UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 20-F

(Mark One)

☐ **REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934**

OR

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2018

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to .

OR

☐ **SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

UBS Group AG
Commission file number: 1-36764

UBS AG
Commission file number: 1-15060

(Exact Name of Registrants as Specified in Their Respective Charters)

Switzerland

(Jurisdiction of Incorporation or Organization)

UBS Group AG
Bahnhofstrasse 45, CH-8001 Zurich, Switzerland
(Address of Principal Executive Office)

UBS AG
Bahnhofstrasse 45, CH-8001 Zurich, Switzerland and Aeschenvorstadt 1, CH-4051 Basel, Switzerland
(Address of Principal Executive Offices)

David Kelly
600 Washington Boulevard
Stamford, CT 06901
Telephone: (203) 719-3000
(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:
Please see page 4-5.
Securities registered or to be registered pursuant to Section 12(g) of the Act:
Please see page 5.
Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:
Please see page 5.

Indicate the number of outstanding shares of each of each issuer's classes of capital or common stock as of 31 December 2018:

UBS Group AG	**UBS AG**
Ordinary shares, par value CHF 0.10 per share:	Ordinary shares, par value CHF 0.10 per share:
3,855,634,749 ordinary shares	3,858,408,466 ordinary shares
(including 166,204,274 treasury shares)	(none of which are treasury shares)

Indicate by check mark if the registrants are well-known seasoned issuers, as defined in Rule 405 of the Securities Act.

UBS Group AG	**UBS AG**
Yes ☐ No ☑	Yes ☐ No ☑

If this report is an annual or transition report, indicate by check mark if the registrants are not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes ☐ No ☑

Note — Checking the box above will not relieve any registrant required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 from their obligations under those Sections.

Indicate by check mark whether the Registrants (1) have filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrants were required to file such reports) and (2) have been subject to such filing requirements for the past 90 days.

Yes ☑ No ☐

Indicate by check mark whether the registrants have submitted electronically and posted on their corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrants were required to submit and post such files).

Yes ☑ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer or an emerging growth company. See definition of "accelerated filer and large accelerated filer" and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check One):

UBS Group AG

Large accelerated filer ☑	Accelerated filer ☐	Non-accelerated filer ☐ Emerging growth company ☐

UBS AG

Large accelerated filer ☐	Accelerated filer ☐	Non-accelerated filer ☑ Emerging growth company ☐

Indicate by check mark which basis of accounting the registrants have used to prepare the financial statements included in this filing.

U.S. GAAP ☐	International Financial Reporting Standards as issued by the International Accounting Standards Board ☑	Other ☐

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrants have elected to follow.

Item 17 ☐ Item 18 ☐

If this is an annual report, indicate by check mark whether the registrants are shell companies (as defined in Rule 12b-2 of the Exchange Act)

Yes ☐ No ☑

Securities registered or to be registered pursuant to Section 12(b) of the Act:

UBS Group AG

Title of each class	Name of each exchange on which registered
Ordinary Shares (par value of CHF 0.10 each)	New York Stock Exchange

UBS AG

Title of each class	Name of each exchange on which registered
UBS AG FI Enhanced Large Cap Growth ETN due June 19, 2024	NYSE Arca
UBS AG FI Enhanced Europe 50 ETN due February 12, 2026	NYSE Arca
UBS AG FI Enhanced Global High Yield ETN due March 3, 2026	NYSE Arca
E-TRACS Linked to the UBS Bloomberg CMCI Food Total Return due April 5, 2038	NYSE Arca
E-TRACS Linked to the UBS Bloomberg CMCI Agriculture Total Return due April 5, 2038	NYSE Arca
E-TRACS Linked to the UBS Bloomberg CMCI Total Return due April 5, 2038	NYSE Arca
E-TRACS Linked to the UBS Bloomberg CMCI Total Return Series B due April 5, 2038	NYSE Arca
E-TRACS Linked to the UBS Bloomberg CMCI Gold Total Return due April 5, 2038	NYSE Arca
E-TRACS Linked to the UBS Bloomberg CMCI Silver Total Return due April 5, 2038	NYSE Arca
E-TRACS Linked to the Bloomberg Commodity Index Total Return℠ due October 31, 2039	NYSE Arca
E-TRACS Linked to the Alerian MLP Infrastructure Index due April 2, 2040	NYSE Arca
E-TRACS Linked to the Alerian MLP Infrastructure Index Series B due April 2, 2040	NYSE Arca
E-TRACS Linked to the Alerian Natural Gas MLP Index due July 9, 2040	NYSE Arca
E-TRACS Linked to the Wells Fargo® Business Development Company Index due April 26, 2041	NYSE Arca
E-TRACS Linked to the Wells Fargo® Business Development Company Index Series B due April 26, 2041	NYSE Arca
2×Leveraged Long E-TRACS Linked to the Wells Fargo® Business Development Company Index due May 24, 2041	NYSE Arca
2×Leveraged Long E-TRACS Linked to the Wells Fargo® Business Development Company Index Series B due May 24, 2041	NYSE Arca
ETRACS Monthly Pay 2xLeveraged Dow Jones Select Dividend Index ETN due May 22, 2042	NYSE Arca
ETRACS Monthly Pay 2xLeveraged S&P Dividend ETN due May 22, 2042	NYSE Arca
ETRACS Alerian MLP Index ETN due July 18, 2042	NYSE Arca
ETRACS Alerian MLP Index ETN Series B due July 18, 2042	NYSE Arca
ETRACS Monthly Pay 2xLeveraged Mortgage REIT ETN due October 16, 2042	NYSE Arca
ETRACS Monthly Pay 2xLeveraged Mortgage REIT ETN Series B due October 16, 2042	NYSE Arca
ETRACS Monthly Pay 2xLeveraged Diversified High Income ETN due November 12, 2043	NYSE Arca
ETRACS Monthly Pay 2xLeveraged Closed-End Fund ETN due December 10, 2043	NYSE Arca
ETRACS Monthly Pay 2xLeveraged Wells Fargo MLP Ex-Energy ETN due June 24, 2044	NYSE Arca
ETRACS Monthly Pay 2xLeveraged US High Dividend Low Volatility ETN due September 30, 2044	NYSE Arca
ETRACS Monthly Pay 2xLeveraged US Small Cap High Dividend ETN due February 6, 2045	NYSE Arca

ETRACS Monthly Reset 2xLeveraged ISE Exclusively Homebuilders ETN due March 13, 2045	NYSE Arca
ETRACS Monthly Pay 2xLeveraged MSCI US REIT index ETN due May 5, 2045	NYSE Arca
ETRACS 2xMonthly Leveraged S&P MLP Index ETN Series B due February 12. 2046	NYSE Arca
ETRACS 2xMonthly Leveraged Alerian MLP Infrastructure Index ETN Series B due February 12, 2046	NYSE Arca
ETRACS S&P GSCI Crude Oil Total Return Index ETN due February 22, 2046	NYSE Arca
ETRACS ProShares Daily 3x Long Crude ETN linked to the Bloomberg WTI Crude Oil Subindex ER due January 4, 2047	NYSE Arca
ETRACS ProShares Daily 3x Inverse Crude ETN linked to the Bloomberg WTI Crude Oil Subindex ER due January 4, 2047	NYSE Arca
VelocitySharesTM 1X Long VSTOXX Futures ETN linked to the VSTOXX Short-Term Futures Investable Index due May 3, 2047	Cboe
VelocitySharesTM 1X Daily Inverse VSTOXX Futures ETN linked to the VSTOXX Short-Term Futures Inverse Investable Index due May 3, 2047	Cboe

Securities registered or to be registered pursuant to Section 12(g) of the Act:
None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:
None

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This report contains statements that constitute “forward-looking statements,” including but not limited to management’s outlook for UBS’s financial performance and statements relating to the anticipated effect of transactions and strategic initiatives on UBS’s business and future development. While these forward-looking statements represent UBS’s judgments and expectations concerning the matters described, a number of risks, uncertainties and other important factors could cause actual developments and results to differ materially from UBS’s expectations. These factors include, but are not limited to: (i) the degree to which UBS is successful in the ongoing execution of its strategic plans, including its cost reduction and efficiency initiatives and its ability to manage its levels of risk-weighted assets (RWA) and leverage ratio denominator (LRD), including to counteract regulatory-driven increases, leverage ratio denominator, liquidity coverage ratio and other financial resources, and the degree to which UBS is successful in implementing changes to its businesses to meet changing market, regulatory and other conditions; (ii) the continuing low or negative interest rate environment in Switzerland and other jurisdictions, developments in the macroeconomic climate and in the markets in which UBS operates or to which it is exposed, including movements in securities prices or liquidity, credit spreads, and currency exchange rates, and the effects of economic conditions, market developments, and geopolitical tensions on the financial position or creditworthiness of UBS’s clients and counterparties as well as on client sentiment and levels of activity; (iii) changes in the availability of capital and funding, including any changes in UBS’s credit spreads and ratings, as well as availability and cost of funding to meet requirements for debt eligible for total loss-absorbing capacity (TLAC); (iv) changes in or the implementation of financial legislation and regulation in Switzerland, the US, the UK, the European Union and other financial centers that have imposed, or resulted in, or may do so in the future, more stringent or entity-specific capital, TLAC, leverage ratio, liquidity and funding requirements, incremental tax requirements, additional levies, limitations on permitted activities, constraints on remuneration, constraints on transfers of capital and liquidity and sharing of operational costs across the Group or other measures, and the effect these will or would have on UBS’s business activities; (v) the degree to which UBS is successful in implementing further changes to its legal structure to improve its resolvability and meet related regulatory requirements and the potential need to make further changes to the legal structure or booking model of UBS Group in response to legal and regulatory requirements, proposals in Switzerland and other jurisdictions for mandatory structural reform of banks or systemically important institutions or to other external developments, and the extent to which such changes will have the intended effects; (vi) UBS’s ability to maintain and improve its systems and controls for the detection and prevention of money laundering and compliance with sanctions to meet evolving regulatory requirements and expectations, in particular in the US; (vii) the uncertainty arising from the timing and nature of the UK exit from the EU; (viii) changes in UBS’s competitive position, including whether differences in regulatory capital and other requirements among the major financial centers will adversely affect UBS’s ability to compete in certain lines of business; (ix) changes in the standards of conduct applicable to our businesses that may result from new regulation or new enforcement of existing standards, including recently enacted and proposed measures to impose new and enhanced duties when interacting with customers and in the execution and handling of customer transactions; (x) the liability to which UBS may be exposed, or possible constraints or sanctions that regulatory authorities might impose on UBS, due to litigation, contractual claims and regulatory investigations, including the potential for disqualification from certain businesses, potentially large fines or monetary penalties, or the loss of licenses or privileges as a result of regulatory or other governmental sanctions, as well as the effect that litigation, regulatory and similar matters have on the operational risk component of our RWA as well as the amount of capital available for return to shareholders; (xi) the effects on UBS’s cross-border banking business of tax or regulatory developments and of possible changes in UBS’s policies and practices relating to this business; (xii) UBS’s ability to retain and attract the employees necessary to generate revenues and to manage, support and control its businesses, which may be affected by competitive factors; (xiii) changes in accounting or tax standards or policies, and determinations or interpretations affecting the recognition of gain or loss, the valuation of goodwill, the recognition of deferred tax assets and other matters; (xiv) UBS’s ability to implement new technologies and business methods, including digital services and technologies and ability to successfully compete with both existing and new financial service providers, some of which may not be regulated to the same extent; (xv) limitations on the effectiveness of UBS’s internal processes for risk management, risk control, measurement and modeling, and of financial models generally; (xvi) the occurrence of operational failures, such as fraud, misconduct, unauthorized trading, financial crime, cyberattacks, and systems failures; (xvii) restrictions on the ability of UBS Group AG to make payments or distributions, including due to restrictions on the ability of its subsidiaries to make loans or distributions, directly or indirectly, or, in the case of financial difficulties, due to the exercise by FINMA or the regulators of UBS’s operations in other countries of their broad statutory powers in relation to protective measures, restructuring and liquidation proceedings; (xviii) the degree to which changes in regulation, capital or legal structure, financial results or other factors may affect UBS’s ability to maintain its stated capital return objective; and (xix) the effect that these or other factors or unanticipated events may have on our reputation and the additional consequences that this may have on our business and performance. The sequence in which the factors above are presented is not indicative of their likelihood of occurrence or the potential magnitude of their consequences. Our business and financial performance could be affected by other factors identified in our past and future filings and reports, including those filed with the SEC. More detailed information about those factors is set forth in documents furnished by UBS and filings made by UBS with the SEC. UBS is not under any obligation to (and expressly disclaims any obligation to) update or alter its forward-looking statements, whether as a result of new information, future events, or otherwise.

Cross-reference table

Set forth below are the respective items of SEC Form 20-F, and the locations in this document where the corresponding information can be found.

- **Annual Report** refers to the Annual Report 2018 of UBS Group AG and UBS AG annexed hereto, which forms an integral part hereof.
- **Supplement** refers to certain supplemental information contained in this forepart of the Form 20-F, starting on page 13 following the cross-reference table.
- **Financial Statements** refers to the consolidated financial statements of either UBS Group AG or UBS AG, or both, depending upon the context, contained in the Annual Report.

In the cross-reference table below, page numbers refer to either the Annual Report or the Supplement, as noted.

Please see page 6 of the Annual Report for definitions of terms used in this Form 20-F relating to UBS.

Form 20-F item	Response or location in this filing
Item 1. Identity of Directors, Senior Management and Advisors.	Not applicable.
Item 2. Offer Statistics and Expected Timetable.	Not applicable.
Item 3. Key Information	
A – Selected Financial Data	Annual Report, *Selected Financial Data* (714-717 and 737-740), *Statement of changes in equity* (316-320 and 512-516) and *UBS shares* (216).
B – Capitalization and Indebtedness.	Not applicable.
C – Reasons for the Offer and Use of Proceeds.	Not applicable.
D – Risk Factors.	Annual Report, *Risk factors* (50-61).
Item 4. Information on the Company.	
A – History and Development of the Company	1-3: Annual Report, *Corporate information* and *Contacts* (5). The registrants' agent is David Kelly, 600 Washington Boulevard, Stamford, CT 06901. 4: Annual Report, *Our evolution* (12-13); *Our strategy* (16); *Our businesses* (19-28); Note 32 to each set of Financial Statements (*Changes in organization and acquisitions and disposals of subsidiaries and businesses*) (489) and (684) 5: Refer to our management discussion and analysis for a description of material acquisitions and divestitures in Annual Report, *Our businesses* (19-28), as applicable; *Our focus on technology* (34-35); also refer to Note 15 to each set of Financial Statements (*Property, equipment and software)* (397 and 592) and Note 32 to each set of Financial Statements (*Changes in organization and acquisitions and disposals of subsidiaries and businesses*) (489) and (684). 6-7: Nothing to disclose. 8: Annual Report, *Information sources* (762).
B – Business Overview.	1, 2, 5 and 7: Annual Report, *Our strategy,business model and environment* (15-61), Note 2a to each set of Financial Statements (*Segment reporting)* (373-376 and 569-572) and Note 2b to each set of Financial Statements (*Segment reporting by geographic location)* (377 and 573). See also Supplement (13). 3: *Seasonal characteristics* (77). 4: Not applicable. 6: None. 8: *Regulation and supervision* (43-44) and *Regulatory and legal developments* (45-49). Supplement (14).

C – Organizational Structure.	Annual Report, *Our evolution* (12-13) and Note 31 to each set of Financial Statements (*Interests in subsidiaries and other entities)* (481-488 and 676-683).
D – Property, Plant and Equipment.	Annual Report, *Property, plant and equipment* (718 and 741), Note 15 to each set of Financial Statements (*Property, equipment and software)* (397 and 592), Note 33 to each set of Financial Statements (*Operating leases and finance leases*) (490 and 685).
Information required by Industry Guide 3	Annual Report, *Information required by industry guide 3* (719-735 and 742-758) and *Selected financial data* (714-717 and 737-740).
Item 4A. Unresolved Staff Comments.	None.
Item 5. Operating and Financial Review and Prospects.	
A – Operating Results.	Annual Report, *Our key figures* (6-7), *UBS AG consolidated key figures* (501-503), *Performance targets and measurement* (17-18), *Group performance* (68-81), financial and operating performance by business division and Corporate Center (82-115), Note 2a to each set of Financial Statements (*Segment reporting)* (373-376 and 569-572), *Currency management* (192), *Capital management* (194-218), *Risk factors* (50-61), *Our environment* (29-31), Note 28 to each set of Financial Statements (*Hedge Accounting)* (452-457 and 648-653), *Regulatory and legal developments* (45-49), *Significant accounting and financial reporting changes* (65-67) and Note 32 to each set of Financial Statements (*Changes in organization and acquisitions and disposals of subsidiaries and businesses*) (489) and (684).
B – Liquidity and Capital Resources.	Annual Report, *Substantial changes in the regulation may adversely affect our businesses and our ability to execute our strategic plans* (*Higher capital and total loss-absorbing capacity requirements increase our costs*) (51-53), *As UBS Group AG is a holding company, its operating results, financial condition and ability to pay dividends and other distributions and/or to pay its obligations in the future depend on funding, dividends and other distributions received directly or indirectly from its subsidiaries, which may be subject to restrictions* (60-61), *Group performance* (68-81), financial and operating performance by business division and Corporate Center (82-115), *Seasonal characteristics* (77), *Interest rate risk in the banking book* (159-163), *Balance sheet, liquidity and funding management* (173-188),*Currency management* (192), *Cash flows* (193), *Capital management* (194-218), Note 26a to each set of Financial Statements (*Restricted financial assets)* (448-449 and 644-645), Note 13 (*Financial assets and liabilities at fair value not held for trading*) (396 and 591), Note 14 (*Financial assets measured at fair value through other comprehensive income*) (396 and 591), and Note 17a (*Other financial assets measured at amortized cost*) (401 and 596), Note 11 to each set of Financial Statements (*Derivative instruments)* (391-395 and 586-590), Note 19 to each set of Financial Statements (*Debt issued designated at fair value)* (402 and 598), Note 20 to each set of Financial Statements (*Debt issued measured at amortized cost*) (403-404 and 599-600), *Short-term borrowings* (726 and 749), Note 15 to each set of Financial Statements (*Property, equipment and software)* (397 and 592) and Note 28 to each set of Financial Statements (*Hedge Accounting)* (452-457 and 648-653). We believe that our working capital is sufficient for the company's present requirements. Liquidity and capital management is undertaken at UBS as an integrated asset and liability management function.
C—Research and Development, Patents and Licenses, etc.	Not applicable.
D—Trend Information.	Annual Report, *Our businesses* (19-28), *Our environment* (29-31), *Regulatory and legal developments* (45-49), *Risk factors* (50-61), *Financial and operating performance* (63-115) and *Top and emerging risks* (122).
E—Off-Balance Sheet Arrangements.	Annual Report, *Off-balance sheet* (189-191), Note 31c) to each set of Financial Statements (*Interests in unconsolidated structured entities*) (484-488 and 679-683), Note 26 to each set of Financial Statements (*Restricted and transferred financial assets)* (448-450 and 644-646) and Note 33 to each set of Financial Statements (*Operating leases and finance leases*) (490 and 685).
F—Tabular Disclosure of Contractual Obligations.	Annual Report, *Contractual obligations* (191).
Item 6. Directors, Senior Management and Employees.	
A – Directors and Senior Management.	1, 2 and 3: Annual Report, *Board of Directors* (230-234) and *Group Executive Board* (243-248). 4, 5: None.

<table>
<tr><td>B – Compensation.</td><td>1: Annual Report, *Compensation* (254-303), Note 30 to each set of Financial Statements (*Employee benefits: variable compensation)* (473-480 and 669-675) and Note 35 to each set of Financial Statements (*Related parties)* (492-494 and 687-689).
2: Annual Report, Note 29 to each set of Financial Statements (*Pension and other post-employment benefit plans)* (458-472 and 654-668).</td></tr>
<tr><td>C – Board practices.</td><td>1: Annual Report, *Board of Directors* (230-242). The term of office for members of the Board of Directors and its Chairman expires after completion of the next Annual General Meeting. The next Annual General Meeting is scheduled on 2 May 2019.
2: Annual Report, *Compensation* (254-303) and Note 35 to each set of Financial Statements (*Related parties)* (492-494 and 687-689).
3: Annual Report, *Audit committee* (237) and *Compensation Committee* (238).
Refer to the Supplement (18) for information on UBS AG's Board of Directors' executive sessions.</td></tr>
<tr><td>D—Employees.</td><td>Annual Report, *Employees* (37-39) and *Financial and operating performance* (63-115).</td></tr>
<tr><td>E—Share Ownership.</td><td>Annual Report, 298-300, Note 30 to each set of Financial Statements (*Employee benefits: variable compensation)* (473-480 and 669-675) and Note 35b to each set of Financial Statements (*Equity holdings of key management personnel)* (492 and 687).</td></tr>
<tr><td colspan="2">**Item 7.** Major Shareholders and Related Party Transactions.</td></tr>
<tr><td>A—Major Shareholders.</td><td>Annual Report, *Group structure and shareholders* (222-223), *Share capital structure* (224-227) and *Voting rights, restrictions and representation* (228).

The number of shares of UBS Group AG held by the respective shareholders listed on page 223 of the Annual Report registered in the UBS share register with 3% or more of total share capital as of 31 December 2018 is as follows:

<table>
<tr><td>Shareholder</td><td>Number of shares held</td></tr>
<tr><td>Chase Nominees Ltd., London</td><td>465,870,853</td></tr>
<tr><td>DTC (Cede & Co.), New York</td><td>278,712,614</td></tr>
<tr><td>Nortrust Nominees Ltd., London</td><td>159,517,521</td></tr>
</table>

The number of shares of UBS AG held by UBS Group AG as of 31 December 2018 was 3,858,408,466 shares.</td></tr>
<tr><td>B—Related Party Transactions.</td><td>Annual Report, *Loans granted to GEB members* (301), *Loans granted to BoD members* (301) and Note 35 to each set of Financial Statements (*Related parties)* (492-494 and 687-689).

The loans disclosed in such sections (a) were made in the ordinary course of business, (b) were made on substantially the same terms, including interest rates and collateral, as those prevailing at the time for comparable transactions with other persons, and (c) did not involve more than the normal risk of collectability or present other unfavorable features.</td></tr>
<tr><td>C—Interests of Experts and Counsel.</td><td>Not applicable.</td></tr>
</table>

Item 8. Financial Information.	
A—Consolidated Statements and Other Financial Information.	1, 2, 3, 4, 6: Please see Item 18 of this Form 20-F. 5: Not applicable. 7: Information on material legal and regulatory proceedings is in Note 21 to each set of Financial Statements (*Provisions and contingent liabilities)* (405-412 and 601-608). For developments during the year, please see also the note *Provisions and contingent liabilities* in the Financial Information section in our respective quarterly reports for the First, Second and Third Quarters 2018, filed on Forms 6-K dated April 23, 2018 (UBS Group AG) and April 27, 2018 (UBS AG), July 24, 2018 (UBS Group AG) and July 27, 2018 (UBS AG) and October 25, 2018 (UBS Group AG) and October 31, 2018 (UBS AG), respectively; as well as the *Provisions and contingent liabilities* section in the Fourth Quarter 2018 Report, filed on Form 6-K dated January 22, 2019. The disclosures in each such Quarterly Report speak only as of their respective dates. 8: Annual Report, *Shareholder returns* (36), *Our stated capital returns objective is based, in part, on capital ratios that are subject to regulatory change and may fluctuate significantly* (60), *Distributions to shareholders* (227).
B—Significant Changes.	Annual Report, Note 1 to each set of Financial Statements (*Summary of significant accounting policies)* (323-372 and 519-568) and Note 38 to each set of Financial Statements (*Events after the reporting period)* (496 and 691).
Item 9. The Offer and Listing.	
A – Offer and Listing Details.	Not applicable.
B—Plan of Distribution.	Not applicable.
C—Markets.	Annual Report, *Listing of UBS Group AG shares* (218).
D—Selling Shareholders.	Not applicable.
E—Dilution.	Not applicable.
F—Expenses of the Issue.	Not applicable.
Item 10. Additional Information.	
A—Share Capital.	Not applicable.
B—Memorandum and Articles of Association.	Annual Report, *Elections and terms of office* (235), *Share capital structure* (224-227), *Organizational principles and structure* (235-239), *Shareholders' participation rights* (228-229), *Significant shareholders* (222-223), *Change of control and defense measures* (249), *Board of Directors* (229-241), *Our compensation governance* (284-285) and *2018 compensation for the Board of Directors* (286-288). Supplement (15-20).
C—Material Contracts.	The Terms & Conditions of the several series of capital instruments issued to date, and to be issued pursuant to Deferred Capital Contingent Plans, are exhibits 4.1 through 4.19 to this Form 20-F. These notes are described under *Capital and other instruments contributing to our total loss-absorbing capacity* on page 197 of the Annual Report and *Deferred Contingent Capital Plan* on page 274 of the Annual Report. The settlement agreements and orders filed as exhibits 4.20 through 4.24 are described in item 5 (*Foreign exchange, LIBOR and benchmark rates, and other trading practices*) of Note 21 (*Provisions and contingent liabilities*) to each set of Financial Statements (406-413 and 602-609). The Asset Transfer Agreement by which certain assets and liabilities of UBS AG were transferred to UBS Switzerland AG is filed as Exhibit 4.25, and is described under *Joint liability of UBS Switzerland AG* on page 696 of the Annual Report.

D—Exchange Controls.	Other than in relation to economic sanctions, there are no restrictions under the Articles of Association of UBS Group AG or UBS AG, nor under Swiss law, as presently in force, that limit the right of non-resident or foreign owners to hold UBS's securities freely. There are currently no Swiss foreign exchange controls or other Swiss laws restricting the import or export of capital by UBS or its subsidiaries, nor restrictions affecting the remittance of dividends, interest or other payments to non-resident holders of UBS securities. The Swiss federal government may impose sanctions on particular countries, regimes, organizations or persons which may create restrictions on exchange of control. A current list, in German, French and Italian, of such sanctions can be found at www.seco-admin.ch. UBS may also be subject to sanctions regulations from other jurisdictions where it operates imposing further restrictions.
E—Taxation.	Supplement (20-22).
F—Dividends and Paying Agents.	Not applicable.
G—Statement by Experts.	Not applicable.
H—Documents on Display.	UBS files periodic reports and other information with the Securities and Exchange Commission. You may read and copy any document that we file with the SEC on the SEC's website, *www.sec.gov*. Much of this information may also be found on the UBS website at *www.ubs.com/investors*.
I—Subsidiary Information.	Not applicable.
Item 11. Quantitative and Qualitative Disclosures About Market Risk.	
(a) Quantitative Information About Market Risk.	Annual Report, *Market risk* (134-164).
(b) Qualitative Information About Market Risk.	Annual Report, *Market risk* (134-164).
(c) Interim Periods.	Not applicable.
Item 12. Description of Securities Other than Equity Securities.	
A – Debt Securities	Not applicable.
B – Warrants and Rights	Not applicable.
C – Other Securities	Not applicable.
D – American Depositary Shares	Not applicable.
Item 13. Defaults, Dividend Arrearages and Delinquencies.	There has been no material default in respect of any indebtedness of UBS or any of its significant subsidiaries or any arrearages of dividends or any other material delinquency not cured within 30 days relating to any preferred stock of UBS Group AG or any of its significant subsidiaries.
Item 14. Material Modifications to the Rights of Security Holders and Use of Proceeds.	None.
Item 15. Controls and Procedures.	
(a) Disclosure Controls and Procedures	Annual Report, *US disclosure requirements* (254), and Exhibit 12 to this Form 20-F.
(b) Management's Annual Report on Internal Control over Financial Reporting	Annual Report, *Management's reports on internal control over financial reporting* (309 and 504).
(c) Attestation Report of the Registered Public Accounting Firm	Annual Report, *Reports of Independent Registered Public Accounting Firm* (310-311 and 505-506).
(d) Changes in Internal Control over Financial Reporting	None.

Item 15T. Controls and Procedures.	Not applicable.
Item 16A. Audit Committee Financial Expert.	Annual Report, *Audit Committee* (237) and *Differences from corporate governance standards relevant to US-listed companies* (220-221). All Audit Committee members have accounting or related financial management expertise and in compliance with the rules established pursuant to the US Sarbanes-Oxley Act of 2002, at least one member, the Chairperson Jeremy Anderson, qualifies as a financial expert.
Item 16B. Code of Ethics.	Annual Report, *Code of Conduct and Ethics* (40). UBS's Code of Conduct and Ethics ("the Code") is published on our website under https://www.ubs.com/global/en/about_ubs/about_us/code_of_conduct.html. The Code is regularly reviewed to make sure it is consistent with the rest of UBS's policies, as well as the law. No waiver from any provision of the Code was granted to any employee in 2018.
Item 16C. Principal Accountant Fees and Services.	Annual Report, *Auditors* (250-251). None of the non-audit services so disclosed were approved by the Audit Committee pursuant to paragraph (c) (7)(i)(C) of Rule 2-01 of Regulation S-X.
Item 16D. Exemptions from the Listing Standards for Audit Committees.	Not applicable.
Item 16E. Purchases of Equity Securities by the Issuer and Affiliated Purchasers.	Annual Report, *Treasury share purchases* (217). On 22 January 2018, UBS Group AG announced its intention to buy back its own registered shares over the coming three years starting from March 2018, amounting to a maximum of CHF 2 billion.
Item 16F. Changes in Registrant's Certifying Accountant.	Not applicable.
Item 16G. Corporate Governance.	Annual Report, *Differences from corporate governance standards relevant to US-listed companies* (220-221).
Item 16H. Mine Safety Disclosure.	Not applicable.
Item 17. Financial Statements.	Not applicable.
Item 18. Financial Statements.	Annual Report, *Consolidated financial statements* (305-706), *Significant regulated subsidiary and sub-group information* (707-709) and *Additional regulatory information* (711-758).
Item 19. Exhibits	Supplement (23-24).

Supplemental information

Item 4. Information on the Company
B – Business Overview

Item 4.B.2. Geographic breakdown of revenues

The operating regions shown in the table below correspond to the regional management structure of the Group. The allocation of operating income to these regions reflects, and is consistent with, the basis on which the business is managed and its performance is evaluated. These allocations involve assumptions and judgments that management considers to be reasonable, and may be refined to reflect changes in estimates or management structure.

The main principles of the allocation methodology are that client revenues are attributed to the domicile of the client, and trading and portfolio management revenues are attributed to the country where the risk is managed. This revenue attribution is consistent with the mandate of the regional Presidents. Certain revenues, such as those related to the Corporate Center – Non-core and Legacy Portfolio, are managed at a Group level. These revenues are included in the *Global* column.

USD billion

Business Division	FY	Americas	Asia Pacific	EMEA	Switzerland	Global	Total
Global Wealth Management	2018	9.2	2.4	3.6	1.6	0.1	16.9
	2017[1]	8.8	2.3	3.6	1.6	0.0	16.3
	2016[1]	8.2	2.0	3.5	1.5	0.0	15.2
Personal & Corporate Banking	2018	0.0	0.0	0.0	4.2	0.0	4.2
	2017[1]	0.0	0.0	0.0	3.9	0.0	3.9
	2016[1]	0.0	0.0	0.0	4.0	0.0	4.0
Asset Management	2018	0.5	0.4	0.3	0.7	(0.1)	1.9
	2017[1]	0.5	0.4	0.4	0.7	0.1	2.1
	2016[1]	0.5	0.4	0.4	0.7	0.0	2.0
Investment Bank	2018	3.0	2.2	2.3	0.8	(0.1)	8.1
	2017[1]	2.9	2.1	2.2	0.8	(0.1)	7.8
	2016[1]	2.9	1.9	2.3	0.8	(0.1)	7.8
Corporate Center	2018	0.0	0.0	0.0	0.0	(1.0)	(1.0)
	2017[1]	0.0	0.0	0.0	0.0	(0.5)	(0.5)
	2016[1]	0.0	0.0	0.0	0.0	(0.3)	(0.3)
Group	2018	12.8	5.0	6.3	7.3	(1.1)	30.2
	2017[1]	12.1	4.8	6.2	7.0	(0.5)	29.6
	2016[1]	11.6	4.3	6.2	7.0	(0.4)	28.7

1 Comparative figures have been restated for the change of the presentation currency from Swiss francs to US dollars. Comparatives may additionally differ due to adjustments following organizational changes, restatements due to the retrospective adoption of new accounting standards or changes in accounting policies, and events after the reporting period.

Disclosure Pursuant To Section 219 of the Iran Threat Reduction And Syrian Human Rights Act

Section 219 of the US Iran Threat Reduction and Syria Human Rights Act of 2012 ("ITRA") added Section 13(r) to the US Securities Exchange Act of 1934, as amended (the "Exchange Act") requiring each SEC reporting issuer to disclose in its annual and, if applicable, quarterly reports whether it or any of its affiliates have knowingly engaged in certain activities, transactions or dealings relating to Iran or with the Government of Iran or certain designated natural persons or entities involved in terrorism or the proliferation of weapons of mass destruction during the period covered by the report. The required disclosure may include reporting of activities not prohibited by US or other law, even if conducted outside the US by non-US affiliates in compliance with local law. Pursuant to Section 13(r) of the Exchange Act, we note the following for the period covered by this annual report:

UBS has a Group Sanctions Policy that prohibits transactions involving sanctioned countries, including Iran, and sanctioned individuals and entities. However, UBS maintains one account involving the Iranian government under the auspices of the United Nations in Geneva after agreeing with the Swiss government that it would do so only under certain conditions. These conditions include that payments involving the account must: (1) be made within Switzerland; (2) be consistent with paying rent, salaries, telephone and other expenses necessary for its operations in Geneva; and (3) not involve any Specially Designated Nationals (SDNs) blocked or otherwise restricted under US or Swiss law. In 2018, the gross revenues for this UN-related account were approximately USD 3,270. We do not allocate expenses to specific client accounts in a way that enables us to calculate net profits with respect to any individual account. UBS AG intends to continue maintaining this account pursuant to the conditions it has established with the Swiss Government and consistent with its Group Sanctions Policy. UBS also maintains a rental surety (effectively a rental security deposit) account in relation to the Government of Iran's UN Mission premises in Geneva; there were no revenues for this account.

As previously reported, UBS had certain outstanding legacy trade finance arrangements issued on behalf of Swiss client exporters in favor of their Iranian counterparties. In February 2012 UBS ceased accepting payments on these outstanding export trade finance arrangements and worked with the Swiss government who insured these contracts (Swiss Export Risk Insurance "SERV"). On December 21, 2012, UBS and the SERV entered into certain Transfer and Assignment Agreements under which SERV purchased all of UBS's remaining receivables under or in connection with Iran-related export finance transactions. Hence, the SERV is the sole beneficiary of said receivables. There was no financial activity involving Iran in connection with these trade finance arrangements in 2018, and no gross revenue or net profit.

In connection with these trade finance arrangements, UBS has maintained one existing account relationship with an Iranian bank. This account was established prior to the US designation of this bank and maintained due to the existing trade finance arrangements. In 2007, following the designation of the bank pursuant to sanctions issued by the US, UN and Switzerland, the account was blocked under Swiss law and remained subject to blocking requirements until January 2016. Client assets as of December 2018 were USD 3,117. There have been no transactions involving this account in 2018 other than general account fees. The gross revenues to report for 2018 are USD 10.

Item 10. Additional Information.
B—Memorandum and Articles of Association.

Please see the Articles of Association of UBS Group AG and of UBS AG (Exhibits 1.1 and 1.2, respectively, to this Form 20-F) and the Organization Regulations of UBS Group AG and UBS AG (Exhibit 1.3 and 1.4, respectively, to this Form 20-F).

Set forth below is a summary of the material provisions of the Articles of Association of UBS Group AG (which we call the "Articles" throughout this document), Organization Regulations of UBS Group AG (which we call the "Organization Regulations" throughout this document) and relevant Swiss laws, in particular the Swiss Code of Obligations, relating to our shares. This description does not purport to be complete and is qualified in its entirety by references to Swiss law, including Swiss company law, and to the Articles and Organization Regulations.

The Articles of Association and Organization Regulations of UBS AG are substantially similar to the Articles and Organization Regulations of UBS Group AG, so the following description applies equally to UBS AG, except where indicated that it refers to only one of the companies.

The principal legislation under which UBS Group AG and UBS AG operate, and under which the ordinary shares of UBS Group AG are issued, is the Swiss Code of Obligations.

The shares are registered shares with a par value of CHF 0.10 per share. The shares are fully paid up, and there is no liability of shareholders to further capital calls by the company. The shares rank *pari passu* in all respects with each other, including voting rights, entitlement to dividends, liquidation proceeds in case of the liquidation of the company, subscription or preemptive rights in the event of a share issue (*Bezugsrechte*) and preemptive rights in the event of the issuance of equity-linked securities (*Vorwegzeichnungsrechte*).

Each share carries one vote at our shareholders' meetings. Voting rights may be exercised only after a shareholder has been recorded in our share register as a shareholder with voting rights. Registration with voting rights is subject to certain restrictions. See "Share Register and Transfer of Shares" below.

The Articles provide that we may elect not to print and deliver certificates in respect of registered shares. Shareholders may, however, following registration in the share register, request at any time that we issue a written statement in respect of their shares; however, the shareholder has no entitlement to the printing and delivery of share certificates.

Shares and Shareholders
Share Register and Transfer of Shares

UBS Group AG's share register is kept by UBS Shareholder Services, P.O. Box, CH-8098 Zurich, Switzerland. Shareholder Services is responsible for the registration of the global shares. It is split into two parts – a Swiss register, which is maintained by UBS Group, acting as Swiss share registrar, and a US register, which is maintained by Computershare Inc., c/o Voluntary Corporate Actions, 250 Royall Street, Suite V, Canton, MA 02021, as US transfer agent ("Computershare").

Swiss law and the Articles of Association of UBS Group AG and UBS AG require UBS to keep a share register in which the names, addresses and nationality (for legal persons, the registered office) of the owners (and beneficial owners) of registered shares are recorded. The main function of the share register is to record shareholders entitled to vote and participate in general meetings, or to assert or exercise other rights related to voting rights.

The transfer of shares which exist in the form of intermediary-held securities is effected by entries in securities accounts in accordance with applicable law. The transfer of uncertificated securities is effected by way of a written declaration of assignment and requires notice to the issuer.

In order to register shares in the share register, a purchaser must file a share registration form with the share register. Failing such registration, the purchaser may not vote at or participate in shareholders' meetings, but will be entitled to dividends, pre-emptive and priority subscription rights, and liquidation proceeds.

Swiss law distinguishes between registration with and without voting rights. Shareholders must be registered in the share register as shareholders with voting rights in order to vote and participate in general meetings or to assert or exercise other rights related to voting rights. A purchaser of shares will be recorded in our share register with voting rights upon disclosure of its name and nationality (and for legal persons, the registered office). However, we may decline a registration with voting rights if the shareholder does not declare that it has acquired the shares in its own name and for its own account. If the shareholder refuses to make such declaration, it will be registered as a shareholder without voting rights.

There is no limitation under Swiss law or our Articles on the right of non-Swiss residents or nationals to own or vote our shares.

General Meeting

Under Swiss law, annual ordinary shareholders’ meetings must be held within six months after the end of our financial year, which is 31 December. Shareholders’ meetings may be convened by the Board of Directors (BoD) or, if necessary, by the statutory auditors, with twenty-days’ advance notice. The BoD is further required to convene an extraordinary shareholders’ meeting if so resolved by a shareholders’ meeting or if so requested by shareholders holding in aggregate at least 10% of our nominal share capital. Shareholders representing shares with an aggregate par value of at least CHF 62,500 have the right to request that a specific proposal be put on the agenda and voted upon at the next shareholders’ meeting. A shareholders’ meeting is convened by publishing a notice in the Swiss Official Commercial Gazette (*Schweizerisches Handelsamtsblatt*) at least 20 days prior to such meeting.

The Articles do not require a minimum number of shareholders to be present in order to hold a shareholders’ meeting.

Unless otherwise provided by law or the Articles (as indicated in this section), resolutions require the approval of an “absolute majority” of the votes cast at a shareholders’ meeting. Shareholders’ resolutions requiring a vote by absolute majority include:

- Amendments to the Articles (except for the changes requiring a higher quorum as indicated below);
- Elections of directors, Chairman of the BoD, members of the compensation committee and statutory auditors;
- Election of the independent proxy;
- Approval of the management report and the consolidated financial statements;
- Approval of the annual financial statements and the resolution on the use of the balance sheet profit (declaration of dividend);
- Approval of the compensation for the BoD and the Group Executive Board (GEB) of UBS Group AG, including the approval of the maximum aggregate amount of compensation of the members of the BoD for the period until the next Annual General Meeting (AGM), the maximum aggregate amount of fixed compensation of the GEB members for the following financial year and the aggregate amount of variable compensation of the GEB members for the preceding financial year, with the exception of a supplementary amount of up to 40% of the average of total annual compensation paid or granted to the GEB during the previous three years for persons joining or promoted within the GEB;
- Decisions to discharge directors and management from liability for matters disclosed to the shareholders’ meeting; and
- Passing resolutions on matters which are by law or by the Articles reserved to the shareholders’ meeting (e.g., the ordering of an independent investigation into the specific matters proposed to the shareholders’ meeting).

Under Swiss corporate law, a resolution passed by at least two thirds of votes represented and an absolute majority of the par value of the shares represented is required in order to approve:

- A change in our stated purpose in the Articles;
- The creation of shares with preferential voting rights;
- A restriction on transferability or registration of shares;
- An increase in authorized or contingent capital or the creation of reserve capital in accordance with Swiss banking law;
- An increase in share capital funded by equity capital, against contribution in kind or to fund acquisitions in kind and the granting of special privileges;
- Changes to pre-emptive rights;
- A change of domicile of the corporation; or
- Dissolution of the corporation.

Under the Articles, a resolution passed at a shareholders’ meeting with a supermajority of at least two thirds of the votes represented at such meeting is required to:

- Change the limits on BoD size in the Articles;
- Remove one-fourth or more of the members of the BoD; or
- Delete or modify these supermajority requirements.

At shareholders’ meetings, a shareholder can be represented by his or her legal representative or under a written power of attorney by another shareholder eligible to vote or, under a written or electronic power of attorney, by the independent proxy. Votes are taken electronically, by written ballot or by a show of hands. Shareholders representing at least 3% of the votes represented may always request that a vote or election take place electronically or by a written ballot.

UBS AG follows the abovementioned statutory quorum rules in lieu of the quorum requirement of Rule 14.10(f)(3) of Bats BZX Exchange, Inc.

Net Profits and Dividends

Swiss law requires that at least 5% of the annual net profits of a corporation must be retained as general reserves until this equals 20% of the corporation's paid-up share capital. Any net profits remaining are at the disposal of the shareholders' meeting, except that, if an annual dividend exceeds 5% of the nominal share capital, then 10% of such excess must be retained as general reserves, unless such corporation qualifies as a holding company.

Under Swiss law, dividends may be paid out only if the corporation has sufficient distributable profits from previous business years or if the reserves of the corporation are sufficient to allow distribution of a dividend. In either event, dividends may be paid out only after approval by the shareholders' meeting. The BoD may propose to the shareholders that a dividend be paid out. The auditors must confirm that the dividend proposal of the BoD conforms with statutory law.

Dividends are usually due and payable after the shareholders' resolution relating to the allocation of profits has been passed. Under Swiss law, the statute of limitations in respect of dividend payments is five years.

US holders of shares will receive dividend payments in US dollars, unless they provide notice to our US transfer agent, Computershare, that they wish to receive dividend payments in Swiss francs. The US transfer agent will be responsible for paying the US dollars or Swiss francs to registered holders, and for withholding any required amounts for taxes or other governmental charges. If the US transfer agent determines, after consultation with us, that in its judgment any foreign currency received by it cannot be converted into US dollars or transferred to US holders, it may distribute the foreign currency received by it, or an appropriate document evidencing the right to receive such currency, or in its discretion hold such foreign currency for the accounts of US holders.

Preemptive Rights

Under Swiss law, any share issue, whether for cash or non-cash consideration or for no consideration, is subject to the prior approval of the shareholders' meeting. Shareholders of a Swiss corporation have certain preemptive rights to subscribe for new issues of shares in proportion to the nominal amount of shares held. The Articles or a resolution adopted at a shareholders' meeting with a supermajority of at least two-thirds of the votes represented and an absolute majority of the nominal value of the shares represented at the meeting may, however, limit or suspend preemptive rights in certain limited circumstances.

Disclosure of Principal Shareholders

Under the applicable provisions of the Swiss Financial Market Infrastructure Act, anyone who directly or indirectly or acting in concert with third parties reaches, exceeds or falls below the thresholds of 3%, 5%, 10%, 15%, 20%, 25%, 33 1/3%, 50% or 66 2/3% of the voting rights of a Swiss-listed corporation must notify the corporation and the SIX Swiss Exchange, whether or not the voting rights can be exercised. Following receipt of such notification, the corporation has the obligation to inform the public. The corporation must disclose in the notes to the balance sheet the identity of any shareholders who own in excess of 5% of its shares.

Notices

Notices to shareholders are made by publication in the Swiss Official Gazette of Commerce. The BoD may designate further means of communication for publishing notices to shareholders.

Mandatory Tender Offer

Under the applicable provisions of the Swiss Financial Market Infrastructure Act, anyone who directly or indirectly or acting in concert with third parties acquires more than 33 1/3% of the voting rights of a Swiss-listed company will have to submit a takeover bid to all remaining shareholders. A waiver from the mandatory bid rule may be granted by our supervisory authority. If no waiver is granted, the mandatory takeover bid must be made pursuant to the procedural rules set forth in the Swiss Financial Market Infrastructure Act and implementing ordinances.

Board of Directors
Borrowing Power

Neither Swiss law nor the Articles restrict in any way our power to borrow and raise funds, provided that any such borrowing is entered into on arms'-length terms.

Swiss law requires that the Articles determine the amount of loans that UBS Group AG, as a listed company, may grant to members of its BoD. The Articles restrict UBS Group AG's ability to grant loans to BoD members as follows: First, loans to the independent members of the BoD shall be made in accordance with the customary business and market conditions. Second, loans to the non-independent members of the BoD shall be made in the ordinary course of business on substantially the same terms as those granted to UBS employees. Third, the total amount of such loans shall not exceed CHF 20 million per member.

Conflicts of Interests

Swiss law does not have a general provision on conflicts of interests. However, the Swiss Code of Obligations requires directors and members of senior management to safeguard the interests of the corporation and, as such, imposes a duty of care and a duty of loyalty on directors and officers. This rule is generally understood as disqualifying directors and senior officers from participating in decisions that directly affect them. Directors and officers are personally liable to the corporation for any breach of these provisions. In addition, Swiss law contains a provision under which payments made to a shareholder or a director or any person associated therewith, other than at arm's length, must be repaid to us if the shareholder or director was acting in bad faith.

In addition, our Organization Regulations provide that, subject to exceptional circumstances in which the best interests of UBS dictate that the member of the BoD or senior management with a conflict of interest shall not participate in the discussions and decision-making involving the interest at stake, the member of the BoD or senior management with a conflict of interest shall participate in discussions and a double vote (meaning a vote with and a vote without the conflicted individual) shall take place. A binding decision on the matter requires the same outcome in both votes.

Retirement of Board members

There is no age-limit requirement for retirement of the members of the BoD. The term of office for each Board member is one year, and no Board member may serve for more than 12 consecutive terms of office. In exceptional circumstances the Board can extend this limit.

Executive sessions

UBS AG's Organization Regulations require one-third of the members of the Board of Directors of UBS AG to be independent. While neither Swiss law applicable to UBS AG nor the Organization Regulations require regularly scheduled meetings of UBS AG's independent directors, the Organization Regulations of UBS Group AG require independent members of the Board of Directors of UBS Group AG to meet, without the participation of the Chairman, at least twice a year. All members of UBS Group AG's Board of Directors are also members of UBS AG's Board of Directors and the meetings are held as combined meetings of UBS Group AG and UBS AG's Board of Directors so that they have the same frequency and length for the two companies. As a result, the practice currently in place at UBS AG is that the independent members regularly meet in executive-only sessions.

The Company
Repurchase of Shares

Swiss law limits a corporation's ability to hold or repurchase its own shares. We and our subsidiaries may only repurchase shares if we have sufficient free reserves to pay the purchase price and if the aggregate nominal value of the shares does not exceed 10% of our nominal share capital. Furthermore, such own shares must be disclosed as negative items in our shareholders' equity. Such shares held by us or our subsidiaries do not carry any rights to vote at shareholders' meetings.

Sinking fund provisions
There are no provisions in the Swiss law or in the Articles requiring the company to put resources aside for the exclusive purpose of redeeming bonds or repurchasing shares.

Registration and Business Purpose

UBS Group AG was incorporated and registered as a corporation limited by shares (*Aktiengesellschaft*) under the laws of Switzerland. UBS Group AG was entered into the commercial register of Canton Zurich on 10 June 2014 under the registration number CHE-395.345.924 and has its registered domicile in Zurich, Switzerland. The business purpose of UBS Group AG, as set forth in article 2 of its Articles, is the acquisition, holding, management and sale of direct and indirect participations in enterprises of any kind, in particular in the area of banking, financial, advisory, trading and service activities in Switzerland and abroad. UBS Group may establish enterprises of any kind in Switzerland and abroad, hold equity interests in these companies, and conduct their management. UBS Group is authorized to acquire, mortgage and sell real estate and building rights in Switzerland and abroad. UBS Group may provide loans, guarantees and other types of financing and security for group companies and borrow and invest capital on the money and capital markets.

UBS AG was incorporated and registered as a corporation limited by shares (*Aktiengesellschaft*) under the laws of Switzerland. It was entered into the commercial registers of Canton Zurich and Canton Basel-City on 29 June 1998 under the registration number CHE-101.329.561 and has registered domiciles in Zurich and Basel, Switzerland. The business purpose of UBS AG, as set forth in article 2 of its Articles of Association, is the operation of a bank, with a scope of operations extending to all types of banking, financial, advisory, trading and service activities in Switzerland and abroad. UBS AG is a wholly owned subsidiary of UBS Group AG.

Duration and Liquidation

UBS Group AG and UBS AG have unlimited duration.

Under Swiss law, we may be dissolved at any time by a shareholders' resolution which must be passed by a supermajority of at least two-thirds of the votes represented and an absolute majority of the nominal value of the shares represented at the meeting. Dissolution by law or court order is possible, for example, if we become bankrupt.

Under Swiss law, any surplus arising out of a liquidation (after the settlement of all claims of all creditors) is distributed to shareholders in proportion to the paid-up nominal value of shares held.

Other

Ernst & Young Ltd, Aeschengraben 9, CH-4051 Basel, Switzerland, have been appointed as statutory auditors and as auditors of the consolidated accounts of both UBS Group AG and UBS AG. The auditors are subject to election by the shareholders at the ordinary general meeting on an annual basis.

E—Taxation.

This section outlines the material Swiss tax and US federal income tax consequences of the ownership of UBS Group AG's ordinary shares (defined as "UBS ordinary shares " in this section) by a US holder (as defined below) who holds UBS ordinary shares as capital assets. This discussion addresses only US federal income taxation and Swiss income and capital taxation and does not discuss all of the tax consequences that may be relevant to holders in light of their individual circumstances, including other foreign tax consequences, state or local tax consequences, estate and gift tax consequences, and tax consequences arising under the Medicare contribution tax on net investment income or the alternative minimum tax. It is designed to explain the major interactions between Swiss and US taxation for US persons who hold UBS ordinary shares.

The discussion does not address the tax consequences to persons who hold UBS ordinary shares in particular circumstances, such as tax-exempt entities, banks, financial institutions, life insurance companies, broker-dealers, traders in securities that elect to use a mark-to-market method of accounting for securities holdings, holders that actually or constructively own 10% or more of the total combined voting power of the voting stock of UBS Group AG or of the total value of stock of UBS Group AG, holders that hold UBS ordinary shares as part of a straddle or a hedging or conversion transaction, holders that purchase or sell UBS ordinary shares as part of a wash sale for tax purposes or holders whose functional currency for US tax purposes is not the US dollar. This discussion also does not apply to holders who acquired their UBS ordinary shares through a tax-qualified retirement plan, nor generally to unvested UBS ordinary shares held under deferred compensation arrangements.

If a partnership (or other entity treated as a partnership) holds UBS ordinary shares, the US federal income tax treatment of a partner will generally depend on the status of the partner and the tax treatment of the partnership. A partner in a partnership holding the UBS ordinary shares should consult its tax advisor with regard to the US federal income tax treatment of an investment in the ordinary shares.

The discussion is based on the tax laws of Switzerland and the United States, including the US Internal Revenue Code of 1986, as amended, its legislative history, existing and proposed regulations under the Internal Revenue Code, published rulings and court decisions, as in effect on the date of this document, as well as the Convention between the United States of America and the Swiss Confederation for the Avoidance of Double Taxation with Respect to Taxes on Income, which we call the “Treaty,” all of which may be subject to change or change in interpretation, possibly with retroactive effect.

For purposes of this discussion, a “US holder” is any beneficial owner of UBS ordinary shares that is for US federal income tax purposes:

- A citizen or resident of the United States;
- A domestic corporation or other entity taxable as a corporation;
- An estate, the income of which is subject to US federal income tax without regard to its source; or
- A trust, if a court within the United States is able to exercise primary supervision over the administration of the trust and one or more US persons have the authority to control all substantial decisions of the trust.

Holders of UBS ordinary shares are urged to consult their tax advisors regarding the US federal, state and local and the Swiss and other tax consequences of owning and disposing of these shares in their particular circumstances.

(a) Ownership of UBS Ordinary Shares - Swiss Taxation

Dividends and Distributions
Dividends paid by UBS Group AG to a holder of UBS ordinary shares (including dividends on liquidation proceeds and stock dividends) are in principle subject to a Swiss federal withholding tax at a rate of 35%.

Under the Capital Contribution Principle, the repayment of capital contributions, including share premiums made by the shareholders after December 31, 1996 is in principle no longer subject to Swiss withholding tax if certain requirements regarding the booking of these capital contributions are met.

A US holder that qualifies for Treaty benefits may apply for a refund of the withholding tax withheld in excess of the 15% Treaty rate (or for a full refund in case of qualifying retirement arrangements). The claim for refund must be filed with the Swiss Federal Tax Administration, Eigerstrasse 65, CH-3003 Berne, Switzerland no later than December 31 of the third year following the end of the calendar year in which the income subject to withholding was due. The form used for obtaining a refund is Swiss Tax Form 82 (82 C for companies; 82 E for other entities; 82 I for individuals; 82 R for regulated investment companies), which may be obtained from the Swiss Federal Tax Administration at the address above or downloaded from the web page of the Swiss Federal tax Administration. The form must be filled out in triplicate with each copy duly completed and signed before a notary public in the United States. The form must be accompanied by evidence of the deduction of withholding tax withheld at the source.

Transfers of UBS Ordinary Shares
The purchase or sale of UBS ordinary shares, whether by Swiss resident or non-resident holders (including US holders), may be subject to a Swiss securities transfer stamp duty of up to 0.15% calculated on the purchase price or sale proceeds if it occurs through or with a bank or other securities dealer as defined in the Swiss Federal Stamp Tax Act in Switzerland or the Principality of Liechtenstein. In addition to the stamp duty, the sale of UBS ordinary shares by or through a member of a recognized stock exchange may be subject to a stock exchange levy.

Capital gains realized by a US holder upon the sale of UBS ordinary shares are not subject to Swiss income or gains taxes, unless such US holder holds such shares as business assets of a Swiss business operation qualifying as a permanent establishment for the purposes of the Treaty. In the latter case, gains are taxed at ordinary Swiss individual or corporate income tax rates, as the case may be, and losses are deductible for purposes of Swiss income taxes.

(b) Ownership of UBS Ordinary Shares - US Federal Income Taxation

The tax treatment of the UBS ordinary shares will depend in part on whether or not UBS Group AG is classified as a passive foreign investment company, or PFIC, for US federal income tax purposes. Except as discussed below under "—Passive Foreign Investment Company (PFIC) Rules", this discussion assumes that UBS Group AG is not classified as a PFIC for United States federal income tax purposes.

Dividends and Distributions
A US holder will include in gross income and treat as a dividend the gross amount of any distribution paid, before reduction for Swiss withholding taxes, by UBS Group AG out of its current or accumulated earnings and profits (as determined for US federal income tax purposes), other than certain pro-rata distributions of UBS ordinary shares, when the distribution is actually or constructively received by the US holder. Distributions in excess of current and accumulated earnings and profits (as determined for US federal income tax purposes) will be treated as a return of capital to the extent of the US holder's basis in its UBS ordinary shares and thereafter as capital gain. However, UBS Group AG does not expect to calculate earnings and profits in accordance with US federal income tax principles. Accordingly, a US holder should expect to generally treat distributions we make on UBS ordinary shares as dividends.

Dividends paid to a noncorporate US holder that constitute qualified dividend income will be taxable to the holder at preferential rates, provided that the holder has a holding period in the shares of more than 60 days during the 121-day period beginning 60 days before the ex-dividend date and meets other holding period requirements. Dividends paid by UBS Group AG with respect to the ordinary shares will generally be qualified as dividend income provided that, in the year that the US holder receives the dividend, the UBS ordinary shares are readily tradable on an established securities market in the United States. The UBS ordinary shares are listed on the New York Stock Exchange, and UBS Group AG therefore expects that dividends will be qualified dividend income.

For US federal income tax purposes, a dividend will include a distribution characterized under Swiss law as a repayment of capital contributions if the distribution is made out of current or accumulated earnings and profits, as described above.

Dividends will generally be income from sources outside the United States for foreign tax credit limitation purposes, and will generally be "passive" income for purposes of computing the foreign tax credit allowable to the holder. However, if (a) we are 50% or more owned, by vote or value, by US persons and (b) at least 10% of our earnings and profits are attributable to sources within the US, then for foreign tax credit purposes, a portion of our dividends would be treated as derived from sources within the US. With respect to any dividend paid for any taxable year, the US source ratio of our dividends for foreign tax credit purposes would be equal to the portion of our earnings and profits from sources within the United States for such taxable year, divided by the total amount of our earnings and profits for such taxable year. Special rules apply in determining the foreign tax credit limitation with respect to dividends that are subject to preferential rates. The dividend will not be eligible for the dividends-received deduction generally allowed to US corporations in respect of dividends received from other US corporations.

The amount of the dividend distribution included in income of a US holder will be the US dollar value of the Swiss franc payments made, determined at the spot Swiss franc/US dollar rate on the date such dividend distribution is includible in the income of the US holder, regardless of whether the payment is in fact converted into US dollars. Generally, any gain or loss resulting from currency exchange fluctuations during the period from the date the dividend payment is included in income to the date such dividend payment is converted into US dollars will be treated as ordinary income or loss and will not be eligible for the special tax rate applicable to qualified dividend income. Such gain or loss will generally be income or loss from sources within the United States for foreign tax credit limitation purposes.

Subject to US foreign tax credit limitations, the nonrefundable Swiss tax withheld and paid over to Switzerland will be creditable or deductible against the US holder’s US federal income tax liability. To the extent a reduction or refund of the tax withheld is available to a US holder under the laws of Switzerland or under the Treaty, the amount of tax withheld that is refundable will not be eligible for credit against the US holder’s US federal income tax liability, whether or not the refund is actually obtained. See “(a) Ownership of UBS Ordinary Shares – Swiss Taxation” above, for the procedures for obtaining a tax refund.

Transfers of UBS Ordinary Shares
A US holder that sells or otherwise disposes of UBS ordinary shares generally will recognize capital gain or loss for US federal income tax purposes equal to the difference between the US dollar value of the amount realized and its tax basis, determined in US dollars, in such UBS ordinary shares. Capital gain of a non-corporate US holder is generally taxed at preferential rates if the UBS ordinary shares were held for more than one year. The gain or loss will generally be income or loss from sources within the United States for foreign tax credit limitation purposes. A US holder will not be allowed a foreign tax credit in respect of any stamp duty or stock exchange levy that is imposed upon a transfer of UBS ordinary shares.

Passive Foreign Investment Company (PFIC) Rules
UBS Group AG believes that UBS ordinary shares should not currently be treated as stock of a PFIC for US federal income tax purposes, and does not expect to become a PFIC in the foreseeable future. However, this conclusion is a factual determination made annually and thus may be subject to change. It is therefore possible that UBS Group AG could become a PFIC in a future taxable year. In general, UBS Group AG will be a PFIC with respect to a US holder if, for any taxable year in which the US holder held UBS ordinary shares, either (i) at least 75% of the gross income of UBS Group AG for the taxable year is passive income or (ii) at least 50% of the value, determined on the basis of a quarterly average, of UBS’s assets is attributable to assets that produce or are held for the production of passive income (including cash). If UBS Group AG were to be treated as a PFIC, gain realized on the sale or other disposition of UBS ordinary shares would in general not be treated as capital gain. Instead, unless a US holder elects to be taxed annually on a mark-to-market basis with respect to its UBS ordinary shares, such gain and certain “excess distributions” would be treated as having been realized ratably over the holder’s holding period for the shares and generally would be taxed at the highest tax rate in effect for each such year to which the gain was allocated, together with an interest charge in respect of the tax attributable to each such year. With certain exceptions, a holder’s UBS ordinary shares will be treated as stock in a PFIC if UBS Group AG was a PFIC at any time during the holder’s holding period in the UBS ordinary shares. In addition, dividends received from UBS Group AG would not be eligible for the preferential tax rate applicable to qualified dividend income if UBS Group AG were to be treated as a PFIC either in the taxable year of the distribution or the preceding taxable year, but would instead be taxable at rates applicable to ordinary income.

Item 19. Exhibits.

Exhibit number	Description
1.1	Articles of Association of UBS Group AG dated 5 March 2018.
1.2	Articles of Association of UBS AG dated 26 April 2018.
1.3	Organization Regulations of UBS Group AG dated 1 March 2018. (Incorporated by reference to Exhibit 1.3 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2017)
1.4	Organization Regulations of UBS AG dated 1 March 2018. (Incorporated by reference to Exhibit 1.4 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2017)
2(b)	Instruments defining the rights of the holders of long-term debt issued by UBS Group AG and its subsidiaries. We agree to furnish to the SEC upon request, copies of the instruments, including indentures, defining the rights of the holders of our long-term debt and of our subsidiaries' long-term debt.
4.1	Fiscal agency agreement dated 17 August 2012 between UBS AG, acting through its Stamford Branch, and U.S. Bank N.A. (Incorporated by reference to Exhibit 4.2 to UBS AG's Annual Report on Form 20-F for the fiscal year ended December 31, 2012)
4.2	Terms and Conditions of Tier 2 Subordinated Notes of UBS AG due 2023, issued 22 May 2013. (Incorporated by reference to Exhibit 4.2 to UBS AG's Annual Report on Form 20-F for the fiscal year ended December 31, 2013)
4.3	Terms and Conditions of Tier 2 capital instruments issued pursuant to the Deferred Contingent Capital Plan 2013/14. (Incorporated by reference to Exhibit 4.3 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2017)
4.4	Terms and Conditions of Tier 2 Subordinated Notes of UBS AG due 12 February 2026, issued 13 February 2014. (Incorporated by reference to Exhibit 4.3 to UBS AG's Annual Report on Form 20-F for the fiscal year ended December 31, 2013)
4.5	Terms and Conditions of Tier 2 Subordinated Notes of UBS AG due 2024, issued 15 May 2014. (Incorporated by reference to Exhibit 4.3 to UBS AG's Annual Report on Form 20-F for the fiscal year ended December 31, 2014)
4.6	Terms and Conditions of USD 1.25 billion 7% Tier 1 Subordinated Notes issued by UBS Group AG on 19 February 2015. (Incorporated by reference to Exhibit 4.4 to UBS AG's Annual Report on Form 20-F for the fiscal year ended December 31, 2014)
4.7	Terms and Conditions of USD 1.25 billion 7.125% Tier 1 Subordinated Notes issued by UBS Group AG on 19 February 2015. (Incorporated by reference to Exhibit 4.5 to UBS AG's Annual Report on Form 20-F for the fiscal year ended December 31, 2014)
4.8	Terms and Conditions of EUR 1 billion 5.75% Tier 1 Subordinated Notes issued by UBS Group AG on 19 February 2015. (Incorporated by reference to Exhibit 4.6 to UBS AG's Annual Report on Form 20-F for the fiscal year ended December 31, 2014)
4.9	Terms and Conditions of additional Tier 1 capital instruments issued pursuant to the Deferred Contingent Capital Plan 2014/15. (Incorporated by reference to Exhibit 4.9 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2017)
4.10	Terms and Conditions of USD 1.575 billion Tier 1 Subordinated Notes issued by UBS Group AG on 7 August 2015. (Incorporated by reference to Exhibit 4.8 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2015)
4.11	Terms and Conditions of additional Tier 1 capital instruments issued pursuant to the Deferred Contingent Capital Plan 2015/16. (Incorporated by reference to Exhibit 4.11 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2017)
4.12	Terms and Conditions of USD 1.5 billion 6.875% Tier 1 Subordinated Notes issued by UBS Group AG on 21 March 2016. (Incorporated by reference to Exhibit 4.10 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2016)

4.13	Terms and Conditions of USD 1.1 billion 7.125% Tier 1 Subordinated Notes issued by UBS Group AG on 10 August 2016. (Incorporated by reference to Exhibit 4.11 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2016)
4.14	Terms and Conditions of additional Tier 1 capital instruments issued pursuant to the Deferred Contingent Capital Plan 2016/17. (Incorporated by reference to Exhibit 4.14 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2017)
4.15	Terms and Conditions of additional Tier 1 capital instruments issued pursuant to the Deferred Contingent Capital Plan 2017/18. (Incorporated by reference to Exhibit 4.15 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2017)
4.16	Terms and Conditions of USD 2 billion 5.0% Tier 1 Subordinated Notes issued on 31 January 2018 by UBS Group Funding (Switzerland) AG and guaranteed by UBS Group AG. (Incorporated by reference to Exhibit 4.16 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2017)
4.17	Terms and Conditions of SGD 700 million 5.875% Tier 1 Subordinated Notes issued on 28 November 2018 by UBS Group Funding (Switzerland) AG and guaranteed by UBS Group AG.
4.18	Terms and Conditions of USD 2.5 billion 7.00% Tier 1 Subordinated Notes issued on 31 January 2019 by UBS Group Funding (Switzerland) AG and guaranteed by UBS Group AG.
4.19	Terms and Conditions of additional Tier 1 capital instruments issued pursuant to the Deferred Contingent Capital Plan 2018/19.
4.20	Commodity Futures Trading Commission Order Instituting Proceedings Pursuant to Section 6(c)(4)(A) and 6(d) of the Commodity Exchange Act, Making Findings, and Imposing Remedial Sanctions, dated November 11, 2014. (Incorporated by reference to Exhibit 4.10 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2015)
4.21	Financial Conduct Authority Final Notice issued 11 November 2014. (Incorporated by reference to Exhibit 4.11 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2015)
4.22	Swiss Financial Market Supervisory Authority Report on Foreign Exchange Trading at UBS AG dated 12 November 2014. (Incorporated by reference to Exhibit 4.12 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2015)
4.23	Plea Agreement between the Criminal Division of the US Department of Justice and UBS AG dated May 20, 2015. (Incorporated by reference to Exhibit 4.13 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2015)
4.24	Board of Governors of the Federal Reserve System and State of Connecticut Department of Banking Order to Cease and Desist and Order of Assessment of a Civil Money Penalty Issued Upon Consent Pursuant to the Federal Deposit Insurance Act, as Amended, dated May 20, 2015. (Incorporated by reference to Exhibit 4.14 to UBS's Annual Report on Form 20-F for the fiscal year ended December 31, 2015)
4.25	Asset Transfer Agreement between UBS AG and UBS Switzerland AG dated 12 June 2015. (Incorporated by reference to Form 6-K of UBS AG filed on June 17, 2015)
8	Significant Subsidiaries of UBS Group AG. Please see Note 31 to each set of Financial Statements (*Interests in subsidiaries and other entities)*, on pages 482-489 and 677-684 of the Annual Report.
12	The certifications required by Rule 13(a)-14(a) (17 CFR 240.13a-14(a))
13	The certifications required by Rule 13(a)-14(b) (17 CFR 240.13a-14(b)) and Section 1350 of Chapter 63 of Title 18 of the U.S. Code (18 U.S.C. 1350).
15.1	Consent of Ernst & Young Ltd. with respect to UBS Group AG
15.2	Consent of Ernst & Young Ltd. with respect to UBS AG
101	Interactive Data Files (sections of the Annual Report formatted in XBRL (Extensible Business Reporting Language)). Furnished electronically herewith.

SIGNATURES

The registrants hereby certify that they meet all of the requirements for filing on Form 20-F and that they have duly caused the undersigned to sign this annual report on their behalf.

UBS Group AG

_/s/ Sergio Ermotti________________
Name: Sergio Ermotti
Title: Group Chief Executive Officer

_/s/ Kirt Gardner___________________
Name: Kirt Gardner
Title: Group Chief Financial Officer

_/s/ Todd Tuckner__________________
Name: Todd Tuckner
Title: Group Controller and Chief Accounting Officer

UBS AG

_/s/ Sergio Ermotti_________________
Name: Sergio Ermotti
Title: President of the Executive Board

_/s/ Kirt Gardner___________________
Name: Kirt Gardner
Title: Chief Financial Officer

_/s/ Todd Tuckner__________________
Name: Todd Tuckner
Title: Group Controller and Chief Accounting Officer

Date: March 15, 2019

UBS Group AG and UBS AG

Annual Report 2018

Our external reporting approach

www.ubs.com/annualreporting

Annual Report 2018 – UBS Group AG and UBS AG

SEC Form 20-F, including XBRL filing

UBS Group AG (SEC) UBS AG (USD) (SEC)

Information for UBS AG consolidated does not differ materially from UBS Group AG on a consolidated basis. Information provided in management's discussion and analysis applies to both UBS Group AG consolidated and UBS AG consolidated, except for certain disclosures in the "Risk, treasury and capital management" section where information for UBS AG consolidated is separately provided.

Annual Report 2018 – UBS Group AG

This document is at the center of our external reporting approach.

UBS Group AG (MG MT) (USD) (USD)

UBS AG (i)

UBS Switzerland AG (i)

UBS Americas Holding LLC (i)

UBS Limited (i)

Auszug aus dem Geschäftsbericht 2018 – UBS Group AG

UBS Group AG (MG MT) (USD) (USD)

The German translation includes the following sections of our Annual Report 2018: "Group performance," IFRS-required disclosures in "Risk, treasury and capital management," "Corporate governance," "Compensation" and consolidated and standalone financial statements for UBS Group AG.

Select Swiss franc disclosures

UBS Group AG (i)

UBS AG (i) (i)

Standalone legal entity reports

UBS Switzerland AG (CHF)

UBS AG (USD)

UBS Group Funding (Switzerland) AG (USD)

Standalone legal entity reports for UBS AG, UBS Switzerland AG and UBS Group Funding (Switzerland) AG are available from 15 March 2019. UBS Limited was merged into UBS Europe SE effective 1 March 2019. UBS Europe SE will be considered a significant regulated subsidiary and beginning with our first quarter 2019 reporting, we will provide respective information in our quarterly and annual reporting. There is no requirement to externally publish an annual report for UBS Americas Holding LLC. Information for other subsidiaries is available under "Other subsidiaries" at *www.ubs.com/investors*. Other legal entity-specific disclosures in accordance with article 89 of the EU Capital Requirements Directive IV (CRD IV) are provided under "EU CRD IV disclosures" at *www.ubs.com/investors*.

Global Reporting Initiative (GRI) Document 2018

UBS Group AG (GRI)

The GRI Document provides comprehensive disclosures on environmental, social and governance factors and includes the disclosures on non-financial information required by German law implementing the EU Directive 2014/95 (CSR-Richtlinie-Umsetzungsgesetz, CSR-RUG).

31 December 2018 Pillar 3 report

UBS Group and significant regulated subsidiaries and sub-groups

(UBS Group AG, UBS AG, UBS Switzerland AG, UBS Limited, UBS Americas Holding LLC)

The Basel III capital adequacy framework requires us to publish a range of Pillar 3 disclosures, mainly covering risk, capital, leverage, liquidity and remuneration. These Pillar 3 disclosures are supplemented by specific additional requirements of the Swiss Financial Market Supervisory Authority (FINMA) and voluntary disclosures on our part. We are also required to disclose certain regulatory information for our significant regulated subsidiaries and sub-groups.

Consolidated   Standalone

(MG MT) Management's discussion and analysis   (SEC) Supplemental SEC disclosures

(USD) (CHF) Financial statements   (i) Selected financial and regulatory information   (GRI) Global Reporting Initiative

Our external reporting requirements and the scope of our external reports are defined by accounting standards, relevant stock and debt listing rules, SEC (US Securities and Exchange Commission) and other regulatory requirements, as well as by our financial reporting policies.

We prepare and publish consolidated financial statements in accordance with International Financial Reporting Standards (IFRS) on a half-yearly basis, in line with the requirements of the SIX Swiss Exchange and the New York Stock Exchange, where our shares are listed. We also publish our results on a quarterly basis in order to provide shareholders with more frequent disclosures than required by law. Statutory financial statements for UBS Group AG are prepared annually as the basis for our Swiss tax return, the appropriation of retained earnings and a potential distribution of dividends, subject to shareholder approval at the Annual General Meeting. Management's discussion and analysis complements our IFRS financial statements.

The Annual Report 2018 – UBS Group AG and UBS AG is the basis for our SEC Form 20-F filing, which includes Extensible Business Reporting Language (XBRL) interactive financial data, as required for non-US private issuers that prepare financial statements in accordance with IFRS.

Our approach to long-term value creation

› What we put into the equation

We deploy and invest our capital …

… to deliver added value through our business activities

Financial

- Common equity tier 1 (CET1) capital: **USD 34.1 billion**
- Total loss-absorbing capacity: **USD 84 billion**
- Risk-weighted assets: **USD 264 billion**
- Leverage ratio denominator: **USD 905 billion**
- Strong balance sheet reflecting high asset quality and low risk profile, e.g., high-quality liquid assets: **USD 173 billion**
- We continue to invest in technology to enhance our business, having spent **USD 3.5 billion** in 2018, and expect to maintain around this level of spend through 2021, mainly on new technologies

Relationships and intellectual

- Over **150** years of experience in banking
- Strong brand
- **10,677** advisors serve our clients in Global Wealth Management
- UBS builds and strengthens client and industry relationships through the various platforms and offerings such as *UBS Evidence Lab Innovations, UBS Partner, UBS Atrium* and *we.trade*

Human

- More than **68,000** people worldwide, of which ~⅓ in Switzerland
- Globally, we hired almost **1,700** junior talents into entry-level training programs
- **104** individuals (to date) relaunched their careers through our award-winning *UBS Career Comeback Program*
- Focus on hiring, retaining and promoting more women across the firm

Social and natural

- We want to be the financial provider of choice for clients wishing to direct capital toward investments that support the Sustainable Development Goals and the transition to a low-carbon economy
- Comprehensive environmental and social risk (ESR) framework governing client and supplier relationships applied firm-wide to all activities
- **USD ~41 million** direct cash contributions to communities
- **197,807** volunteering hours on community projects
- UBS Optimus Foundation: **USD ~67 million** raised in donations
- Through our supply chain, we sourced USD 11 billion of products and services, of which we purchased USD 2.5 billion of goods from approximately 11,000 suppliers in Switzerland

As of or for the year ended 31 December 2018

› to create long-term value for our stakeholders

… balancing opportunities and risks resulting from our environment and our business

… to achieve positive results for our stakeholders

Investors

- Dividend of **CHF 0.70** per share proposed for the financial year 2018
- Combining the proposed dividend with our share repurchases of CHF 750 million last year, our total payout ratio for 2018 will be 76% (calculated as accruals for proposed dividends to shareholders plus the share repurchases in 2018 divided by net profit attributable to shareholders)
- Net profit attributable to shareholders: **USD 4,516 million** in 2018
- Return on tangible equity: **10.0%**. Adjusted return on tangible equity excl. deferred tax expense / benefit and deferred tax assets: **12.9%**
- Updated annual performance targets, ambitions and capital and resource guidelines effective from 2019
- We achieved a **13.1%** return on CET1 capital (with a target of ~15% for the full year 2019)
- UBS AG ratings: Moody's: Aa3 (stable outlook); S&P: A+ (stable outlook); Fitch: AA- (stable outlook)

Clients

- Invested assets: **USD 3,101 billion**
- In Switzerland, UBS has client relationships with one in three households, more than 50% of the mid- to large firms and more than 90% of the large corporates
- Access to a comprehensive offering and convenient digital banking
- In Asset Management, we serve approximately **3,000** corporate and institutional clients around the world
- Our Investment Bank, with a presence in 33 countries, provides services globally to a variety of clients, such as institutional investors, asset managers, hedge funds, corporates, pension funds, central banks, sovereigns, financial advisors and family offices, as well as to our business divisions
- Launch of *UBS Manage* Sustainable Investing (SI) (discretionary mandate) based on new CIO SI strategic asset allocation (100% SI excluding liquidity allocation)

Employees

- Truly global: our employees are working in **50** countries, are citizens of **133** countries and speak more than **150** languages
- Among the world's most attractive employers (Universum Top 50, Equileap Gender Equality Global Ranking No. 18)
- Our in-house *UBS University* helps to ensure employees have the skills they need for the future
- As a result of insourcing initiatives and improved efficiency, we significantly reduced our external staff in Corporate Center and saw a resulting increase in employees within our Business Solutions Centers

Society

- Leading provider of sustainable investment products in Switzerland with ~23% market share among respective asset and wealth managers
- Sustainable investing assets represented **USD 1,110 billion,** constituting ~36% of total invested assets
- Our ESR standards apply to client and supplier relationships equally. Of the 2,114 assessments by our ESR function, ~100 were rejected or not further pursued, ~350 relationships were approved with qualifications
- One of the top taxpayers in Switzerland
- More than **343,000** direct beneficiaries as a result of our community investment
- UBS Optimus Foundation's work helped improve the well-being of **2.8 million** children globally
- Total reduction of greenhouse gas footprint by 63% from baseline year 2004

As of or for the year ended 31 December 2018

Contents

Dear shareholders,


Axel A. Weber Chairman of the Board of Directors


Sergio P. Ermotti Group Chief Executive Officer

Building on your positive feedback from last year, our shareholder letter this year again answers a series of questions that we are regularly asked by different stakeholders of the bank.

What was the market context in 2018?
The year started off positively, but nervousness set in by the end of the first half. Markets started fearing a downturn well ahead of any real economy indicators. Our private clients became less active, and from the fourth quarter onward, markets sold off as well. The most striking example to illustrate what developed over the course of 2018 is the fact that about 90% of asset classes were down on a year-over-year basis. That's quite extraordinary. And when you look at what happened in December 2018, it was one of the worst months since the Great Depression in terms of market performance. The coexistence of macroeconomic and geopolitical issues caused even more concerns with investors. For example, according to our fourth quarter client survey, cash balances with our US wealth management clients reached a record-high level of 24%.

How do you assess the financial performance of the Group in 2018?
We had a very successful 2018, despite the market conditions just described. Against this backdrop, we increased net profit[1] by USD 0.6 billion or 16% to USD 4.5 billion, and achieved a strong adjusted return on tangible equity excluding deferred tax expense / benefit and DTAs[2] of 12.9%. Reported return on CET1 capital was 13.1%, markedly above most of our European peers and in line with American banks. We also generated USD 4.0 billion of additional capital in 2018 and our total loss-absorbing capacity increased to USD 84 billion.

How did 2018 reflect your capital returns policy?
Consistent with our capital returns policy, we accrued for a higher dividend and exceeded our share buyback goal of CHF 550 million by CHF 200 million. The Board of Directors intends to propose an 8% increase in our dividend to CHF 0.70 per share for the financial year 2018. Combined with the share buyback of CHF 750 million last year, our total payout ratio[3] for 2018 will be 76%. To sum up, we continue to deliver attractive shareholder returns, while maintaining a strong capital position and investing for further growth.

Why has the UBS share price lost so much ground despite these achievements?
In our view, the current share price doesn't reflect the long-run value of our franchise. The entire banking sector saw significant share price corrections in 2018. One needs to look at both absolute and relative performance. Investors' profitability expectations for the industry reflect the fear of a global economic slowdown, more challenging market conditions or a combination of both. Nevertheless, we are among the highest-valued banks in Europe and compare well to a number of US peers. In terms of total shareholder return, we also outperformed our main European peers. Our focus is on sustainable performance, which is at the core of our strategy and should drive valuation growth over the cycle.

Why do you believe UBS still has the right strategy – how does it set you apart from others?
Secular trends such as global wealth creation, including the increased need for pension products, and the opening up of China's financial markets will continue to drive the unique value of our franchise. We are the preeminent global wealth manager to high net worth and ultra high net worth clients as well as the number one Swiss bank, enhanced by an investment bank that is strong in the areas where we choose to compete, and a successful asset manager. The strength of our business model and our strategic focus have generated more than USD 19 billion in net profits over the last five years. More than half of our profits come from asset-gathering businesses, and our Swiss business further contributes to the stability of our earnings. We are diversified geographically, and well positioned in the world's largest and fastest growing markets. Of course we review and recalibrate our strategy each year, as we constantly evolve in response to new challenges, but we have strategic clarity and consistency.

Are you satisfied with your combined wealth management division's performance – where can you improve?
We've made good progress in exploiting the combined scale and capabilities of the businesses. Global Wealth Management achieved a decade-high pre-tax profit of USD 3.6 billion in 2018. Working as an integrated business creates new opportunities for revenue growth and improves our ability to execute existing opportunities, which we expect to enable us to achieve our 10–15% profit growth target. We also expect to generate cost synergies of USD 600 million over the next three years that will help fund our investments for growth and efficiency. We intend to make strategic investments totaling more than USD 1 billion through 2021 to further improve client and advisor experience. We remain confident in our growth plans even though net new money was not what we wanted it to be in 2018. Therefore, we will be intensifying our efforts to attract and retain a higher proportion of our current and prospective clients' assets.

Your adjusted cost / income ratio is currently 79.5%. How do you intend to reach your 2021 ambition of around 72%?
First, when measuring efficiency, it's important to include risk-adjusted capital returns and not look at the cost / income ratio in isolation. Our goal is to balance revenue growth with both cost and capital efficiency. We delivered 3% positive operating leverage in 2018, as we increased revenues while reducing expenses. Our aim is to keep costs, excluding performance-based compensation, broadly flat over the next three years. And we have a range of tactical measures to address market headwinds. For example, while we cannot and do not want to halt our investments, we can adjust the pace and relative priority. And we will be focusing our hiring plans on the most important strategic growth areas.

Where and how do you expect to grow going forward?
We believe we can grow our revenues at more than the rate of global economic expansion over the cycle. From a geographic standpoint, the greatest growth is expected to come from gaining market share in the US and Asia Pacific. In the US, we have a sizeable opportunity with ultra high net worth clients. And we want to build our share of wallet with US persons outside the US. Also, further globalizing our Global Family Office capabilities is another part of our growth initiatives. In China, we became the first foreign bank to increase its stake to a majority of 51% in a securities joint venture, giving us a great foothold for future expansion. And in Switzerland, net new business volume growth in Personal & Corporate Banking was double GDP growth last year. Our aim is to further solidify this leadership position by, for example, expanding our digital lead. These are just some of the opportunities we are focused on, there are plenty of others, many of which are discussed in the pages of our annual report.

You want to be the bank for US, Asian and European entrepreneurs and corporates for their local and global needs – why should they choose UBS?
Because we are a truly global bank. Our clients globally require advice and solutions for both their own wealth and their businesses. They expect us to deliver the whole of UBS to them, with global wealth management and investment bank capabilities under one roof, from M&A all the way to succession planning, as well as the best teams when it comes to research and execution. We have the breadth and the expertise to bridge between both their corporate and their personal financial needs. This makes UBS an obvious choice, given our leading position in those fields that matter most to our clients.

Sustainability is a key part of your strategy, how is that reflected in your client offering?
We provide a broad range of products and solutions to both private and institutional clients, including sustainable and impact investing opportunities. For example, Asset Management followed its successful UK Climate Aware rules-based fund with a similar fund available for international investors. The portfolio is oriented toward companies that are better prepared for a low-carbon future while reducing exposure to, rather than excluding, companies with higher carbon risk, in order to pursue strategic engagement with these companies. Also in 2018, Global Wealth Management launched the world's first fully sustainable investing (SI) cross-asset mandate portfolio for private clients. As of 31 December 2018, clients had invested USD 2.8 billion assets under management in this innovative solution.

What are you doing to prepare UBS for the digital future of banking?
We're not just preparing for the future, we're actively shaping it. Technology is changing the way banks, including UBS, operate. That's why we are investing more than 10% of revenues, more than USD 3 billion each year, into technology. For example, we've accelerated our journey into the cloud space, thereby reducing the number of costly traditional data centers. We also increased the number of robots performing routine tasks from roughly 700 to 1,000 last year. We will more broadly leverage machine learning and artificial intelligence-powered engines to automate more complex tasks and allow for better and faster decision-making, for example in risk management or anti-money laundering. But the big focus is on front-to-back digitalization ultimately driving a better client experience, so technology is about much more than just cost savings.

You put several legacy issues behind you in 2018, but just received an adverse verdict in France. Can you comment on this matter?
We continued to make significant progress last year on legacy litigation, including resolution of two RMBS-related cases. In the two most prominent open matters, the FIRREA litigation and the French cross-border case, UBS has chosen to defend the bank in court with the best interests of shareholders in mind. We are confident in our legal position, and contesting these cases has also allowed us to present our arguments to stakeholders publicly. We strongly disagree with the verdict in France. UBS respected and followed its obligations under Swiss and French law as well as the European Savings Tax Directive. The judgment is not supported by the facts. For example, no evidence was provided that any French client was solicited on French soil by a UBS AG client advisor to open an account in Switzerland. This is acknowledged by the decision itself. Even assuming liability - which we contest - the calculation of the fine and the damages are, in our view, inconsistent and not in line with applicable law. We have appealed the French court's decision to the Court of Appeal, which will retry the case in its entirety. The Court of Appeal operates under the supervision of the French Supreme Court and is required to address our arguments in its decision. Based on the law and the facts, we believe the verdict should be reversed.

What provisions have you taken for the France case?
Notwithstanding the strength of our legal arguments and the lack of evidence to support the charges, we have increased the provision for this matter to a total of EUR 450 million (USD 516 million). Under the accounting standard, we are required to judge if an outflow is probable and to estimate the extent of such an outflow considering a wide range of outcomes. In light of the first judgment and considering the full range of potential final decisions, the provision on our balance sheet reflects our best estimate of possible financial implications. That said, we still believe the verdict should be reversed, at which time we would release the provision.

Looking back at the Investor Update in October last year, how was the start into 2019?
Given the market developments since last October, our starting point for the year is different than we had planned, making this year's journey toward our targets steeper. Also, despite some rebound in equity markets, clients so far have remained cautious in the first quarter of 2019. Nevertheless, we will have to see how the rest of the year develops. One of our goals at the 2018 Investor Update was to be transparent about the factors that we can and cannot control. We do not control the external environment, nor equity markets and interest rates. But of course this doesn't mean we are passively waiting for markets to improve. It's up to us to continue executing our plans with energy and commitment, with a focus on sustainable, long-term value creation.

What are the biggest opportunities medium to long term?
Over the last ten years, we have reconfigured UBS, while delivering strong results, and we are excited about the potential for the next decade. We had to deal with many challenges and that also taught us a lot, which will allow us to execute even better going forward. To achieve that, we need to take partnership within UBS to the next level. Because we know it leads to better results for clients, which in turn leads to more capital generation and even better returns for shareholders. We expect to generate almost as much capital in the next three years as we did in the previous six. And to tie in with our global growth ambitions mentioned earlier, our global infrastructure has the capacity to accommodate far more assets at marginal cost – so more scale is a significant opportunity. From a client perspective, we've seen that those who have navigated this environment most successfully are those who develop a clear long-term plan to allow for a sustainable legacy. With that in place, clients will be well positioned to seek opportunities amid the short-term noise. That's exactly what we at UBS are doing ourselves.

Thank you for your ongoing support. We look forward to your feedback and also to welcoming you at our AGM on 2 May 2019 in Basel.

Yours sincerely,

Axel A. Weber Chairman of the Board of Directors	Sergio P. Ermotti Group Chief Executive Officer

1 Net profit attributable to shareholders, excluding the USD 2,939 million net write-down of deferred tax assets (DTAs) following the enactment of the US Tax Cuts and Jobs Act in the fourth quarter of 2017.
2 Adjusted return on tangible equity excluding deferred tax expense / benefit and DTAs; calculated as adjusted net profit / loss attributable to shareholders excluding amortization and impairment of goodwill and intangible assets and deferred tax expense / benefit, divided by average tangible equity attributable to shareholders excluding any DTAs that do not qualify as CET1 capital. 3 Calculated as accruals for proposed dividends to shareholders plus the share buyback in 2018 divided by net profit attributable to shareholders.

Returning home

In 2018, we returned to our newly-renovated historic headquarters. This story and more in our Annual Review 2018.

Available from 1 April 2019
ubs.com/annualreview

Corporate information

UBS Group AG is incorporated and domiciled in Switzerland and operates under art. 620ff. of the Swiss Code of Obligations as an Aktiengesellschaft, a corporation limited by shares. Its registered office is at Bahnhofstrasse 45, CH-8001 Zurich, Switzerland, phone +41-44-234 11 11, and its corporate identification number is CHE-395.345.924. UBS Group AG was incorporated on 10 June 2014 and was established in 2014 as the holding company of the UBS Group. UBS Group AG shares are listed on the SIX Swiss Exchange and on the New York Stock Exchange (ISIN: CH0244767585; CUSIP: H42097107). UBS Group AG owns 100% of the outstanding shares of UBS AG.

UBS AG is incorporated and domiciled in Switzerland and operates under art. 620ff. of the Swiss Code of Obligations as an Aktiengesellschaft, a corporation limited by shares. The addresses and telephone numbers of the two registered offices of UBS AG are: Bahnhofstrasse 45, CH-8001 Zurich, Switzerland, phone +41-44-234 11 11; and Aeschenvorstadt 1, CH-4051 Basel, Switzerland, phone +41-61-288 50 50. The corporate identification number is CHE-101.329.561. UBS AG is a bank. The company was formed on 29 June 1998, when Union Bank of Switzerland (founded 1862) and Swiss Bank Corporation (founded 1872) merged to form UBS AG.

Contacts

Switchboards
For all general inquiries.
www.ubs.com/contact

Zurich +41-44-234 1111
London +44-207-567 8000
New York +1-212-821 3000
Hong Kong +852-2971 8888
Singapore +65-6495 8000

Investor Relations
UBS's Investor Relations team supports institutional, professional and retail investors from our offices in Zurich, New York and Krakow.

UBS Group AG, Investor Relations
P.O. Box, CH-8098 Zurich, Switzerland

www.ubs.com/investors

Hotline Zurich +41-44-234 4100
Hotline New York +1-212-882 5734

Media Relations
UBS's Media Relations team supports global media and journalists from offices in Zurich, London, New York and Hong Kong.

www.ubs.com/media

Zurich +41-44-234 8500
mediarelations@ubs.com

London +44-20-7567 4714
ubs-media-relations@ubs.com

New York +1-212-882 5857
mediarelations-ny@ubs.com

Hong Kong +852-2971 8200
sh-mediarelations-ap@ubs.com

Office of the Group Company Secretary
The Group Company Secretary receives inquiries on compensation and related issues addressed to members of the Board of Directors.

UBS Group AG, Office of the Group Company Secretary
P.O. Box, CH-8098 Zurich, Switzerland

sh-company-secretary@ubs.com

Hotline +41-44-235 6652

Shareholder Services
UBS's Shareholder Services team, a unit of the Group Company Secretary office, is responsible for the registration of UBS Group AG registered shares.

UBS Group AG, Shareholder Services
P.O. Box, CH-8098 Zurich, Switzerland

sh-shareholder-services@ubs.com

Hotline +41-44-235 6652

US Transfer Agent
For global registered share-related inquiries in the US.

Computershare Trust Company NA
P.O. Box 505000
Louisville, KY 40233-5000, USA

Shareholder online inquiries:
https://www-us.computershare.com/investor/Contact

Shareholder website:
www.computershare.com/investor

Calls from the US +1-866-305-9566
Calls from outside the US
+1-781-575-2623
TDD for hearing impaired
+1-800-231-5469
TDD foreign shareholders
+1-201-680-6610

Corporate calendar UBS Group AG

Publication of the first quarter 2019 report:	Thursday, 25 April 2019
Annual General Meeting 2019:	Thursday, 2 May 2019
Publication of the second quarter 2019 report:	Tuesday, 23 July 2019
Publication of the third quarter 2019 report:	Tuesday, 22 October 2019

Corporate calendar UBS AG

Publication of the first quarter 2019 report:	Tuesday, 30 April 2019
Publication of the second quarter 2019 report:	Friday, 26 July 2019
Publication of the third quarter 2019 report:	Friday, 25 October 2019

Additional publication dates of quarterly and annual reports will be made available as part of the corporate calendar of UBS AG at *www.ubs.com/investors.*

Imprint

Publisher: UBS Group AG, Zurich, Switzerland | www.ubs.com

Language: English

Our key figures

	As of or for the year ended		
USD million, except where indicated	31.12.18	31.12.17	31.12.16
Group results			
Operating income	30,213	29,622	28,729
Operating expenses	24,222	24,272	24,519
Operating profit / (loss) before tax	5,991	5,351	4,209
Net profit / (loss) attributable to shareholders	4,516	969	3,348
Diluted earnings per share (USD)[1]	1.18	0.25	0.88
Profitability and growth[2]			
Return on equity (%)[3]	8.6	1.8	6.1
Return on tangible equity (%)[4]	10.0	2.2	7.1
Adjusted return on tangible equity excluding deferred tax expense / benefit and deferred tax assets (%)[5]	12.9	13.7	11.3
Return on common equity tier 1 capital (%)[6]	13.1	3.0	10.9
Return on risk-weighted assets, gross (%)[7]	11.8	12.6	13.1
Return on leverage ratio denominator, gross (%)[7]	3.3	3.3	3.2
Cost / income ratio (%)[8]	79.9	81.6	85.2
Adjusted cost / income ratio (%)[9]	79.5	78.2	80.8
Net profit growth (%)[10]	366.0	(71.1)	(48.3)
Resources			
Total assets	958,489	939,279	918,906
Equity attributable to shareholders	52,928	52,495	52,916
Common equity tier 1 capital[11]	34,119	33,516	30,156
Risk-weighted assets[11]	263,747	243,636	218,785
Common equity tier 1 capital ratio (%)[11]	12.9	13.8	13.8
Going concern capital ratio (%)[11]	17.5	17.6	17.9
Total loss-absorbing capacity ratio (%)[11]	31.7	33.0	31.1
Leverage ratio denominator[11]	904,598	909,032	855,255
Common equity tier 1 leverage ratio (%)[11]	3.77	3.69	3.53
Going concern leverage ratio (%)[11]	5.1	4.7	4.6
Total loss-absorbing capacity leverage ratio (%)[11]	9.3	8.8	7.9
Liquidity coverage ratio (%)[12]	136	143	132
Other			
Invested assets (USD billion)[13]	3,101	3,262	2,761
Personnel (full-time equivalents)	66,888	61,253	59,387
Market capitalization[14,15]	45,907	68,477	58,177
Total book value per share (USD)[14]	14.35	14.11	14.25
Total book value per share (CHF)[14,16]	14.11	13.75	14.51
Tangible book value per share (USD)[14]	12.55	12.34	12.52
Tangible book value per share (CHF)[14,16]	12.33	12.03	12.74

1 Refer to "Note 9 Earnings per share (EPS) and shares outstanding" in the "Consolidated financial statements" section of this report for more information. 2 Refer to the "Performance targets and measurement" section of this report for more information on our performance targets. 3 Calculated as net profit attributable to shareholders / average equity attributable to shareholders. 4 Calculated as net profit attributable to shareholders before amortization and impairment of goodwill and intangible assets / average equity attributable to shareholders less average goodwill and intangible assets. 5 Calculated as adjusted net profit attributable to shareholders before amortization and impairment of goodwill and intangible assets and before deferred tax expense or benefit / average equity attributable to shareholders less average goodwill and intangible assets and less average deferred tax assets that do not qualify as common equity tier 1 capital. 6 Calculated as net profit attributable to shareholders before amortization and impairment of goodwill and intangible assets / average common equity tier 1 capital. 7 Calculated as operating income before credit loss expense or recovery / average risk-weighted assets and average leverage ratio denominator, respectively. 8 Calculated as operating expenses / operating income before credit loss expense or recovery. 9 Calculated as adjusted operating expenses / adjusted operating income before credit loss expense or recovery. 10 Calculated as change in net profit attributable to shareholders from continuing operations between current and comparison periods / net profit attributable to shareholders from continuing operations of comparison period. 11 Based on the Swiss systemically relevant bank framework as of 1 January 2020. Refer to the "Capital management" section of this report for more information. 12 Effective 1 January 2017 the reported quarterly average is the average of daily values during the quarter. The 2016 figure is based on the average of the three month-end values. Refer to the "Balance sheet, liquidity and funding management" section of this report for more information. 13 Includes invested assets for Global Wealth Management, Asset Management and Personal & Corporate Banking. 14 Refer to "UBS shares" in the "Capital management" section of this report for more information. 15 The calculation of market capitalization has been amended to reflect total shares outstanding multiplied by the share price at the end of the period. The calculation was previously based on total shares issued multiplied by the share price at the end of the period. Market capitalization has been reduced by USD 2.1 billion as of 31 December 2018, by USD 2.4 billion as of 31 December 2017 and by USD 2.2 billion as of 31 December 2016 as a result. 16 Total book value per share and tangible book value per share in Swiss francs are calculated based on a translation of equity under our US dollar presentation currency. As a consequence of the restatement to a US dollar presentation currency, amounts may differ from those originally published in our quarterly and annual reports.

Events subsequent to the publication of the unaudited fourth quarter 2018 report

The 2018 results and the balance sheet as of 31 December 2018 differ from those presented in the unaudited fourth quarter 2018 report published on 22 January 2019 as a result of events adjusted for after the balance sheet date. Provisions for litigation, regulatory and similar matters increased, which reduced 2018 operating profit before tax and 2018 net profit attributable to shareholders by USD 382 million. As a result, basic earnings per share decreased by USD 0.10 and diluted earnings per share decreased by USD 0.09.

Changes to our functional and presentation currencies

Effective from 1 October 2018, the functional currency of UBS Group AG and UBS AG's Head Office in Switzerland changed from Swiss francs to US dollars and that of UBS AG's London Branch from British pounds to US dollars, in compliance with the requirements of International Accounting Standard (IAS) 21, *The Effects of Changes in Foreign Exchange Rates*. The presentation currency of UBS Group AG's consolidated financial statements has changed from Swiss francs to US dollars to align with the functional currency changes of significant Group entities. Prior periods have been restated for this change in presentation currency. Assets, liabilities and total equity were translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses were translated at the respective average rates prevailing for the relevant periods.

Performance measures reason for use

Return on equity	This measure provides information on the profitability of the business in relation to equity.
Return on tangible equity	This measure provides information on the profitability of the business in relation to tangible equity.
Adjusted return on tangible equity excluding deferred tax expense / benefit and deferred tax assets	This measure provides information on the profitability of the business in relation to tangible equity, excluding deferred tax expense / benefit and deferred tax assets. We believe that excluding these items better reflects the underlying returns of the businesses, as deferred tax items are generally not included in capital and have volatility that is unrelated to the performance of the business divisions and the Group in that period.
Return on common equity tier 1 capital	This measure provides information on the profitability of the business in relation to common equity tier 1 capital.
Return on risk-weighted assets, gross	This measure provides information on the revenues of the business in relation to risk-weighted assets.
Return on leverage ratio denominator, gross	This measure provides information on the revenues of the business in relation to leverage ratio denominator.
Cost / income ratio	This measure provides information on the efficiency of the business by comparing operating expenses with gross income.
Adjusted cost / income ratio	This measure provides information on the efficiency of the business by comparing operating expenses with gross income, while excluding items that management believes are not representative of the underlying performance of the businesses.
Net profit growth	This measure provides information on profit growth in comparison with the prior period.

Terms used in this report, unless the context requires otherwise

"UBS," "UBS Group," "UBS Group AG consolidated," "Group," "the Group," "we," "us" and "our"	UBS Group AG and its consolidated subsidiaries
"UBS AG consolidated"	UBS AG and its consolidated subsidiaries
"UBS Group AG" and "UBS Group AG standalone"	UBS Group AG on a standalone basis
"UBS AG" and "UBS AG standalone"	UBS AG on a standalone basis
"UBS Switzerland AG"	UBS Switzerland AG on a standalone basis
"UBS Limited"	UBS Limited on a standalone basis
"UBS Americas Holding LLC consolidated"	UBS Americas Holding LLC and its consolidated subsidiaries

Our Board of Directors

1. **Axel A. Weber**
   Chairman of the Board of Directors / Chairperson of the Corporate Culture and Responsibility Committee / Chairperson of the Governance and Nominating Committee

2. **Julie G. Richardson**
   Member of the Compensation Committee / member of the Risk Committee

3. **Ann F. Godbehere**
   Chairperson of the Compensation Committee / member of the Audit Committee

4. **Jeremy Anderson**
   Chairperson of the Audit Committee / member of the Corporate Culture and Responsibility Committee

5. **Dieter Wemmer**
   Member of the Compensation Committee / member of the Risk Committee

6. **David Sidwell**
   Senior Independent Director / Chairperson of the Risk Committee / member of the Governance and Nominating Committee

7. **Beatrice Weder di Mauro**
   Member of the Audit Committee / member of the Corporate Culture and Responsibility Committee

8. **Fred Hu**
   Member of the Board of Directors

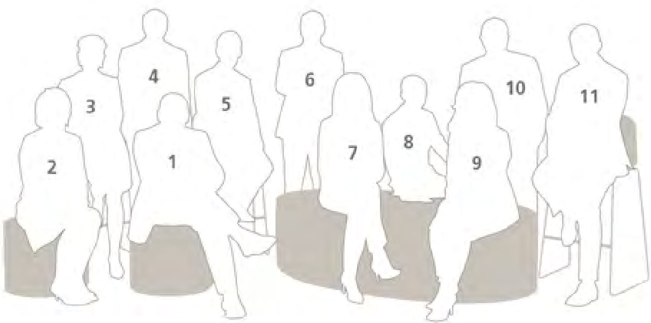
9. **Isabelle Romy**
   Member of the Audit Committee / member of the Governance and Nominating Committee

10. **Reto Francioni**
    Member of the Corporate Culture and Responsibility Committee / member of the Risk Committee

11. **Michel Demaré**
    Independent Vice Chairman / member of the Audit Committee / member of the Compensation Committee / member of the Governance and Nominating Committee

12. **Robert W. Scully***
    Member of the Risk Committee

*Robert W. Scully is not present on the picture



The Board of Directors (BoD) of UBS Group AG, under the leadership of the Chairman, consists of six to 12 members as per our Articles of Association. The BoD decides on the strategy of the Group upon recommendation of the Group Chief Executive Officer (Group CEO) and is responsible for the overall direction, supervision and control of the Group and its management as well as for supervising compliance with applicable laws, rules and regulations. The BoD exercises oversight over UBS Group AG and its subsidiaries and is responsible for establishing a clear Group governance framework to provide effective steering and supervision of the Group, taking into account the material risks to which UBS Group AG and its subsidiaries are exposed. The BoD has ultimate responsibility for the success of the Group and for delivering sustainable shareholder value within a framework of prudent and effective controls, approves all financial statements for issue and appoints and removes all Group Executive Board (GEB) members.

Our Group Executive Board

UBS Group AG operates under a strict dual board structure, as mandated by Swiss banking law, and therefore the BoD delegates the management of the business to the GEB. Under the leadership of the Group CEO, the GEB has executive management responsibility for the steering of the Group and its business. It assumes overall responsibility for developing the Group and business division strategies and the implementation of approved strategies.

→ **Refer to "Board of Directors" and "Group Executive Board" in the "Corporate governance" section of this report or to *www.ubs.com/bod* and *www.ubs.com/geb* for the full biographies of our BoD and GEB members**

1. **Sergio P. Ermotti**
   Group Chief Executive Officer

2. **Edmund Koh**
   President UBS Asia Pacific

3. **Kirt Gardner**
   Group Chief Financial Officer

4. **Sabine Keller-Busse**
   Group Chief Operating Officer

5. **Markus Ronner**
   Group Chief Compliance and Governance Officer

6. **Robert Karofsky**
   Co-President Investment Bank

7. **Piero Novelli**
   Co-President Investment Bank

8. **Ulrich Körner**
   President Asset Management and President UBS Europe, Middle East and Africa

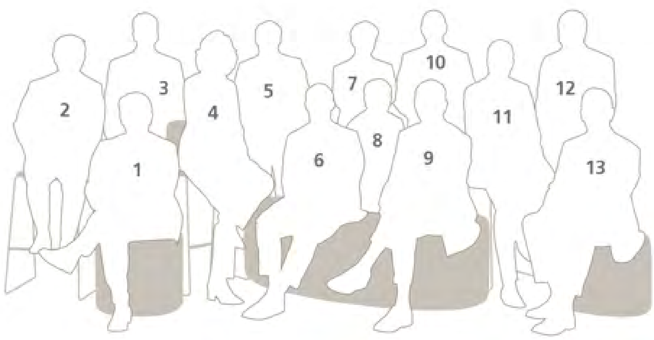
9. **Axel P. Lehmann**
   President Personal & Corporate Banking and President UBS Switzerland

10. **Martin Blessing**
    Co-President Global Wealth Management

11. **Christian Bluhm**
    Group Chief Risk Officer

12. **Tom Naratil**
    Co-President Global Wealth Management and President UBS Americas

13. **Markus U. Diethelm**
    Group General Counsel



Our evolution

Since our origins in the mid-19th century, many financial institutions have become part of the history of our firm and have helped to shape its development. 1998 was a major turning point for the firm, when two of the then three largest banks of Switzerland, Union Bank of Switzerland and Swiss Bank Corporation (SBC), merged to form today's UBS. At the time of the merger, both banks were already well established and successful in their own right. Union Bank of Switzerland had grown organically to become the largest Swiss bank. In contrast, SBC had grown mainly through a combination of strategic partnerships and acquisitions, including S.G. Warburg in 1995.

In 2000, we acquired PaineWebber, a US brokerage and asset management firm whose roots went back to 1879, establishing us as a significant player in the US. Over the past half century and more, we have largely organically built a strong presence in the Asia Pacific region, where we are the largest wealth manager (measured by invested assets), a top-tier investment bank and an established player in asset management.

During the financial crisis of 2008, we incurred significant losses. In 2011, we initiated a strategic transformation of our firm toward a business model that focused on our core businesses of wealth management and personal and corporate banking in Switzerland. We sought to revert to our roots, emphasizing a client-centric model that requires less risk-taking and capital, and have successfully completed this transformation.

Three keys

Our Pillars, Principles and Behaviors, launched in 2013, are the foundation for our corporate strategy, identity and culture.

Today, we are a global financial services firm, consisting of the preeminent global wealth manager to high net worth and ultra high net worth clients, the leading personal and corporate banking business in Switzerland, a global asset manager and a focused investment bank.

The chart on the next page provides an overview of our principal legal entities and reflects our legal entity structure.

→ **Refer to *www.ubs.com/history* for more information**

Most recent changes to our legal entity structure

In 2014, we began adapting our legal entity structure to improve the resolvability of the Group in response to too big to fail requirements in Switzerland and recovery and resolution regulation in other countries in which the Group operates.

We continue to consider further changes to the Group's legal structure in response to regulatory requirements and other external developments. Such changes may include further consolidation of operating subsidiaries in the EU and adjustments to the booking entity or location of products and services.

→ **Refer to the "Risk factors" section of this report for more information**

→ **Refer to the "Regulatory and legal developments" section of this report for more information**

2014

Holding company

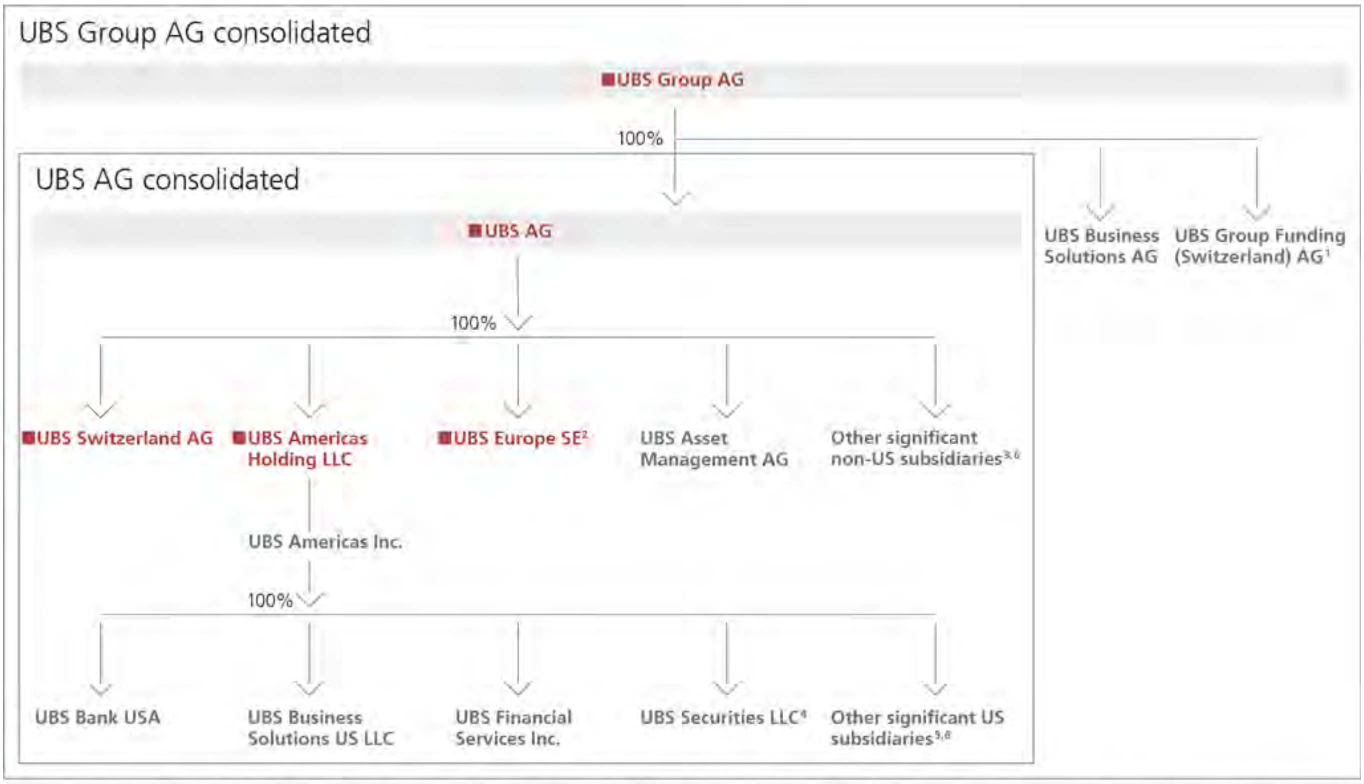
- UBS Group AG became the holding company of the Group

2015

UBS structure

- Transferred our personal and corporate banking and wealth management businesses booked in Switzerland from UBS AG to the newly established UBS Switzerland AG
- Implemented a more self-sufficient business and operating model for UBS Limited
- UBS Business Solutions AG, a direct subsidiary of UBS Group AG, was established as the Group service company

The legal structure of the UBS Group as of 1 March 2019



1 UBS Group Funding (Switzerland) AG issues loss-absorbing additional tier 1 (AT1) capital instruments and total loss-absorbing capacity (TLAC)-eligible senior unsecured debt, which are guaranteed by UBS Group AG. 2 UBS Limited was merged into UBS Europe SE effective 1 March 2019. 3 Other significant non-US subsidiaries are generally held either directly by UBS AG or indirectly through UBS Switzerland AG or UBS Asset Management AG. 4 99% directly held by UBS Americas Inc. and 1% held by UBS Americas Holding LLC. 5 Other significant US subsidiaries are generally held either directly by UBS Americas Inc. or indirectly through UBS Financial Services Inc. 6 Refer to "Note 31 Interests in subsidiaries and other entities" in the "Consolidated financial statements" section of this report for more information on UBS's subsidiaries, including individually significant subsidiaries and sub-groups.

■ Holding company and significant regulated subsidiaries and sub-groups subject to disclosure in UBS Group AG annual and quarterly reporting

2016

UBS structure

- UBS Americas Holding LLC designated as our intermediate holding company for our US subsidiaries
- Wealth management subsidiaries in various European countries merged into UBS Europe SE
- Majority of Asset Management's operating subsidiaries transferred to UBS Asset Management AG
- UBS Group Funding (Switzerland) AG established as a wholly owned direct subsidiary to issue loss-absorbing AT1 capital instruments and TLAC-eligible senior unsecured debt, guaranteed by UBS Group AG

2017

UBS Business Solutions

UBS Group Funding (Switzerland) AG

- Shared services functions transferred in Switzerland and the UK from UBS AG to UBS Business Solutions AG
- Completed the transfer of shared services functions in the US to our US service company, UBS Business Solutions US LLC, a wholly owned subsidiary of UBS Americas Holding LLC
- Transferred our then outstanding TLAC-eligible senior unsecured debt to UBS Group Funding (Switzerland) AG as the issuer

2018

UBS Group Funding (Switzerland) AG

- Substituted UBS Group AG where it was the issuer of outstanding AT1 capital instruments with UBS Group Funding (Switzerland) AG

2019

UBS Europe SE

- Merger of UBS Limited, our UK-headquartered subsidiary, into UBS Europe SE, our German-headquartered European subsidiary, prior to the UK's scheduled departure from the EU at the end of March 2019

Our strategy, business model and environment

Management report

Our strategy

Attractive business model

Our strategy is centered on our leading global wealth management business and our premier personal and corporate banking business in Switzerland, complemented by our focused investment bank and global asset manager. We concentrate on capital-efficient businesses in our targeted markets, where we have a strong competitive position and an attractive long-term growth or profitability outlook.

We are the preeminent global wealth manager to high net worth and ultra high net worth clients, based on invested assets. We have a strong presence in the largest market, the United States, and the leading position in the fastest-growing region, Asia Pacific, based on invested assets. Our global wealth management business benefits from its scale, which is difficult to replicate organically, and leading positions across the high net worth and ultra high net worth client segments in an industry with attractive growth prospects. The partnership between our business divisions is critical to the success of our strategy and a source of competitive advantage.

Capital strength is the foundation of our strategy and our business model is capital-accretive and capital-efficient.

Long-term value creation through cost- and capital-efficient growth

We are managing UBS for the long term, focusing on sustainable profit growth and responsible resource deployment. We aim to balance growth opportunities with cost and capital efficiency in order to drive attractive risk-adjusted returns and sustainable performance.

Revenue growth

We believe we can grow our revenues at least at the rate of global economic expansion over the cycle, by executing our plans with discipline and by taking advantage of favorable market and industry trends. Improved collaboration and partnership across our business divisions provide further revenue growth potential and enable us to better meet the needs of our ultra high net worth and Global Family Office clients.

Geographically, we expect the US and Asia Pacific to be the strongest contributors to future profit growth. We are already a strong player in the US and Latin America, with ambitions to grow further by capturing market share and benefiting from secular growth trends. We believe Asia Pacific, particularly China, presents a significant long-term opportunity, given its economic expansion and wealth creation. Our competitive position in the region is strong and we are well positioned to capture the growth opportunities across our businesses. In Switzerland, our home market, we intend to reinforce our leadership position. In Europe, the Middle East and Africa, we want to leverage our existing capabilities to grow our market share during the further consolidation that is expected in the financial services industry.

→ **Refer to "Industry trends" in the "Our environment" section of this report for more information on the expected industry consolidation**

Cost efficiency

We are a cost-conscious organization with objectives to improve our overall cost efficiency. Our aim is to keep costs, excluding performance-based compensation which is linked to revenues, broadly flat over the next three years, while growing our revenues.

We plan to continue to invest in technology to improve efficiency and effectiveness, drive growth and better serve our clients.

In order to further strengthen the business divisions' ownership of Corporate Center costs and align Group and divisional performance, we have adjusted our Corporate Center cost allocation methodology. A higher proportion of these costs will be allocated to the business divisions from the first quarter of 2019.

→ **Refer to the "Significant accounting and financial reporting changes" section of this report for more information on the changes in cost allocations to business divisions**

Capital efficiency

We remain disciplined when deploying capital across our businesses, aiming to cover the cost of capital where capital is allocated.

We are improving transparency and accountability regarding the use of resources, allowing the business divisions to further optimize their capital usage and pursue growth opportunities in a capital-efficient manner. Consequently, we have adapted our equity attribution framework and, from the first quarter of 2019, will further allocate to the business divisions resources that were previously centrally held.

→ **Refer to "Equity attribution and return on attributed equity" in the "Capital management" section of this report for more information on how equity is attributed to our business divisions**
→ **Refer to the "Significant accounting and financial reporting changes" section of this report for more information on the changes in resource allocations to business divisions**

Attractive capital returns

Our capital strength and capital-accretive business model allow us to grow our business while delivering attractive capital returns to our shareholders.

We aim to increase our ordinary dividend per share at a mid-to-high single-digit percentage each year. We also aim to return excess capital, after accruals for ordinary dividends, most likely in the form of share repurchases. We consider our business outlook and capital plan, as well as other developments, in determining excess capital available for share repurchases.

Performance targets and measurement

Targets, ambitions and capital and resource guidelines

In October 2018, we refined our performance target framework, introducing more specific targets and ambitions for the Group and business divisions. Our targets and ambitions are underpinned by our latest three-year strategic plan. Our strategic plan reflects our strategic initiatives, management actions as well as certain economic and market assumptions. The changes take into account the effects of the changes in Corporate Center allocations and our equity attribution methodology, which came into effect on 1 January 2019.

Targets are measured on an annual basis, except our adjusted profit before tax growth targets for Global Wealth Management, Personal & Corporate Banking and Asset Management, and the adjusted return on attributed equity target for the Investment Bank, all of which represent the average annual performance we aim to deliver over the cycle.

The table on the next page shows the performance targets, ambitions, and capital and resource guidelines for the Group and business divisions for the 2019–2021 period. Our targets represent what we expect to achieve in the short term. Our ambitions reflect what we aim to achieve within the next three years.

Both Group and business division performance against targets are taken into account when determining variable compensation.

→ **Refer to "Performance and compensation at a glance" in the "Compensation" section of this report for more information on variable compensation**

Group targets and ambitions

Our Group targets reflect our overarching goal of growing our business while delivering attractive capital returns and maintaining disciplined resource management.

Regulatory capital plays an important role in how we manage our business. It drives our regulatory capital ratios, which are a key input for defining our risk appetite and a primary constraint on our ability to invest or return capital to shareholders. We have therefore adopted return on common equity tier 1 (CET1) capital as a Group target, aiming at around 15% on a reported basis in 2019, with an ambition to improve to around 17% by 2021.

For our cost efficiency target, we believe adjusted financials better reflect our fundamental business performance than reported financials. Our reported and adjusted results have been converging as we have reduced restructuring expenses, and we expect this convergence to continue. We are targeting an adjusted cost / income ratio of around 77% in 2019, with the ambition to improve to around 72% by 2021.

Divisional targets and ambitions

Our divisional targets include measures of profitability, efficiency and growth, tailored to the strategic objectives and market conditions of each business division, and underpin our Group targets.

Targets, ambitions and capital and resource guidelines 2019–2021

			Targets		Ambitions	Capital / resource guidelines
			FY19	FY19–21		FY19–21
Group	1	Reported return on CET1 capital	~15%		~17%	
	2	Adjusted cost / income ratio[1]	~77%		~72%	
	3	CET1 capital ratio				~13%
	4	CET1 leverage ratio				~3.7%
Global Wealth Management	5	Adjusted pre-tax profit growth[1]		10–15%[2]		
	2	Adjusted cost / income ratio[1]	~75%		~70%	
	6	Net new money growth		2–4%		
Personal & Corporate Banking	5	Adjusted pre-tax profit growth[1]		3–5%[2]		
	2	Adjusted cost / income ratio[1]	~59%		~56%	
	7	Net interest margin		145–155 bps		
Asset Management	5	Adjusted pre-tax profit growth[1]		~10%[2]		
	2	Adjusted cost / income ratio[1]	~72%		~68%	
	6	Net new money growth (excl. money markets)		3–5%		
Investment Bank	8	Adjusted return on attributed equity[1]		~15%[2,3]		
	2	Adjusted cost / income ratio[1]	~78%		~75%	
	9	RWA and LRD in relation to Group				~1/3

1 Refer to the "Group performance" section of this report for information on adjusting items. 2 Over the cycle. 3 Repositioned from a minimum return to a performance target.

Definitions

1	Reported return on CET1 capital	Net profit attributable to shareholders divided by average CET1 capital.
2	Adjusted cost / income ratio	Adjusted operating expenses divided by adjusted operating income before credit loss (expense) / recovery.
3	CET1 capital ratio	CET1 capital divided by risk-weighted assets as of period end.
4	CET1 leverage ratio	CET1 capital divided by leverage ratio denominator as of period end.
5	Adjusted pre-tax profit growth	Change in business division adjusted profit before tax between current and comparison periods divided by business division adjusted profit before tax in the comparison period. For Asset Management, this metric excludes the effect of business exits. For Personal & Corporate Banking, it is measured in Swiss francs.
6	Net new money growth	Net new money for the period (annualized as applicable) divided by invested assets at the beginning of the period.
7	Net interest margin	Net interest income (annualized as applicable) divided by average loans.
8	Adjusted return on attributed equity (RoAE)	Business division adjusted operating profit before tax (annualized as applicable) divided by average attributed equity.
9	RWA and LRD in relation to Group	Risk-weighted assets (RWA) or leverage ratio denominator (LRD) attributed to the Investment Bank divided by total Group RWA or LRD, as applicable.

Our businesses

Working in partnership

We operate through four business divisions – Global Wealth Management, Personal & Corporate Banking, Asset Management and the Investment Bank – as well as our Corporate Center.

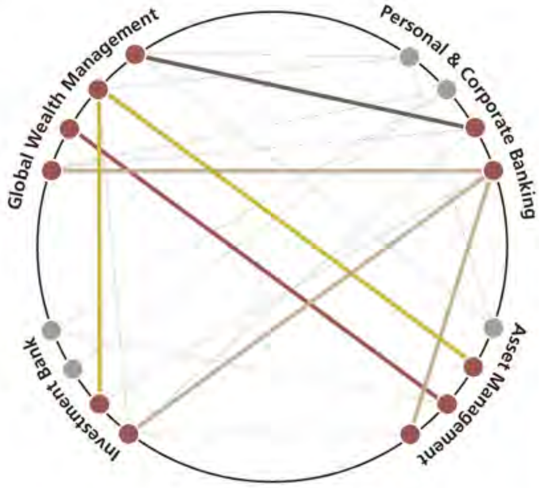
We see partnership as key to our growth, both within and between business divisions. We are at our best when we combine our strengths to provide our clients with more comprehensive and better solutions.

Our global reach and the breadth of our expertise are major assets that set us apart from our competitors. Combining our strengths makes us a better firm. Initiatives such as the *Group Franchise Awards* encourage employees to look for ways to build bridges between areas and offer the whole firm to our clients.

How we deliver the whole firm to our clients – examples

Wealth Management Platform
Our Wealth Management Platform was built on our Swiss IT platform – as Global Wealth Management migrates to one operating platform outside of the US. The same interface is shared by Personal & Corporate Banking clients in Switzerland and Global Wealth Management clients outside the US. In the US the Wealth Management Americas Platform is expected to improve advisor productivity by leveraging a newly-created advisory utility.

Client evolution, shifts and referrals
Personal & Corporate Banking generates client shifts and referrals to other business divisions. For example, personal banking clients are shifted to Global Wealth Management, and corporate and institutional segment clients are referred to Asset Management for pension fund solutions or the Investment Bank for capital market and corporate transactions.



Cross-divisional product development
Asset Management and Global Wealth Management collaborate to design products such as the Systematic Allocation Portfolio, which in the three years since it was launched has attracted more than USD 28 billion in invested assets. In partnership with the World Bank and other institutions, we have also developed a fully sustainable investing cross-asset mandate portfolio for private clients. Investment solutions aligned with this asset allocation have attracted USD 2.8 billion of investments in support of objectives like the Sustainable Development Goals (SDG) as of 31 December 2018.

Global Family Office
Our Global Family Office unit brings together the capabilities of Global Wealth Management, Asset Management and the Investment Bank. It provides customized, institutional-style service to wealthy families and individuals seeking access to, or advice on, capital market activities.

Global Wealth Management

We are the preeminent global wealth manager to high net worth and ultra high net worth clients, with USD 2.3 trillion in invested assets. Our goal is to provide tailored investment advice and solutions to private clients, in particular in the ultra high net worth and high net worth segments.

At the start of 2018, Wealth Management and Wealth Management Americas were combined into a single unit designed to better deliver our services to clients, realize meaningful improvements in efficiency and accelerate growth for our shareholders. We combined the central functions of Chief Investment Office (CIO), Investment Platforms and Solutions (IPS), Client Strategy Office (CSO) and Chief Operating Office (COO), which enables us to operate these central functions efficiently and effectively support the regional business units, which remain close to our clients with decentralized service delivery. The unification of the ultra high net worth business unit enables us to leverage best practices in serving the wealthiest individuals globally and supporting our growth ambitions by working closer together. We have established a referral and collaboration framework that fosters cross-regional teamwork.

Our focus

We serve high net worth and ultra high net worth individuals, families and family offices around the world and affluent clients in selected markets. Our business is focused on the high net worth and ultra high net worth segments, including family offices. Our unified Global Wealth Management division helps us to better serve clients with global needs. We are already a market leader in the ultra high net worth segment outside the US.[1] We believe that Global Wealth Management can become the firm of choice for the wealthiest clients both in and outside the US. We expect that increasing our market share with ultra high net worth clients in the US could generate approximately USD 70 billion of cumulative net new money from 2019 to 2021.

We expect that our business growth will occur primarily in the US, in part from the initiatives described above, and in Asia Pacific, where we are already the largest wealth manager based on invested assets.

We are focusing on increasing mandate and lending penetration with innovative solutions for our clients as well as enhancing the advisors' productivity in these regions by making operational processes more efficient. Additionally, we aim to maintain low attrition and to increase our share of clients' business.

As of 31 December 2018, approximately 80% of invested assets booked outside the Americas were on the *Wealth Management Platform.* We plan to eventually converge to a single operating platform outside the Americas. In parallel, we are working on creating the *Wealth Management Americas Platform* in collaboration with third-party software provider Broadridge. This platform is anticipated to improve advisor productivity and support advisors in growing their businesses. We expect the platform, scheduled to go live in 2021, to increase efficiency and scalability.

→ **Refer to "Our focus on technology" in the "How we create value for our stakeholders" section of this report for more information on the Wealth Management Platform and Group-wide technology spend**

How we operate

We have a global footprint, with a strong presence in the world's largest and fastest-growing markets. The US is our largest market, representing more than 50% of our invested assets. We are the largest wealth manager in Asia Pacific and the second largest in Latin America, based on invested assets.[1]

In Switzerland, we maintain the leading market position and collaborate closely with Personal & Corporate Banking, Asset Management and the Investment Bank.

Our broad domestic footprint in Europe enables us to provide locally adapted offerings, while local offices across Central Europe, the Middle East and Africa keep us close to our clients.

Collaboration with the Investment Bank and Asset Management allows us to offer ultra high net worth clients tailored institutional coverage and global execution.

→ **Refer to "Working in partnership" in this section for more information on the Global Family Office**

We continue to control costs and are focused on identifying new synergies across Global Wealth Management. We expect to realize USD 600 million of cost savings over the next three years by delayering and removing duplicate functions, reducing replacement hiring and optimizing third-party spending. At the same time, we expect to make strategic investments totaling more than USD 1 billion through 2021, including USD 600 million in technology, to further improve client and advisor experience.

Our main competitors are either large US players, but with less reach outside the US – including Bank of America, Citigroup, JPMorgan Chase, Morgan Stanley and Wells Fargo – or geographically diverse firms without our scale or US exposure, such as BNP Paribas, Credit Suisse, Deutsche Bank, HSBC and Julius Baer. Our size and diversified client portfolio are exceptional and would be difficult and expensive for other wealth managers to replicate organically.

1 Statements of market position for Global Wealth Management are UBS's estimates based on published invested assets and internal estimates.

What we offer

By operating as a single business, we aim to offer our clients the best wealth management solutions, services and expertise globally.

We deliver our investment solutions through our IPS offerings, including flagship investment mandates, consisting of our innovative long-term themes and sustainable investment offerings. Our core investment solutions consist of: *UBS Transact,* a self-directed account granting clients access to UBS execution capabilities and the *UBS House View; UBS Advice,* which adds portfolio monitoring against an agreed investment strategy to self-directed accounts; and *UBS Manage,* a discretionary mandate solution where we use our expertise to invest clients' assets according to a predefined investment strategy. We provide our clients with investment analysis and thought leadership and formulate our client investment strategies through the CIO and the CSO. The CIO provides a concise, comprehensive *UBS House View,* which identifies and communicates investment opportunities and market risks to help protect and grow our clients' wealth over generations. The CSO aims at deepening the firm's understanding of clients' needs, behaviors and preferences to tailor our offerings and better serve our clients.

Clients benefit from our comprehensive set of capabilities and expertise, including wealth planning, investing, lending, philanthropy, corporate and banking services as well as family office services in collaboration with the Investment Bank and Asset Management.

→ **Refer to "Working in partnership" in this section for more information on collaboration between the business divisions**

We are continuously working to improve our offering. Key innovations launched in 2018 include enhancements to *UBS Manage,* which now incorporates mandate solutions with 100% sustainable investments, and two additional impact investment solutions. In addition, we launched the *Systematic Allocation Portfolio* in the US, a *UBS Manage* offering based on the UBS CIO World Equity Market Model, which analyzes economic and financial data to detect signs of improving or deteriorating equity markets to adjust portfolio exposure dynamically.

How we serve our clients

We serve our clients through local offices and dedicated advisors. Our ultra high net worth business is managed globally across the regions.

We use a mix of digital and non-digital channels (including marketing campaigns, events, advertising, publications and digital-only solutions) to help drive greater awareness of UBS among prospects and reinforce trust-based relationships between advisors and clients.

How we are organized

Our business division is organized into the regional business units the Americas, which includes the US, Canada and Latin America; Europe, Middle East and Africa (EMEA); Asia Pacific; and Switzerland, as well as the business unit for our ultra high net worth clients. Central functions for global capabilities supporting these business units are the CIO, IPS, the CSO and the COO. We are governed by executive, risk, operating as well as asset and liability committees.

4

regional business units

The Americas, including the US, Canada and Latin America, EMEA, Asia Pacific, and Switzerland

ultra high net worth business unit

Serves clients globally across the regions

Personal & Corporate Banking

As the leading personal and corporate bank in Switzerland, we provide comprehensive financial products and services to private, corporate and institutional clients. We are among the country's foremost players in the private and corporate loan market, with a well-collateralized and conservatively managed lending portfolio. Personal & Corporate Banking is at the core of our universal bank delivery model in Switzerland.

Our focus

We are the premier personal and corporate bank in Switzerland, providing superior client experience and combining technology with a personal touch.

We have a strong pipeline of growth initiatives in both of our business areas. In Personal Banking, for example, we are further improving technology-enabled mortgage advisory and aim to improve efficiency by streamlining processes and introducing new digital self-service tools. In Corporate & Institutional Clients (CIC), we are investing for growth with a focus on our SMEs, corporates and multinationals businesses and leveraging our transaction banking capabilities. We have recently launched a number of innovations and digital solutions such as the *UBS Atrium* investor portal, which allows institutional investors to invest in mortgages directly, our vendor leasing solution and the trade finance platform *we.trade*, based on blockchain technology, which we developed as part of a consortium with other banks.

Technology plays a key role in our client-centered operating model and we aim to expand our digital leadership. Our multi-year digitalization program enables us to further enhance the client experience. On the basis of advanced analytics and blockchain technologies, we are able to offer clients new products and to identify new cross-selling opportunities.

→ **Refer to "Our focus on technology" in the "How we create value for our stakeholders" section of this report for more information on our investment in technology**

Operationally, we strive for superb execution, focusing on efficiency while improving our service quality and overall agility.

How we operate

While we operate primarily in our home market of Switzerland, we also provide capabilities to support the growth of the international business activities of our corporate and institutional clients through our local hubs in Frankfurt, New York, Hong Kong and Singapore.

In the CIC business, our main competitors are Credit Suisse, the cantonal banks and globally active foreign banks. We compete in areas covering basic banking services, cash management, trade and export finance, asset servicing, corporate finance and lending, as well as cash and securities transactions for banks.

In the Swiss personal banking business, our competitors are Credit Suisse, PostFinance, Raiffeisen, the cantonal banks and other regional and local Swiss banks. We compete in areas including basic banking, mortgages and foreign exchange, as well as investment mandates and funds.

What we offer

Our personal banking clients have access to a comprehensive life cycle-based offering and convenient digital banking. We deliver a broad range of basic banking products, from payments to deposits, cards, online and mobile banking, as well as lending (predominantly mortgages), investments and retirement services. The overall service range is complemented by our *KeyClub* reward program. In close collaboration with Global Wealth Management, we offer leading private banking and wealth management services.

→ **Refer to "Working in partnership" in this section for more information on collaboration between the business divisions**

Our corporate and institutional clients benefit from our financing and investment solutions, notably from access to equity and debt capital markets, syndicated and structured credit, private placements, leasing and traditional financing. Our transaction banking offers solutions for payment and cash management services, trade and export finance, receivables finance, as well as global custody solutions to institutional clients. In real estate, we offer our mortgage platform *UBS Atrium,* connecting institutional investors with Swiss mortgage holders to create a competitive offering and attractive investment opportunities for institutional investors.

We collaborate closely with the Investment Bank to offer capital market and foreign exchange products, hedging strategies and trading capabilities, as well as corporate finance advice. In cooperation with Asset Management, we also provide fund and portfolio management solutions.

How we serve our clients

We are the recognized digital leader with the highest online and mobile penetration in Switzerland and continue to invest in a multi-channel distribution strategy to further enhance our leading position.

We are adapting existing branch formats to suit evolving client needs, converting some locations to smaller, more agile branches that serve as marketing and digital support hubs and ensure a strong local presence. We aim to further reshape our physical footprint in an innovative and client-centric way, namely by defining future branch formats with different purposes.

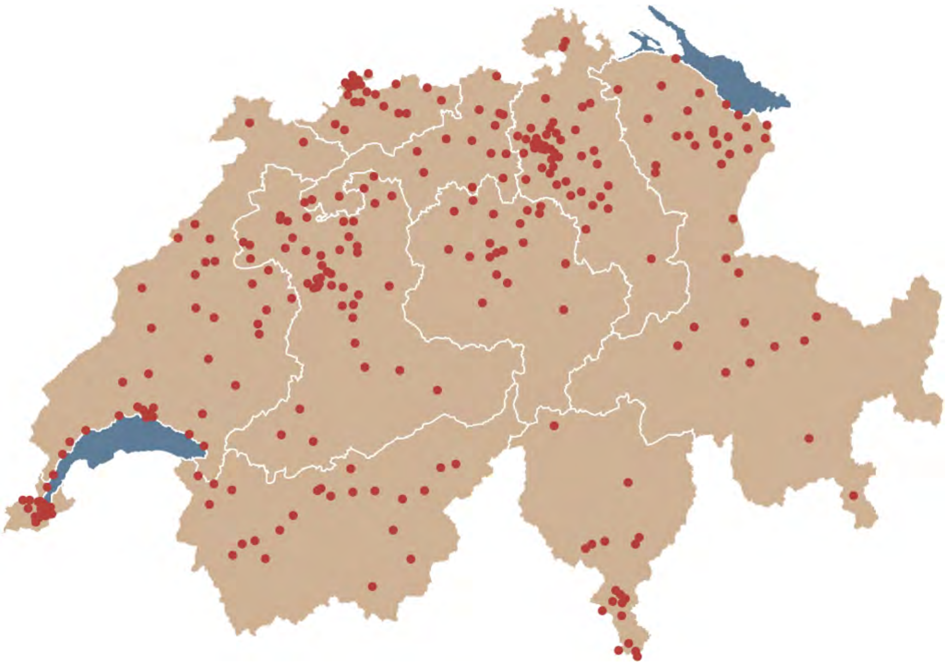
In addition, we continue to shift basic banking services and transactions from branches to contact centers and digital channels, which already serve most of our 2.5 million personal banking clients. Dedicated client advisors serve personal banking clients who have more individualized needs.

Similarly, we bundle our digital offering for small businesses in our Digital Corporate Bank, which offers the convenience and leading digital solutions that small companies look for.

For marketing campaigns, we use online media (including social media and search engine advertising), out-of-home media (posters and digital billboards) and, very selectively, print, TV, radio and cinema advertising. In line with our position as a digital leader in Swiss banking, and because of the channel's cost effectiveness, we follow a digital-first media strategy. More than 50% of our media investment goes into online channels.

How we are organized

Our business division is organized into Personal Banking and CIC, and further into client and (for corporate banking) product segments. Geographically, our business and our 279 branches are organized into 10 regions, covering distinct Swiss economic areas. We are governed by executive, risk and operating committees, and operate mainly through UBS Switzerland AG.



279

branches in Switzerland

Personal Banking with 279 branches in Switzerland, of which 91 branches are shared with GWM and 60 branches are shared with CIC

Asset Management

Asset Management is a large-scale and diversified global asset manager, with USD 781 billion in invested assets. We offer investment capabilities and styles across all major traditional and alternative asset classes, as well as platform solutions and advisory support to institutions, wholesale intermediaries and Global Wealth Management clients around the world.

Our focus

Building on our global reach and strengths across all major traditional and alternative asset classes, as well as our differentiated client proposition, our strategy focuses on capturing opportunities in areas with above-average industry growth and is based on six priorities.

In wholesale, which is a rapidly evolving and attractive segment, we aim to significantly expand our market share through a combination of product innovation, the development of strategic partnerships and increased leverage of our comprehensive Platform Services capabilities.

We continue to develop our award-winning[1] Indexed and Alternative Beta business (including exchange-traded funds (ETFs) in Asia Pacific, Europe and Switzerland). Since the end of 2016, this business has grown by approximately 50% in terms of invested assets driven by continued product innovation and our highly scalable platform.

Our Investment Solutions business provides access to the breadth and depth of our capabilities across public and private markets, and combines them to meet the needs of clients across the globe, as few other firms can. To drive further growth, we are focused on delivering superior multi-asset strategies for wholesale clients and providing components of the investment process to strategic partners.

Sustainable & Impact Investing is a further key area, as clients are increasingly seeking solutions that combine their investment goals with sustainability objectives. We aim to establish ourselves as a leading provider through: product and service innovation; dedicated research; integration of environmental, social and governance factors into our investment processes; leveraging our proprietary analytics; and active corporate engagement.

Geographically, we are further expanding our onshore business in China, one of the fastest-growing asset management markets in the world, building on our extensive and long-standing presence in Asia Pacific.

To support our growth, we have a continuous emphasis on increasing efficiency and effectiveness, driven through our operational excellence initiatives. This includes our flagship programs to replace our core IT platform, develop our data analytic capabilities and further evolve our operations platform.

These programs are expected to be completed by 2020. We also continue to optimize processes and leverage new technologies across our Client Coverage, Investments and Products, Platforms & Specialists areas.

→ **Refer to “Our focus on technology” in the “How we create value for our stakeholders” section of this report for more information on our UBS Partner offering**

How we operate

We cover the main asset management markets globally, with a presence in 23 countries grouped in four regions: the Americas; Europe, Middle East and Africa; Switzerland; and Asia Pacific.

Our main competitors are global firms with wide-ranging capabilities and distribution channels, such as Amundi, BlackRock, DWS, Goldman Sachs Asset Management, Invesco, JPMorgan Asset Management, Morgan Stanley Investment Management and Schroders, as well as firms with a specific market or asset class focus.

What we offer

We offer clients a wide range of investment products and services in different asset classes in the form of segregated, pooled or advisory mandates as well as registered investment funds in various jurisdictions.

Our traditional and alternative capabilities include equities, fixed income, hedge funds, real estate and private markets, indexed and alternative beta strategies (including ETFs) as well as sustainable and impact investing products and solutions.

Our Investment Solutions business draws on the breadth of our capabilities to offer asset allocation and currency investment strategies across the risk / return spectrum; customized multi-asset solutions, advisory and fiduciary services; and multi-manager hedge fund solutions and advisory services.

Our Platform Services capabilities include *UBS Fondcenter,* a leading fund platform in Europe and Asia; *Fund Management Services,* providing fund corporate governance and white-labeling services; and *UBS Partner,* our innovative new offering that provides banks with powerful tools and analytics to support their advisory offering.

1 Second largest Europe-based indexed player based on peers’ public reporting as of November 2018 (UBS calculation) and ranked fifth largest ETF provider in Europe as of December 2018 (source: ETFGI).

How we serve our clients

We deliver our investment products and services directly to institutional clients. High net worth and retail clients are served through Global Wealth Management, third-party banks and distributors.

Our clients require world-class holistic advice and global coverage. In order to enable our client relationship managers to provide the specialized advice our clients need, and to deliver to them the full strengths of our firm, our Client Coverage teams are aligned along global segments (institutional, wholesale and Global Wealth Management). In addition, we believe it is equally important that our relationship managers are located near our clients to help ensure that our teams are best placed to build long-term relationships and develop a deep understanding of the challenges they face.

→ **Refer to "Working in partnership" in this section for examples of areas of collaboration**

How we are organized

Our business division is organized by the products and services we offer: Client Coverage, Investments, Real Estate & Private Markets, Products, Platforms & Specialists, and the Chief Operating Officer area. While we are based in 23 countries worldwide across four regions, our business is driven out of eight main hubs: Chicago, Hong Kong, London, New York, Singapore, Sydney, Tokyo and Zurich.

We are governed by executive, risk and operating committees, supplemented by business unit-specific committees.

23
countries
Covering the main asset management markets globally

8
main hubs
Connecting the full breadth of our investment insights across the world to serve our clients

Investment Bank

The Investment Bank provides a range of services to institutional, corporate and wealth management clients to help them raise capital, grow their businesses, invest and manage risks. We are focused on our traditional strengths in advisory, capital markets, equities and foreign exchange, complemented by a targeted rates and credit platform. We use our powerful research and technology capabilities to support our clients as they adapt to the evolving market structures and changes in the regulatory, technological, economic and competitive landscape.

We aspire to deliver market-leading solutions to clients, using our intellectual capital and electronic platforms. We also provide services to Global Wealth Management, Personal & Corporate Banking and Asset Management, while managing our balance sheet, costs, risk-weighted assets and leverage ratio denominator with discipline.

Our focus

Our key priority is disciplined growth in the capital-light advisory and execution businesses, while accelerating our digital transformation.

Corporate Client Solutions is focused on deepening selected industry verticals, providing macro views complemented by expertise within specific sub-sectors, and increasing senior-level client interactions. In Equities, we aim to offer our clients a range of products, innovative solutions, expert advice, access to liquidity and seamless execution, as well as a continued flow of differentiated content. In Foreign Exchange, Rates and Credit, our focus is on delivering returns from recent investments made in talent and technology. We also plan to expand our Foreign Exchange business and our Solutions business within Rates and Credit. We continue to build out *UBS Evidence Lab Innovations* to concentrate on data-driven research.

→ **Refer to "Our focus on technology" in the "How we create value for our stakeholders" section of this report for more information on Evidence Lab Innovations**

Our digital strategy is led by our businesses, which harness technology to deliver superior and differentiated client service and content. We established *UBS Investment Bank Innovation Lab* to speed up innovation by enabling proofs of concept. We are also making efforts to digitalize our entire front-to-back processes.

Our balanced global reach gives us attractive options for growth across various regions. In the Americas, the largest investment banking fee pool globally, we are focusing on increasing our market share in our Advisory, Equity Capital Markets, Equities and Foreign Exchange, Rates and Credit businesses.

In Asia Pacific, we see opportunities primarily from expected market internationalization and growth in China. We are planning to grow there by further strengthening Corporate Client Solutions, both onshore and offshore.

Partnership across the Investment Bank's businesses and the Group should also lead to growth by delivering global products to each region, leveraging our global connectivity across borders and sharing and strengthening our best client relationships.

→ **Refer to "Working in partnership" in this section for examples of areas of collaboration**

How we operate

We have a global reach, with a presence in 33 countries and principal offices in the major financial hubs. Our business is geographically balanced, with 45% of adjusted profit before tax in 2018 coming from the Americas, 25% from Europe, Middle East and Africa (including Switzerland), and 30% from Asia Pacific.

Competing firms are active in many of our markets, but our strategy differentiates us with its focus on leadership in the selected areas where we have chosen to compete, and a business model that leverages talent and technology rather than balance sheet.

Our main competitors are the major global investment banks, including Morgan Stanley, Credit Suisse and Goldman Sachs, as well as corporate investment banks, including Bank of America, Barclays, Citigroup, Deutsche Bank and JPMorgan Chase. We also compete with boutique investment banks and fintechs in certain regions and products.

What we offer

Through our Corporate Client Solutions business, we advise our clients on strategic business opportunities and help them raise capital to fund their activities.

Our Investor Client Services business enables our clients to buy, sell and finance securities on capital markets across the globe and to manage their risks and liquidity.

In Equities, we distribute, structure, execute, finance and clear equity cash and derivative products.

Foreign Exchange, Rates and Credit provides execution services and solutions, with an emphasis on electronic trading, and maintains high levels of balance sheet velocity. In Foreign Exchange, we help our clients manage their currency exposures and to buy and sell precious metals, and are recognized as one of the leading foreign exchange market-makers. Rates and Credit encompasses sales, trading and market-making in a selected range of products, including tailored financing solutions.

Furthermore, in Research, we offer clients key insights on major financial markets and securities around the globe. Separately, our team of experts in *UBS Evidence Lab Innovations* specializes in creating insight-ready datasets for companies of all sizes, spanning over 50 sectors and 30 countries.

We seek to develop new products and solutions that are consistent with our capital-efficient business model. These are typically related to new technologies or changing market standards. Some examples are *UBS Data Solutions,* a centralized data processing and distribution platform, which was launched to meet client demand for both financial and alternative data, and *UBS Evidence Lab Innovations,* as mentioned above.

Since 2005, we have addressed increasing client demand for sustainable investing by providing thematic and sector research. We also provide investment solutions through socially responsible and impact exchange-traded funds and index-linked notes. In addition, we offer capital-raising and strategic advisory services globally to companies that make a positive contribution to climate change mitigation and adaptation.

How we serve our clients

We use a variety of marketing channels, including online and face-to-face, to interact with our clients.

In Corporate Client Solutions, we leverage our intellectual capital and relationships to deliver high-quality solutions for our clients.

In Equities, we use our execution capabilities, differentiated research content, bespoke solutions and our global platform to expand our coverage across a broad set of institutional and corporate clients.

In Foreign Exchange, Rates and Credit, we deliver seamless client service through *One Client.* This is the evolution of our client franchise coverage model, which aims to drive the best client outcomes through relationships, collaboration, technology and data-driven client intelligence.

In Research, we deliver high-quality differentiated research to our institutional clients using a wide range of methods, including *UBS Neo,* our multi-channel platform.

How we are organized

Our business division is organized into the following units: Corporate Client Solutions, Investor Client Services, and Research and UBS Evidence Lab Innovations. We are governed by executive, operating, risk, and asset and liability committees. Each business unit is organized globally by product and, within that, by region.

9
financial hubs
In all major financial centers

33
countries
Ensuring a global reach

Corporate Center

Our Corporate Center provides services to the Group through the Corporate Center – Services and Group Asset and Liability Management (Group ALM) units with a focus on quality, risk mitigation and efficiency. Corporate Center also includes the Non-core and Legacy Portfolio unit.

How we are organized

Until the end of 2018, we reported Corporate Center as three separate units: Corporate Center – Services, Group ALM and Non-core and Legacy Portfolio.

Beginning with our first quarter 2019 report, we will provide results for total Corporate Center only and will not separately disclose Corporate Center – Services, Group ALM and Non-core and Legacy Portfolio. Furthermore, we will operationally combine Group Treasury with Group ALM and their net retained operating income will be reported as a separate line item within Corporate Center.

→ **Refer to the "Significant accounting and financial reporting changes" section in this report for more information on the changes in the structure of Corporate Center**

Corporate Center – Services

Corporate Center – Services consists of the Group Chief Operating Officer area (Group Technology, Group Corporate Services, Group Human Resources, Group Operations and Group Sourcing), Group Finance (excluding Group ALM), Group Legal, Group Risk Control, Group Communications & Branding, Group Compliance, Regulatory & Governance, and *UBS in society*.

Specifically, in the areas of finance, legal, compliance and risk management and control, we aim to provide high-quality advice while optimizing resources and mitigating risk. In other areas, such as human resources, information technology, operations, and marketing and communications, we align services based on demand and delivery of defined strategies.

These functions partner with business divisions and Group ALM through a service-based operating model. Corporate Center – Services allocates the majority of its operating expenses to the business divisions and other Corporate Center units, and determines cost allocations with them as part of the annual business planning cycle.

In 2018, we aligned our Corporate Center more closely with the business divisions, while keeping the benefits of a strong Corporate Center. Increasing proximity between the business and Corporate Center means UBS can be more agile and responsive to the needs of our clients, positioning us better to capture front-to-back opportunities in areas such as digitalization. By bringing the activities of the businesses and Corporate Center closer together, we also increase efficiency and create a working environment built on a culture of accountability and collaboration.

Corporate Center – Group ALM

Group ALM manages the structural risk of our balance sheet, including interest rate risk, structural foreign exchange risk and collateral risk, as well as the risks associated with our liquidity and funding portfolios. Group ALM also seeks to optimize financial performance by matching assets and liabilities. Group ALM serves all business divisions and the other Corporate Center units through three main risk management areas, and its risk management is fully integrated into the Group's risk governance framework.

Business division-aligned risk management activities include managing the interest rate risk in the banking book on behalf of Global Wealth Management and Personal & Corporate Banking, and managing high-quality liquid asset (HQLA) portfolios, as well as risk management of credit, debit and funding valuation adjustments for our over-the-counter derivatives portfolio. Net income generated by these activities is fully allocated to the associated business divisions and other Corporate Center units.

Capital investment and issuance activities consist of managing our equity and capital instruments as well as instruments that contribute to our total loss-absorbing capacity (TLAC). Revenues from investing the Group's equity, and the incremental expenses of issuing capital and TLAC instruments at the UBS Group AG level relative to issuing senior debt out of operating subsidiaries, are fully allocated to the business divisions and other Corporate Center units.

Group structural risk is managed to meet overall objectives. These activities include managing the Group's HQLA and long-term debt portfolios. The net positive or negative income generated is allocated to the business divisions and other Corporate Center units based on their consumption of the underlying risks and resources.

Corporate Center – Non-core and Legacy Portfolio

Non-core and Legacy Portfolio manages legacy positions from businesses exited by the Investment Bank, following a largely passive wind-down strategy. It is overseen by a committee chaired by the Group Chief Risk Officer. The portfolio also includes positions relating to legal matters arising from businesses that were transferred to it at the time of its formation.

→ **Refer to "Note 21 Provisions and contingent liabilities" in the "Consolidated financial statements" section of this report for more information on litigation, regulatory and similar matters**

Our environment

Current market climate

Global economic developments in 2018

The global economy maintained its pace of growth in 2018. World GDP expanded by 3.8%, almost identical to the 3.9% growth of 2017.

Economic expansion was as broadly based as in 2017, with no G20 nations in recession. The US provided much of the growth impetus, driven, in part, by its Tax Cuts and Jobs Act introduced in December 2017, which put the US on course for 2.8% growth (up from 2.2% in 2017). The stronger economy and lower tax rates contributed to more than 20% higher corporate earnings, despite concerns over a potential trade conflict with China.

Growth was slower in the eurozone. However, the region managed to get through the year without major political or economic shocks. A dispute between the Italian government and the European Commission was resolved, and the Greek debt crisis, which in recent years seemed to threaten the integrity of the eurozone, was largely absent from the headlines. Overall, eurozone GDP increased by close to 2% for the year. Outside of the eurozone, the Swiss economy did especially well, expanding 2.6% after 1.7% in the prior year.

Emerging markets faced mounting pressures. Efforts by China to restrain domestic corporate borrowing cooled its economy, with growth slowing to 6.5%, from 6.9% in 2017. Other emerging nations were also affected as the trade conflict between the US and China dampened business confidence. Despite such obstacles, most emerging market economies achieved solid GDP expansion – with the Indian economy even seeing growth improve to 7.3%, from 6.7%.

This relatively benign backdrop and muted inflation pressures allowed developed market central banks to continue gradually tightening monetary policy. The European Central Bank announced it would end its quantitative easing program, while the Federal Reserve contracted its balance sheet by USD 50 billion a month and increased its target overnight rate by 1 percentage point in four steps during 2018.

For much of the year, US equities performed strongly in this environment of sound growth, rising earnings and only gradual central bank tightening of monetary policy. The strength of the US market helped lift global stock indexes, more than offsetting a muted performance from emerging market and eurozone indexes. However, markets turned volatile in October 2018.

The Morgan Stanley Capital International (MSCI) All Country World Index – which by late September 2018 had climbed 6% year to date – saw a correction in the last quarter and ended the year with a loss of 7.7%. This was the first year of negative returns since 2011.

Safer assets, such as 10-year US Treasury bonds (USTs), proved more stable to investors. Yields on 10-year USTs fell around 40 basis points in the last three months of the year.

Uncertainty over the terms of the UK withdrawal from the EU captured headlines but had limited effect on global markets.

Economic and market outlook for 2019

The economic cycle is maturing. Potential setbacks such as trade turmoil and monetary tightening could create obstacles for investors. However, we do not think they will tip the global economy into recession. The US-China trade dispute looks set to remain a concern, but a major escalation that could end the global economic expansion appears unlikely.

We do not expect the ongoing negotiations on the UK's withdrawal from the EU to exert a major influence over global markets.

Equally, we expect the world's main central banks to avoid excessive tightening of monetary policy. For the first time since the 2008 financial crisis, central bank balance sheets are likely to be smaller at the end than at the start of the year. The withdrawal of stimulus will remove a powerful force inhibiting market volatility. However, with inflation still under control, policy makers can afford to be gradual in tightening, reducing the risk that they will undermine growth or unsettle markets with accelerated rises. In the US, expectations about multiple interest rate hikes during 2019 have diminished.

We do not see signs of overvaluation in global equity markets. As of the end of 2018, global stocks traded at a discount to their 30-year average on a trailing price-to-earnings basis, reflecting the aggressive sell-off in the fourth quarter and the higher earnings achieved throughout the year.

Equity markets recovered at the start of 2019, supporting our view that the sell-off in late 2018 was excessive.

Industry trends

While our industry was heavily affected by regulatory developments over the past decade, technology is slowly emerging as the main driver of change going forward and is expected to affect the competitive landscape as well as our products and operations.

Digitalization

Technology is changing the way banks operate and we expect this to continue in step with exponential advances in computing capability, evolving customer needs and digital trends. Technology spend is no longer solely considered a means to make banks more efficient. Today, technology investment is the key to keeping banks flexible and competitive in a digitalized world and creates the opportunity to develop new business models.

We strive to deliver state-of-the-art digital tools and services to provide a better experience for clients and employees. In doing so, we are continuously improving the ability to transact, perform day-to-day tasks and add value for the firm. UBS's digital ecosystem is powered by a growing number of automated systems and processes that generate data, which in turn drive our efforts in artificial intelligence. It is this convergence of automation, artificial intelligence and strong human capital that will drive innovation and superior client experience, as well as enable business growth.

Consolidation

We expect further consolidation in the financial services industry, driven by ongoing margin pressure as well as the increasing scale advantages resulting from the fixed costs of technology and regulation. Many regions and businesses are still highly fragmented and the search for scale and cost efficiencies is expected to be a key driver for consolidation. Many banks are also seeking exposure to regions with attractive growth profiles, such as Asia and emerging markets, through local acquisitions or partnerships. Lastly, the increased focus on core capabilities or geographical footprints and the ongoing simplification of operating models to reduce operational and compliance risks will also result in further disposals of non-core businesses and assets.

New competitors

Our competitive environment is also evolving. In addition to our traditional competitors in the asset-gathering businesses, new entrants are targeting selected components of the value chain. However, we have not yet seen a fundamental unbundling of the value chain and client relationships, ultimately resulting in the disintermediation of banks by new competitors. Over the longer term, we believe the entry into the financial services industry of large platform companies could pose a significant competitive threat, given their strong client franchises and access to client data.

Regulation

The measures set out by the post-2008 regulatory reform agenda are now largely in place. While some areas, such as funding in resolution, must still be fully addressed, and implementation of certain standards, such as the Basel III capital rules, is continuing on a national level, the focus is shifting from regulation to supervision. In parallel, some regulators are considering reassessing the efficiency of the new frameworks.

In general, regulatory-driven change continues to consume substantial resources. In 2019, we expect further adjustments to the Swiss too big to fail framework, including concrete proposals to implement the finalized Basel III standard at national level. We anticipate continued work on resolution-related and derivatives reforms, and a sustained high focus on conduct and anti-money laundering.

The overall context of these developments is a backdrop of increased protectionism and new regulatory hurdles, posing challenges to the provision of cross-border financial services. Market access restrictions into the EU in particular would have a significant effect on Switzerland as a financial center including UBS. Variations in how different countries implement rules, and an increasing national focus, bring a risk of additional regulatory fragmentation across the globe, which in turn may lead to higher costs for us and new financial stability risks. However, we believe the adaptations made to our business model and proactive management of regulatory change put us in a strong position to absorb upcoming changes to the regulatory environment.

→ **Refer to the "Regulatory and legal developments" and "Capital management" sections of this report for more information**

Wealth transfer

Demographic and socioeconomic developments continue to generate shifts in wealth among age and gender groups. As a result, the client base of the wealth management industry is becoming increasingly diverse. The industry is therefore bound to adapt its services and offerings to meet the specific needs and expectations of growing client groups. We are working to defend our status as the preferred wealth manager for these clients through our active segment management strategy. Our wealth planning expertise is also supported by dedicated intergenerational wealth transfer services for all segments, such as *Great Wealth* for ultra high net worth clients. *Wealth Way* is another example that covers wealth transfer. This offering takes a holistic view of our clients' financial matters and covers needs beyond their lifetime to support them in creating a legacy.

Retirement funding

Over recent years, the pension industry has faced two key challenges: fundamental demographic shifts, such as aging populations, and lower expected returns.

Beyond structural answers to these challenges, such as the progressive shift from defined benefit to defined contribution pensions, we believe pension funds are reassessing their asset allocation approach. Indeed, many pension funds are now allocating a higher share of their portfolios to alternative investments such as private equity, hedge funds, real estate and infrastructure in a search for higher-yielding exposures.

We see this development as positive for UBS as these funds will likely need further support to define their investment strategy and target portfolio allocation. In addition, our private banking and wealth management clients are expected to need further financial and retirement planning advice, which we are able to provide holistically through our wealth planning services.

How we create value for our stakeholders

Clients

With clients at the heart of our business, we are committed to building and sustaining long-term relationships based on mutual respect, trust and integrity. Understanding our clients' needs and expectations allows us to serve their best interests and to create value for them.

Our clients and what matters most

There is no archetypal UBS client. Our clients have varying needs, but each of them expects outstanding advice and service, a wide range of choices, and an excellent client experience.

Global Wealth Management serves high net worth and ultra high net worth individuals, families, and family offices around the world and affluent clients in selected markets. We provide these clients with access to outstanding advice, service, and opportunities from around the globe delivered by experts they can trust. Global Wealth Management clients demand a bank that understands their unique needs and circumstances. A bank that values long-term relationships built on trust and dependability, and a bank that helps them maintain their lifestyles today, improve their lifestyles in the future, and improve the lives of others.

In Switzerland, Personal & Corporate Banking serves approximately 2.5 million individuals and 121,000 corporate and institutional clients, ranging from small and medium-sized companies to larger corporates and multinational companies. Personal & Corporate Banking clients look for financial advice based on their needs at each stage of their life cycle, as well as a comprehensive digital offering enabling them to bank at their convenience, wherever they are, whenever they want to. We provide tailored advice, drawing on our broad product offering in all relevant areas: basic banking services, investing, financing (including mortgages), retirement planning, cash management, trade and export finance, global custody, and company succession among others.

In Asset Management, we deliver investment products and services directly to approximately 3,000 clients around the world – including sovereign institutions, central banks, supranational corporations, pension funds, insurers and charities, as well as Global Wealth Management and its clients, wholesale intermediaries and financial institutions. Our clients seek global insights and a holistic approach to tailoring solutions. By building long-term, personalized relationships with our clients and partners, we aim to achieve a deep understanding of their needs and to earn their trust. We draw on the breadth and depth of our global offering across asset classes and our Platform Services capabilities to deliver the solutions they need. With over 900 investment professionals, our teams bring distinct investment styles and philosophies with one shared goal – to provide clients with best-in-class ideas and superior investment performance.

The Investment Bank provides corporate, institutional and wealth management clients with expert advice, financial solutions, best-in-class execution, and comprehensive access to the world's capital markets. Our model is specifically built around our clients and their needs. Corporate clients can access advisory services, debt and equity capital market solutions and bespoke financing through our Corporate Client Solutions business. Our Investor Client Services business is focused on helping institutional clients engage with local markets globally, offering equities and equity-linked products, foreign exchange, rates and credit, and is underpinned by our research offering, which gives clients an edge when it comes to understanding markets. *UBS Evidence Lab Innovations* provides clients with access to insight-ready datasets for thousands of companies – the same evidence we provide to our UBS Research analysts.

Enhancing the client experience through digitalization

We strive to personalize interactions with our clients, while streamlining and simplifying them through front-to-back digitalization.

In Global Wealth Management we provide our clients with a hybrid approach that preserves and enhances the value of human relationships. Clients expect digital tools but say personal time spent with advisors is more important than ever. This means providing technology that empowers client advisors so they spend more time with clients. And our clients want digital tools that improve their experience – high end e-banking, access to bespoke research that is tailored to their needs, and multiple ways to communicate with their client advisors.

In Personal & Corporate Banking, more than 60% of our personal banking client relationships are now completely paperless and we pioneered video onboarding in Switzerland. In addition, front-to-back digitalization enables corporate clients to create customized product bundles based on their specific needs. We also pioneered the new blockchain-based trade finance platform we.trade, together with other industry participants, which allows corporate and institutional clients to easily and safely create trade orders online and manage the entire trade process from order to payment.

In Asset Management we are investing in new tools and technologies, as well as our alternative data capabilities, to support our teams' investment decision-making processes and enhance client service. In addition, our flagship operational excellence programs are focused on building a scalable and globally integrated operating platform to better enable our teams to deliver the full breadth of our capabilities to clients around the world. We also continue to develop our comprehensive Platform Services capabilities including *UBS Partner,* our new and innovative private-label technology solution, which will enable a step change in the advisory process and services offered by our wholesale clients.

The Investment Bank strives to be the digital investment bank of the future, with innovation-led businesses that drive efficiencies and solutions. Our investments in new technologies and data science teams help us to better understand our clients' investment processes and trading needs. This allows us to deliver tailored sales and trading commentary, research, access to liquidity and prime brokerage products. We recently established the *UBS Investment Bank Innovation Lab* to help connect business teams to leverage best practice, build and test proof of concepts safely and quickly and inspire a culture of innovation. We see increasing interest from clients in financial and alternative datasets that they can incorporate into their models. In response, we set up *UBS Data Solutions* to meet those needs through a centralized robust data processing and distribution platform.

→ **Refer to "Our focus on technology" in this section for more examples on how technology is used for the benefit of our clients**

Our focus on technology

As digitalization continues to transform the banking industry, investment in technology plays a critical role in maintaining our position as the largest global wealth manager. In 2018, we spent USD 3.5 billion on technology and we expect to maintain around this level of spend through 2021. We gear our investments toward technologies to enable business growth through innovation and superior client experience, and to continue to increase efficiency across the organization.

Significant achievements in 2018 include laying the foundations for enterprise-wide Cloud adoption. We expect that leveraging the Cloud will enable us to respond more rapidly to market changes and client needs without compromising on security or efficiency. We aim to take advantage of the Cloud by improving the scalability of our systems and reducing the time to market for innovative IT products.

Additionally, we continued deploying robots (i.e., automated processes) to reduce manual work and ensure the stability of our systems. We are growing capabilities for smarter cognitive technologies including artificial intelligence (AI) to support more insightful and faster decision making.

Advanced technologies are used in our business divisions and Corporate Center to enhance the client experience by increasing front-to-back digitalization, improving product excellence and distribution, driving efficiency gains and maintaining platform security. Selected highlights are described below.

Global Wealth Management

Wealth Management Online

Wealth Management Online is a digital offering for clients with a UBS investment solution, fully integrated in UBS Digital Banking and available for desktop and mobile devices. The content is tailored to clients' underlying investment solutions. Clients benefit from up-to-date portfolio quality information and notification thereof, and direct execution of investment proposals to optimize the portfolio quality. The hybrid servicing model offers the possibility to involve the client advisor for further advice at any stage.

UBS Wealth Management USA App

Our wealth management clients in the Americas can now benefit from an innovative banking app that allows them to set personalized and tailored investment and savings goals. The app also features the option to receive portfolio diagnostics and tailored investment proposals as well as personal financial advisor support. This all serves to facilitate the achievement of the set objectives. In addition, financial advisors can leverage social media to engage with clients and prospects in a more meaningful and differentiating way.

Structured Product Investor

Structured Product Investor is a single platform with multi-location, multi-issuer and multi-asset class capabilities for customized structured products.

Wealth Management Platform

The strategic, client-centric Wealth Management Platform, which also hosts the Personal & Corporate Banking business, enables scalability and efficiency through standardization as well as flexibility for innovative offerings.

Personal & Corporate Banking

we.trade

we.trade is an open and interoperable trade finance platform based on blockchain technology that grants clients across the globe digital, transparent, efficient and cost-effective access to international trade.

Digital Business

Digital Business is an integrated corporate portal, offering Swiss small and medium-sized entities tailored banking packages consisting of up to 20 modular digital solutions covering online and mobile banking, payment transactions and liquidity and credit planning.

UBS Access App

The new UBS Access App offers a fast, convenient and secure way to access UBS e-banking without a special log-in device and to confirm online credit card transactions via a new 3-D Secure process.

Asset Management

UBS Partner

UBS Partner is a unique offering within our comprehensive Platform Services capabilities, creating a step change in analysis capability for wholesale clients. It can scan and analyze millions of portfolios every night against clients' risk profiles, instrument quality criteria and investment goals, flagging issues and providing actionable investment options to address them. Centered on each client's investment goals, UBS Partner can support wholesale clients in increasing client satisfaction levels and willingness to refer.

Investment Bank

UBS Evidence Lab Innovations

UBS Evidence Lab Innovations provides clients with access to insight-ready datasets for a large set of companies and sectors. Experts work across 45 specialized areas to harvest, cleanse, and connect billions of data items each month to surface evidence that relates to investment decisions.

UBS Investment Bank Innovation Lab

The UBS Investment Bank Innovation Lab works with businesses and operations across the bank with the ambition to create innovative and user-centric solutions for our clients. Driving a culture of innovation, the lab makes it easier for people to collaborate by connecting them to expert internal and external resources, ideas, and new technologies to test and deploy new proof of concepts faster.

Corporate Center

A3

The strategic firm-wide end user platform, A3, seeks to enable access to any UBS application, from any device, anywhere, within cross border restrictions. This private cloud-based technology increases flexibility and staff productivity.

eDiscovery

eDiscovery service capabilities include the collection, processing, review and production of electronically stored UBS data to provide better results for internal investigation and litigation activities by using machine learning. This allows UBS to substantially reduce legal spend and to meet regulators' expectations in a timely manner with reasonable effort.

Investors

We build long-term value for our investors by executing our strategy with discipline, striving for cost- and capital-efficient growth, long-term sustainable value creation and attractive shareholder returns.

Cost- and capital-efficient revenue growth

Our ambition is to grow our Group revenues faster than global real GDP. Our Global Wealth Management business is well positioned to take advantage of two secular trends: wealth creation and continued economic growth, notably in Asia, where China is opening its financial markets. Each of our businesses has initiatives to achieve revenue growth and improve operating efficiency in its area.

→ **Refer to "Industry trends" in the "Our environment" section of this report for more information on wealth creation**

While we aim to increase revenues, cost efficiency is a strategic priority for us. Similarly, capital efficiency is of utmost importance for UBS overall and for each business division. To provide further transparency and increase accountability on costs and capital consumption, we have revised our cost allocation methodology and equity attribution framework effective on 1 January 2019.

→ **Refer to the "Significant accounting and financial reporting changes" section of this report for more information**

Shareholder returns

We aim to increase our ordinary dividend per share at a mid-to-high single-digit percentage each year. We also aim to return excess capital, after accruals for ordinary dividends, most likely in the form of share repurchases. We consider our business outlook and capital plan, as well as other developments, in determining excess capital available for share repurchases.

Alignment of interests

We aim to align the interests of our employees with those of our equity and debt investors. This is reflected in our compensation philosophy and practices.

→ **Refer to "Our compensation philosophy" in the "Compensation" section of this report for more information**

Communications

Our Investor Relations function serves as the primary point of contact between UBS and the institutional investor community. Our senior management and the Investor Relations team regularly interact with investors, financial analysts and other market participants, such as credit rating agencies. Clear, transparent and relevant disclosures, together with regular and direct interactions with existing and prospective shareholders, form the basis for our communications. The Investor Relations team also relays the views of and feedback from the institutional investor community on UBS to our senior management.

The Investor Relations and Corporate Responsibility teams work together and interact with those investors focusing on sustainability topics relevant to UBS and society at large.

→ **Refer to "Corporate governance" and "Information policy" in the "Corporate governance and compensation" section of this report for more information**

→ **Refer to "Society" in this section of the report for more information on our sustainability efforts**

Employees

Our employees are crucial to our business strategy. Accordingly, our human resource (HR) strategy seeks to attract, develop and retain talented people at all levels with the diverse skills, experience and commitment to effectively advise our clients, deliver innovative solutions, manage risk, navigate evolving regulatory requirements, and drive change.

Our corporate culture

A strong culture drives sustainable success and adds value at the individual, team and corporate levels. We invest in our employees and promote measures that build engagement and a cohesive, collaborative work environment. Our strategy and culture are underpinned by our three keys to success: our *Pillars, Principles and Behaviors.* These keys are the foundation for how we manage our workforce, how we work with our stakeholders and each other, and how we make business decisions and deliver on our strategy.

→ **Refer to the contents page of this report for more information on the Pillars, Principles and Behaviors**

Since 2013, we have embedded the three keys into our culture, including all HR processes, through transformative initiatives like our firm-wide Senior Leadership Experience and, more recently, our *Group Franchise Awards (GFA)* program. The *GFA* program fosters cross-divisional collaboration and ideas for simplifying our processes, with more than 14,300 business referrals and nearly 900 simplification ideas submitted in 2018.

We measure our culture-building progress through regular employee surveys. In 2018, responses indicated that employee engagement, appreciation for our talent management practices and pride in working at UBS were at, or above, the norm for high-performing organizations.

Employer of choice

We are widely recognized as an employer of choice, as evidenced by the numerous external awards that we have received. Key to this is ensuring our employees can build rewarding careers here. Internal mobility therefore remained a priority in 2018, as it builds cross-firm connections, increases engagement and enables employees to leverage and develop their skills. We further enhanced our suite of in-house recruitment tools during the year to better match internal talent with open roles, and developed specialized training to increase line manager effectiveness.

We received nearly 847,000 applications and hired a total of 13,249 external candidates in 2018. For our graduate talent programs, we hired 467 new university graduates and 585 interns. In Switzerland, we hired 268 apprentices for business and IT roles, and 151 trainees into our bank entry programs for high school graduates. Our UK apprenticeship program hired 57 school leavers across various roles.

→ **Refer to *www.ubs.com/employerawards* for more information**

Our diverse and inclusive workplace

Our diverse workforce and inclusive culture are critical to our long-term success. We are committed to further increasing our diversity and to ensuring equal opportunities for all employees.

We are especially focused on hiring, retaining and promoting more women across the firm, with a stated aspiration to increase the representation of women in management roles to one-third.

Our award-winning *UBS Career Comeback Program,* already established in the UK, US and Switzerland, was extended to India in 2018. The program offers permanent roles to professionals wishing to return to corporate jobs after a career break and supports them with on-the-job experience, classroom learning and mentoring. To date, *Career Comeback* has helped 102 women and 2 men at senior levels to relaunch their careers.

In addition to our strategic initiatives, every year we sponsor numerous activities to promote inclusiveness. For example, this year we became a supporter of the UN Standards of Conduct for Business, a set of anti-discrimination guidelines. Additionally, our employee networks regularly host events regarding gender, culture, ethnicity, LGBTI / Pride, disability, veterans, parenting, elder care and other topics. In 2018, we sponsored 43 employee networks globally.

→ **Refer to *www.ubs.com/diversity* for more information**

Our integrated workforce strategy

Throughout the year, the firm focused on enabling higher productivity, enhancing the client experience, building critical in-house expertise and managing costs. Our integrated workforce strategy contributed to these achievements through a combination of insourcing (especially in Group Technology) and regular hiring of staff. As a result, our Business Solutions Centers (BSCs) in China, India, Poland, Switzerland and the US grew substantially.

Our BSC employee population increased by 3,115 in 2018 through hiring or insourcing, including 1,893 in India and 822 in Poland. We also expanded our BSC presence in Switzerland with the opening of a new BSC in Manno, focused on data analytics and artificial intelligence. At year-end, offshore and nearshore employees accounted for around 29% of our global Corporate Center employee population. As a result of insourcing initiatives and improved efficiency, we reduced our external staff in Corporate Center by 5,515.

Personnel by region

	As of			% change from
Full-time equivalents	31.12.18	31.12.17	31.12.16	31.12.17
Americas	21,309	20,770	20,522	3
of which: USA	*20,495*	*19,944*	*19,695*	*3*
Asia Pacific	12,119	8,959	7,539	35
Europe, Middle East and Africa	12,620	11,097	10,746	14
of which: UK	*5,782*	*5,274*	*5,206*	*10*
of which: rest of Europe	*6,670*	*5,662*	*5,373*	*18*
of which: Middle East and Africa	*168*	*161*	*167*	*5*
Switzerland	20,840	20,427	20,581	2
Total[1]	66,888	61,253	59,387	9

1 The increase in workforce in 2018 was mainly due to insourcing initiatives and was more than offset by a decrease in external staff.

Gender distribution by employee category[1]

	Officers (Director and above)		Officers (other officers)		Employees		Total	
By headcount, as of 31.12.18	Number	%	Number	%	Number	%	Number	%
Male	18,514	75	15,465	61	7,794	43	41,773	61
Female	6,078	25	10,059	39	10,428	57	26,565	39
Total	24,592	100	25,524	100	18,222	100	68,338	100

1 Calculated on the basis that a person (working full time or part time) is considered one headcount (in this table only). This accounts for the total UBS employee number of 68,338 as of 31 December 2018, which excludes staff from UBS Card Center, Wolfsberg and Hotel Seepark Thun.

Developing and retaining talent

Our business strategy and culture are advanced through education and leadership development, with our in-house *UBS University* as the one-stop shop for all learning activities at UBS. Through our suite of development programs, business skills and risk management classes, as well as lifelong learning opportunities, we seek to ensure that all employees have the skills and expertise to meet client needs and grow their careers. Our Master in Wealth Management program remains the pinnacle of development for client-facing staff in Global Wealth Management. By the end of 2018, 208 senior client advisors, desk heads and client-aligned managers had successfully completed (or were on track to complete) the two-year degree program.

In 2018, *UBS University* transformed its offering to connect employees with global trends, transform their businesses, lead in a digital world and re-skill to prepare for the future. Monthly recommended learning playlists enable employees to explore a wide variety of topics. Our permanent employees completed approximately 812,000 learning activities in 2018, including mandatory training on compliance, business and other topics. This averaged to 11.9 sessions, or 1.76 training days, per employee.

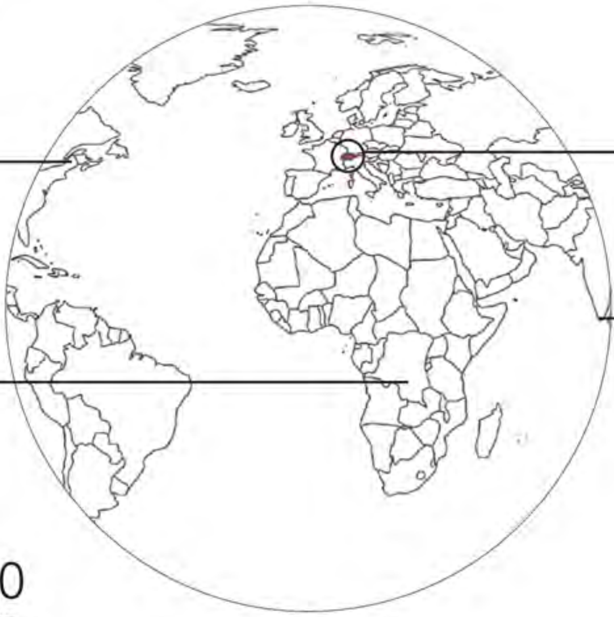
Clear expectations, challenging goals, continuous feedback and a performance-centric compensation framework promote long-term success for employees, as well as for the firm. Since we believe that how we achieve results is as important as the results themselves, our annual year-end reviews assess both performance goals and the behaviors of integrity, collaboration and challenge. Both ratings are then considered in development, reward and promotion decisions. Our firm-wide talent management and succession-planning processes, including accelerated development and internal mobility opportunities for key talent, support employee satisfaction and retention and help ensure our long-term success.

Our workforce at a glance[1]

66,888
total employees (FTE)
5,635 more than a year ago (FTE)
68,338 employees (by headcount)

20% under 30 years old,
59% between 30 and 50,
21% over 50

39%
are women
(26,565)



31%
in Americas
8,221 | 13,342

19%
in EMEA
5,124 | 7,836

32%
in Switzerland
7,954 | 13,728

18%
in APAC
5,266 | 6,867

61%
are men
(41,773)

More than 150
languages spoken

Citizens of 133
countries

50
countries

49% of employees in Switzerland have worked here 10+ years

8 is the average years of service

[1]Calculated as of 31.12.18 on a headcount basis of 68,338 internal employees only (2017: 62,558) unless specified to be on a full-time equivalent (FTE) basis, where we include proportionate numbers of part-time employees.

Society

We want to promote global economic development that is sustainable for the planet and humanity. We have embodied the overarching objective of the 17 Sustainable Development Goals (SDGs), which provide a roadmap to solve the common sustainability-related challenges of our society.

→ **Refer to the UBS World Economic Forum white paper 2019 under *www.ubs.com/wef* for more information**

As the preeminent global wealth manager to high net worth and ultra high net work clients, we aspire to take a leading role in shaping the future. Our firm is in a powerful position to contribute toward achieving the SDGs by integrating sustainability in our mainstream offerings, through new and innovative financial products with a positive effect on the environment and society, and by advising our clients on their philanthropic works.

We contribute to the setting of standards and collaborate in and beyond our industry. We do so through the management of environmental and social risks, the management of our environmental footprint and our comprehensive sustainability disclosures. Information on all of these efforts and commitments is provided in the Global Reporting Initiative (GRI) Document on our website. For all references to the GRI Document 2018, refer to "Annual reporting" at *www.ubs.com/investors*. The content of the GRI Document has been prepared in accordance with the GRI Standards ("comprehensive" option) and with the German rules implementing the EU directive on disclosure of non-financial and diversity information (2014/95/EU). Our reporting on sustainability has been reviewed by Ernst & Young Ltd against the GRI Standards providing limited assurance.

Code of Conduct and Ethics

In our Code of Conduct and Ethics (Code), the Board of Directors and the Group Executive Board set out the principles and practices that define our ethical standards and the way we do business. These principles apply to all aspects of our business.

All employees must confirm annually that they have read and will adhere to the Code and other key policies, supporting a culture where ethical and responsible behavior is part of our everyday operations.

→ **Refer to the Code of Conduct and Ethics of UBS at *www.ubs.com/code* for more information**

Strategy

UBS in society

UBS in society is a dedicated organization within the firm, focused on maximizing our positive effect and minimizing any negative effects UBS has on society and the environment. It covers topics such as sustainable and impact investing, client philanthropy, environmental and human rights policies governing client and supplier relationships, and our community investment. Through *UBS in society,* UBS is driving change that matters by using our firm's expertise to bring about sustainable performance.

The activities driven by *UBS in society* are overseen, at the highest level of our firm, by our Board of Directors' Corporate Culture and Responsibility Committee (CCRC). The Group CEO proposes the *UBS in society* strategy and annual objectives to the CCRC, supervises their execution and informs the Group Executive Board and CCRC, as appropriate. Reporting to the Group CEO, the Head *UBS in society* is UBS's senior-level representative for sustainability issues.

→ **Refer to "Board of Directors" in the "Corporate governance" section of this report for more information on the CCRC**

→ **Refer to the GRI Document 2018 for more information on UBS's sustainability governance and UBS in society**

Supporting clients in their sustainability efforts

At the heart of our approach to sustainability are both our clients and society at large. We support clients in their sustainability efforts through thought leadership, innovation and partnerships, and strive to incorporate environmental, social and governance (ESG) impacts into the products and services we provide, serving society through them.

We know that ESG topics are increasingly important to society and our clients alike. Our research found that 58% of high net worth investors expected sustainable investing to become the standard within 10 years, while 82% believed SI returns would match or surpass those of traditional investments.

Moreover, we are among the 2,200 signatories of the Principles for Responsible Investment (PRI), the world's leading proponent of responsible investment. The PRI works to support its signatories in incorporating ESG factors into their investment and ownership decisions.

Sustainable investing

Sustainable investing (SI) is an approach that seeks to incorporate ESG considerations into investment decisions. SI strategies seek to achieve one or more of the following objectives: achieve a positive environmental or social impact, align investments with an investor's personal environmental or social values or improve portfolio risk and return characteristics. We aim to be a leader in SI for private and institutional clients, measurable by the size of SI assets under management (AuM).

As of 31 December 2018, total SI assets represented USD 1,110 billion (2017: USD 1,133 billion), or 35.8% (2017: 34.7%), of our total invested assets. Our core SI assets increased to USD 313 billion (2017: USD 182 billion), representing 10.1% (2017: 5.6%) of our total invested assets. Core SI products involve a strict and diligent asset selection process through either exclusions (of companies / sectors from the portfolio where the companies are not aligned to an investor's values) or positive selections (such as best-in-class, thematic or ESG integration and impact investing).

→ **Refer to the "Our businesses" section of this report for more information on how individual business divisions incorporate sustainability into their approach**

→ **Refer to the "Sustainable investments" table in the "Our clients" section of the GRI Document 2018 for more information on SI**

Philanthropy – partnering with clients for good

We believe our clients can make a meaningful, and measurable, difference for their chosen causes with advice from our philanthropy experts and programs carefully selected through our UBS Optimus Foundation. We increase social impact by combining our expertise with capital and networks. Together with the UBS Optimus Foundation, our experts offer clients unique access to social and financial innovation and philanthropic advice, as well as tailored program design, co-funding and co-development opportunities.

The UBS Optimus Foundation is an award-winning grant-making foundation that helps our clients use their wealth to drive positive and sustainable social change for children. The Foundation connects clients with inspiring entrepreneurs, new technologies and proven models that make a measureable difference to the world's most vulnerable children. In 2018, the Foundation's work helped improve the well-being of 2.8 million children globally.

→ **Refer to *www.ubs.com/optimus* for more information**

Climate action

We believe the transition to a low-carbon economy is vital and we are focused on supporting our clients in preparing for success in an increasingly carbon-constrained world. We implement our climate strategy in four different ways:

- by seeking to protect our assets from climate change risks;
- by supporting our clients' efforts to assess, manage and protect themselves from climate-related risks;
- by mobilizing private and institutional capital toward investments that facilitate climate change mitigation and adaptation, and by supporting the transition to a low-carbon economy as a corporate advisor and / or with our lending capacity; and
- by continuing to reduce our greenhouse gas emissions and increase the firm's share in renewable energy.

We regularly report on the implementation of our climate strategy and follow the recommendations on climate-related disclosures provided by the Financial Stability Board's Task Force on Climate-related Financial Disclosures (TCFD).

→ **Refer to "Our climate strategy – taking action to support a low-carbon economy" in the "Our Governance and principles" section of the GRI Document 2018 for our full climate-related disclosures**

Environmental and social risk

We consider environmental and social risk (ESR) management critical to our sustainability strategy. Our comprehensive ESR framework governs client and supplier relationships and applies firm-wide to all activities, meets the highest industry standards (as recognized by ESG ratings) and is integrated in management practices and control principles.

We have set ESR standards pertaining to environmental and human rights topics in product development, investments, financing and supply chain management. We have identified certain controversial activities that we will not engage in at all, or only under stringent criteria. As part of this process, we engage with clients and suppliers to better understand their processes and policies, and to explore how any environmental and social risks may be mitigated.

→ **Refer to the GRI Document 2018 for a full description of our ESR management and framework**

Community investment

We recognize that our long-term success depends on the health and prosperity of the communities of which we are a part. We seek to redress disadvantages through long-term investments in education and entrepreneurship. We provide strategic financial commitments and targeted employee volunteering to drive change.

→ **Refer to the "Our communities" section of the GRI Document 2018 for more information**

Aims and progress

We work with a long-term focus on providing appropriate returns to all of our stakeholders in a responsible manner. To underline our commitment, we provide transparent targets and report on progress made against them wherever possible. In 2018, we made good progress in delivering against the Group aims.

We aim to be	Our progress
A leader in sustainable investing (SI) for private and institutional clients as demonstrated by the size of UBS's SI AuM, for which UBS has: – set the ambition to double the penetration of core SI assets by the end of 2020, from 5.6% (USD 182 billion) of our total invested assets at the end of 2017[1]; and – set a target of directing USD 5 billion of client assets into new impact investments for the SDGs by the end of 2021.	– The penetration of core SI assets increased to 10.1% (USD 313 billion) of our total invested assets in 2018, a 72% increase over 2017 (USD 182 billion).[1, 2] – USD 1.9 billion of client assets were directed into SDG-related impact investments[3].
A recognized innovator and thought leader in philanthropy as shown by the engagement with our key stakeholders and our work to support positive social impact, for which UBS aims to: – achieve 40% of employees volunteering by the end of 2020, of which 40% of volunteer hours will be skills based; and – pioneer new ways to bring substantial funding to the SDGs and substantially increase donations to the UBS Optimus Foundation to improve the well-being of vulnerable children.	– 36% of our global workforce volunteered and 45% of the volunteer hours were skills based.[4] – UBS Optimus Foundation: USD 66.6 million in donations raised; USD 81.8 million grants approved; well-being of 2.8 million children globally improved; three Development Impact Bonds in education and health care launched.
An industry leader in sustainability by retaining favorable positions in key environmental, social and governance (ESG) ratings and driving optimization in areas that are important to ESG investors.	– UBS maintained its industry leadership in the Dow Jones Sustainability Indices (DJSI). – MSCI ESG Research upgraded UBS to an AA rating. – Sustainalytics ranked UBS an industry leader. – CDP awarded UBS a position on the Climate A List.

1 Core SI are SI products that involve a strict and diligent asset selection process through either exclusions (of companies/sectors from the portfolio where the companies are not aligned to an investor's values) or positive selections (such as best-in-class, thematic or ESG integration and impact investing). Refer to the "Sustainable investments" table in the "Our clients" section of the GRI Document 2018. 2 The increase in core SI assets was mainly driven by the ESG integration strategy of Asset Management. Refer to the "Sustainable investments" table in the "Our clients" section of the GRI Document 2018. 3 Strategies, where the investment has the intention to generate measurable environmental and social impact alongside a financial return. 4 Refer to the "Our communities" section in the GRI Document 2018.

Regulation and supervision

As a financial services provider based in Switzerland, UBS is subject to the consolidated supervision of the Swiss Financial Market Supervisory Authority (FINMA). Our entities are also regulated and supervised by the authorities in each of the countries where they conduct business. Through UBS AG and UBS Switzerland AG, which are licensed as banks in Switzerland, the Group may engage in a full range of financial services activities in Switzerland and abroad, including personal banking, commercial banking, investment banking and asset management.

As a global systemically important bank (G-SIB), as designated by the Financial Stability Board, and a systemically relevant bank (SRB) in Switzerland, we are subject to stricter regulatory requirements and supervision than most other Swiss banks. The significant changes to financial regulation after the financial crisis in 2008 have had a material effect on how we conduct our business and have required significant investment.

→ **Refer to the "Our evolution" section of this report for more information**

→ **Refer to the "Regulatory and legal developments" and "Risk factors" sections of this report for more information**

Regulation and supervision in Switzerland

Supervision

UBS Group AG and its subsidiaries are subject to consolidated supervision by FINMA under the Swiss Federal Law on Banks and Savings Banks (Swiss Banking Act) and related ordinances, which impose, among other requirements, minimum standards for capital, liquidity, risk concentration and internal organization. FINMA fulfills its statutory supervisory responsibilities through licensing, regulation, monitoring and enforcement. It is responsible for prudential supervision and mandates audit firms to perform regulatory audits and other supervisory tasks on its behalf.

Capital adequacy and liquidity regulation

As an internationally active Swiss SRB, we are subject to capital and total loss-absorbing capacity requirements, which are based on both risk-weighted assets and leverage ratio denominator and are among the most stringent in the world. Furthermore, we are subject to shorter-term liquidity coverage ratio rules, and following the introduction of the net stable funding ratio in Switzerland, we will be subject to longer-term minimum funding requirements.

→ **Refer to the "Capital management" section of this report for more information on the Swiss SRB framework and the Swiss too big to fail requirements**

→ **Refer to "Assets and liquidity management" in the "Treasury management" section of this report for more information on liquidity coverage ratio requirements**

Resolution planning and resolvability

The Swiss Banking Act and related ordinances provide FINMA with intervention powers to resolve a failing financial institution, including UBS Group AG, UBS AG and UBS Switzerland AG. These measures may be triggered when thresholds are breached and allow FINMA considerable discretion in determining whether, when or in what manner to exercise such powers. In case of impending insolvency, FINMA may impose more onerous requirements on UBS, including limiting payment of dividends and interest, as well as measures to alter our legal structure (e.g., to separate lines of business into dedicated entities, with limits on our intra-Group funding and intra-Group guarantees) or to reduce business risk in some manner. The Swiss Banking Act allows FINMA to extinguish or convert to common equity the liabilities of the Group in connection with its resolution.

Swiss too big to fail provisions require Swiss SRBs to establish an emergency plan that shows how Swiss systemically important functions can be maintained in a crisis. In response to these requirements in Switzerland, and to similar requirements in other jurisdictions, UBS – in close cooperation with its main resolution authorities under the lead of FINMA – has developed recovery plans and resolution strategies to manage a crisis. UBS has also developed plans for restructuring or winding down businesses if the firm could not be stabilized by other means. In recent years, we have invested significantly in making UBS simpler from a structural, financial and operational perspective.

Regulation and supervision outside Switzerland

Regulation and supervision in the US

In the US, UBS is subject to regulation and supervision by the Board of Governors of the Federal Reserve System (Federal Reserve Board) under a number of laws. UBS Group AG and UBS AG are both subject to the Bank Holding Company Act, under which the Federal Reserve Board has supervisory authority over the US operations of both UBS Group AG and UBS AG. UBS's US operations are also subject to oversight by the Federal Reserve Board's Large Institution Supervision Coordinating Committee.

In addition to being a financial holding company under the Bank Holding Company Act, UBS AG maintains several branches and representative offices in the US, which are authorized and supervised by the Office of the Comptroller of the Currency. UBS AG is registered as a swap dealer with the Commodity Futures Trading Commission (CFTC) and we expect to register as a security-based swap dealer with the Securities and Exchange Commission (SEC) when such registration becomes required.

UBS Americas Holding LLC – the intermediate holding company for our non-branch operations in the US, as required under the Dodd-Frank Act – is subject to requirements established by the Federal Reserve Board related to risk-based capital, liquidity, the Comprehensive Capital Analysis and Review stress testing and capital planning process, resolution planning and governance.

UBS Bank USA, a Federal Deposit Insurance Corporation-insured depository institution subsidiary, is licensed and regulated by state regulators in Utah.

UBS Financial Services Inc., UBS Securities LLC and several other US subsidiaries are subject to regulation by a number of different government agencies and self-regulatory organizations, including the SEC, the Financial Industry Regulatory Authority, the CFTC, the Municipal Securities Rulemaking Board and national securities exchanges, depending on the nature of their business.

Regulation and supervision in the UK

Our regulated operations in the UK are mainly subject to the authority of the Prudential Regulation Authority (PRA), which is part of the Bank of England, and the Financial Conduct Authority (FCA). We are also subject to the rules of the London Stock Exchange and other securities and commodities exchanges of which UBS AG is a member.

UBS AG and UBS Europe SE have UK-registered branches in London. UBS AG London Branch serves as a global booking center for our Investment Bank. In addition, our regulated subsidiaries in the UK that provide asset management services are authorized and regulated mainly by the FCA, with one entity being also subject to the authority of the PRA.

Regulation and supervision in Germany

With the transfer and merger of certain UBS Limited businesses into UBS's German-incorporated subsidiary UBS Europe SE, headquartered in Frankfurt, Germany, supervision of UBS Europe SE was transferred from the German Federal Financial Supervisory Authority (BaFin) to the European Central Bank. The entity is subject to EU and German laws and regulation. UBS Europe SE has branches in Austria, Denmark, France, Italy, Luxembourg, the Netherlands, Poland, Spain, Sweden, Switzerland, and the UK, and is subject to conduct supervision by authorities in all these countries.

Anti-money laundering and anti-corruption

Combating money laundering and terrorist financing has been a major focus of government policies relating to financial institutions in recent years. The US Bank Secrecy Act and other laws and regulations applicable to UBS require the maintenance of effective policies, procedures and controls to detect, prevent and report money laundering and terrorist financing, and to verify the identity of our clients. Failure to maintain and implement adequate programs to prevent money laundering and terrorist financing could result in significant legal and reputation risk.

In addition, we are subject to laws and regulations, in jurisdictions in which we operate, prohibiting corrupt or illegal payments to government officials and others, including the US Foreign Corrupt Practices Act and the UK Bribery Act. We maintain policies, procedures and internal controls intended to comply with these regulations.

Data protection

We are subject to regulations concerning the use and protection of customer, employee, and other personal and confidential information. This includes provisions under Swiss law, the EU General Data Protection Regulation (GDPR) – which provides significant new data protection – and laws of other jurisdictions.

If implemented as proposed, we will become subject to the revised Swiss data protection law (Swiss Federal Act on Data Protection), which seeks to improve data protection for individuals by enhancing the transparency and accountability rules for companies processing data, among other measures. This would align Swiss data regulation with revised European legislation, including the GDPR, and is intended to ensure the equivalence necessary for the continued cross-border transmission of data. We expect the revised law to take effect in 2019.

→ **Refer to the "Risk factors" section of this report for more information on regulatory change**

Regulatory and legal developments

Switzerland

TBTF framework in Switzerland

In November 2018, the Swiss Federal Council adopted a revision of the Capital Adequacy Ordinance (CAO), which features the following elements: (i) gone concern capital requirements for the three Swiss domestic systemically important banks were set at 40% of the going concern capital requirements already in force; (ii) a risk-weighting approach was introduced for the treatment of systemically important banks' participations in their subsidiaries; and (iii) group entities that provide services necessary for the continuation of a bank's business processes, including UBS Business Solutions AG, will now be subject to consolidated supervision by the Swiss Financial Market Supervisory Authority (FINMA).

The Federal Council is expected to initiate a separate consultation in the first half of 2019 regarding potential revisions to the gone concern capital requirements at legal entity level for the two Swiss global systemically important banks, including UBS.

Separately, in December 2018, the Swiss Parliament approved changes to the tax treatment of too big to fail (TBTF) instruments issued by the holding companies of Swiss systemically important banks. The new law aims to eliminate the additional tax burden imposed on systemically important banks as a result of required issuances of TBTF instruments at the holding company level. In March 2019, the Federal Council determined that the rule would enter into force retroactively as of 1 January 2019. Going forward, we will issue new loss-absorbing additional tier 1 capital instruments and total loss-absorbing capacity (TLAC)-eligible senior unsecured debt directly out of UBS Group AG. We also expect UBS Group AG to assume outstanding capital and debt instruments that were previously issued by UBS Group Funding (Switzerland) AG as a means of managing the aforementioned tax burden.

Consultation on ordinance specifying FinSA

In October 2018, the Swiss government initiated a consultation on, among other items, the proposed Financial Services Ordinance (FinSO), which would specify the details of the Financial Services Act (FinSA). The act will come into force on 1 January 2020, as would the ordinances.

FinSO, together with FinSA and the Financial Institutions Act (FinIA), would introduce new investor protection rules, including significantly enhanced information and documentation requirements. We have begun preparing for implementation of the new rules.

EU equivalence for Swiss trading venues

In December 2018, the European Commission (EC) extended its equivalence decision for Swiss trading venues by six months, until the end of June 2019. The EC has stated that any further extension of its equivalence decision will be contingent upon the Federal Council's endorsement of a framework agreement.

If the EC does not extend recognition of Switzerland's trading venues beyond June 2019, the Swiss contingency measure, which was adopted by the Swiss Federal Council in November 2018, would come into effect. The measure would introduce a new Swiss standard recognizing non-EU foreign trading venues that admit Swiss shares to trading, but disallowing trading in Swiss shares on EU trading venues. We would then be required to significantly alter our trading arrangements, for which UBS has taken the appropriate preparations. We expect that EU trading venues would comply with the Swiss measure, resulting in a shift of liquidity in shares issued in Switzerland from EU trading venues to Swiss trading venues.

Automatic exchange of information

In September 2018, as a consequence of the automatic exchange of information (AEI) introduced in Switzerland as of 1 January 2017, financial data was exchanged for the first time with the first 36 partner states to have signed an agreement for information exchange. On 1 January 2018, an additional 41 countries were added to Switzerland's network of AEI partner states. Financial data is expected to be exchanged with them for the first time in 2019. Before the first transmission, these jurisdictions will be subject to a mandatory review by the Federal Council to ensure compliance with data exchange requirements. On 1 January 2019, the Swiss Parliament approved the introduction of the AEI with another 89 partner states, out of a total of 107 states that have committed to implementing the AEI. In December 2018, the Swiss government launched a consultation on AEI implementation with the remaining 18 partner states.

We have experienced outflows of cross-border client assets in connection with the AEI, as well as with other changes in tax regimes or their enforcement.

Adoption of Swiss corporate tax reform

In September 2018, the Swiss Parliament adopted corporate tax reform measures, previously known as Tax Proposal 17, that abolish preferential corporate tax treatment for holding companies and introduce a series of tax measures aligned to the Organisation for Economic Co-operation and Development (OECD) standards to maintain Switzerland's competitiveness as a business location. The measures include an optional relief on capital tax that compensates for the proposed elimination of the current preferential holding company capital tax rate. In addition, the cantonal share of direct federal tax revenue would increase, giving the cantons leeway to reduce their cantonal corporate income tax rate. The popular vote will take place on 19 May 2019 and, if the vote is successful, the reform will enter into force on 1 January 2020. The changes would increase our tax liability in Switzerland by a modest amount, which we expect to be largely offset by the changes in cantonal tax rates, if enacted.

Revision of AML regulation in Switzerland

In June 2018, the Swiss Federal Council initiated a consultation on amendments to the Anti-Money Laundering Act, aiming to implement the recommendations from the Financial Action Task Force's Mutual Evaluation Report of Switzerland. The consultation proposes changes to enhance due diligence obligations for certain services, beneficial owner verification, and monitoring and reporting of suspicious activities.

Implementation of these amendments may require changes to our client onboarding and ongoing compliance processes and may lead to increased costs. The precise effect on UBS depends on the final law, which is subject to parliamentary debate.

Developments related to cyber resilience in the financial system

In April 2018, the Swiss Federal Council adopted the national strategy for Switzerland's protection against cyber risks for 2018-2022. The financial sector is deemed a critical infrastructure and will be required to implement measures to strengthen its resilience in terms of cybersecurity and further enhance its cooperation with relevant public-sector bodies as a result of the national strategy.

Also in April 2018, the European Central Bank (ECB) consulted on its cyber resilience oversight expectations for financial market infrastructures (FMIs) and banks, based on global guidance by the Committee on Payments and Market Infrastructures and the International Organization of Securities Commissions, aiming to address fragmentation of approaches, but stop short of imposing a single set of standards. In December 2018, the ECB finalized the FMI cyber resilience oversight expectations, thus providing FMIs with detailed steps on how to operationalize the guidance and reflecting the feedback from the consultation, in particular on the need for harmonization across different jurisdictions and among regulators to reduce the current fragmentation.

In November 2018, the Financial Stability Board (FSB) finalized its Cyber Lexicon, which comprises a set of approximately 50 core terms related to cybersecurity and cyber resilience in the financial sector. The lexicon is intended to support the work of the FSB, standard-setting bodies, authorities and private-sector participants.

In addition, in July 2018, the UK Prudential Regulation Authority (PRA) and Financial Conduct Authority (FCA) published a joint discussion paper on an approach to improve the operational resilience of FMIs. Among other things, the paper envisages that boards and senior management can achieve better standards of operational resilience through increased focus on setting, monitoring and testing specific impact tolerances for key business services. Separately, the Basel Committee on Banking Supervision (BCBS) confirmed in its June 2018 update on the 2018–2019 work program that cyber risk and operational resilience remain priorities.

International

NSFR implementation

In November 2018, the Swiss Federal Council announced that it would consider finalization of the net stable funding ratio (NSFR) requirement at the end of 2019. The NSFR requirement, as originally proposed in 2017, could result in a significant increase in long-term funding requirements on a legal entity level.

In the EU, the political agreement on the Risk Reduction Measures package implies implementation of the NSFR in the first half of 2021. This is expected to apply at both consolidated and legal entity level, with the possibility for cross-border waivers at the legal entity level. There will be a four-year transitional period during which certain derivatives, repurchase and reverse repurchase agreements will receive lower required stable funding factors. UBS's EU entities are expected to be within the scope of the NSFR requirements, although at Group consolidated level UBS will be subject to the Swiss NSFR requirements, once implemented.

In the United States, the US Department of Treasury in its June 2017 Core Principles report recommended delaying the implementation of the NSFR until it can be appropriately calibrated and assessed. While the proposal has been outstanding for over two years, representatives of the US banking agencies have not indicated how this will be achieved, though comments provided earlier in 2018 indicated that the proposal was near finalization. While recent tailoring of prudential standards has indicated which US bank holding companies would be subject to the final rule, including a modified approach, it has not been clarified for US-based intermediate holding companies of foreign banks. Any difference between the US implementation and that applied by other jurisdictions could present competitive challenges for non-US banking organizations.

→ **Refer to "Liabilities and funding management" in the "Treasury management" section of this report for more information on the NSFR**

Adjustments to the market risk framework

In January 2019, the Basel Committee published final revisions of the market risk framework, which followed its fundamental review of the trading book and will serve as the Pillar 1 minimum capital requirement as of 1 January 2022. The revisions include adjustments to the risk sensitivity of the standardized approach and clarifications on the scope of application, amendments to the risk sensitivity of the standardized approach and to the internal models approach, in particular to the profit and loss attribution test and the non-modelable risk factors. We are currently assessing any potential effect on UBS.

Pillar 3 disclosure requirements revised

In December 2018, the BCBS published its updated Pillar 3 disclosure requirements, completing revisions to the disclosure framework started earlier. In particular, the revision reflects the final Basel III standards issued in December 2017. In addition, the updated framework sets out new disclosure requirements on asset encumbrance and, if required by national supervisors at the jurisdictional level, on capital distribution constraints.

The implementation deadline for the disclosure requirements related to Basel III is 1 January 2022. The effective date for the disclosure requirements for asset encumbrance, capital distribution constraints and the prudential treatment of problem assets is the end of 2020.

Basel Committee developments on the leverage ratio

The BCBS consulted on a targeted and limited revision of the leverage ratio's treatment of client-cleared derivatives, outlining three options, two of which would recognize initial margin offset and could lead to a reduction of the Group leverage ratio denominator compared with Basel III requirements. The BCBS is also consulting on additional leverage ratio disclosure requirements to address leverage ratio window-dressing concerns, with proposed implementation no later than 1 January 2022.

EU Risk Reduction Measures package

The EU institutions reached political agreement on the Risk Reduction Measure legislative package, which will incorporate a number of Basel III reforms as well as the FSB TLAC standard into EU law. The agreement remains subject to final technical adjustments.

The package includes an internal TLAC requirement calibrated at 90% of the full Pillar 1 level for material subsidiaries of non-EU global systemically important banks. UBS Europe SE is likely to fall within this definition and is therefore expected to attract an internal TLAC requirement.

The measures also include a requirement for third-country banking groups with more than EUR 40 billion of assets to establish an intermediate EU parent undertaking (IPU). This will be subject to a three-year implementation period. We therefore expect implementation to be required by the first half of 2024. UBS expects to be within the scope of this requirement and to implement the necessary measures to comply with it.

The European Commission (EC) is expected to introduce new legislation by mid-2020 to turn these reporting requirements into binding capital requirements following finalization of the market risk standard. We therefore expect the EU to introduce binding capital requirements later than the effective date of the revised Basel III standards.

Finally, the measures introduce a new two-business-day pre-resolution moratorium tool, in addition to the existing tool established in the EU Bank Recovery and Resolution Directive. However, the rules as proposed will not permit the two tools to be used in combination, meaning the maximum length of a stay will remain two business days. While a pre-resolution tool diverges from international standards, the retention of the two-business-day maximum limits the effect of this change.

The legislative package is expected to receive final approval in the second quarter of 2019, with the majority of the measures being phased in from the first half of 2021.

Developments related to EU cross-border business

We expect finalization of the EU Investment Firm Review (IFR) during the first half of 2019. In addition to amending EU prudential rules for investment firms, the IFR is expected to update the Markets in Financial Instruments Directive II (MiFID II) equivalence framework. The final rules, once agreed, are likely to introduce further reporting obligations for third-country headquartered firms such as UBS on services provided within the EU alongside a more granular focus on the equivalence of third-country rules by EU regulators. Depending on final legislative discussions, it is possible that further restrictions on cross-border market access may be introduced. We are monitoring these developments closely to determine potential effects on our business activities.

We also expect finalization of revisions to the European Market Infrastructure Regulation in the first half of 2019, which would allow the EU to derecognize systemic third-country central clearing counterparties (CCPs) under certain conditions. Our EU-based entities, principally UBS Europe SE, can only hold exposures against those third-country CCPs that are recognized by the EU. While the EU is putting in place arrangements to ensure that, in the event of a no-deal Brexit, EU firms can continue to access UK CCPs for one year, we have developed contingency plans to ensure continuity of service for our EU clients should these arrangements lapse after 12 months.

UK withdrawal from the EU

We continue to prepare for the UK withdrawal from the EU in the expectation that the UK will leave the EU on 29 March 2019. Our plans are intended to ensure that we can continue to serve our clients in any scenario (including a scenario in which the UK leaves the EU without a binding withdrawal agreement).

As the effective date of the UK's withdrawal approaches, and given the political challenges of the UK ratification process, it appears increasingly likely that any transition arrangements may be significantly limited in scope, since the withdrawal agreement may only be agreed close to the exit date, if at all. Equally, it remains possible that the exit date may change.

On 1 March 2019, the previously announced combined UK business transfer and cross-border merger of UBS Limited into UBS Europe SE took place. Former clients and other counterparties of UBS Limited who can be serviced by UBS AG's London Branch were migrated to UBS AG's London Branch prior to the merger. As a result of this action, we expect no material effect on our ability to serve our clients as a result of the UK's withdrawal from the EU.

The EC has adopted an equivalence decision that permits the European Securities and Markets Authority (ESMA) to recognize UK-authorized CCPs such that they may continue to provide clearing services in the EU for one year in a no-deal scenario, effective from 30 March 2019. ESMA has announced that it aims to adopt the recognition decisions ahead of 29 March 2019. Once in place, these decisions would allow us to maintain derivatives exposures to UK CCPs in UBS Europe SE after the UK's withdrawal from the EU.

Developments related to the transition away from IBOR

The Swiss National Working Group on Swiss Franc Reference Rates (NWG) suggested a fallback clause (defining how the client interest rate is calculated under Swiss law in case the London Interbank Offered Rate (LIBOR) is discontinued permanently), to be used in retail and corporate loans. As of 1 November 2018, all of our new three-year LIBOR mortgages include a fallback clause. Regarding term rate, the Swiss NWG recommends using a compounded Swiss average rate overnight (SARON), wherever possible.

In December 2018, FINMA issued guidance on risks related to a potential replacement of the interbank offered rates (IBORs), outlining legal and valuation risks as well as risks related to operational readiness for supervised institutions.

In response to a request from UK regulators PRA and FCA in September 2018, we submitted a board-approved summary of our assessment of key risks relating to IBOR discontinuation and details of actions to mitigate those risks.

We have a substantial number of contracts linked to IBORs. The new risk-free alternative reference rates do not currently provide a term structure and will therefore require a change in the contractual terms of products currently indexed on terms other than overnight. We have established a cross-divisional, cross-regional governance structure and change program to address the scale and complexity of the transition.

EU Sustainable Finance Action Plan

In March 2018, the EC launched a Sustainable Finance Action Plan as the basis for a "greener" financial system in the form of 10 action points.

In May 2018, the EC adopted the first set of measures implementing several key points announced in its action plan. This included a proposal for a taxonomy on sustainable finance, which introduces disclosure obligations on how institutional investors and asset managers integrate environmental, social and governance (ESG) factors in their risk processes, and a proposal to create a new category of benchmarks comprising low carbon and positive carbon impact benchmarks, which would provide investors with better information on the carbon footprint of their investments. Other initiatives include seeking feedback on inclusions of ESG considerations into the advice that investment firms and insurance distributors offer to individual clients.

We are committed to creating long-term positive effects for our clients, employees, investors and society. In 2015, we established a cross-divisional organization, *UBS in society*, to help drive capital toward investments that support the achievement of the Sustainable Development Goals and the transition to a low-carbon economy.

→ **Refer to "Society" in the "How we create value for our stakeholders" section of this report for more information on UBS in society**

USA

Proposed BEAT regulations issued

In December 2018, the US Department of Treasury issued proposed regulations in connection with the base erosion and anti-abuse tax (BEAT), which was introduced into law as part of the Tax Cuts and Jobs Act in December 2017. BEAT is calculated on the basis of modified taxable income that includes an add back of otherwise tax-deductible payments made by a US taxpayer to non-US-related parties. BEAT applies in a given year to the extent that it is higher than the regular federal corporate tax for that same year. The proposed regulations clarify that payments made by a US entity to a non-US-related party are not subject to BEAT, provided the income from such payments is either taxable in the hands of the non-US-related party as US effectively connected income or the payment relates to the US minimum mandatory amount of TLAC instruments. Consistent with our previous guidance, and taking the proposed regulations into account, we do not expect to incur material BEAT expenses for the foreseeable future.

US Fed on tailoring of enhanced prudential standards

With the passage of the Economic Growth, Regulatory Relief and Consumer Protection Act (EGRRCPA) in May 2018, the US banking agencies were required to implement a series of reforms relative to Section 165 of the Dodd-Frank Act that most notably dealt with resolution planning and enhanced prudential standards. While EGRRCPA was targeted at US bank holding companies and their subsidiary banks, the US regulators have begun efforts that may extend similar reforms to foreign banks' intermediate holding companies operating in the US. Of these reforms, the tailoring of enhanced prudential standards is the more important aspect. Such tailoring is expected to better align regulatory requirements such as capital and liquidity risk management and stress testing processes with the risk profile of our US-based activities, and would permit a more efficient allocation of capital and funding resources to our US operations.

Proposal to introduce stress capital buffer

In April 2018, the Federal Reserve Board issued a proposal to introduce a bank-specific stress capital buffer (SCB), which would replace the existing capital conservation buffer of 2.5% applicable to firms subject to the Comprehensive Capital Analysis and Review (CCAR) and would be applied to a firm's common equity tier 1 (CET1) and tier 1 leverage ratios based on the higher of 2.5% or the difference between the starting and minimum projected capital ratio levels over the nine-quarter projection period using the Federal Reserve Board's severely adverse scenario. Additionally, the Federal Reserve Board would no longer separately make quantitative objections to a covered firm's capital plans. While Federal Reserve Board principals have publicly expressed views that certain elements of the proposal would be delayed, the Federal Reserve Board has not re-issued a formal communication expressing such. Absent any further clarification on the proposal and planned tailoring of prudential standards for foreign banks, we expect UBS Americas Holding LLC, our US intermediate holding company, to be subject to the SCB and to remain a covered firm under the Federal Reserve Board's CCAR program.

Duties to customers in the US

In April 2018, the US Securities and Exchange Commission (SEC) proposed a new regulation and interpretation intended to enhance and clarify the duties of brokers and investment advisors to retail customers. The proposals would require broker-dealers and investment advisors to provide a new relationship summary to customers describing the relationship with the customers, the services offered, standards of conduct, fees and costs, conflicts of interest and disciplinary information. The new regulation would apply to broker-dealers and would require they act in a customer's best interest when making an investment or investment strategy recommendation to a retail investor. The proposed interpretation clarifies certain obligations of investment advisors relating to acting in the best interest of clients, obtaining best execution of transactions, providing ongoing advice and monitoring, and disclosing and mitigating conflicts of interest. The proposed requirements, if adopted, would apply to a large portion of Global Wealth Management's businesses in the US.

The proposals overlap with the US Department of Labor's (DOL) fiduciary rule, which would have applied to retirement accounts, and would have been phased in through 2019. The DOL fiduciary rule was invalidated by a US court of appeals in March 2018.

Single-counterparty credit limits

In June 2018, the Federal Reserve Board finalized the single-counterparty credit limit (SCCL) rule to mitigate the concentrations of risk between large banking organizations and their counterparties from undermining financial stability. The rule will become effective in 2020. Under the rule, foreign banks with US banking operations and USD 250 billion or more in total global assets would be subject to the SCCL framework relative to their combined US operations and their intermediate holding companies (IHC) greater than USD 50 billion. With respect to UBS's combined US operations, the rule allows for compliance with the SCCL rule with respect to its combined US operations by certifying to the Federal Reserve Board that it complies with a comparable home country regime, which for UBS would be the FINMA Circular "Risk diversification – banks," which entered into force on 1 January 2019. For its IHC, UBS would be subject to a limit of aggregate net credit exposure to a counterparty of 25% of the IHC's total regulatory capital plus the balance of its loan loss reserves not included in tier 2 capital. The IHC currently does not have any counterparty exposures that would exceed the required threshold.

Risk factors

Certain risks, including those described below, may affect our ability to execute our strategy or our business activities, financial condition, results of operations and prospects. We are inherently exposed to multiple risks, many of which may become apparent only with the benefit of hindsight. As a result, risks that we do not consider to be material or of which we are not currently aware could also adversely affect us. The order of presentation of the risk factors below does not indicate the likelihood of their occurrence or the potential magnitude of their consequences.

Market and macroeconomic risks

Performance in the financial services industry is affected by market conditions and the macroeconomic climate

Our businesses are materially affected by market and macroeconomic conditions. Adverse changes in interest rates, credit spreads, securities prices, market volatility and liquidity, foreign exchange rates, commodity prices, and other market fluctuations, as well as changes in investor sentiment, can affect our earnings and ultimately our financial and capital positions.

A market downturn and weak macroeconomic conditions can be precipitated by a number of factors, including geopolitical events, changes in monetary or fiscal policy, trade imbalances, natural disasters, pandemics, civil unrest, acts of violence, war or terrorism. Macroeconomic and political developments can have unpredictable and destabilizing effects and, because financial markets are global and highly interconnected, even local and regional events can have widespread effects well beyond the countries in which they occur. Moreover, if individual countries impose restrictions on cross-border payments or other exchange or capital controls, or change their currency (for example, if one or more countries should leave the eurozone), we could suffer losses from enforced default by counterparties, be unable to access our own assets, or be unable to effectively manage our risks.

We could be materially affected if a crisis develops, regionally or globally, as a result of disruptions in markets as a result of macroeconomic or political developments, or as a result of the failure of a major market participant. Over time, our strategic plans have become more heavily dependent on our ability to generate growth and revenue in emerging markets, including China, causing us to be more exposed to the risks associated with such markets.

We have material exposures to a number of markets, and our businesses have regional exposures and concentrations that differ from certain of our peers. Global Wealth Management derives revenues from all the principal regions, but has a greater concentration in Asia than many peers and a substantial presence in the US, unlike many European peers. The Investment Bank's Equities business is more heavily weighted to Europe and Asia than our peers, and within this business its derivatives business is more heavily weighted to structured products for wealth management clients, in particular with European and Asian underlyings. Our performance may therefore be more affected by political, economic and market developments in these regions and businesses than some other financial service providers.

A decrease in business and client activity and market volumes, for example, as a result of significant market volatility, adversely affects transaction fees, commissions and margins, particularly in Global Wealth Management and the Investment Bank, as we experienced in the fourth quarter of 2018 and in 2016. A market downturn is likely to reduce the volume and valuations of assets that we manage on behalf of clients, which would reduce recurring fee income that is charged based on invested asset and performance-based fees in Asset Management. Such a downturn may also cause a decline in the value of assets that we own and account for as investments or trading positions. On the other hand, reduced market liquidity or volatility may limit trading opportunities and may therefore reduce transaction-based fees and may also impede our ability to manage risks.

In addition, the implementation of the expected credit loss (ECL) regime, as required by IFRS 9, is intended to result in fewer pro-cyclical charges for credit impairment by ensuring that impairment charges would be recognized earlier through anticipating a downturn using appropriate forward-looking measures and, conversely, an expected positive development once the trough of a downturn has been reached. There is a material risk that these expectations will not materialize, and that ECL under IFRS 9 will prove to be pro-cyclical. Provision requirements under IFRS 9 may in practice increase rapidly at the onset of an economic downturn as a result of higher levels of credit impairment (stage 3) as well as higher ECL from stages 1 and 2, only gradually diminishing once the economic outlook improves. Substantial increases in ECL could exceed expected loss for regulatory capital purposes and adversely affect our common equity tier 1 (CET1) capital and regulatory capital ratios. The effect of pro-cyclical ECL requirements will be assessed in our stress testing outputs.

We are exposed to the credit risk of our clients, trading counterparties and other financial institutions

Credit risk is an integral part of many of our activities, including lending, underwriting and derivatives activities. Failure to properly assess and manage credit risk or adverse economic or market conditions may lead to impairments and defaults on credit exposures. Losses may be exacerbated by declines in the value of collateral securing loans and other exposures. In our prime brokerage, securities finance and Lombard lending businesses we extend substantial amounts of credit against securities collateral, the value or liquidity of which may decline rapidly. Our Swiss mortgage and corporate lending portfolios are a large part of our overall lending. We are therefore exposed to the risk of adverse economic developments in Switzerland, including the strength of the Swiss franc and its effect on Swiss exports, prevailing negative interest rates by the Swiss National Bank, economic conditions within the eurozone or the EU, and the evolution of agreements between Switzerland and the EU and European Economic Area, which represent Switzerland's largest export market.

The aforementioned developments have in the past affected, and going forward could materially affect, our overall financial performance and the financial performance of our individual businesses.

Market conditions and fluctuations may have a detrimental effect on our profitability, capital strength, liquidity and funding position

Low and negative interest rates in Switzerland and the eurozone have negatively affected our net interest income

A continuing low or negative interest rate environment may further erode interest margins and adversely affect the net interest income generated by the Personal & Corporate Banking and Global Wealth Management businesses. Our performance is also affected by the cost of maintaining the high-quality liquid assets required to cover regulatory outflow assumptions embedded in the liquidity coverage ratio.

The Swiss National Bank permits Swiss banks to make deposits up to a threshold at zero interest. Any reduction in or limitations on the use of this exemption from the otherwise applicable negative interest rates could exacerbate the effect of negative interest rates in Switzerland. Low and negative interest rates may also affect customer behavior and hence our overall balance sheet structure. Mitigating actions that we have taken, or may take in the future, such as the introduction of selective deposit fees or minimum lending rates, have resulted and may further result in the loss of customer deposits (a key source of funding for us), net new money outflows and a declining market share in our Swiss lending business.

Our shareholders' equity and capital are also affected by changes in interest rates. In particular, the calculation of our Swiss pension plan's net defined benefit assets and liabilities is sensitive to the discount rate applied and to fluctuations in the value of pension plan assets. Any further reduction in interest rates may lower the discount rates and result in pension plan deficits as a result of the long duration of corresponding liabilities. This could lead to a corresponding reduction in our equity and common equity tier 1 capital.

Currency fluctuation

We are subject to currency fluctuation risks. Effective 1 October 2018, the functional currency of UBS Group AG and UBS AG's Head Office in Switzerland has changed from Swiss francs to US dollars and the functional currency of UBS AG's London Branch operations has changed from British pounds to US dollars. In line with these changes, we have changed the presentation currency of UBS Group AG's and UBS AG's consolidated financial statements from Swiss francs to US dollars effective from our fourth quarter 2018 reporting. Although this change reduces our exposure to currency fluctuation risks against Swiss francs, a substantial portion of our assets and liabilities are denominated in currencies other than the US dollar. Accordingly, changes in foreign exchange rates may continue to adversely affect our profits, balance sheet and capital leverage and liquidity coverage ratios.

In order to hedge our CET1 capital ratio, our CET1 capital must have foreign currency exposure, which leads to currency sensitivity. As a consequence, it is not possible to simultaneously fully hedge both the amount of capital and the capital ratio. Our change to the US dollar as our presentation currency has reduced, but not eliminated the exposure of our CET1 capital and capital ratios to currency fluctuations.

Regulatory and legal risks

Substantial changes in the regulation may adversely affect our businesses and our ability to execute our strategic plans

Fundamental changes in the laws and regulations affecting financial institutions can have a material and adverse effect on our business. Following the 2007–2009 financial crisis, regulators and legislators have adopted a wide range of changes to the laws, regulations and supervisory frameworks applicable to banks. The changes are intended to address the perceived causes of the crisis and to limit the systemic risks posed by major financial institutions. They have caused us to make significant changes in our businesses, strategy and legal structure. We have moved significant operations into subsidiaries to improve resolvability and meet other regulatory requirements, and this has resulted in substantial implementation costs, increased our capital and funding costs and reduced operational flexibility. Although many of the regulatory changes have been completed, some continue to be phased in over time or require further rulemaking or guidance for implementation, and other changes are still under consideration.

Notwithstanding attempts by regulators to align their efforts, the measures adopted or proposed differ significantly across the major jurisdictions, making it increasingly difficult to manage a global institution. Swiss regulatory changes with regard to such matters as capital and liquidity have often proceeded more quickly than those in other major jurisdictions, and Switzerland's requirements for major international banks are among the strictest of the major financial centers. This could put Swiss banks such as UBS at a disadvantage when competing with peer financial institutions subject to more lenient regulation or with unregulated non-bank competitors.

Banking structure and activity limitations: We have made significant changes to our legal and operational structure to meet legal and regulatory requirements and expectations. For example, we have transferred all of our US subsidiaries under a US intermediate holding company to meet US regulatory requirements, and have transferred substantially all the operations of Personal & Corporate Banking and Global Wealth Management booked in Switzerland to UBS Switzerland AG, to improve resolvability. These changes, particularly the transfer of operations to subsidiaries, require significant time and resources to implement, and create operational, capital, liquidity, funding and tax inefficiencies. In addition, they may increase our aggregate credit exposure to counterparties as they transact with multiple entities within the Group. Further, our operations in subsidiaries are subject to local capital, liquidity, stable funding, capital planning and stress testing requirements. These requirements have resulted in increased capital and liquidity requirements in affected subsidiaries, which limit our operational flexibility and negatively affects our ability to benefit from synergies between business units and to distribute earnings to the Group.

We have incurred substantial costs in implementing a compliance and monitoring framework in connection with the Volcker Rule under the Dodd-Frank Act and have modified our business activities both inside and outside the US to conform to the Volcker Rule's activity limitations. We may incur additional costs in the short term if aspects of the Volcker Rule are modified in ways that would require changes to the operation of our Volcker compliance program, even if those changes may reduce the long-term burden on our operations. We may also become subject to other similar regulations substantively limiting the types of activities in which we may engage or the way we conduct our operations.

Higher capital and total loss-absorbing capacity requirements increase our costs: As an internationally active Swiss systemically relevant bank (SRB), we are subject to capital and total loss-absorbing capacity (TLAC) requirements that are among the most stringent in the world.

We expect our risk-weighted assets (RWA) to increase in 2019 as a result of changes in methodology and add-ons in the calculation of RWA, as well as implementation of new accounting standards. Changes to international capital standards for banks recently adopted by the Basel Committee on Banking Supervision are expected to further increase our RWA when the standards are scheduled to become effective in 2022.

Resolvability and resolution and recovery planning: Under the Swiss too big to fail (TBTF) framework, we are required to put in place viable emergency plans to preserve the operation of systemically important functions in the event of a failure. Moreover, under this framework and similar regulations in the US, the UK, the EU and other jurisdictions in which we operate, we are required to prepare credible recovery and resolution plans detailing the measures that would be taken to recover in the event of a significant adverse event or to wind down the Group or the operations in a host country through resolution or insolvency proceedings. If a recovery or resolution plan we produce is determined by the relevant authority to be inadequate or not credible, relevant regulation may permit the authority to place limitations on the scope or size of our business in that jurisdiction, or oblige us to hold higher amounts of capital or liquidity or to change our legal structure or business in order to remove the relevant impediments to resolution.

The Swiss Banking Act and implementing ordinances provide the Swiss Financial Market Supervisory Authority (FINMA) with significant powers to intervene in order to prevent a failure of, or to resolve, a failing financial institution. FINMA has considerable discretion in determining whether, when, or in what manner to exercise such powers. In case of a threatened insolvency, FINMA may impose more onerous requirements on us, including restrictions on the payment of dividends and interest. FINMA could also directly or indirectly require us, for example, to alter our legal structure, including by separating lines of business into dedicated entities, with limitations on intra-Group funding and certain guarantees, or to further reduce business risk levels in some manner. FINMA also has the ability to write down or convert into common equity the capital instruments and other liabilities of UBS Group AG, UBS AG and UBS Switzerland AG in connection with a resolution.

Substantial changes in market regulation have affected and will continue to affect how we conduct our business: The revised Markets in Financial Instruments Directive (MiFID II) became effective in 2018. MiFID II, among other things, introduces substantial new regulation of exchanges and trading venues, including new pre-trade and post-trade transparency requirements, a ban on the practice of using commissions on transactions to compensate for research services and substantial new conduct requirements for financial services firms when dealing with clients. Implementation by the G20 countries of the commitment to require all standardized over-the-counter (OTC) derivative contracts to be traded on exchanges or trading facilities and cleared through central counterparties has had and will continue to have a significant effect on our OTC derivatives business, which is conducted primarily in the Investment Bank. These market changes are likely to reduce the revenue potential of certain lines of business for market participants generally, including UBS. For example, the changes introduced by MiFID II appear to have reduced commission rates and trading margins; these reductions may not be fully offset by charges for research services. Also, these changes may have a material effect on the market infrastructure that we use and the way we interact with clients, and may result in additional material implementation costs.

Some of the regulations applicable to UBS AG as a registered swap dealer with the Commodity Futures Trading Commission (CFTC) in the US, and certain regulations that will be applicable when UBS AG registers as a security-based swap dealer with the US Securities and Exchange Commission (SEC), apply to UBS AG globally, including those relating to swap data reporting, record-keeping, compliance and supervision. As a result, in some cases US rules duplicate or may conflict with legal requirements applicable to us elsewhere, including in Switzerland, and may place us at a competitive disadvantage to firms that are not required to register in the US with the SEC or CFTC.

In many instances, we provide services on a cross-border basis, and we are therefore sensitive to barriers restricting market access for third-country firms. In particular, efforts in the EU to harmonize the regime for third-country firms to access the European market may have the effect of creating new barriers that adversely affect our ability to conduct business in these jurisdictions from Switzerland. In addition, a number of jurisdictions are increasingly regulating cross-border activities based on determinations of equivalence of home country regulation, substituted compliance or similar principles of comity. A negative determination could limit our access to the market in those jurisdictions and may negatively influence our ability to act as a global firm. For example, the EU has provided only a temporary equivalence determination for Swiss exchanges, which has caused Switzerland to adopt regulations that may result in limitations on trading Swiss listed securities on EU markets. In addition, as such determinations are typically applied on a jurisdictional level rather than on an entity level, we will generally need to rely on jurisdictions' willingness to collaborate.

Material legal and regulatory risks arise in the conduct of our business

As a global financial services firm operating in more than 50 countries, we are subject to many different legal, tax and regulatory regimes, including extensive regulatory oversight, and exposed to significant liability risk. We are subject to a large number of claims, disputes, legal proceedings and government investigations, and we expect that our ongoing business activities will continue to give rise to such matters in the future. The extent of our financial exposure to these and other matters is material and could substantially exceed the level of provisions that we have established. We are not able to predict the financial and non-financial consequences these matters may have when resolved.

We may be subject to adverse preliminary determinations or court decisions that may negatively affect public perception and our reputation, result in prudential actions from regulators, and cause us to record additional provisions for the matter even when we believe we have substantial defenses and expect to ultimately achieve a more favorable outcome. This risk is illustrated by the award of aggregate penalties and damages of EUR 4.5 billion by the court in France.

Resolution of regulatory proceedings may require us to obtain waivers of regulatory disqualifications to maintain certain operations; may entitle regulatory authorities to limit, suspend or terminate licenses and regulatory authorizations; and may permit financial market utilities to limit, suspend or terminate our participation in them. Failure to obtain such waivers, or any limitation, suspension or termination of licenses, authorizations or participations, could have material adverse consequences for us.

Our settlements with governmental authorities in connection with foreign exchange, London Interbank Offered Rates (LIBOR) and other benchmark interest rates starkly illustrate the significantly increased level of financial and reputational risk now associated with regulatory matters in major jurisdictions. In connection with investigations related to LIBOR and other benchmark rates and to foreign exchange and precious metals, very large fines and disgorgement amounts were assessed against us, and we were required to enter guilty pleas despite our full cooperation with the authorities in the investigations, and despite our receipt of conditional leniency or conditional immunity from antitrust authorities in a number of jurisdictions, including the US and Switzerland.

Ever since our material losses arising from the 2007–2009 financial crisis, we have been subject to a very high level of regulatory scrutiny and to certain regulatory measures that constrain our strategic flexibility. While we believe we have remediated the deficiencies that led to those losses as well as to the unauthorized trading incident announced in September 2011, the effects on our reputation, as well as on relationships with regulatory authorities of the LIBOR-related settlements of 2012 and settlements with some regulators of matters related to our foreign exchange and precious metals business, have resulted in continued scrutiny.

We are also subject to significant new regulatory requirements, including recovery and resolution planning, US enhanced prudential standards and Comprehensive Capital Analysis and Review. Our implementation of additional regulatory requirements and changes in supervisory standards, as well as our compliance with existing laws and regulations, continue to receive heightened scrutiny from supervisors. If we do not meet supervisory expectations in relation to these or other matters, or if additional supervisory or regulatory issues arise, we would likely be subject to further regulatory scrutiny as well as measures that might further constrain our strategic flexibility. We are in active dialog with regulators concerning the actions we are taking to improve our operational risk management, control, anti-money laundering, data management and other frameworks, and otherwise seek to meet supervisory expectations, but there can be no assurance that our efforts will have the desired effects. As a result of this history, our level of risk with respect to regulatory enforcement may be greater than that of some of our peers.

The effect of taxes on our financial results is significantly influenced by tax law changes and reassessments of our deferred tax assets

Our effective tax rate is highly sensitive to our performance, our expectation of future profitability and statutory tax rates. Based on prior years' tax losses, we have recognized deferred tax assets (DTAs) reflecting the probable recoverable level based on future taxable profit as informed by our business plans. If our performance is expected to produce diminished taxable profit in future years, particularly in the US, we may be required to write down all or a portion of the currently recognized DTAs through the income statement in excess of anticipated amortization. This would have the effect of increasing our effective tax rate in the year in which any write-downs are taken. Conversely, if we expect the performance of entities in which we have unrecognized tax losses to improve, particularly in the US or the UK, we could potentially recognize additional DTAs. The effect of doing so would be to reduce our effective tax rate in years in which additional DTAs are recognized and to increase our effective tax rate in future years. Our effective tax rate is also sensitive to any future reductions in statutory tax rates, particularly in the US and Switzerland, which would cause the expected future tax benefit from items such as tax loss carry-forwards in the affected locations to diminish in value. This in turn would cause a write-down of the associated DTAs. For example, the reduction in the US federal corporate tax rate to 21% from 35% introduced by the US Tax Cuts and Jobs Act (TCJA) resulted in a USD 2.9 billion net write-down in the Group's DTAs in the fourth quarter of 2017.

We generally revalue our DTAs in the fourth quarter of the financial year based on a reassessment of future profitability taking into account our updated business plans. We consider the performance of our businesses and the accuracy of historical forecasts, tax rates and other factors in evaluating the recoverability of our DTAs, including the remaining tax loss carry-forward period and our assessment of expected future taxable profits over the life of DTAs. Estimating future profitability is inherently subjective and is particularly sensitive to future economic, market and other conditions, which are difficult to predict.

Our results in recent periods have demonstrated that changes in the recognition of DTAs can have a very significant effect on our reported results. Any future change in the manner in which UBS remeasures DTAs could affect UBS's effective tax rate, particularly in the year in which the change is made.

Our full-year effective tax rate could change if aggregate tax expenses in respect of profits from branches and subsidiaries without loss coverage differ from what is expected. In particular, losses at entities that cannot be offset for tax purposes by net operating losses may increase our effective tax rate. Moreover, tax laws or the tax authorities in countries where we have undertaken legal structure changes may prevent the transfer of tax losses incurred in one legal entity to newly organized or reorganized subsidiaries or affiliates or may impose limitations on the utilization of tax losses that relate to businesses formerly conducted by the transferor. Were this to occur in situations where there were also limited planning opportunities to utilize the tax losses in the originating entity, the DTAs associated with such tax losses may be required to be written down through the income statement.

Changes in tax law may materially affect our effective tax rate and in some cases may substantially affect the profitability of certain activities. In addition, statutory and regulatory changes, as well as changes to the way in which courts and tax authorities interpret tax laws including assertions that we are required to pay taxes in a jurisdiction as a result of activities connected to that jurisdiction constituting a permanent establishment or similar theory, and changes in our assessment of uncertain tax positions, could cause the amount of taxes we ultimately pay to materially differ from the amount accrued.

Discontinuance of, or changes to, benchmark rates may require adjustments to our agreements with clients and other market participants, as well as to our systems and processes

Since April 2013, the UK Financial Conduct Authority (FCA) has regulated LIBOR and regulators in other jurisdictions have increased oversight of other interbank offered rates (IBORs) and similar benchmark rates. Efforts to transition from IBORs to alternative benchmark rates are underway in several jurisdictions. The FCA announced in July 2017 that it will not continue beyond 2021 to regulate LIBOR or take other actions to sustain LIBOR, and urged users to plan the transition to alternative reference rates. As a result, there can be no guarantee that LIBOR will be determined after 2021 on the same basis as at present, if at all.

In the third quarter of 2018, the private-sector working group on euro risk-free rates recommended ESTER (euro short-term rate) as the replacement for EONIA (Euro OverNight Index Average), which will be prohibited by the EU Benchmark Regulation after 1 January 2020. Futures contracts referenced to the Secured Overnight Financing Rate (SOFR), the recommended successor to US dollar LIBOR, have begun trading on the Chicago Mercantile Exchange. The Bank of England consulted on the development of Term SONIA (Sterling Overnight Index Average) Reference Rates, which are expected to become available in the second half of 2019. The International Swaps and Derivatives Association, as part of a Financial Conduct Authority (FCA) mandate, consulted on preferred options for LIBOR transition fallbacks for derivatives. The FCA and the Prudential Regulation Authority have written to the CEOs of banks and insurance companies in the UK, including us, seeking assurance that senior managers and boards understand the risks associated with the transition away from IBORs and are taking appropriate preparatory action to transition to alternative rates before the end of 2021. In July 2018, the International Swaps and Derivatives Association launched a market-wide consultation on technical issues related to new benchmark fallbacks for derivatives contracts that reference certain IBORs.

We have a substantial number of contracts linked to IBORs. The new risk-free alternative reference rates do not provide a term structure and will therefore require a change in the contractual terms of products currently indexed on terms other than overnight. In some cases contracts may contain provisions intended to provide a fall-back interest rate in the event of a brief unavailability of the relevant IBOR. These provisions may not be effective or may produce arbitrary results in the event of a permanent cessation of the relevant IBOR. In addition, numerous of our internal systems, limits and processes make use of IBORs as reference rates. Transition to replacement reference rates will require significant effort.

UK withdrawal from the EU

We have planned our response to the UK withdrawal from the EU assuming that the UK will leave the EU in March 2019 and that any transition arrangements will only become legally binding close to the exit date. Given the continuing uncertainty on transition arrangements and the potential future restrictions on providing financial services into the EU from the UK, we have completed the merger of UBS Limited, our UK-based subsidiary, into UBS Europe SE, a German-headquartered European subsidiary. As a result, we expect that UBS Europe SE will become subject to direct supervision by the European Central Bank.

Clients and counterparties of UBS Limited who can be serviced by UBS AG, London Branch following the exit of the UK from the EU have generally been migrated to that branch. The remaining clients and other counterparties of UBS Limited were transferred to UBS Europe SE upon completion of a UK business transfer proceeding on 1 March 2019 and the merger of the two entities.

In connection with the merger, a small number of roles are being relocated from the UK to other European locations. We also expect to increase the loss-absorbing capacity of UBS Europe SE to reflect the additional activities it would acquire.

If we experience financial difficulties, FINMA has the power to open restructuring or liquidation proceedings or impose protective measures in relation to UBS Group AG, UBS AG or UBS Switzerland AG, and such proceedings or measures may have a material adverse effect on our shareholders and creditors

Under the Swiss Banking Act, FINMA is able to exercise broad statutory powers with respect to Swiss banks and Swiss parent companies of financial groups, such as UBS Group AG, UBS AG and UBS Switzerland AG, if there is justified concern that the entity is over-indebted, has serious liquidity problems or, after the expiration of any relevant deadline, no longer fulfils capital adequacy requirements. Such powers include ordering protective measures, instituting restructuring proceedings (and exercising any Swiss resolution powers in connection therewith), and instituting liquidation proceedings, all of which may have a material adverse effect on our shareholders and creditors or may prevent UBS Group AG, UBS AG or UBS Switzerland AG from paying dividends or making payments on debt obligations.

Protective measures may include, but are not limited to, certain measures that could require or result in a moratorium on, or the deferment of, payments. We would have limited ability to challenge any such protective measures, and creditors and shareholders would have no right under Swiss law or in Swiss courts to reject them, seek their suspension, or challenge their imposition, including measures that require or result in the deferment of payments.

If restructuring proceedings are opened with respect to UBS Group AG, UBS AG or UBS Switzerland AG, the resolution powers that FINMA may exercise include the power to (i) transfer all or some of the assets, debt and other liabilities, and contracts of the entity subject to proceedings to another entity, (ii) stay for a maximum of two business days a. the termination of, or the exercise of rights to terminate, netting rights, b. rights to enforce or dispose of certain types of collateral or c. rights to transfer claims, liabilities or certain collateral, under contracts to which the entity subject to proceedings is a party, and / or (iii) partially or fully write down the equity capital and, if such equity capital is fully written down, convert into equity or write down the capital and other debt instruments of the entity subject to proceedings. Shareholders and creditors would have no right to reject, or to seek the suspension of, any restructuring plan pursuant to which such resolution powers are exercised. They would have only limited rights to challenge any decision to exercise resolution powers or to have that decision reviewed by a judicial or administrative process or otherwise.

Upon full or partial write-down of the equity and debt of the entity subject to restructuring proceedings, the relevant shareholders and creditors would receive no payment in respect of the equity and debt that is written down, the write-down would be permanent, and the investors would not, at such time or at any time thereafter, receive any shares or other participation rights, or be entitled to any write-up or any other compensation in the event of a potential recovery of the debtor. If FINMA orders the conversion of debt of the entity subject to restructuring proceedings into equity, the securities received by the investors may be worth significantly less than the original debt and may have a significantly different risk profile, and such conversion would also dilute the ownership of existing shareholders. In addition, creditors receiving equity would be effectively subordinated to all creditors of the restructured entity in the event of a subsequent winding up, liquidation or dissolution of the restructured entity, which would increase the risk that investors would lose all or some of their investment.

FINMA has significant discretion in the exercise of its powers in connection with restructuring proceedings. Furthermore, certain categories of debt obligations, such as certain types of deposits, are subject to preferential treatment. As a result, holders of obligations of an entity subject to a Swiss restructuring proceeding may have their obligations written down or converted into equity even though obligations ranking on par with or junior to such obligations are not written down or converted.

FINMA has expressed its preference for a single-point-of-entry resolution strategy for global systemically important financial groups, led by the bank's home supervisory and resolution authorities and focused on the top-level group company. This would mean that, if UBS AG or one of UBS Group AG's other subsidiaries faces substantial losses, FINMA could open restructuring proceedings with respect to UBS Group AG only and order a bail-in of its liabilities if there is a justified concern that in the near future such losses could affect UBS Group AG. In that case, it is possible that the obligations of UBS AG or any other subsidiary of UBS Group AG would remain unaffected and outstanding, while the equity capital and the capital and other debt instruments of UBS Group AG would be written down and / or converted into equity of UBS Group AG in order to recapitalize UBS AG or such other subsidiary.

Liquidity risks

Liquidity and funding management are critical to our ongoing performance

The viability of our business depends on the availability of funding sources, and our success depends on our ability to obtain funding at times, in amounts, for tenors and at rates that enable us to efficiently support our asset base in all market conditions. Our funding sources have generally been stable, but could change in the future because of, among other things, general market disruptions or widening credit spreads, which could also influence the cost of funding. A substantial part of our liquidity and funding requirements are met using short-term unsecured funding sources, including retail and wholesale deposits and the regular issuance of money market securities. A change in the availability of short-term funding could occur quickly.

Moreover, more stringent capital and liquidity and funding requirements will likely lead to increased competition for both secured funding and deposits as a stable source of funding, and to higher funding costs. The addition of loss-absorbing debt as a component of capital requirements, the regulatory requirements to maintain minimum TLAC at our holding company and at subsidiaries, as well as the power of resolution authorities to bail in TLAC and other debt obligations, and uncertainty as to how such powers will be exercised, will increase our cost of funding and could potentially increase the total amount of funding required, in the absence of other changes in our business.

Reductions in our credit ratings may adversely affect the market value of the securities and other obligations and increase our funding costs, in particular with regard to funding from wholesale unsecured sources, and could affect the availability of certain kinds of funding. In addition, as we experienced in connection with Moody's downgrade of our long-term debt rating in June 2012, rating downgrades can require us to post additional collateral or make additional cash payments under trading agreements. Our credit ratings, together with our capital strength and reputation, also contribute to maintaining client and counterparty confidence, and it is possible that rating changes could influence the performance of some of our businesses.

Liquidity and funding: The requirement to maintain a liquidity coverage ratio of high-quality liquid assets to estimated stressed short-term net cash outflows, the proposed requirement to maintain a net stable funding ratio, and other similar liquidity and funding requirements, oblige us to maintain high levels of overall liquidity, limit our ability to optimize interest income and expense, make certain lines of business less attractive and reduce our overall ability to generate profits. The liquidity coverage ratio and net stable funding ratio requirements are intended to ensure that we are not overly reliant on short-term funding and that we have sufficient long-term funding for illiquid assets. The relevant calculations make assumptions about the relative likelihood and amount of outflows of funding and available sources of additional funding in market-wide and firm-specific stress situations. There can be no assurance that in an actual stress situation our funding outflows would not exceed the assumed amounts. Moreover, many of our subsidiaries must comply with minimum capital, liquidity and similar requirements and as a result UBS Group AG and UBS AG have contributed a significant portion of their capital and provide substantial liquidity to these subsidiaries. These funds are available to meet funding and collateral needs in the relevant entities, but are generally not readily available for use by the Group as a whole.

Strategy, management and operations risks

We may not be successful in the ongoing execution of our strategic plans

Over the last seven years, we have transformed our business to focus on our Global Wealth Management business and our universal bank in Switzerland, complemented by Asset Management and a significantly smaller and more capital efficient Investment Bank; we have substantially reduced the risk-weighted assets and leverage ratio denominator usage in Corporate Center – Non-core and Legacy Portfolio; and made significant cost reductions. We have recently provided an update on the execution of our strategy, updated our performance targets and provided guidance on capital and resources. Risk remains that we may not succeed in executing our strategy or achieving our performance targets, or may be delayed in doing so. Market events or other factors may adversely affect our ability to achieve our objectives. Macroeconomic conditions, geopolitical uncertainty, changes to regulatory requirements and the continuing costs of meeting these requirements have prompted us to adapt our targets and ambitions in the past and we may need to do so again in the future.

To achieve our strategic plans, we expect to continue to make significant expenditures on technology and infrastructure to improve client experience, improve and further enable digital offerings and increase efficiency. Our investments in new technology may not fully achieve our objectives or improve our ability to attract and retain customers. In addition, we will likely face competition in providing digitally enabled offerings from both existing competitors and new financial service providers in various portions of the value chain. Our ability to develop and implement competitive digitally enabled offerings and processes will be an important factor in our ability to compete.

As part of our strategy, we seek to improve our operating efficiency, in part by controlling our costs. We may not be able to identify feasible cost reduction opportunities that are consistent with our business goals and cost reductions may be realized later or may be smaller than we anticipate. Higher temporary and permanent regulatory costs and higher business demand than anticipated have partly offset cost reductions and delayed the achievement of our past cost reduction targets, and we could continue to be challenged in the execution of our ongoing efforts to improve operating efficiency.

Changes in our workforce as a result of outsourcing, nearshoring, offshoring, insourcing or staff reductions may introduce new operational risks that, if not effectively addressed, could affect our ability to achieve cost and other benefits from such changes, or could result in operational losses. Such changes can also lead to expenses recognized in the income statement well in advance of the cost savings intended to be achieved through such workforce strategy; for example, if provisions for real estate lease contracts need to be recognized, or when, in connection with the closure or disposal of non-profitable operations, foreign currency translation losses previously recorded in other comprehensive income are reclassified to the income statement.

As we implement effectiveness and efficiency programs, we may also experience unintended consequences, such as the unintended loss or degradation of capabilities that we need in order to maintain our competitive position, achieve our targeted returns or meet existing or new regulatory requirements and expectations.

Operational risks affect our business

Our businesses depend on our ability to process a large number of transactions, many of which are complex, across multiple and diverse markets in different currencies, to comply with requirements of many different legal and regulatory regimes to which we are subject and to prevent, or promptly detect and stop, unauthorized, fictitious or fraudulent transactions. We also rely on access to, and on the functioning of, systems maintained by third parties, including clearing systems, exchanges, information processors and central counterparties. Any failure of our or third-party systems could have an adverse effect on us. Our operational risk management and control systems and processes are designed to help ensure that the risks associated with our activities - including those arising from process error, failed execution, misconduct, unauthorized trading, fraud, system failures, financial crime, cyberattacks, breaches of information security, inadequate or ineffective access controls and failure of security and physical protection - are appropriately controlled. If our internal controls fail or prove ineffective in identifying and remedying these risks, we could suffer operational failures that might result in material losses, such as the substantial loss we incurred from the unauthorized trading incident announced in September 2011.

We and other financial services firms have been subject to breaches of security and to cyber- and other forms of attack, some of which are sophisticated and targeted attacks intended to gain access to confidential information or systems, disrupt service or destroy data. These attacks may be attempted through the introduction of viruses or malware, phishing and other forms of social engineering, distributed denial of service attacks and other means. These attempts may occur directly, or using equipment or security passwords of our employees, third party service providers or other users. In addition to external attacks, we have experienced loss of client data from failure by employees and others to follow internal policies and procedures and from misappropriation of our data by employees and others. We may not be able to anticipate, detect or recognize threats to our systems or data and our preventative measures may not be effective to prevent an attack or a security breach. In the event of a security breach notwithstanding our preventative measures, we may not immediately detect a particular breach or attack. Once a particular attack is detected, time may be required to investigate and assess the nature and extent of the attack. A successful breach or circumvention of security of our systems or data could have significant negative consequences for us, including disruption of our operations, misappropriation of confidential information concerning us or our customers, damage to our systems, financial losses for us or our customers, violations of data privacy and similar laws, litigation exposure and damage to our reputation.

We are subject to complex and frequently changing laws and regulations governing the protection of client and personal data, such as the EU General Data Privacy Regulation. Ensuring that we comply with applicable laws and regulations when we collect, use and transfer personal information requires substantial resources and may affect the ways in which we conduct our business. In the event that we fail to comply with applicable laws, we may be exposed to regulatory fines and penalties and other sanctions. We may also incur such penalties if our vendors or other service providers or clients or counterparties fail to comply with these laws or to maintain appropriate controls over protected data. In addition, any loss or exposure of client or other data, may adversely damage our reputation and adversely affect our business.

A major focus of US and other countries' governmental policies relating to financial institutions in recent years has been on fighting money laundering and terrorist financing. We are required to maintain effective policies, procedures and controls to detect, prevent and report money laundering and terrorist financing, and to verify the identity of our clients under the laws of many of the countries in which we operate. We are also subject to laws and regulations related to corrupt and illegal payments to government officials by others, such as the US Foreign Corrupt Practices Act and the UK Bribery Act. We have implemented policies, procedures and internal controls that are designed to comply with such laws and regulations. Notwithstanding this, US regulators have found deficiencies in the design and operation of anti-money laundering programs in our US operations. We have undertaken a significant program to address these regulatory findings with the objective of fully meeting regulatory expectations for our programs. Failure to maintain and implement adequate programs to combat money laundering, terrorist financing or corruption, or any failure of our programs in these areas, could have serious consequences both from legal enforcement action and from damage to our reputation. Frequent changes in sanctions imposed and increasingly complex sanctions imposed on countries, entities and individuals increase our cost of monitoring and complying with sanctions requirements and increase the risk that we will not timely identify previously permissible client activity that is subject to a sanction.

As a result of new and changed regulatory requirements and the changes we have made in our legal structure, the volume, frequency and complexity of our regulatory and other reporting has significantly increased. Regulators have also significantly increased expectations for our internal reporting and data aggregation, as well as management reporting. We have incurred and continue to incur significant costs to implement infrastructure to meet these requirements. Failure to timely and accurately meet external reporting requirements or to meet regulatory expectations for internal reporting, data aggregation and management reporting could result in enforcement action or other adverse consequences for us.

Certain types of operational control weaknesses and failures could also adversely affect our ability to prepare and publish accurate and timely financial reports.

In addition, despite the contingency plans we have in place, our ability to conduct business may be adversely affected by a disruption in the infrastructure that supports our businesses and the communities in which we operate. This may include a disruption due to natural disasters, pandemics, civil unrest, war or terrorism and involve electrical, communications, transportation or other services we use or used by third parties with whom we conduct business.

We may not be successful in implementing changes in our wealth management businesses to meet changing market, regulatory and other conditions

Our wealth and asset management businesses operate in an environment of increasing regulatory scrutiny and changing standards with respect to fiduciary and other standards of care and the focus on mitigating or eliminating conflicts of interest between a manager or advisor and the client, which require effective implementation across the global systems and processes of investment managers and other industry participants. For example, the SEC proposed a new regulation and interpretation intended to enhance and clarify the duties of brokers and investment advisers to retail customers. The proposed requirements, if adopted, would apply to a large portion of Global Wealth Management's business in the US, and we will likely be required to materially change business processes, policies and the terms on which we interact with these clients in order to comply with these rules, if and when they become fully effective. In addition, MiFID II imposes new requirements on us when providing advisory services to clients in the EU, including new requirements for agreements with clients.

UBS experienced cross-border outflows over a number of years as a result of heightened focus by fiscal authorities on cross-border investment and fiscal amnesty programs, in anticipation of the implementation in Switzerland of the global automatic exchange of tax information, and as a result of the measures UBS has implemented in response to these changes. Further changes in local tax laws or regulations and their enforcement, the implementation of cross-border tax information exchange regimes, national tax amnesty or enforcement programs or similar actions may affect our clients' ability or willingness to do business with us and result in additional cross-border outflows.

In recent years, Global Wealth Management's net new money inflows have come predominantly from clients in Asia Pacific and in the ultra high net worth segment globally. Over time, inflows from these lower-margin segments and markets have been replacing outflows from higher-margin segments and markets, in particular cross-border clients. This dynamic, combined with changes in client product preferences as a result of which low-margin products account for a larger share of our revenues than in the past, has put downward pressure on Global Wealth Management's margins.

As the discussion above indicates, we are exposed to possible outflows of client assets in our asset-gathering businesses and to changes affecting the profitability of Global Wealth Management, in particular. Initiatives that we may implement to overcome the effects of changes in the business environment on our profitability, balance sheet and capital positions may not succeed in counteracting those effects and may cause net new money outflows and reductions in client deposits, as happened with our balance sheet and capital optimization program in 2015. There is no assurance that we will be successful in our efforts to offset the adverse effect of these or similar trends and developments.

Our stated capital returns objective is based, in part, on capital ratios that are subject to regulatory change and may fluctuate significantly

We plan to operate with a CET1 capital ratio of around 13% and a CET1 leverage ratio of around 3.7%. Our ability to maintain these ratios is subject to numerous risks, including the financial results of our businesses, the effect of changes to capital standards, methodologies and interpretation that may adversely affect the calculation of our CET1 ratios, the imposition of risk add-ons or capital buffers, and the application of additional capital, liquidity and similar requirements to subsidiaries. The results of our businesses may be adversely affected by events arising from other factors described herein. In some cases, such as litigation and regulatory risk and operational risk events, losses may be sudden and large. These risks could reduce the amount of capital available for return to shareholders and hinder our ability to achieve our capital returns target of a progressive cash dividend coupled with a share repurchase program.

Failure to maintain our capital strength may adversely affect our ability to execute our strategy, our client franchise and our competitive position

Our capital strength is a key component of our strategy. Capital strength enables us to grow our businesses, and absorb increases in regulatory and capital requirements. It reassures our clients and stakeholders, forms the basis for our capital return policy and contributes to our credit ratings. Our capital ratios are driven primarily by RWA, leverage ratio denominator and eligible capital, all of which may fluctuate based on a number of factors, some of which are outside our control.

Our eligible capital may be reduced by losses recognized within net profit or other comprehensive income. Eligible capital may also be reduced for other reasons, including certain reductions in the ratings of securitization exposures, acquisitions and divestments changing the level of goodwill, adverse currency movements affecting the value of equity, prudential adjustments that may be required due to the valuation uncertainty associated with certain types of positions, and changes in the value of certain pension fund assets and liabilities or in the interest rate and other assumptions used to calculate the changes in our net defined benefit obligation recognized in other comprehensive income.

RWA are driven by our business activities, by changes in the risk profile of our exposures, by changes in our foreign currency exposures and foreign exchange rates and by regulation. For instance, substantial market volatility, a widening of credit spreads, adverse currency movements, increased counterparty risk, deterioration in the economic environment or increased operational risk could result in an increase in RWA. We have significantly reduced our market risk and credit risk RWA in recent years. However, increases in operational risk RWA, particularly those arising from litigation, regulatory and similar matters, and regulatory changes in the calculation of RWA and regulatory add-ons to RWA have offset a substantial portion of this reduction. Changes in the calculation of RWA or, as discussed above, the imposition of additional supplemental RWA charges or multipliers applied to certain exposures and other methodology changes, as well as the implementation of the recently adopted changes to international capital standards for banks, could substantially increase our RWA.

The leverage ratio is a balance sheet-driven measure and therefore limits balance sheet-intensive activities, such as lending, more than activities that are less balance sheet intensive, and it may constrain our business even if we satisfy other risk-based capital requirements. Our leverage ratio denominator is driven by, among other things, the level of client activity, including deposits and loans, foreign exchange rates, interest rates and other market factors. Many of these factors are wholly or partially outside of our control.

We may be unable to identify or capture revenue or competitive opportunities, or retain and attract qualified employees

The financial services industry is characterized by intense competition, continuous innovation, restrictive, detailed, and sometimes fragmented regulation and ongoing consolidation. We face competition at the level of local markets and individual business lines, and from global financial institutions that are comparable to us in their size and breadth. Barriers to entry in individual markets and pricing levels are being eroded by new technology. We expect these trends to continue and competition to increase. Our competitive strength and market position could be eroded if we are unable to identify market trends and developments, do not respond to such trends and developments by devising and implementing adequate business strategies, do not adequately develop or update our technology including our digital channels and tools, or are unable to attract or retain the qualified people needed.

The amount and structure of our employee compensation is affected not only by our business results but also by competitive factors and regulatory considerations.

In recent years, in response to the demands of various stakeholders, including regulatory authorities and shareholders, and in order to better align the interests of our staff with other stakeholders, we have increased average deferral periods for stock awards, expanded forfeiture provisions and, to a more limited extent, introduced clawback provisions for certain awards linked to business performance. We have also introduced individual caps on the proportion of fixed to variable pay for the Group Executive Board (GEB) members, as well as certain other employees.

Constraints on the amount or structure of employee compensation, higher levels of deferral, performance conditions and other circumstances triggering the forfeiture of unvested awards may adversely affect our ability to retain and attract key employees. The loss of key staff and the inability to attract qualified replacements could seriously compromise our ability to execute our strategy and to successfully improve our operating and control environment, and could affect our business performance. Swiss law requires that shareholders approve the compensation of the Board of Directors (BoD) and the GEB each year. If our shareholders fail to approve the compensation for the GEB or the BoD, this could have an adverse effect on our ability to retain experienced directors and our senior management.

We depend on our risk management and control processes to avoid or limit potential losses in our businesses

Controlled risk-taking is a major part of the business of a financial services firm. Some losses from risk-taking activities are inevitable, but to be successful over time, we must balance the risks we take against the returns generated. Therefore we must diligently identify, assess, manage and control our risks, not only in normal market conditions but also as they might develop under more extreme, stressed conditions, when concentrations of exposures can lead to severe losses.

As seen during the financial crisis of 2007–2009, we have not always been able to prevent serious losses arising from extreme or sudden market events that are not anticipated by our risk measures and systems. Our risk measures, concentration controls and the dimensions in which we aggregated risk to identify correlated exposures proved inadequate in a historically severe deterioration in financial markets. As a result, we recorded substantial losses on fixed income trading positions, particularly in 2008 and 2009. We have substantially revised and strengthened our risk management and control framework and increased the capital we hold relative to the risks we take. Nonetheless, we could suffer further losses in the future if, for example:

– we do not fully identify the risks in our portfolio, in particular risk concentrations and correlated risks;
– our assessment of the risks identified, or our response to negative trends, proves to be untimely, inadequate, insufficient or incorrect;
– markets move in ways that we do not expect – in terms of their speed, direction, severity or correlation – and our ability to manage risks in the resulting environment is, therefore, affected;
– third parties to whom we have credit exposure or whose securities we hold are severely affected by events and we suffer defaults and impairments beyond the level implied by our risk assessment; or
– collateral or other security provided by our counterparties proves inadequate to cover their obligations at the time of default.

We have exposures related to real estate in various countries, including a substantial Swiss mortgage portfolio. Although we believe this portfolio is prudently managed, we could nevertheless be exposed to losses if a substantial deterioration in the Swiss real estate market were to occur. We also hold legacy risk positions, primarily in Corporate Center, that, in many cases, are illiquid and may again deteriorate in value.

We also manage risk on behalf of our clients. The performance of assets we hold for our clients may be adversely affected by the same factors mentioned above. If clients suffer losses or the performance of their assets held with us is not in line with relevant benchmarks against which clients assess investment performance, we may suffer reduced fee income and a decline in assets under management, or withdrawal of mandates.

Investment positions, such as equity investments made as part of strategic initiatives and seed investments made at the inception of funds that we manage, may also be affected by market risk factors. These investments are often not liquid and generally are intended or required to be held beyond a normal trading horizon. Deteriorations in the fair value of these positions would have a negative effect on our earnings.

As UBS Group AG is a holding company, its operating results, financial condition and ability to pay dividends and other distributions and / or to pay its obligations in the future depend on funding, dividends and other distributions received directly or indirectly from its subsidiaries, which may be subject to restrictions

UBS Group AG’s ability to pay dividends and other distributions and to pay its obligations in the future will depend on the level of funding, dividends and other distributions, if any, received from UBS AG and other subsidiaries. The ability of such subsidiaries to make loans or distributions, directly or indirectly, to UBS Group AG may be restricted as a result of several factors, including restrictions in financing agreements and the requirements of applicable law and regulatory, fiscal or other restrictions. In particular, UBS Group AG’s direct and indirect subsidiaries, including UBS AG, UBS Switzerland AG, UBS Limited and UBS Americas Holding LLC, are subject to laws and regulations that restrict dividend payments, authorize regulatory bodies to block or reduce the flow of funds from those subsidiaries to UBS Group AG, or could affect their ability to repay any loans made to, or other investments in, such subsidiary by UBS Group AG or another member of the Group. For example, the US Comprehensive Capital Analysis and Review process requires that our US intermediate holding company demonstrate that it can continue to meet minimum capital standards over a hypothetical nine-quarter severely adverse economic scenario. If it fails to meet the quantitative capital requirements, or the Federal Reserve Board’s qualitative assessment of the capital planning process is adverse, our US intermediate holding company would be prohibited from paying dividends or making distributions. Restrictions and regulatory actions of this kind could impede access to funds that UBS Group AG may need to meet its obligations or to pay dividends to shareholders. In addition, UBS Group AG’s right to participate in a distribution of assets upon a subsidiary’s liquidation or reorganization is subject to all prior claims of the subsidiary’s creditors.

Our capital instruments may contractually prevent UBS Group AG from proposing the distribution of dividends to shareholders, other than in the form of shares, if we do not pay interest on these instruments.

Furthermore, UBS Group AG may guarantee some of the payment obligations of certain of the Group's subsidiaries from time to time. These guarantees may require UBS Group AG to provide substantial funds or assets to subsidiaries or their creditors or counterparties at a time when UBS Group AG is in need of liquidity to fund its own obligations.

The credit ratings of UBS Group AG or its subsidiaries used for funding purposes could be lower than the ratings of the Group's operating subsidiaries, which may adversely affect the market value of the securities and other obligations of UBS Group AG or those subsidiaries on a standalone basis.

Reputational risk

Our reputation is critical to our success

Our reputation is critical to the success of our strategic plans, business and prospects. Reputational damage is difficult to reverse, and improvements tend to be slow and difficult to measure. Our reputation has been adversely affected by our losses during the financial crisis, investigations into our cross-border private banking services, criminal resolutions of LIBOR-related and foreign exchange matters, as well as other matters. We believe that reputational damage as a result of these events was an important factor in our loss of clients and client assets across our asset-gathering businesses. New events that cause reputational damage could have a material adverse effect on our results of operation and financial condition, as well as our ability to achieve our strategic goals and financial targets.

Estimation and valuation risk

Our financial results may be negatively affected by changes to assumptions and valuations, as well as changes to accounting standards

We prepare our consolidated financial statements in accordance with International Financial Reporting Standards (IFRS). The application of these accounting standards requires the use of judgment based on estimates and assumptions that may involve significant uncertainty at the time they are made. This is the case, for example, with respect to the measurement of fair value of financial instruments, the recognition of deferred tax assets, the assessment of the impairment of goodwill and estimation of provisions for contingencies, including litigation, regulatory and similar matters. Such judgments, including the underlying estimates and assumptions, which encompass historical experience, expectations of the future and other factors, are regularly evaluated to determine their continuing relevance based on current conditions. Using different assumptions could cause the reported results to differ. Changes in assumptions, or failure to make the changes necessary to reflect evolving market conditions, may have a significant effect on the financial statements in the periods when changes occur. Estimates of provisions for contingencies may be subject to a wide range of potential outcomes and significant uncertainty. For example, the broad range of potential outcomes in our proceeding in France increases the uncertainty associated with assessing the appropriate provision. If the estimates and assumptions in future periods deviate from the current outlook, our financial results may also be negatively affected.

Changes to IFRS or interpretations thereof may cause future reported results and financial position to differ from current expectations, or historical results to differ from those previously reported due to the adoption of accounting standards on a retrospective basis. Such changes may also affect our regulatory capital and ratios. For example, we adopted IFRS 9 effective on 1 January 2018, which required us to change the accounting treatment of financial instruments measured at amortized cost and certain other positions, to record loans from inception net of expected credit losses instead of recording credit losses on an incurred loss basis, and is generally expected to result in an increase in recognized credit loss allowances. In addition, the ECL provisions of IFRS 9 may result in greater volatility in credit loss expense as ECL changes in response to developments in the credit cycle and composition of our loan portfolio. The effect may be more pronounced in a deteriorating economic environment.

Financial and operating performance

Management report

Critical accounting estimates and judgments

In preparing our financial statements in accordance with International Financial Reporting Standards (IFRS), as issued by the International Accounting Standards Board (IASB), we apply judgment and make estimates and assumptions that may involve significant uncertainty at the time they are made. We regularly reassess those estimates and assumptions, which encompass historical experience, expectations of the future and other pertinent factors, to determine their continuing relevance based on current conditions, and we update them as necessary. Changes in estimates and assumptions may have a significant effect on the financial statements. Furthermore, actual results may differ significantly from our estimates, which could result in significant losses to the Group, beyond what we anticipated or provided for.

Key areas involving a high degree of judgment and areas where estimates and assumptions are significant to the consolidated financial statements include:
- fair value of financial instruments
- allowances and provisions for expected credit losses
- assessment of the business model and certain contractual features when classifying financial instruments
- pension and other post-employment benefit plans
- income taxes
- goodwill
- provisions and contingent liabilities
- consolidation of structured entities
- determination of the functional currency and assessing the earliest date from which it is practical to perform a restatement following a change in presentation currency

We believe that the judgments, estimates and assumptions we have made are appropriate under the circumstances and that our financial statements fairly present, in all material respects, the financial position of UBS as of 31 December 2018 and the results of our operations and cash flows for 2018 in accordance with IFRS.

→ **Refer to "Note 1a Significant accounting policies" in the "Consolidated financial statements" section of this report for more information**
→ **Refer to the "Risk factors" section of this report for more information**

Significant accounting and financial reporting changes

Significant accounting and financial reporting changes in 2018

Changes to our functional and presentation currencies

As a consequence of many legal entity structural changes over recent years – notably the transfer of our Personal & Corporate Banking and Global Wealth Management businesses booked in Switzerland from UBS AG to UBS Switzerland AG, and the creation of UBS Business Solutions AG, which houses a significant portion of the employees and associated costs that were previously held in UBS AG's Head Office in Switzerland and UBS AG's London branch – there is now a concentration of US dollar-influenced and -managed business activities in UBS AG's Head Office in Switzerland and UBS AG's London Branch. In addition, from the fourth quarter of 2018, for risk management purposes we adopted the US dollar as our risk-neutral currency and have adjusted our structural risk positions accordingly. As a result of these changes, effective from 1 October 2018, the functional currency of UBS Group AG and UBS AG's Head Office in Switzerland changed from Swiss francs to US dollars and that of UBS AG's London Branch from British pounds to US dollars, in compliance with the requirements of International Accounting Standard (IAS) 21, *The Effects of Changes in Foreign Exchange Rates*.

The presentation currency of UBS Group AG's consolidated financial statements has changed from Swiss francs to US dollars to align with the functional currency changes of significant Group entities. Prior periods have been restated for this presentation currency change. Assets, liabilities and total equity were translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses were translated at the respective average rates prevailing for the relevant periods. Additionally, *Other income* was restated to reflect releases of foreign currency translation (FCT) gains or losses from *Other comprehensive income* (OCI) to the income statement when calculated under US dollars as the presentation currency. The retrospective application of the presentation currency change did not affect total equity, but resulted in changes to the accumulated FCT OCI and other components of equity, in particular share premium and retained earnings. We have not restated our Basel III capital information due to immateriality.

→ **Refer to "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of this report for more information on the effects of restating to a US dollar presentation currency**

We will continue to publish selected financial and regulatory information in Swiss francs as part of our quarterly and annual reporting at *www.ubs.com/investors*. Business division results of Personal & Corporate Banking are presented in both Swiss francs and US dollars, and its management's discussion and analysis is provided in Swiss francs, as its business activities are mainly managed in Swiss francs.

We expect that these functional and presentation currency changes, together with the related changes to our risk management framework and certain hedging programs, should increase our reported Group operating income by approximately USD 0.3 billion in 2019 based on market-implied forwards.

IFRS 9, *Financial Instruments*

Effective 1 January 2018, we adopted IFRS 9, *Financial Instruments*, which replaces IAS 39, *Financial Instruments: Recognition and Measurement,* and substantially changed the classification, measurement and impairment of financial assets, income statement and balance sheet presentation and disclosure of financial instruments and other arrangements in scope. As permitted by IFRS 9, we elected not to restate prior-period information.

The adoption of IFRS 9 has resulted in a USD 0.6 billion reduction in our IFRS consolidated equity, net of tax, as well as a USD 0.3 billion reduction in our common equity tier 1 capital as of 1 January 2018, with no material effect on our capital ratios.

→ **Refer to "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of this report for more information**

IFRS 15, *Revenue from Contracts with Customers*

Effective 1 January 2018, we adopted IFRS 15, *Revenue from Contracts with Customers*, which replaces IAS 18, *Revenue*, and establishes principles for revenue recognition that apply to all contracts with customers other than those relating solely to financial instruments, leases and insurance contracts. IFRS 15 requires an entity to recognize revenue as performance obligations are satisfied. As permitted by IFRS 15, we elected not to restate prior-period information. The adoption of IFRS 15 has resulted in a reduction in our IFRS consolidated equity of USD 25 million, net of tax, as of 1 January 2018, with no material effect on our capital ratios.

→ **Refer to "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of this report for more information**

Changes to segment reporting effective first quarter 2018

Effective 1 February 2018, we integrated our Wealth Management and Wealth Management Americas business divisions into a single Global Wealth Management business division, which is managed on an integrated basis, with a single set of performance measures, performance targets, operating plan and management structure. Consistent with this, the operating results of Global Wealth Management are presented and assessed on an integrated basis in internal management reports to the Group Executive Board, which is considered the "chief operating decision maker" in accordance with IFRS 8, *Operating Segments*. Consequently, from the first quarter of 2018, Global Wealth Management qualifies as an operating and reportable segment for the purpose of segment reporting and is presented in these financial statements alongside Personal & Corporate Banking, Asset Management, the Investment Bank and Corporate Center. Following the change in the composition of our operating segments and corresponding reportable segments, previously reported segment information has been restated. The change has no effect on the recognized goodwill of either of the former segments.

Changes to Pillar 3 disclosure requirements

During 2018, we implemented several changes related to the "Pillar 3 disclosure requirement – consolidated and enhanced framework" as issued by the Basel Committee on Banking Supervision (BCBS) in March 2018, which represents the second phase of the BCBS review of the Pillar 3 disclosure framework and builds on the revisions to the Pillar 3 disclosure requirements published in January 2015. In addition, we implemented changes related to the revised Basel III securitization framework for securitization exposures in the banking book.

On 16 July 2018, FINMA issued a revised Circular 2016 / 1 "Disclosure – banks," including the aforementioned second-phase revisions, which requires banks to gradually implement the requirements from 31 December 2018 onward.

In addition, further disclosure requirements will be adopted in the first half of 2019, according to the applicable effective dates.

→ **Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors*, for more information on the changes to Pillar 3 disclosure requirements**

Significant accounting and financial reporting changes in 2019

IFRS 16, *Leases*

We have adopted IFRS 16, *Leases*, as of 1 January 2019, fundamentally changing how we account for operating leases when acting as a lessee. Upon adoption, assets and liabilities increased by approximately USD 3.5 billion, with a corresponding increase in risk-weighted assets (RWA) and leverage ratio denominator (LRD). As permitted by IFRS 16, we elected not to restate prior-period information.

→ **Refer to "Note 1d International Financial Reporting Standards and Interpretations to be adopted in 2019 and later and other changes" in the "Consolidated financial statements" section of this report for more information**

Changes in Corporate Center cost and resource allocation to business divisions

In order to further align Group and divisional performance, we are adjusting our methodology for the allocation of Corporate Center – Services funding costs and expenses to the business divisions. At the same time, we are updating our funds transfer pricing framework to better reflect the sources and usage of funding. All of these changes are effective as of 1 January 2019 and we will provide restated prior-period information in advance of our first quarter 2019 results.

Together, these changes will decrease the business divisions' operating results and thereby increase their adjusted cost / income ratios by approximately 1–2 percentage points, with an offsetting effect of approximately USD 0.7 billion in Corporate Center's operating profit / (loss) before tax.

We will retain in Corporate Center funding costs for deferred tax assets, costs relating to our legal entity transformation program and other costs not attributable to or representative of the performance of the business divisions.

Alongside the updates to cost allocations and to our funds transfer pricing framework, we are increasing the allocation of balance sheet resources from Corporate Center to the business divisions. For 2018, the restatement will result in approximately USD 26 billion of additional RWA and approximately USD 93 billion of additional LRD allocated from Corporate Center to the business divisions, consisting of:

- approximately USD 9 billion of additional RWA and LRD associated with property, equipment and software previously retained in Corporate Center – Services;
- approximately USD 14 billion of operational risk RWA previously allocated to Corporate Center – Services and Corporate Center – Group Asset and Liability Management (Group ALM);
- approximately USD 3 billion of additional RWA and approximately USD 90 billion of additional LRD previously retained in Corporate Center – Group ALM. This reflects a higher allocation of high-quality liquid assets (HQLA) to the business divisions, in line with the HQLA levels we expect to maintain, as well as the allocation of certain other assets centrally managed on behalf of the business divisions; and
- a reduction of approximately USD 7 billion in the LRD allocation related to an offset for common equity tier 1 (CET1) deduction items previously held in Corporate Center – Services, which is now allocated to the business divisions.

We have adopted IFRS 16, *Leases*, as of 1 January 2019, and allocated approximately USD 3.5 billion each of additional RWA and LRD to the business divisions.

Changes in equity attribution

The aforementioned changes in resource allocation from Corporate Center to the business divisions will be reflected in the equity attribution to the business divisions. Furthermore, we are updating our equity attribution framework, revising the capital ratio for RWA from 11% to 12.5% and incrementally allocating to business divisions approximately USD 2 billion of attributed equity that is related to certain common equity tier 1 (CET1) deduction items previously held centrally. In aggregate, we expect to allocate approximately USD 7 billion of additional attributed equity to the business divisions, of which approximately USD 3 billion will be allocated to the Investment Bank. The remaining attributed equity retained in Corporate Center will primarily relate to deferred tax assets, dividend accruals and Corporate Center – Non-core and Legacy Portfolio.

All of these changes are effective as of 1 January 2019 and we will provide restated prior-period information in advance of our first quarter results.

→ **Refer to "Equity attribution and return on attributed equity" in the "Capital management" section of this report for more information on the equity attributed to the business divisions**

Changes in Corporate Center segment reporting

As announced in our third quarter 2018 report, as of 1 January 2019, we no longer separately assess the performance of Corporate Center – Non-core and Legacy Portfolio, given its substantially reduced size and resource consumption. In addition, following the aforementioned changes to our methodology for allocating funding costs and expenses from Corporate Center – Services and Corporate Center – Group ALM to the business divisions, the operating loss retained in Corporate Center – Services and Corporate Center – Group ALM will be significantly reduced.

As a consequence and in compliance with IFRS 8, *Operating Segments*, beginning with our first quarter 2019 report, we will provide results for total Corporate Center only and will not separately report Corporate Center – Services, Group ALM and Non-core and Legacy Portfolio. Furthermore, we will operationally combine Group Treasury with Group ALM and call this combined function Group Treasury. Commentary on the performance of this function will be included in the Corporate Center management discussion and analysis in our quarterly and annual reporting. Former Group ALM total risk management net income after allocations will continue to be disclosed as a separate line item. Prior-period information will be restated.

IFRS 9 and our significant regulated subsidiaries and sub-groups

FINMA's plan to implement expected credit losses under Swiss GAAP has been deferred. We will continue to apply the incurred loss model in the UBS AG standalone and UBS Switzerland AG standalone financial statements, which are prepared in accordance with Swiss GAAP (FINMA Circular 2015 / 1 and Banking Ordinance).

UBS Americas Holding LLC expects to early adopt Accounting Standards Update (ASU) 2016-13, *Measurement of Credit Losses on Financial Instruments,* on 1 January 2020, in order for its consolidated financial statements to align with the mandatory effective date for some of its subsidiaries.

Group performance

Income statement

	For the year ended			% change from
USD million	31.12.18	31.12.17	31.12.16	31.12.17
Net interest income	6,025	6,656	6,487	(9)
Other net income from fair value changes on financial instruments	5,984	5,065	5,023	18
Credit loss (expense) / recovery	(118)	(131)	(38)	(10)
Fee and commission income	19,598	19,362	18,374	1
Fee and commission expense	(1,703)	(1,840)	(1,781)	(7)
Net fee and commission income	17,895	17,522	16,593	2
Other income	427	511	663	(16)
Total operating income	30,213	29,622	28,729	2
of which: net interest income and other net income from fair value changes on financial instruments	*12,008*	*11,721*	*11,510*	*2*
Personnel expenses	16,132	16,199	15,913	0
General and administrative expenses	6,797	6,949	7,517	(2)
Depreciation and impairment of property, equipment and software	1,228	1,053	997	17
Amortization and impairment of intangible assets	65	71	93	(8)
Total operating expenses	24,222	24,272	24,519	0
Operating profit / (loss) before tax	5,991	5,351	4,209	12
Tax expense / (benefit)	1,468	4,305	777	(66)
Net profit / (loss)	4,522	1,046	3,432	332
Net profit / (loss) attributable to non-controlling interests	7	77	84	(91)
Net profit / (loss) attributable to shareholders	4,516	969	3,348	366

Comprehensive income

Total comprehensive income	4,231	2,113	1,251	100
Total comprehensive income attributable to non-controlling interests	5	326	62	(98)
Total comprehensive income attributable to shareholders	4,225	1,787	1,189	136

Performance by business division and Corporate Center unit – reported and adjusted[1,2]

USD million	Global Wealth Management	Personal & Corporate Banking	Asset Manage-ment	Investment Bank	CC – Services[3]	CC – Group ALM	CC – Non-core and Legacy Portfolio	UBS
	For the year ended 31.12.18							
Operating income as reported	16,941	4,222	1,857	8,150	(513)	(609)	165	30,213
of which: gains related to investments in associates[4]	*101*	*359*						*460*
of which: gains on sale of real estate					*31*			*31*
of which: gains on sale of subsidiaries and businesses					*25*			*25*
of which: remeasurement loss related to UBS Securities China[5]					*(270)*			*(270)*
Operating income (adjusted)	16,840	3,863	1,857	8,150	(300)	(609)	165	29,966
Operating expenses as reported	13,313	2,310	1,406	6,501	293	84	315	24,222
of which: personnel-related restructuring expenses[6]	*34*	*4*	*23*	*16*	*208*	*0*	*0*	*286*
of which: non-personnel-related restructuring expenses[6]	*16*	*0*	*10*	*11*	*238*	*0*	*0*	*275*
of which: restructuring expenses allocated from CC – Services[6]	*209*	*43*	*33*	*166*	*(456)*	*3*	*3*	*0*
of which: gain related to changes to the Swiss pension plan	*(66)*	*(38)*	*(10)*	*(5)*	*(122)*			*(241)*
Operating expenses (adjusted)	13,120	2,300	1,350	6,313	425	81	312	23,903
of which: net expenses for litigation, regulatory and similar matters[7]	*619*	*41*	*0*	*(64)*	*(7)*	*0*	*69*	*657*
Operating profit / (loss) before tax as reported	3,628	1,912	451	1,649	(806)	(693)	(150)	5,991
Operating profit / (loss) before tax (adjusted)	3,720	1,563	508	1,836	(725)	(690)	(148)	6,063

USD million	Global Wealth Management	Personal & Corporate Banking	Asset Manage-ment	Investment Bank	CC – Services[3]	CC – Group ALM	CC – Non-core and Legacy Portfolio	UBS
	For the year ended 31.12.17							
Operating income as reported	16,287	3,925	2,083	7,794	(157)	(288)	(22)	29,622
of which: gains on sale of subsidiaries and businesses			*153*					*153*
of which: gains on sale of financial assets at fair value through OCI[8]				*137*				*137*
of which: net foreign currency translation losses[9]						*(16)*		*(16)*
Operating income (adjusted)	16,287	3,925	1,929	7,658	(157)	(271)	(22)	29,349
Operating expenses as reported	12,717	2,317	1,495	6,527	779	48	388	24,272
of which: personnel-related restructuring expenses[6]	*39*	*7*	*17*	*39*	*442*	*1*	*0*	*545*
of which: non-personnel-related restructuring expenses[6]	*75*	*0*	*22*	*18*	*532*	*0*	*0*	*647*
of which: restructuring expenses allocated from CC – Services[6]	*474*	*98*	*63*	*310*	*(954)*	*3*	*6*	*0*
of which: expenses from modification of terms for certain DCCP awards[10]				*26*				*26*
Operating expenses (adjusted)	12,129	2,212	1,393	6,135	759	44	382	23,054
of which: net expenses for litigation, regulatory and similar matters[7]	*174*	*2*	*(4)*	*(42)*	*252*	*0*	*52*	*434*
Operating profit / (loss) before tax as reported	3,571	1,607	587	1,267	(935)	(336)	(411)	5,351
Operating profit / (loss) before tax (adjusted)	4,159	1,713	536	1,523	(915)	(315)	(405)	6,295

Performance by business division and Corporate Center unit – reported and adjusted (continued)[1,2]

	For the year ended 31.12.16							
USD million	Global Wealth Management	Personal & Corporate Banking	Asset Manage-ment	Investment Bank	CC – Services[3]	CC – Group ALM	CC – Non-core and Legacy Portfolio	UBS
Operating income as reported	15,249	4,035	1,955	7,779	(103)	(155)	(32)	28,729
of which: gains on sale of financial assets at fair value through OCI[8]	*31*	*105*		*77*				*213*
of which: gains on sale of real estate					*123*			*123*
of which: gains related to investments in associates		*21*						*21*
of which: net foreign currency translation losses[9]						*(84)*		*(84)*
of which: losses on sale of subsidiaries and businesses	*(24)*							*(24)*
Operating income (adjusted)	15,242	3,909	1,955	7,702	(226)	(71)	(32)	28,480
Operating expenses as reported	12,159	2,250	1,498	6,765	753	(1)	1,094	24,519
of which: personnel-related restructuring expenses[6]	*61*	*4*	*15*	*156*	*526*	*0*	*1*	*763*
of which: non-personnel-related restructuring expenses[6]	*55*	*0*	*15*	*14*	*631*	*0*	*0*	*715*
of which: restructuring expenses allocated from CC – Services[6]	*478*	*115*	*72*	*416*	*(1,101)*	*0*	*21*	*0*
Operating expenses (adjusted)	11,564	2,132	1,397	6,179	697	(1)	1,073	23,041
of which: net expenses for litigation, regulatory and similar matters[7]	*164*	*3*	*(2)*	*42*	*2*	*0*	*595*	*805*
Operating profit / (loss) before tax as reported	**3,090**	**1,785**	**457**	**1,014**	**(856)**	**(154)**	**(1,126)**	**4,209**
Operating profit / (loss) before tax (adjusted)	**3,678**	**1,778**	**558**	**1,524**	**(923)**	**(70)**	**(1,105)**	**5,439**

1 Adjusted results are non-GAAP financial measures as defined by SEC regulations. 2 Comparative figures in this table have been restated for the change of the presentation currency from Swiss francs to US dollars with assets, liabilities and total equity translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses translated at the respective average rates prevailing for the relevant periods. Comparatives may additionally differ due to adjustments following organizational changes, restatements due to the retrospective adoption of new accounting standards or changes in accounting policies, and events after the reporting period. 3 Corporate Center – Services operating expenses presented in this table are after service allocations to business divisions and other Corporate Center units. 4 Reflects a valuation gain on our equity ownership in SIX related to the sale of SIX Payment Services to Worldline. 5 Related to the increase of stake in and consolidation of UBS Securities China. Refer to "Note 32 Changes in organization and acquisitions and disposals of subsidiaries and businesses" in the "Consolidated financial statements" section of this report for more information. 6 Reflects restructuring expenses related to legacy cost programs as well as expenses for new restructuring initiatives for Global Wealth Management and Asset Management in 2018. 7 Reflects the net increase in / (release of) provisions for litigation, regulatory and similar matters recognized in the income statement. Refer to "Note 21 Provisions and contingent liabilities" in the "Consolidated financial statements" section of this report for more information. Also includes recoveries from third parties of USD 29 million, USD 55 million and USD 13 million for the years ended 31 December 2018, 31 December 2017 and 31 December 2016, respectively. 8 Includes a gain on the sale of our investment in the London Clearing House in the Investment Bank in 2017, gains on sales of our investment in IHS Markit in the Investment Bank in 2017 and 2016, and a gain on the sale of our investment in Visa Europe in Global Wealth Management and Personal & Corporate Banking in 2016. Figures presented for periods prior to 2018 relate to financial assets available for sale. 9 Related to the disposal of foreign branches and subsidiaries. 10 Relates to the removal of the service period requirement for DCCP awards granted for the performance years 2012 and 2013.

2018 compared with 2017

Results

We recorded net profit attributable to shareholders of USD 4,516 million in 2018, which included a net tax expense of USD 1,468 million. In 2017, net profit attributable to shareholders was USD 969 million, which included a net tax expense of USD 4,305 million, including a USD 2,939 million net write-down of deferred tax assets following the reduction in the US federal corporate tax rate after the enactment of the Tax Cuts and Jobs Act (TCJA) in the US during the fourth quarter of 2017.

Profit before tax increased by USD 640 million, or 12%, to USD 5,991 million, mainly reflecting higher operating income. Operating income increased by USD 591 million, or 2%, reflecting a USD 373 million increase in net fee and commission income as well as USD 287 million higher net interest income and other net income from fair value changes on financial instruments. Operating expenses were broadly unchanged, mainly as USD 169 million higher expenses for depreciation, amortization and impairment of property, equipment, software and intangible assets were offset by USD 152 million lower general and administrative expenses.

In addition to reporting our results in accordance with International Financial Reporting Standards (IFRS), we report adjusted results that exclude items that management believes are not representative of the underlying performance of our businesses. Such adjusted results are non-GAAP financial measures as defined by SEC regulations. These adjustments include restructuring expenses related to our CHF 2.1 billion cost reduction program, completed at the end of 2017 (referred to as our "legacy cost programs" in this report). We incurred restructuring expenses in connection with such legacy cost programs, as well as expenses relating to new restructuring initiatives, of USD 561 million and expect such amounts to be approximately USD 0.2 billion for the full year 2019.

For the purpose of determining adjusted results for 2018, we excluded a gain of USD 460 million related to investments in associates, gains of USD 31 million on sale of real estate, gains of USD 25 million on sale of subsidiaries and businesses, a remeasurement loss of USD 270 million related to the increase of our shareholding in UBS Securities China, a gain of USD 241 million related to changes to the Swiss pension plan, and net restructuring expenses of USD 561 million. For 2017, we excluded gains of USD 153 million on sale of subsidiaries and businesses, gains of USD 137 million on sale of financial assets at fair value through OCI, net foreign currency translation losses of USD 16 million, expenses of USD 26 million related to the modification of terms for Deferred Contingent Capital Plan (DCCP) awards granted for the performance years 2012 and 2013, and net restructuring expenses of USD 1,192 million.

On this adjusted basis, profit before tax decreased by USD 232 million, or 4%, to USD 6,063 million, reflecting USD 849 million higher adjusted operating expenses, partly offset by USD 617 million higher adjusted operating income.

Operating income

Total operating income was USD 30,213 million compared with USD 29,622 million. On an adjusted basis, total operating income increased by USD 617 million, or 2%, to USD 29,966 million, mainly due to a USD 373 million increase in net fee and commission income as well as USD 287 million higher net interest income and other net income from fair value changes on financial instruments.

Net interest income and other net income from fair value changes on financial instruments

	For the year ended			% change from
USD million	31.12.18	31.12.17	31.12.16	31.12.17
Net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income (AC / FVOCI)	3,710	5,018	5,403	(26)
Net interest income from financial instruments measured at fair value through profit or loss (FVTPL)	2,315	1,638	1,084	41
Other net income from fair value changes on financial instruments	5,984	5,065	5,023	18
Total	12,008	11,721	11,510	2
Global Wealth Management	5,254	5,149	4,893	2
of which: net interest income	*4,310*	*4,103*	*3,843*	*5*
of which: transaction-based income from foreign exchange and other intermediary activity[1]	*944*	*1,046*	*1,050*	*(10)*
Personal & Corporate Banking	2,514	2,510	2,563	0
of which: net interest income	*2,106*	*2,127*	*2,225*	*(1)*
of which: transaction-based income from foreign exchange and other intermediary activity[1]	*408*	*383*	*337*	*6*
Asset Management	(30)	(24)	(29)	23
Investment Bank[2]	4,812	4,363	4,330	10
Corporate Client Solutions	*1,056*	*1,087*	*830*	*(3)*
Investor Client Services	*3,756*	*3,276*	*3,500*	*15*
Corporate Center[2]	(541)	(278)	(246)	95
CC – Services	*(159)*	*(43)*	*(90)*	*268*
CC – Group ALM	*(554)*	*(162)*	*(96)*	*241*
CC – Non-core and Legacy Portfolio	*173*	*(72)*	*(60)*	

1 Mainly includes spread-related income in connection with client-driven transactions, foreign currency translation effects and income and expenses from precious metals, which are included in the income statement line Other net income from fair value changes on financial instruments. The amounts reported on this line are one component of Transaction-based income in the management discussion and analysis of Global Wealth Management and Personal & Corporate Banking in the "Global Wealth Management" and "Personal & Corporate Banking" sections of this report. 2 Investment Bank and Corporate Center information is provided at the business line level rather than by financial statement reporting line in order to reflect the underlying business activities, which is consistent with the structure of their management discussion and analysis in the "Investment Bank" and "Corporate Center" sections of this report.

Net interest income and other net income from fair value changes on financial instruments

Total combined net interest income and other net income from fair value changes on financial instruments increased by USD 287 million to USD 12,008 million. This was mainly driven by increases in the Investment Bank and Global Wealth Management, partly offset by a decrease in Corporate Center.

Global Wealth Management

In Global Wealth Management, net interest income increased by USD 207 million to USD 4,310 million, reflecting an increase in average margin on deposits and higher loan volumes, partly offset by the expiration of an interest rate hedge portfolio at the end of 2017, lower net income from Group structural risk management activities and higher funding costs for long-term debt that contributes to total loss-absorbing capacity.

Transaction-based income from foreign exchange and other intermediary activity decreased by USD 102 million to USD 944 million, mainly due to lower client activity.

Personal & Corporate Banking

In Personal & Corporate Banking, net interest income decreased by USD 21 million to USD 2,106 million, primarily related to the expiration of an interest rate hedge portfolio at the end of 2017, as well as higher funding costs for long-term debt that contributes to total loss-absorbing capacity and lower banking book interest income. This was partly offset by higher deposit revenues.

Transaction-based income from foreign exchange and other intermediary activity increased by USD 25 million to USD 408 million, mainly due to higher net income from foreign exchange transactions.

Investment Bank

In the Investment Bank, net interest income and other net income from fair value changes on financial instruments increased by USD 449 million to USD 4,812 million. This was driven by a USD 480 million increase in Investor Client Services, primarily in Foreign Exchange, Rates and Credit, mainly due to higher client activity levels and improved trading performance across the majority of products. 2018 also included the recognition of net income of around USD 100 million, comprised mainly of previously deferred day-1 profits, due to enhanced observability and revised valuations in the funding curve used to value UBS interest-linked notes. In addition, there was an increase in Equities, primarily in Financing Services and Derivatives, driven by increased client activity. In Corporate Client Solutions, net interest income and other net income from fair value changes on financial instruments was broadly stable at USD 1,056 million.

Corporate Center

In Corporate Center, net interest income and other net income from fair value changes on financial instruments decreased by USD 263 million, primarily reflecting a USD 392 million decrease in Corporate Center – Group Asset and Liability Management (Group ALM), mainly due to higher net interest expense in Group ALM's unsecured funding portfolio. In addition, there was a USD 116 million decrease in Corporate Center – Services, primarily driven by higher funding costs relating to Corporate Center – Services' balance sheet assets. These decreases were partly offset by a USD 245 million increase in Corporate Center – Non-core and Legacy Portfolio, primarily because 2018 included valuation gains on auction rate securities, which were measured at amortized cost in 2017 and are now measured at fair value through profit or loss effective 1 January 2018 upon adoption of IFRS 9.

→ **Refer to "Note 3 Net interest income and other net income from fair value changes on financial instruments" in the "Consolidated financial statements" section of this report for more information**

Credit loss expense / recovery

We adopted IFRS 9, *Financial Instruments,* effective 1 January 2018. IFRS 9 introduces a forward-looking expected credit loss (ECL) approach, which is intended to result in an earlier recognition of credit losses based on an ECL impairment approach compared with the incurred-loss impairment approach for financial instruments under IAS 39, *Financial Instruments: Recognition and Measurement,* and the loss-provisioning approach for financial guarantees and loan commitments under IAS 37, *Provisions, Contingent Liabilities and Contingent Assets*.

Total net credit loss expenses were USD 118 million in 2018, reflecting net losses of USD 95 million related to credit-impaired (stage 3) positions, mainly in Personal & Corporate Banking and to a lesser extent in the Investment Bank, as well as net expected credit losses of USD 23 million related to stage 1 and 2 positions.

→ **Refer to "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of this report for more information on the adoption of IFRS 9**

→ **Refer to "Note 23 Expected credit loss measurement" in the "Consolidated financial statements" section of this report for more information on credit loss expense / recovery**

→ **Refer to the "Risk factors" section of this report for more information**

Credit loss (expense) / recovery

	For the year ended			% change from
USD million	31.12.18	31.12.17	31.12.16	31.12.17
Global Wealth Management	(15)	(8)	(8)	89
Personal & Corporate Banking	(56)	(20)	(6)	180
Investment Bank	(38)	(92)	(11)	(58)
Corporate Center	(8)	(11)	(12)	(27)
of which: Non-core and Legacy Portfolio	*(8)*	*(11)*	*(12)*	*(33)*
Total	(118)	(131)	(38)	(10)

Net fee and commission income

Net fee and commission income was USD 17,895 million compared with USD 17,522 million.

Investment fund fees and fees for portfolio management and related services increased by USD 722 million to USD 12,710 million, mainly in Global Wealth Management, predominantly driven by higher average invested assets and an increase in mandate penetration during the year.

M&A and corporate finance fees increased by USD 70 million to USD 768 million, primarily reflecting an increase in the Investment Bank due to higher revenues from both private transactions and merger and acquisition transactions.

Other fee and commission expense increased by USD 220 million to USD 1,387 million, primarily in Asset Management, mainly due to the inclusion of fund administration expenses, which were reported as operating expenses prior to the sale of Asset Management's fund administration business in October 2017.

Underwriting fees decreased by USD 192 million to USD 811 million, mainly reflecting lower equity underwriting revenues in the Investment Bank.

→ **Refer to "Note 4 Net fee and commission income" in the "Consolidated financial statements" section of this report for more information**

Other income

Other income was USD 427 million compared with USD 511 million. Excluding the aforementioned adjusting items, which consist of gains related to investments in associates, gains on sales of subsidiaries and businesses, gains on sale of financial assets at fair value through OCI and real estate, a remeasurement loss related to UBS Securities China and net foreign currency translation losses, adjusted other income decreased by USD 56 million. This decrease was mainly due to higher gains on sale of financial assets at fair value through OCI in 2017, which were not treated as adjusting items.

→ **Refer to "Note 5 Other income" in the "Consolidated financial statements" section of this report for more information**

→ **Refer to "Note 32 Changes in organization and acquisitions, sales and disposals of subsidiaries and businesses" in the "Consolidated financial statements" section of this report for more information on the increase of stake in and consolidation of UBS Securities China**

Operating expenses

Total operating expenses were broadly unchanged at USD 24,222 million. Excluding net restructuring expenses of USD 561 million (2017: USD 1,192 million) and a gain of USD 241 million in 2018 related to changes to the Swiss pension plan, as well as expenses of USD 26 million in 2017 in the Investment Bank related to the modification of terms for DCCP awards granted for the performance years 2012 and 2013, adjusted total operating expenses increased by USD 849 million, or 4%, to USD 23,903 million.

Personnel expenses

Personnel expenses decreased by USD 67 million to USD 16,132 million, mainly reflecting a USD 259 million decrease in net restructuring expenses and a gain of USD 241 million in 2018 related to changes to the Swiss pension plan, largely offset by higher salary expenses. On an adjusted basis, personnel expenses increased by USD 459 million.

Adjusted expenses for salaries increased by USD 472 million to USD 6,273 million, mainly in Corporate Center – Services, primarily driven by continued insourcing of certain activities and staff from third-party vendors to our Business Solutions Centers. This increase in salaries was partly offset by lower general and administrative expenses. Salary expenses also increased in Global Wealth Management.

Adjusted expenses for total variable compensation decreased by USD 75 million, reflecting a decrease of USD 112 million in expenses for awards related to prior years, partly offset by USD 38 million higher expenses for current-year awards.

Financial advisor variable compensation was broadly stable at USD 4,054 million, reflecting lower expenses for compensation commitments to recruited financial advisors, almost entirely offset by an increase in expenses due to higher compensable revenues.

Adjusted other personnel expenses increased by USD 72 million, primarily due to an increase in costs for salary-related add-ons, recruitment and contractors, partly offset by lower expenses for pension and other post-employment benefit plans.

→ **Refer to the "Compensation" section of this report for more information**

→ **Refer to "Note 6 Personnel expenses," "Note 29 Pension and other post-employment benefit plans" and "Note 30 Employee benefits: variable compensation" in the "Consolidated financial statements" section of this report for more information**

General and administrative expenses

General and administrative expenses decreased by USD 152 million to USD 6,797 million. This was mainly due to USD 415 million lower net restructuring expenses, partly offset by USD 223 million higher net expenses for litigation, regulatory and similar matters. Net expenses for the UK and German bank levy were USD 58 million in 2018 and included a USD 45 million credit related to prior years. In 2017, net expenses for the UK and German bank levy were USD 20 million and included an USD 85 million credit related to prior years.

On an adjusted basis, general and administrative expenses increased by USD 263 million, primarily due to the aforementioned increase in net expenses for litigation, regulatory and similar matters and USD 147 million higher expenses for rent and maintenance of IT and other equipment. This was partly offset by USD 66 million lower professional fees and a USD 52 million decrease in marketing and public relations costs.

Operating expenses

	For the year ended			% change from
USD million	31.12.18	31.12.17	31.12.16	31.12.17
Operating expenses as reported				
Personnel expenses	16,132	16,199	15,913	0
General and administrative expenses	6,797	6,949	7,517	(2)
Depreciation and impairment of property, equipment and software	1,228	1,053	997	17
Amortization and impairment of intangible assets	65	71	93	(8)
Total operating expenses as reported	24,222	24,272	24,519	0
Adjusting items				
Personnel expenses	45	570	763	
of which: restructuring expenses[1]	*286*	*545*	*763*	
of which: a gain related to changes to the Swiss pension plan[2]	*(241)*			
of which: expenses from modification of terms for certain DCCP awards[3]		*26*		
General and administrative expenses[1]	225	640	705	
Depreciation and impairment of property, equipment and software[1]	50	7	11	
Total adjusting items	319	1,217	1,479	
Operating expenses (adjusted)[4]				
Personnel expenses	16,087	15,628	15,150	3
of which: salaries	*6,273*	*5,801*	*5,864*	*8*
of which: total variable compensation	*3,167*	*3,242*	*3,123*	*(2)*
of which: relating to current year[5]	*2,576*	*2,538*	*2,281*	*1*
of which: relating to prior years[6]	*592*	*704*	*842*	*(16)*
of which: financial advisor variable compensation[7]	*4,054*	*4,064*	*3,740*	*0*
of which: other personnel expenses[8]	*2,593*	*2,521*	*2,423*	*3*
General and administrative expenses	6,572	6,309	6,812	4
of which: net expenses for litigation, regulatory and similar matters	*657*	*434*	*805*	*51*
of which: other general and administrative expenses	*5,916*	*5,875*	*6,007*	*1*
Depreciation and impairment of property, equipment and software	1,178	1,046	986	13
Amortization and impairment of intangible assets	65	71	93	(8)
Total operating expenses (adjusted)	23,903	23,054	23,041	4

1 Reflects restructuring expenses related to legacy cost programs as well as expenses for new restructuring initiatives for Global Wealth Management and Asset Management in 2018. 2 Refer to "Note 29 Pension and other post-employment benefit plans" in the "Consolidated financial statements" section of this report for more information. 3 Relates to the removal of the service period requirement for DCCP awards granted for the performance years 2012 and 2013. 4 Adjusted results are non-GAAP financial measures as defined by SEC regulations. 5 Includes expenses relating to performance awards and other variable compensation for the respective performance year. 6 Consists of amortization of prior years' awards relating to performance awards and other variable compensation. 7 Financial advisor variable compensation consists of formulaic compensation based directly on compensable revenues generated by financial advisors and supplemental compensation calculated on the basis of financial advisor productivity, firm tenure, new assets and other variables. It also includes expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. 8 Consists of expenses related to contractors, social security, pension and other post-employment benefit plans and other personnel expenses. Refer to "Note 6 Personnel expenses" in the "Consolidated financial statements" section of this report for more information.

We believe that the industry continues to operate in an environment in which expenses associated with litigation, regulatory and similar matters will remain elevated for the foreseeable future and we continue to be exposed to a number of significant claims and regulatory matters. The outcome of many of these matters, the timing of a resolution, and the potential effects of resolutions on our future business, financial results or financial condition are extremely difficult to predict.

→ **Refer to "Note 7 General and administrative expenses" and "Note 21 Provisions and contingent liabilities" in the "Consolidated financial statements" section of this report for more information**

Depreciation, amortization and impairment

Depreciation, amortization and impairment of property, equipment, software and intangible assets was USD 1,293 million compared with USD 1,124 million, mainly resulting from higher expenses for internally generated capitalized software, driven by newly developed software that has been placed in service over the last 12 months, and higher impairment costs.

On an adjusted basis, depreciation, amortization and impairment of property, equipment, software and intangible assets increased by USD 126 million, primarily due to the aforementioned increase in expenses for internally generated capitalized software.

→ **Refer to "Note 15 Property, equipment and software" and "Note 16 Goodwill and intangible assets" in the "Consolidated financial statements" section of this report for more information**

Tax

We recognized an income tax expense of USD 1,468 million for 2018, compared with an income tax expense of USD 4,305 million for 2017.

The 2018 income tax expense reflects current tax expenses of USD 884 million, which primarily relate to taxable profits of UBS Switzerland AG and other entities. It also includes a net deferred tax expense of USD 859 million, which primarily relates to the amortization of deferred tax assets (DTAs) previously recognized in relation to tax losses carried forward and deductible temporary differences to reflect their offset against profits for the year.

In addition, following the corporate tax reform in the US at the end of 2017 and the reduction in timeframe between the end of our seven-year profit forecast period and the expiry of our brought-forward US tax losses, we have reviewed our approach to the remeasurement of our US DTAs. This review resulted in the recognition of a net tax benefit during the year of USD 275 million, comprised of as follows:

– The write-off of a Swiss temporary difference DTA of USD 1,617 million relating to UBS AG's investment in our US intermediate holding company (US IHC), UBS Americas Holding LLC. The write-off occurred because the temporary difference between the tax and accounting values in respect of UBS AG's investment in the US IHC is no longer expected to reverse in the foreseeable future, reflecting the expected repatriation of a significant portion of future US earnings.
– A net increase in DTAs of USD 1,180 million, which is the sum of two related items. We recognized new US temporary difference DTAs of USD 2,134 million as a result of tax elections made in the fourth quarter of 2018 to capitalize certain historic real estate costs for US tax purposes that will be amortized over a period of up to 39 years. These elections also resulted in a reduction in recognized US tax loss DTAs of USD 954 million, because expected future taxable profits otherwise available against which to utilize brought-forward tax losses were reduced by the expected future amount of capitalized real estate cost amortization.
– A current US state and local tax expense of USD 160 million resulting from the real estate capitalization elections.
– An increase in recognized US DTAs recorded at the level of UBS Americas Inc. of USD 1,367 million, reflecting the elimination of the seven-year profit forecast period limit for US tax loss DTAs as well as the transfer by UBS AG of US shareholdings in certain profitable subsidiaries to UBS Americas Inc.
– A decrease in recognized US DTAs for UBS AG of USD 495 million, which mainly relates to the transfer of the shareholdings referred to above.

The 2017 income tax expense of USD 4,305 million included a deferred tax expense of USD 3,415 million, which primarily related to a net write-down of DTAs in respect of the US federal corporate tax rate reduction included in the TCJA enacted in the fourth quarter of 2017. It also included a current tax expense of USD 890 million, which related to taxable profits of UBS Switzerland AG and other entities.

Tax loss DTAs at the level of UBS Americas Inc. will begin to be amortized with effect from 1 January 2019. For 2019, we expect a full-year tax rate of approximately 25%, of which 14% relates to current tax expenses.

→ **Refer to "Note 8 Income taxes" in the "Consolidated financial statements" section of this report for more information**

→ **Refer to the "Risk factors" section of this report for more information**

Total comprehensive income attributable to shareholders

In 2018, total comprehensive income attributable to shareholders was USD 4,225 million, reflecting net profit of USD 4,516 million, partly offset by negative other comprehensive income (OCI), net of tax, of USD 290 million.

Foreign currency translation OCI was negative USD 541 million in 2018, mainly resulting from the weakening of the Swiss franc, the euro and the British pound against the US dollar. In 2017, OCI related to foreign currency translation was positive USD 1,564 million.

OCI related to cash flow hedges was negative USD 269 million, mainly reflecting a decrease in net unrealized gains on hedging derivatives resulting from increases in the relevant long-term interest rates. In 2017, OCI related to cash flow hedges was negative USD 635 million.

OCI associated with financial assets measured at fair value through OCI was negative USD 45 million, compared with negative USD 91 million, reflecting net unrealized losses following increases in the relevant US dollar long-term interest rates in 2018.

OCI related to own credit on financial liabilities designated at fair value was positive USD 509 million and primarily reflected a widening of credit spreads. In 2017, OCI related to own credit on financial liabilities designated at fair value was negative USD 317 million, primarily reflecting a tightening of credit spreads.

Defined benefit plan OCI was USD 56 million compared with USD 296 million. Total pre-tax OCI related to the Swiss defined benefit plan was negative USD 352 million. This reflected a net gain of USD 242 million from the remeasurement of the defined benefit obligation (DBO) which was more than offset by a loss of USD 523 million due to a negative return on plan assets and a loss of USD 71 million related to an increase in the effect of the IFRS asset ceiling. The net gain of USD 242 million related to the DBO remeasurement was mainly driven by a gain of USD 776 million due to an increase in the applicable discount rate, partly offset by an experience loss of USD 397 million (reflecting the effects of differences between the previous actuarial assumptions and what actually occurred) and a loss of USD 124 million due to an increase in the rate of interest credit on retirement savings.

Total pre-tax OCI related to UK defined benefit plans was positive USD 132 million, reflecting OCI gains of USD 269 million from the remeasurement of the DBO, primarily driven by a gain of USD 220 million due to an increase in the applicable discount rate. This was partly offset by OCI losses of USD 136 million due to a negative return on plan assets.

The total pre-tax OCI loss of USD 220 million was more than offset by a net tax benefit of USD 276 million, mainly due to the recognition of temporary difference DTAs in the US in the fourth quarter of 2018, following our review of the approach used to remeasure our US DTAs and the timing for recognizing deferred taxes.

→ **Refer to "Statement of comprehensive income" in the "Consolidated financial statements" section of this report for more information**

→ **Refer to "Note 29 Pension and other post-employment benefit plans" in the "Consolidated financial statements" section of this report for more information on defined benefit plans**

Sensitivity to interest rate movements

As of 31 December 2018, we estimate that a parallel shift in yield curves by +100 basis points could lead to a combined increase in annual net interest income of approximately USD 0.7 billion in Global Wealth Management and Personal & Corporate Banking. Of this increase, approximately USD 0.3 billion and USD 0.2 billion would result from changes in US dollar and euro interest rates, respectively.

The immediate effect on shareholders' equity of such a shift in yield curves would be a decrease of approximately USD 2.0 billion recognized in OCI, of which approximately USD 1.5 billion would result from changes in US dollar interest rates. The immediate effect on regulatory capital would be immaterial as OCI from cash flow hedges is not recognized in capital and the effect from debt instruments measured at fair value through OCI would be offset by a positive effect from pension fund assets and liabilities.

The aforementioned estimates are based on a hypothetical scenario of an immediate increase in interest rates, equal across all currencies and relative to implied forward rates applied to our banking book and financial assets measured at fair value through OCI. These estimates further assume no change to balance sheet size and structure, constant foreign exchange rates and no specific management action.

Net profit attributable to non-controlling interests

Net profit attributable to non-controlling interests was USD 7 million in 2018, compared with USD 77 million in the prior year, mainly because a EUR 600 million non-Basel III-compliant hybrid tier 1 capital instrument was redeemed in the fourth quarter of 2017.

For 2019, we currently expect net profit attributable to non-controlling interests to be less than USD 10 million.

Key figures

Return on tangible equity

The return on tangible equity (RoTE) was 10.0% compared with 2.2%, mainly because the fourth quarter of 2017 included a USD 2,939 million net write-down of DTAs following a reduction in the US federal corporate tax rate after the enactment of the TCJA in the US. The adjusted RoTE excluding deferred tax expense / benefit and DTAs was 12.9% compared with 13.7%, and was below our 2018 target of approximately 15%.

Return on common equity tier 1 (CET1) capital

The return on CET1 capital (RoCET1) was 13.1% compared with 3.0%, mainly because the fourth quarter of 2017 included the aforementioned net write-down of DTAs. Excluding this net DTA write-down from net profit attributable to shareholders, the RoCET1 would have been 12.0% in 2017.

Cost / income ratio

The cost / income ratio was 79.9% compared with 81.6%. On an adjusted basis, the cost / income ratio was 79.5% compared with 78.2%, and was above our over-the-cycle target of below 75%.

Common equity tier 1 capital ratio / risk-weighted assets

Our CET1 capital ratio was 12.9%, a decrease of 0.8 percentage points compared with 31 December 2017, in line with our capital guidance, reflecting a USD 0.6 billion increase in CET1 capital and a USD 20.1 billion increase in risk-weighted assets (RWA).

RWA increased by USD 20.1 billion to USD 263.7 billion as of 31 December 2018, primarily due to a USD 19.1 billion increase in methodology, policy changes and model updates.

→ **Refer to the "Investment Bank," "Corporate Center" and "Capital management" sections of this report for more information**

Common equity tier 1 leverage ratio / leverage ratio denominator

Our CET1 leverage ratio was 3.77%, an increase of 0.08 percentage points compared with 31 December 2017, slightly above our guidance of approximately 3.7%, reflecting the aforementioned increase in CET1 capital and a USD 4.4 billion decrease in the leverage ratio denominator (LRD).

The LRD decreased by USD 4.4 billion to USD 904.6 billion as of 31 December 2018, primarily driven by decreases from currency effects of USD 12.1 billion and incremental netting and collateral mitigation as well as policy changes of USD 1.5 billion, partly offset by a USD 9.1 billion increase in asset size and other.

→ **Refer to the "Investment Bank," "Corporate Center" and "Capital management" sections of this report for more information**

Going concern leverage ratio

Our going concern leverage ratio was 5.1%, an increase of 0.4 percentage points compared with 31 December 2017, reflecting a USD 3.3 billion increase in going concern capital, partly offset by the aforementioned decrease in LRD.

→ **Refer to the "Capital management" section of this report for more information**

Net new money and invested assets

Management's discussion and analysis on net new money and invested assets is provided in the "Global Wealth Management" and "Asset Management" sections of this report.

Seasonal characteristics

Our revenues may show seasonal patterns, notably in the Investment Bank and Global Wealth Management. These business divisions typically show the highest client activity levels in the first quarter, with lower levels throughout the rest of the year, especially during the summer months and end-of-year holiday season. Other seasonal factors that may affect our businesses include annual tax payments (which are concentrated in the second quarter in the US) and asset withdrawals, which tend to occur in the fourth quarter.

Return on equity

	As of or for the year ended		
USD million, except where indicated	31.12.18	31.12.17	31.12.16
Net profit			
Net profit attributable to shareholders	4,516	969	3,348
Amortization and impairment of intangible assets	65	71	93
Pre-tax adjusting items[1,2]	73	944	1,230
Tax effect on adjusting items[3]	(16)	(208)	(271)
Adjusted net profit attributable to shareholders	4,638	1,776	4,400
of which: deferred tax (expense) / benefit[4]	*(425)*	*(3,414)*	*43*
Adjusted net profit attributable to shareholders excluding deferred tax expense / benefit	5,062	5,190	4,357
Equity			
Equity attributable to shareholders	52,928	52,495	52,916
Less: goodwill and intangible assets	6,647	6,563	6,442
Tangible equity attributable to shareholders	46,281	45,932	46,474
of which: DTAs not eligible as common equity tier 1 capital[5]	*6,693*	*6,826*	*10,059*
Tangible equity attributable to shareholders excluding DTAs	39,588	39,106	36,415
Common equity tier 1 capital	34,119	33,516	30,156
Return on equity			
Return on equity (%)	8.6	1.8	6.1
Return on tangible equity (%)	10.0	2.2	7.1
Adjusted return on tangible equity (%)[1]	10.1	3.7	9.1
Adjusted return on tangible equity excluding deferred tax expense / benefit and DTAs (%)[1,6]	12.9	13.7	11.3
Return on common equity tier 1 capital (%)[7]	13.1	3.0	10.9

1 Adjusted results are non-GAAP financial measures as defined by SEC regulations. 2 Refer to the "Performance by business division and Corporate Center unit – reported and adjusted" table in this section for more information. 3 Generally reflects an indicative tax rate of 22% on pre-tax adjusting items. 4 Deferred tax expense / benefit in respect to taxable profits and any remeasurements of DTAs, such as the net write-down due to the Tax Cuts and Jobs Act enacted in the fourth quarter of 2017. 5 DTAs that do not qualify as common equity tier 1 (CET1) capital, reflecting DTAs recognized for tax loss carry-forwards of USD 6,107 million as of 31 December 2018 (31 December 2017: USD 5,947 million; 31 December 2016: USD 8,256 million) as well as DTAs on temporary differences, excess over threshold of USD 586 million as of 31 December 2018 (31 December 2017: USD 879 million; 31 December 2016: USD 1,803 million), in accordance with Swiss SRB rules. Refer to the "Capital management" section of this report for more information. 6 Calculated as adjusted net profit / loss attributable to shareholders excluding deferred tax expense / benefit, such as the net write-down due to the Tax Cuts and Jobs Act enacted in the fourth quarter of 2017, divided by average tangible equity attributable to shareholders excluding any DTAs that do not qualify as CET1 capital. 7 Calculated as net profit / loss attributable to shareholders divided by average CET1 capital.

Net new money[1]

	For the year ended		
USD billion	31.12.18	31.12.17	31.12.16
Global Wealth Management	24.7	44.8	43.0
Asset Management	32.2	59.5	(16.2)
of which: excluding money market flows	*24.8*	*48.7*	*(23.0)*
of which: money market flows	*7.5*	*10.8*	*6.8*

1 Net new money excludes interest and dividend income.

Invested assets

	As of			% change from
USD billion	31.12.18	31.12.17	31.12.16	31.12.17
Global Wealth Management	2,260	2,403	2,060	(6)
Asset Management	781	796	645	(2)
of which: excluding money market funds	*696*	*719*	*580*	*(3)*
of which: money market funds	*85*	*78*	*65*	*9*

2017 compared with 2016

Results

We recorded net profit attributable to shareholders of USD 969 million in 2017, which included a net tax expense of USD 4,305 million, mainly driven by a deferred tax expense of USD 3,414 million, primarily related to a net write-down of DTAs in respect of the US federal corporate tax reduction included in the TCJA enacted in the fourth quarter of 2017. In 2016, net profit attributable to shareholders was USD 3,348 million, which included a net tax expense of USD 777 million.

Profit before tax increased by USD 1,142 million, or 27%, to USD 5,351 million, reflecting higher operating income and a reduction in operating expenses. Operating income increased by USD 893 million, or 3%, mainly due to USD 929 million higher net fee and commission income, primarily in Global Wealth Management. Operating expenses decreased by USD 247 million, or 1%, mainly due to USD 568 million lower general and administrative expenses, primarily reflecting USD 371 million lower net expenses for provisions for litigation, regulatory and similar matters.

In addition to reporting our results in accordance with International Financial Reporting Standards (IFRS), we report adjusted results that exclude items that management believes are not representative of the underlying performance of our businesses. Such adjusted results are non-GAAP financial measures as defined by SEC regulations. For the purpose of determining adjusted results for 2017, we excluded gains of USD 153 million on sale of subsidiaries and businesses, gains of USD 137 million on sale of financial assets at fair value through OCI, net foreign currency translation losses of USD 16 million, expenses of USD 26 million related to the modification of terms for DCCP awards granted for the performance years 2012 and 2013, and net restructuring expenses of USD 1,192 million. For 2016, we excluded gains of USD 213 million on sale of financial assets at fair value through OCI, gains of USD 123 million on sale of real estate, gains of USD 21 million related to investments in associates, net foreign currency translation losses of USD 84 million, losses of USD 24 million on sales of subsidiaries and businesses, and net restructuring expenses of USD 1,479 million.

On this adjusted basis, profit before tax increased by USD 856 million, or 16%, to USD 6,295 million, reflecting USD 869 million higher adjusted operating income and USD 13 million higher adjusted operating expenses.

Operating income

Total operating income was USD 29,622 million, compared with USD 28,729 million. On an adjusted basis, total operating income increased by USD 869 million, or 3%, to USD 29,349 million, mainly reflecting an increase of USD 929 million in net fee and commission income.

Net interest income and other net income from fair value changes on financial instruments

Total combined net interest income and other net income from fair value changes on financial instruments increased by USD 211 million to USD 11,721 million.

Global Wealth Management

In Global Wealth Management, net interest income increased by USD 260 million to USD 4,103 million, primarily due to an increase in average margin on deposits as well as higher loan volumes, partly offset by higher funding costs for long-term debt that contributes to total loss-absorbing capacity and lower banking book interest income.

Transaction-based income from foreign exchange and other intermediary activity was broadly stable.

Personal & Corporate Banking

Personal & Corporate Banking net interest income decreased by USD 98 million to USD 2,127 million, mainly due to higher funding costs for long-term debt that contributes to total loss-absorbing capacity and lower banking book interest income. This was partly offset by higher deposit revenues.

Transaction-based income from foreign exchange and other intermediary activity increased by USD 46 million to USD 383 million, mainly due to higher revenues from foreign exchange transactions.

Investment Bank

In the Investment Bank, net interest income and other net income from fair value changes on financial instruments was broadly stable at USD 4,363 million, reflecting a USD 257 million increase in Corporate Client Solutions, mainly in Equity Capital Markets and Risk Management, which was almost entirely offset by a USD 224 million decrease in Investor Client Services. This decrease reflected lower revenues in Foreign Exchange, Rates and Credit, partly offset by higher revenues in Equities.

Corporate Center

In Corporate Center, net interest income and other net income from fair value changes on financial instruments decreased by USD 32 million to negative USD 278 million, mainly due to a USD 66 million decrease in Corporate Center – Group ALM. This was largely offset by an increase of USD 47 million in Corporate Center – Services, mainly reflecting higher treasury-related income from Corporate Center – Group ALM.

Credit loss expense / recovery

The net credit loss expense was USD 131 million compared with USD 38 million, mainly reflecting USD 81 million higher expenses in the Investment Bank, primarily resulting from a margin loan to a single client following a significant decrease in the value of the collateral.

Net fee and commission income

Net fee and commission income increased by USD 929 million to USD 17,522 million.

Fees for portfolio management and related services increased by USD 597 million to USD 7,666 million, primarily driven by Global Wealth Management, mainly related to higher invested assets.

Underwriting fees increased by USD 264 million to USD 1,003 million, largely due to higher equity underwriting revenues, mainly in the Investment Bank.

Other income

Other income was USD 511 million compared with USD 663 million. Excluding the aforementioned adjusting items, which consist of gains on sales of subsidiaries and businesses, gains on sales of financial assets at fair value through OCI, gains related to investments in associates and net foreign currency translation losses, adjusted other income decreased by USD 178 million. This decrease was mainly due to lower gains on sale of financial assets at fair value through OCI and a decrease in other sundry income.

Operating expenses

Total operating expenses decreased by USD 247 million, or 1%, to USD 24,272 million. Excluding net restructuring expenses of USD 1,192 million, compared with USD 1,479 million in 2016, and expenses of USD 26 million in 2017 in the Investment Bank related to the modification of terms for DCCP awards granted for the performance years 2012 and 2013, adjusted total operating expenses were broadly stable at USD 23,054 million.

Personnel expenses

Personnel expenses increased by USD 286 million to USD 16,199 million and included net restructuring expenses of USD 545 million in 2017, mainly related to our transitioning activities to nearshore and offshore locations, compared with USD 763 million in 2016. In addition, 2017 included expenses of USD 26 million in the Investment Bank related to the modification of terms for DCCP awards granted for the performance years 2012 and 2013. On an adjusted basis, personnel expenses increased by USD 478 million to USD 15,628 million.

Adjusted expenses for salaries decreased by USD 63 million to USD 5,801 million, mainly reflecting our nearshoring and offshoring initiatives and cost reduction programs.

Adjusted expenses for total variable compensation increased by USD 119 million, reflecting an increase of USD 257 million in expenses for current-year awards, partly offset by USD 138 million lower expenses for awards related to prior years.

Adjusted other personnel expenses increased by USD 98 million, primarily due to USD 58 million higher social security expenses.

Financial advisor variable compensation increased by USD 324 million to USD 4,064 million, mainly reflecting higher compensable revenues and changes we announced in 2016 to our financial advisor compensation model.

General and administrative expenses

General and administrative expenses decreased by USD 568 million to USD 6,949 million. Excluding net restructuring expenses of USD 640 million compared with USD 705 million, adjusted general and administrative expenses decreased by USD 503 million, primarily reflecting USD 371 million lower net expenses for provisions for litigation, regulatory and similar matters, a decrease in expenses for marketing and public relations, and lower professional fees. In addition, the net expense for the UK and German bank levy was USD 20 million in 2017, compared with USD 124 million, primarily because 2017 included an USD 85 million credit related to prior years.

Tax

We recognized an income tax expense of USD 4,305 million for 2017, which included a net Swiss tax expense of USD 562 million and a net non-Swiss tax expense of USD 3,743 million.

The Swiss tax expense included a current tax expense of USD 455 million related to taxable profits earned by Swiss subsidiaries, against which no losses were available to offset. In addition, it included a deferred tax expense of USD 107 million, which reflected a net decrease in DTAs previously recognized in relation to tax losses carried forward and temporary differences.

The non-Swiss tax expense included a current tax expense of USD 435 million related to taxable profits earned by non-Swiss subsidiaries and branches, against which no losses were available to offset. In addition, it included a deferred tax expense of USD 3,308 million, which reflected a net decrease in DTAs previously recognized in relation to tax losses carried forward and temporary differences and mainly related to the write-down of US DTAs resulting from the reduction in the federal corporate tax rate to 21% from 35% after the enactment of the TCJA during the fourth quarter of 2017.

The tax expense of USD 4,305 million for 2017 was higher than the tax expense of USD 777 million in 2016, mainly because 2017 included a net write-down of DTAs of USD 2,939 million resulting from the aforementioned reduction in the US federal corporate tax rate.

Total comprehensive income attributable to shareholders

In 2017, total comprehensive income attributable to shareholders was positive USD 1,787 million, reflecting net profit of USD 969 million and positive OCI of USD 818 million.

Foreign currency translation OCI was USD 1,564 million, mainly resulting from the strengthening of the Swiss franc, euro and British pound against the US dollar. In 2016, foreign currency translation OCI was negative USD 458 million.

Defined benefit plan OCI was positive USD 296 million compared with negative USD 829 million. Total pre-tax OCI related to UK defined benefit plans was positive USD 305 million, reflecting OCI gains of USD 215 million from the return on plan assets and an OCI gain of USD 90 million due to a net decrease in the DBO. The OCI gain of USD 90 million from the net DBO decrease reflected gains of USD 82 million related to changes in life expectancy assumptions, a gain of USD 60 million due to a decline in the rate of pension increase and an OCI experience gain of USD 50 million (reflecting the effects of differences between the previous actuarial assumptions and what actually occurred), partly offset by a loss of USD 102 million from a decrease in the applicable discount rate.

Total pre-tax OCI related to the Swiss defined benefit plan was negative USD 79 million. This reflected an OCI gain of USD 1,640 million from the return on plan assets, which was more than offset by an OCI loss of USD 1,417 million, representing an increase in the excess of the pension surplus over the estimated future economic benefit, and an OCI loss of USD 301 million due to the DBO remeasurement. The OCI loss of USD 301 million related to the DBO remeasurement mainly reflected a loss of USD 165 million from a decrease in the applicable discount rate and an OCI experience loss of USD 154 million, reflecting the effects of differences between the previous actuarial assumptions and what actually occurred.

OCI related to cash flow hedges was negative USD 635 million, primarily reflecting a decrease in unrealized gains on hedging derivatives that resulted from increases in long-term interest rates. In 2016, OCI related to cash flow hedges was negative USD 684 million.

OCI related to own credit on financial liabilities designated at fair value was negative USD 317 million compared with negative USD 130 million, and mainly reflected a tightening of credit spreads in 2017.

OCI associated with financial assets measured at fair value through OCI was negative USD 91 million compared with negative USD 58 million and primarily reflected the reclassification of net gains from OCI to the income statement upon sale of assets, partly offset by net unrealized gains following decreases in the relevant long-term interest rates.

Net profit attributable to non-controlling interests

Net profit attributable to non-controlling interests was USD 77 million in 2017 compared with USD 84 million in the prior year.

Global Wealth Management

Global Wealth Management[1]

	As of or for the year ended			% change from
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.17
Results				
Net interest income	4,310	4,103	3,843	5
Recurring net fee income[2]	9,585	8,968	8,472	7
Transaction-based income[3]	2,911	3,159	2,887	(8)
Other income	151	65	55	133
Income	16,956	16,295	15,257	4
Credit loss (expense) / recovery[4]	(15)	(8)	(8)	89
Total operating income	16,941	16,287	15,249	4
Personnel expenses	7,683	7,674	7,254	0
Salaries and other personnel costs	3,628	3,610	3,514	1
Financial advisor variable compensation[5,6]	3,470	3,310	2,931	5
Compensation commitments with recruited financial advisors[5,7]	584	754	808	(23)
General and administrative expenses	1,724	1,263	1,221	36
Services (to) / from Corporate Center and other business divisions	3,852	3,726	3,627	3
of which: services from CC – Services	*3,740*	*3,626*	*3,520*	*3*
Depreciation and impairment of property, equipment and software	4	4	4	(2)
Amortization and impairment of intangible assets	50	49	54	2
Total operating expenses	13,313	12,717	12,159	5
Business division operating profit / (loss) before tax	3,628	3,571	3,090	2
Adjusted results[8]				
Total operating income as reported	16,941	16,287	15,249	4
of which: gain / (loss) on sale of financial assets at fair value through OCI[9]			*31*	
of which: gain / (loss) on sale of subsidiaries and businesses			*(24)*	
of which: gains related to investments in associates	*101*			
Total operating income (adjusted)	16,840	16,287	15,242	3
Total operating expenses as reported	13,313	12,717	12,159	5
of which: personnel-related restructuring expenses[10]	*34*	*39*	*61*	
of which: non-personnel-related restructuring expenses[10]	*16*	*75*	*55*	
of which: restructuring expenses allocated from CC – Services[10]	*209*	*474*	*478*	
of which: gain related to changes to the Swiss pension plan	*(66)*			
Total operating expenses (adjusted)	13,120	12,129	11,564	8
Business division operating profit / (loss) before tax as reported	3,628	3,571	3,090	2
Business division operating profit / (loss) before tax (adjusted)	3,720	4,159	3,678	(11)
Performance measures[11]				
Pre-tax profit growth (%)	1.6	15.5	(13.4)	
Cost / income ratio (%)	78.5	78.0	79.7	
Net new money growth (%)	1.0	2.2	2.2	
Net margin on invested assets (bps)[12]	15	16	15	(5)
Adjusted performance measures[8,11]				
Pre-tax profit growth (%)	(10.6)	13.1	(3.8)	
Cost / income ratio (%)	77.8	74.4	75.8	
Net new money growth (%)	1.0	2.2	2.2	
Net margin on invested assets (bps)[13]	16	19	18	(16)

Global Wealth Management (continued)[1]

USD million, except where indicated	As of or for the year ended 31.12.18	31.12.17	31.12.16	% change from 31.12.17
Additional information				
Recurring income[14]	13,894	13,072	12,315	6
Recurring income as a percentage of income (%)	81.9	80.2	80.7	
Average attributed equity (USD billion)[15]	13.4	13.0	6.1	3
Return on attributed equity (%)[15]	27.0	27.5	50.7	
Return on attributed tangible equity (%)[15]	44.0	45.5		
Risk-weighted assets (USD billion)[15]	60.5	58.1	48.7	4
of which: held by Global Wealth Management (USD billion)	*58.2*	*55.9*	*48.7*	*4*
of which: held by CC – Group ALM on behalf of Global Wealth Management (USD billion)[16]	*2.3*	*2.3*		*2*
Leverage ratio denominator (USD billion)[15]	270.6	268.7	180.4	1
of which: held by Global Wealth Management (USD billion)	*207.4*	*205.0*	*180.4*	*1*
of which: held by CC – Group ALM on behalf of Global Wealth Management (USD billion)[16]	*63.2*	*63.7*		*(1)*
Goodwill and intangible assets (USD billion)	5.2	5.1	5.0	2
Net new money (USD billion)	24.7	44.8	43.0	
Invested assets (USD billion)	2,260	2,403	2,060	(6)
Gross margin on invested assets (bps)	71	73	75	(3)
Adjusted gross margin on invested assets (bps)	70	73	75	(3)
Client assets (USD billion)	2,519	2,661	2,297	(5)
Loans, gross (USD billion)[17]	174.7	172.5	151.7	1
Due to customers (USD billion)[17]	271.8	278.0	278.1	(2)
Recruitment loans to financial advisors[5]	2,296	2,619	3,033	(12)
Other loans to financial advisors[5]	994	580	462	71
Personnel (full-time equivalents)	23,618	23,177	23,247	2
Advisors (full-time equivalents)	10,677	10,616	10,884	1

1 Comparative figures in this table have been restated for the change of the presentation currency from Swiss francs to US dollars with assets, liabilities and total equity translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses translated at the respective average rates prevailing for the relevant periods. Comparatives may additionally differ due to adjustments following organizational changes, restatements due to the retrospective adoption of new accounting standards or changes in accounting policies, and events after the reporting period. 2 Recurring net fee income consists of fees for services provided on an ongoing basis such as portfolio management fees, asset-based investment fund fees, custody fees and account-keeping fees, which are generated on client assets. 3 Transaction-based income consists of the non-recurring portion of net fee and commission income, mainly consisting of brokerage and transaction-based investment fund fees as well as credit card fees and fees for payment transactions, together with Other net income from fair value changes on financial instruments. 4 Upon adoption of IFRS 9 effective 1 January 2018, credit loss expenses include credit losses on recruitment loans to financial advisors previously recognized in personnel expenses. Prior periods were not restated for this change. 5 Relates to licensed professionals with the ability to provide investment advice to clients in the Americas. 6 Financial advisor variable compensation consists of formulaic compensation based directly on compensable revenues generated by financial advisors and supplemental compensation calculated on the basis of financial advisor productivity, firm tenure, new assets and other variables. 7 Compensation commitments with recruited financial advisors represent expenses related to compensation commitments granted to financial advisors at the time of recruitment that are subject to vesting requirements. 8 Adjusted results are non-GAAP financial measures as defined by SEC regulations. 9 Includes a gain on the sale of our investment in Visa Europe in 2016. Figures presented for periods prior to 2018 relate to financial assets available for sale. 10 Reflects restructuring expenses related to legacy cost programs as well as expenses for new restructuring initiatives in 2018. 11 Refer to the "Performance targets and measurement" section of this report for the definitions of our performance measures. 12 Calculated as operating profit before tax / average invested assets. 13 Calculated as adjusted operating profit before tax / average invested assets. 14 Recurring income consists of net interest income and recurring net fee income. 15 Refer to the "Capital management" section of this report for more information. 16 Represents risk-weighted assets and leverage ratio denominator held by Corporate Center – Group ALM that are directly associated with activity managed centrally on behalf of the business divisions and other Corporate Center units. Refer to "Equity attribution and return on attributed equity" in the "Capital management" section of this report for more information. 17 Loans and Due to customers in this table include customer brokerage receivables and payables, respectively, which with the adoption of IFRS 9 effective 1 January 2018 have been reclassified to a separate reporting line on the balance sheet.

Regional breakdown of performance measures[1]

As of or for the year ended 31.12.18 *USD billion, except where indicated*	Americas	EMEA	Asia Pacific	Switzerland	Total of regions[2]	*of which: ultra high net worth (UHNW)*
Net new money	(4.1)	10.4	17.3	3.2	26.7	*24.8*
Net new money growth (%)	(0.3)	1.9	4.5	1.5	1.1	*2.1*
Invested assets	1,200	500	357	200	2,257	*1,127*
Loans, gross	59.5[3]	37.5	42.3	35.0	174.2	
Client advisors (full-time equivalents)	6,850	1,837	1,138	737	10,561	*1,043[4]*

1 Refer to the "Performance targets and measurement" section of this report for the definitions of our performance measures. 2 Excluding minor functions with 116 advisors, USD 3 billion of invested assets, USD 0.5 billion of loans and USD 2 billion of net new money outflows in 2018. 3 Loans include customer brokerage receivables, which with the adoption of IFRS 9 effective 1 January 2018 have been reclassified to a separate reporting line on the balance sheet. 4 Represents advisors who exclusively serve ultra high net worth clients in a globally managed unit.

2018 compared with 2017

Results

Profit before tax increased by USD 57 million, or 2%, to USD 3,628 million, including a USD 101 million valuation gain on our equity ownership in SIX related to the sale of SIX Payment Services to Worldline and a credit of USD 66 million related to our Swiss pension plan. Adjusted profit before tax decreased by USD 439 million, or 11%, to USD 3,720 million, reflecting higher operating expenses, partly offset by higher operating income.

Operating income

Total operating income increased by USD 654 million, or 4%, to USD 16,941 million. Excluding the aforementioned valuation gain, adjusted total operating income increased by USD 553 million, or 3%, to USD 16,840 million, mainly driven by higher recurring net fee income and net interest income, partly offset by lower transaction-based income.

Net interest income increased by USD 207 million to USD 4,310 million, due to an increase in average margin on deposits, as well as higher loan volumes, partly offset by the expiration of an interest rate hedge portfolio at the end of 2017, lower net income from Group structural risk management activities and higher funding costs for long-term debt that contributes to total loss-absorbing capacity.

→ **Refer to "Corporate Center – Group Asset and Liability Management" in this section of the report for more information on net income from Group structural risk management**

Recurring net fee income increased by USD 617 million to USD 9,585 million, predominantly driven by higher average invested assets and an increase in mandate penetration during the year.

Transaction-based income decreased by USD 248 million to USD 2,911 million, mainly due to lower client activity in the Americas and in Asia Pacific.

Other income increased by USD 86 million to USD 151 million. Excluding the aforementioned valuation gain, adjusted other income decreased by USD 15 million to USD 50 million.

Operating expenses

Total operating expenses increased by USD 596 million, or 5%, to USD 13,313 million and adjusted total operating expenses by USD 991 million, or 8%, to USD 13,120 million.

Personnel expenses increased by USD 9 million to USD 7,683 million and, excluding the aforementioned credit related to changes to our Swiss pension plan, adjusted personnel expenses increased by USD 79 million to USD 7,714 million. This increase was mainly due to higher salaries and staff levels, partly offset by lower variable compensation not related to financial advisors. In the Americas, higher financial advisor variable compensation was offset by lower expenses for compensation commitments to recruited financial advisors.

General and administrative expenses increased by USD 461 million to USD 1,724 million and adjusted general and administrative expenses increased by USD 520 million to USD 1,708 million, predominantly driven by higher provisions for litigation matters and higher regulatory-related expenses.

Net expenses for services from Corporate Center and other business divisions increased by USD 126 million to USD 3,852 million and adjusted net expenses for services increased by USD 392 million to USD 3,643 million, mainly reflecting higher expenses from Group Technology and Group Risk Control.

Cost / income ratio

The cost / income ratio increased to 78.5% from 78.0%. On an adjusted basis, the ratio increased to 77.8% from 74.4% and was above our 2018 target range of 65–75%.

Net new money

Net new money inflows were USD 24.7 billion compared with inflows of USD 44.8 billion. The net new money growth rate was 1.0% compared with 2.2%, and was below our 2018 target range of 2–4%. Net new money was predominantly driven by inflows in Asia Pacific and EMEA, partly offset by outflows in the Americas, which included a single outflow of USD 4.5 billion from a corporate employee share program.

Invested assets

Invested assets decreased by USD 143 billion to USD 2,260 billion, due to negative market performance of USD 144 billion, negative currency effects of USD 19 billion and reclassifications of USD 12 billion. This was partly offset by net new money inflows of USD 25 billion and an increase of USD 7 billion related to the acquisition of subsidiaries and businesses. Mandate penetration increased to 33.6% from 32.9%.

Personnel

Global Wealth Management employed 23,618 personnel as of 31 December 2018, an increase of 441 compared with 23,177 personnel as of 31 December 2017. The number of advisors increased by 61 to 10,677.

2017 compared with 2016

Results

Profit before tax increased by USD 481 million, or 16%, to USD 3,571 million and adjusted profit before tax increased by USD 481 million, or 13%, to USD 4,159 million, reflecting higher operating income, partly offset by higher operating expenses.

Operating income

Total operating income increased by USD 1,038 million, or 7%, to USD 16,287 million and adjusted total operating income increased by USD 1,045 million, or 7%, to USD 16,287 million, driven by increases across all income lines.

Net interest income increased by USD 260 million to USD 4,103 million, primarily due to an increase in average margin on deposits as well as higher loan volumes, partly offset by higher funding costs for long-term debt that contributes to total loss-absorbing capacity and lower banking book interest income.

→ **Refer to "Corporate Center – Group Asset and Liability Management" in this section of the report for more information on net income from Group structural risk management**

Recurring net fee income increased by USD 496 million to USD 8,968 million, predominantly driven by higher average invested assets and an increase in mandate penetration. This was partly offset by the effects of cross-border outflows and shifts into retrocession-free products.

Transaction-based income increased by USD 272 million to USD 3,159 million, across all regions, mainly due to increased client activity, most notably in Asia Pacific and in the Americas.

Other income increased by USD 10 million to USD 65 million.

Operating expenses

Total operating expenses increased by USD 558 million, or 5%, to USD 12,717 million, and adjusted total operating expenses increased by USD 565 million or 5%, to USD 12,129 million.

Personnel expenses increased by USD 420 million to USD 7,674 million and adjusted personnel expenses increased by USD 442 million to USD 7,635 million. This increase was mainly due to higher variable compensation, partly offset by lower expenses for compensation commitments to recruited financial advisors in the Americas. The increase of financial advisor variable compensation reflects higher compensable revenues as well as changes we announced in 2016 to our financial advisor compensation model.

General and administrative expenses increased by USD 42 million to USD 1,263 million and adjusted general and administrative expenses increased by USD 23 million to USD 1,189 million, predominantly driven by higher provisions for litigation matters.

Net expenses for services from Corporate Center and other business divisions increased by USD 99 million to USD 3,726 million and adjusted net expenses for services increased by USD 103 million to USD 3,251 million, mainly reflecting higher costs for strategic and regulatory initiatives and higher expenses from control functions.

Cost / income ratio

The cost / income ratio decreased to 78.0% from 79.7%. On an adjusted basis, the ratio decreased to 74.4% from 75.8% and was within our 2017 target range of 65–75%.

Net new money

Net new money inflows were USD 44.8 billion compared with inflows of USD 43.0 billion. The net new money growth rate remained stable at 2.2% and was within our 2017 target range of 2–4%. Net new money was predominantly driven by inflows in Asia Pacific and Europe, Middle East and Africa (EMEA), partly offset by outflows in the Americas. Cross-border-related net outflows were USD 12 billion compared with USD 14 billion, mainly driven by outflows in EMEA. In addition, we incurred net outflows of USD 8 billion related to the introduction of fees on euro deposit concentrations in EMEA and Switzerland.

Invested assets

Invested assets increased by USD 343 billion to USD 2,403 billion, mainly due to positive market performance of USD 251 billion, positive currency effects of USD 48 billion and net new money inflows of USD 45 billion. Mandate penetration increased to 32.9% from 31.1%.

Personnel

Global Wealth Management employed 23,177 personnel as of 31 December 2017, a decrease of 70 compared with 23,247 personnel as of 31 December 2016. The number of advisors decreased by 268 to 10,616.

Personal & Corporate Banking

Personal & Corporate Banking – in Swiss francs[1]

	As of or for the year ended			% change from
CHF million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.17
Results				
Net interest income	2,058	2,086	2,199	(1)
Recurring net fee income[2]	625	593	553	5
Transaction-based income[3]	1,086	1,104	1,028	(2)
Other income	419	86	211	386
Income	4,187	3,869	3,990	8
Credit loss (expense) / recovery	(55)	(19)	(6)	186
Total operating income	4,133	3,850	3,984	7
Personnel expenses	786	836	845	(6)
General and administrative expenses	279	290	285	(4)
Services (to) / from Corporate Center and other business divisions	1,181	1,133	1,080	4
of which: services from CC – Services	*1,255*	*1,227*	*1,186*	*2*
Depreciation and impairment of property, equipment and software	14	13	15	8
Amortization and impairment of intangible assets	0	0	0	
Total operating expenses	2,260	2,272	2,224	(1)
Business division operating profit / (loss) before tax	1,873	1,578	1,760	19
Adjusted results[4]				
Total operating income as reported	4,133	3,850	3,984	7
of which: gains related to investments in associates	*359*		*21*	
of which: gain on sale of financial assets at fair value through OCI[5]			*102*	
Total operating income (adjusted)	3,774	3,850	3,861	(2)
Total operating expenses as reported	2,260	2,272	2,224	(1)
of which: personnel-related restructuring expenses[6]	*4*	*7*	*4*	
of which: non-personnel-related restructuring expenses[6]	*0*	*0*	*0*	
of which: restructuring expenses allocated from CC – Services[6]	*42*	*96*	*113*	
of which: gain related to changes to the Swiss pension plan	*(35)*			
Total operating expenses (adjusted)	2,248	2,169	2,107	4
Business division operating profit / (loss) before tax as reported	1,873	1,578	1,760	19
Business division operating profit / (loss) before tax (adjusted)	1,526	1,681	1,754	(9)
Performance measures[7]				
Pre-tax profit growth (%)	18.7	(10.3)	6.9	
Cost / income ratio (%)	54.0	58.7	55.7	
Net interest margin (bps)	157	157	163	0
Net new business volume growth for Personal Banking (%)[8]	4.2	4.0	3.1	
Adjusted performance measures[4,7]				
Pre-tax profit growth (%)	(9.2)	(4.2)	4.3	
Cost / income ratio (%)	58.7	56.1	54.5	
Net interest margin (bps)	157	157	163	0
Net new business volume growth for Personal Banking (%)[8]	4.2	4.0	3.1	

Personal & Corporate Banking – in Swiss francs (continued)[1]

	As of or for the year ended			% change from
CHF million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.17
Additional information				
Average attributed equity (CHF billion)[9]	6.4	6.1	4.1	5
Return on attributed equity (%)[9]	29.1	25.8	43.2	
Return on attributed tangible equity (%)[9]	29.1	25.8		
Risk-weighted assets (CHF billion)[9]	57.0	49.1	41.6	16
of which: held by Personal & Corporate Banking (CHF billion)	*55.9*	*48.0*	*41.6*	*16*
of which: held by CC – Group ALM on behalf of Personal & Corporate Banking (CHF billion)[10]	*1.1*	*1.0*		*4*
Leverage ratio denominator (CHF billion)[9]	190.1	186.9	152.2	2
of which: held by Personal & Corporate Banking (CHF billion)	*149.6*	*148.0*	*152.2*	*1*
of which: held by CC – Group ALM on behalf of Personal & Corporate Banking (CHF billion)[10]	*40.5*	*38.9*		*4*
Business volume for Personal Banking (CHF billion)	156	155	149	1
Net new business volume for Personal Banking (CHF billion)	6.6	6.0	4.6	
Client assets (CHF billion)[11]	638	667	630	(4)
Loans, gross (CHF billion)	131.0	131.4	133.9	0
Due to customers (CHF billion)	141.7	135.9	135.9	4
Secured loan portfolio as a percentage of total loan portfolio, gross (%)	92.0	92.7	92.9	
Impaired loan portfolio as a percentage of total loan portfolio, gross (%)[12]	1.3	0.6	0.6	
Personnel (full-time equivalents)	5,183	5,102	5,143	2

1 Comparative figures in this table may differ from those originally published in quarterly and annual reports due to adjustments following organizational changes, restatements due to the retrospective adoption of new accounting standards or changes in accounting policies, and events after the reporting period. 2 Recurring net fee income consists of fees for services provided on an ongoing basis such as portfolio management fees, asset-based investment fund fees, custody fees and account-keeping fees, which are generated on client assets. 3 Transaction-based income comprises the non-recurring portion of net fee and commission income, mainly consisting of brokerage and transaction-based investment fund fees as well as credit card fees and fees for payment transactions, together with net income from fair value changes on financial instruments. 4 Adjusted results are non-GAAP financial measures as defined by SEC regulations. 5 Includes a gain on the sale of our investment in Visa Europe in 2016. Figures presented for periods prior to 2018 relate to financial assets available for sale. 6 Reflects restructuring expenses related to legacy cost programs. 7 Refer to the "Performance targets and measurement" section of this report for the definitions of our performance measures. 8 Calculated as net new business volume for the period / business volume at the beginning of the period. 9 Refer to the "Capital management" section of this report for more information. 10 Represents risk-weighted assets and leverage ratio denominator held by Corporate Center – Group ALM that are directly associated with activity managed centrally on behalf of the business divisions and other Corporate Center units. Refer to "Equity attribution and return on attributed equity" in the "Capital management" section of this report for more information. 11 Client assets are comprised of invested assets and other assets held purely for transactional purposes or custody only. We do not measure net new money for Personal & Corporate Banking. 12 Refer to the "Risk management and control" section of this report for more information on (credit-)impaired exposures.

2018 compared with 2017

Results

Profit before tax increased by CHF 295 million, or 19%, to CHF 1,873 million, predominantly reflecting a CHF 359 million valuation gain on our equity ownership in SIX related to the sale of SIX Payment Services to Worldline. Adjusted profit before tax decreased by CHF 155 million, or 9%, to CHF 1,526 million, due to lower operating income and higher operating expenses.

Effective from 1 January 2018, we have reclassified certain expenses for clearing, credit card add-on services and the client loyalty program, which are incremental and incidental to revenues on a prospective basis, to better align these expenses with their associated revenues within operating income. This resulted in a CHF 66 million reduction in total operating income, mainly related to transaction-based income. Total operating expenses decreased by a broadly corresponding amount, primarily reflecting a reduction in general and administrative expenses.

Operating income

Total operating income increased by CHF 283 million, or 7%, to CHF 4,133 million, mainly reflecting the aforementioned valuation gain. Excluding this item, adjusted total operating income decreased by CHF 76 million to CHF 3,774 million, mainly reflecting lower net interest and transaction-based income as well as higher credit loss expenses, partly offset by higher recurring net fee income.

Net interest income decreased by CHF 28 million to CHF 2,058 million, mainly due to the expiration of an interest rate hedge portfolio at the end of 2017, as well as higher funding costs for long-term debt that contributes to total loss-absorbing capacity and lower banking book interest income. This was partly offset by higher deposit revenues.

Recurring net fee income increased by CHF 32 million to CHF 625 million, mainly reflecting higher custody and mandate revenues as well as higher fees from bundled products.

Transaction-based income decreased by CHF 18 million to CHF 1,086 million, mainly due to the aforementioned reclassification from expenses to revenues. The reclassification effect was partly offset by higher revenues from foreign exchange transactions, as well as higher fees received from Global Wealth Management, reflecting increased shift and referral volumes.

Other income increased by CHF 333 million to CHF 419 million, mainly due to the aforementioned valuation gain.

We recorded a net credit loss expense of CHF 55 million compared with CHF 19 million, reflecting higher expenses for newly credit-impaired positions, as well as lower net recoveries on existing credit-impaired positions, both predominantly in the Corporate Clients area. The adoption of IFRS 9 on 1 January 2018 had no material effect on net credit losses as stage 1 and 2 expected credit losses amounted to net CHF 0 million for 2018.

→ **Refer to "Credit risk" in the "Risk management and control" section of this report for more information on expected credit losses**

→ **Refer to "Note 1c Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9, *Financial Instruments*" in the "Consolidated financial statements" section of this report for more information on the adoption of IFRS 9**

Operating expenses

Operating expenses were broadly unchanged at CHF 2,260 million, reflecting CHF 57 million lower restructuring expenses and a credit of CHF 35 million related to changes to our Swiss pension plan, partly offset by CHF 38 million higher expenses for provisions for litigation, regulatory and similar matters. Adjusted total operating expenses increased by CHF 79 million to CHF 2,248 million.

Personnel expenses decreased by CHF 50 million to CHF 786 million, mostly due to the aforementioned pension plan credit, and adjusted personnel expenses decreased by CHF 11 million to CHF 817 million, mainly reflecting lower variable compensation.

General and administrative expenses decreased by CHF 11 million to CHF 279 million, primarily reflecting the aforementioned reclassification from expenses to revenues, partly offset by higher expenses for provisions for litigation, regulatory and similar matters.

Net expenses for services from Corporate Center and other business divisions increased by CHF 48 million to CHF 1,181 million. Adjusted net expenses for services increased by CHF 101 million to CHF 1,138 million, mainly reflecting higher expenses from Group Technology as well as for strategic and regulatory initiatives.

Cost / income ratio

The cost / income ratio decreased to 54.0% from 58.7%, mainly due to the aforementioned valuation gain. On an adjusted basis, the ratio increased to 58.7% compared with 56.1% and remained within our 2018 target range of 50–60%.

Net interest margin

The net interest margin remained stable at 157 basis points on both a reported and adjusted basis as lower net interest income was offset by lower average loan volume, and remained within our 2018 target range of 150–165 basis points.

Net new business volume growth for personal banking

The net new business volume growth rate for our personal banking business was our best on record at 4.2% compared with 4.0%, above our 2018 target range of 1–4%. Net new client assets and, to a lesser extent, net new loans were positive.

Personnel

Personal & Corporate Banking employed 5,183 personnel as of 31 December 2018, an increase of 81 compared with 5,102 personnel as of 31 December 2017.

2017 compared with 2016

Results

Profit before tax decreased by CHF 182 million, or 10%, to CHF 1,578 million. Adjusted profit before tax decreased by CHF 73 million, or 4%, to CHF 1,681 million, due to slightly lower operating income and higher operating expenses.

Operating income

Total operating income decreased by CHF 134 million, or 3%, to CHF 3,850 million. 2016 included a gain on the sale of our investment in Visa Europe of CHF 102 million, as well as gains related to investments in associates of CHF 21 million. Excluding these items, adjusted total operating income decreased by CHF 11 million to CHF 3,850 million, mainly reflecting lower net interest income, partly offset by higher transaction-based income.

Net interest income decreased by CHF 113 million to CHF 2,086 million, mainly due to higher funding costs for long-term debt that contributes to total loss-absorbing capacity and lower banking book interest income. This was partly offset by higher deposit revenues.

Recurring net fee income increased by CHF 40 million to CHF 593 million, mainly reflecting higher custody and mandates revenues.

Transaction-based income increased by CHF 76 million to CHF 1,104 million, mainly reflecting higher revenues from foreign exchange and credit card transactions.

Other income decreased by CHF 125 million to CHF 86 million, mainly due to the aforementioned gains on the sale of our investment in Visa Europe and investments in associates.

We recorded a net credit loss expense of CHF 19 million compared with CHF 6 million, reflecting higher expenses for newly impaired positions, as well as lower net recoveries on existing impaired positions.

→ **Refer to "Credit risk" in the "Risk management and control" section of this report for more information on expected credit losses**

Operating expenses

Total operating expenses increased by CHF 48 million to CHF 2,272 million and adjusted total operating expenses increased by CHF 62 million to CHF 2,169 million.

Personnel expenses decreased by CHF 9 million to CHF 836 million and adjusted personnel expenses decreased by CHF 12 million to CHF 829 million, mainly reflecting lower salary costs due to a decrease in the number of employees and other cost saving initiatives.

General and administrative expenses slightly increased by CHF 5 million to CHF 290 million.

Net expenses for services from Corporate Center and other business divisions increased by CHF 53 million to CHF 1,133 million. Adjusted net expenses for services increased by CHF 70 million to CHF 1,037 million, mainly reflecting higher expenses for strategic and regulatory initiatives and from Group Operations.

Cost / income ratio

The cost / income ratio increased to 58.7% from 55.7%. On an adjusted basis, the ratio increased to 56.1% compared with 54.5% and remained within our 2017 target range of 50–60%.

Net interest margin

The net interest margin decreased 6 basis points to 157 basis points on both a reported and adjusted basis, and remained within our 2017 target range of 140–180 basis points.

Net new business volume growth for personal banking

The net new business volume growth rate for our personal banking business was 4.0% compared with 3.1% and remained within the upper level of our 2017 target range of 1–4%. Net new client assets and, to a lesser extent, net new loans were positive.

Personnel

Personal & Corporate Banking employed 5,102 personnel as of 31 December 2017, a decrease of 41 compared with 5,143 personnel as of 31 December 2016.

Personal & Corporate Banking – in US dollars[1]

	As of or for the year ended			% change from
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.17
Results				
Net interest income	2,106	2,127	2,225	(1)
Recurring net fee income[2]	640	605	560	6
Transaction-based income[3]	1,112	1,125	1,041	(1)
Other income	420	87	215	381
Income	4,278	3,945	4,042	8
Credit loss (expense) / recovery	(56)	(20)	(6)	180
Total operating income	4,222	3,925	4,035	8
Personnel expenses	803	852	855	(6)
General and administrative expenses	285	296	287	(4)
Services (to) / from Corporate Center and other business divisions	1,208	1,156	1,093	5
of which: services from CC – Services	*1,285*	*1,251*	*1,201*	*3*
Depreciation and impairment of property, equipment and software	14	13	15	8
Amortization and impairment of intangible assets	0	0	0	
Total operating expenses	2,310	2,317	2,250	0
Business division operating profit / (loss) before tax	1,912	1,607	1,785	19
Adjusted results[4]				
Total operating income as reported	4,222	3,925	4,035	8
of which: gains related to investments in associates	*359*		*21*	
of which: gain on sale of financial assets at fair value through OCI[5]			*105*	
Total operating income (adjusted)	3,863	3,925	3,909	(2)
Total operating expenses as reported	2,310	2,317	2,250	0
of which: personnel-related restructuring expenses[6]	*4*	*7*	*4*	
of which: non-personnel-related restructuring expenses[6]	*0*	*0*	*0*	
of which: restructuring expenses allocated from CC – Services[6]	*43*	*98*	*115*	
of which: gain related to changes to the Swiss pension plan	*(38)*			
Total operating expenses (adjusted)	2,300	2,212	2,132	4
Business division operating profit / (loss) before tax as reported	1,912	1,607	1,785	19
Business division operating profit / (loss) before tax (adjusted)	1,563	1,713	1,778	(9)
Performance measures[7]				
Pre-tax profit growth (%)	18.9	(10.0)	4.4	
Cost / income ratio (%)	54.0	58.7	55.7	
Net interest margin (bps)	157	157	162	0
Net new business volume growth for Personal Banking (%)[8]	4.2	4.2	3.2	
Adjusted performance measures[4,7]				
Pre-tax profit growth (%)	(8.8)	(3.7)	1.8	
Cost / income ratio (%)	58.7	56.1	54.4	
Net interest margin (bps)	157	157	162	0
Net new business volume growth for Personal Banking (%)[8]	4.2	4.2	3.2	

Personal & Corporate Banking – in US dollars (continued)[1]

	As of or for the year ended			% change from
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.17
Additional information				
Average attributed equity (USD billion)[9]	6.6	6.2	4.1	6
Return on attributed equity (%)[9]	29.1	25.8	43.3	
Return on attributed tangible equity (%)[9]	29.1	25.8		
Risk-weighted assets (USD billion)[9]	57.9	50.4	40.9	15
of which: held by Personal & Corporate Banking (USD billion)	*56.8*	*49.3*	*40.9*	*15*
of which: held by CC – Group ALM on behalf of Personal & Corporate Banking (USD billion)[10]	*1.1*	*1.1*		*3*
Leverage ratio denominator (USD billion)[9]	193.4	191.8	149.6	1
of which: held by Personal & Corporate Banking (USD billion)	*152.2*	*151.9*	*149.6*	*0*
of which: held by CC – Group ALM on behalf of Personal & Corporate Banking (USD billion)[10]	*41.2*	*39.9*		*3*
Business volume for Personal Banking (USD billion)	158	159	147	0
Net new business volume for Personal Banking (USD billion)	6.7	6.1	4.7	
Client assets (USD billion)[11]	648	684	619	(5)
Loans, gross (USD billion)	133.3	134.8	131.5	(1)
Due to customers (USD billion)	144.1	139.5	133.6	3
Secured loan portfolio as a percentage of total loan portfolio, gross (%)	92.0	92.7	92.9	
Impaired loan portfolio as a percentage of total loan portfolio, gross (%)[12]	1.3	0.6	0.6	
Personnel (full-time equivalents)	5,183	5,102	5,143	2

1 Comparative figures in this table have been restated for the change of the presentation currency from Swiss francs to US dollars with assets, liabilities and total equity translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses translated at the respective average rates prevailing for the relevant periods. Comparatives may additionally differ due to adjustments following organizational changes, restatements due to the retrospective adoption of new accounting standards or changes in accounting policies, and events after the reporting period. 2 Recurring net fee income consists of fees for services provided on an ongoing basis such as portfolio management fees, asset-based investment fund fees, custody fees and account-keeping fees, which are generated on client assets. 3 Transaction-based income comprises the non-recurring portion of net fee and commission income, mainly consisting of brokerage and transaction-based investment fund fees as well as credit card fees and fees for payment transactions, together with net income from fair value changes on financial instruments. 4 Adjusted results are non-GAAP financial measures as defined by SEC regulations. 5 Includes a gain on the sale of our investment in Visa Europe in 2016. Figures presented for periods prior to 2018 relate to financial assets available for sale. 6 Reflects restructuring expenses related to legacy cost programs. 7 Refer to the "Performance targets and measurement" section of this report for the definitions of our performance measures. 8 Calculated as net new business volume for the period / business volume at the beginning of the period. 9 Refer to the "Capital management" section of this report for more information. 10 Represents risk-weighted assets and leverage ratio denominator held by Corporate Center – Group ALM that are directly associated with activity managed centrally on behalf of the business divisions and other Corporate Center units. Refer to "Equity attribution and return on attributed equity" in the "Capital management" section of this report for more information. 11 Client assets are comprised of invested assets and other assets held purely for transactional purposes or custody only. We do not measure net new money for Personal & Corporate Banking. 12 Refer to the "Risk management and control" section of this report for more information on (credit-)impaired exposures.

Asset Management

Asset Management[1]

	As of or for the year ended			% change from
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.17
Results				
Net management fees[2]	1,778	1,800	1,831	(1)
Performance fees	80	130	124	(38)
Gain / (loss) on sale of subsidiaries and businesses		153		
Total operating income	1,857	2,083	1,955	(11)
Personnel expenses	703	731	736	(4)
General and administrative expenses	202	235	244	(14)
Services (to) / from Corporate Center and other business divisions	498	524	512	(5)
of which: services from CC – Services	*541*	*562*	*537*	*(4)*
Depreciation and impairment of property, equipment and software	2	1	1	100
Amortization and impairment of intangible assets	1	3	5	(67)
Total operating expenses	1,406	1,495	1,498	(6)
Business division operating profit / (loss) before tax	451	587	457	(23)
Adjusted results[3]				
Total operating income as reported	1,857	2,083	1,955	(11)
of which: gain / (loss) on sale of subsidiaries and businesses		*153*		
Total operating income (adjusted)	1,857	1,929	1,955	(4)
Total operating expenses as reported	1,406	1,495	1,498	(6)
of which: personnel-related restructuring expenses[4]	*23*	*17*	*15*	
of which: non-personnel-related restructuring expenses[4]	*10*	*22*	*15*	
of which: restructuring expenses allocated from CC – Services[4]	*33*	*63*	*72*	
of which: gain related to changes to the Swiss pension plan	*(10)*			
Total operating expenses (adjusted)	1,350	1,393	1,397	(3)
Business division operating profit / (loss) before tax as reported	451	587	457	(23)
Business division operating profit / (loss) before tax (adjusted)	508	536	558	(5)
Performance measures[5]				
Pre-tax profit growth (%)	(23.2)	28.6	(24.4)	
Cost / income ratio (%)	75.7	71.8	76.6	
Net new money growth excluding money market flows (%)	3.4	8.4	(3.9)	
Net margin on invested assets (bps)[6]	6	8	7	(25)
Adjusted performance measures[3,5]				
Pre-tax profit growth (%)[7]	(0.6)	(2.1)	(8.7)	
Cost / income ratio (%)	72.7	72.2	71.4	
Net new money growth excluding money market flows (%)	3.4	8.4	(3.9)	
Net margin on invested assets (bps)[8]	6	7	9	(14)
Information by business line / asset class				
Net new money (USD billion)				
Equities	20.7	18.7	(10.1)	
Fixed Income	8.3	28.6	(3.4)	
of which: money markets	*7.5*	*10.8*	*6.8*	
Multi Assets & Solutions	1.9	4.9	(4.3)	
Hedge Fund Businesses	0.4	2.2	(0.3)	
Real Estate & Private Markets	1.0	5.1	1.8	
Total net new money	32.2	59.5	(16.2)	
of which: net new money excluding money markets	*24.8*	*48.7*	*(23.0)*	

Asset Management (continued)[1]

	As of or for the year ended			% change from
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.17
Invested assets (USD billion)				
Equities	285	300	216	(5)
Fixed Income	253	248	206	2
of which: money market	*85*	*78*	*65*	*9*
Multi Assets & Solutions	120	130	119	(8)
Hedge Fund Businesses	42	42	38	0
Real Estate & Private Markets	81	76	66	7
Total invested assets	781	796	645	(2)
of which: passive strategies	*298*	*293*	*203*	*2*
Information by region				
Invested assets (USD billion)				
Americas	192	187	157	3
Asia Pacific	141	163	127	(13)
Europe, Middle East and Africa	189	178	141	6
Switzerland	259	268	221	(3)
Total invested assets	781	796	645	(2)
Information by channel				
Invested assets (USD billion)				
Third-party institutional	484	498	388	(3)
Third-party wholesale	78	82	74	(5)
UBS's wealth management businesses	219	216	183	1
Total invested assets	781	796	645	(2)
Assets under administration[9]				
Assets under administration (USD billion)[10]			413	
Net new assets under administration (USD billion)[11]			0.6	
Gross margin on assets under administration (bps)			3	
Additional information				
Average attributed equity (USD billion)[12]	1.7	1.7	1.4	0
Return on attributed equity (%)[12]	26.5	34.0	32.2	
Return on attributed tangible equity (%)[12]	139.4	186.2		
Risk-weighted assets (USD billion)[12]	4.2	4.1	3.8	2
of which: held by Asset Management (USD billion)	*4.1*	*4.0*	*3.8*	*2*
of which: held by CC – Group ALM on behalf of Asset Management (USD billion)[13]	*0.1*	*0.1*		*0*
Leverage ratio denominator (USD billion)[12]	5.1	4.9	2.6	4
of which: held by Asset Management (USD billion)	*2.7*	*2.8*	*2.6*	*(4)*
of which: held by CC – Group ALM on behalf of Asset Management (USD billion)[13]	*2.5*	*2.1*		*19*
Goodwill and intangible assets (USD billion)	*1.4*	*1.4*	*1.4*	*0*
Gross margin on invested assets (bps)	23	29	30	(21)
Adjusted gross margin on invested assets (bps)	23	26	30	(12)
Personnel (full-time equivalents)	2,301	2,335	2,308	(1)

1 Comparative figures in this table have been restated for the change of the presentation currency from Swiss francs to US dollars with assets, liabilities and total equity translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses translated at the respective average rates prevailing for the relevant periods. Comparatives may additionally differ due to adjustments following organizational changes, restatements due to the retrospective adoption of new accounting standards or changes in accounting policies, and events after the reporting period. 2 Net management fees include transaction fees, fund administration revenues (including net interest and trading income from lending activities and foreign exchange hedging as part of the fund services offering), gains or losses from seed money and co-investments, funding costs, and other items that are not performance fees. Beginning 1 January 2018, net management fees additionally include fund and custody expenses recognized as contra revenues and previously included in operating expenses. Prior periods were not restated for this change. 3 Adjusted results are non-GAAP financial measures as defined by SEC regulations. 4 Reflects restructuring expenses related to legacy cost programs as well as expenses for new restructuring initiatives in 2018. 5 Refer to the "Performance targets and measurement" section of this report for the definitions of our performance measures. 6 Calculated as operating profit before tax / average invested assets. 7 Excluding the effect of business exits. Prior-period information for the periods ending before 1 January 2018 has been restated. 8 Calculated as adjusted operating profit before tax / average invested assets. 9 Following the sale of our fund administration business in Luxembourg and Switzerland to Northern Trust on 1 October 2017, we no longer report assets under administration. 10 This includes UBS and third-party fund assets for which the fund services unit provided professional services, including fund set-up, accounting and reporting for traditional investment funds and alternative funds. 11 Inflows of assets under administration from new and existing funds less outflows from existing funds or fund exits. 12 Refer to the "Capital management" section of this report for more information. 13 Represents risk-weighted assets and leverage ratio denominator held by Corporate Center – Group ALM that are directly associated with activity managed centrally on behalf of the business divisions and other Corporate Center units. Refer to "Equity attribution and return on attributed equity" in the "Capital management" section of this report for more information.

2018 compared with 2017

Results

Profit before tax decreased by USD 136 million, or 23%, to USD 451 million, mainly as 2017 included a gain of USD 153 million on the sale of our fund administration business. Excluding this gain, adjusted profit before tax decreased by USD 28 million, or 5%, to USD 508 million, mainly driven by lower operating income, partly offset by lower operating expenses.

Operating income

Total operating income decreased by USD 226 million, or 11%, to USD 1,857 million. Excluding the aforementioned gain on the sale of our fund administration business, adjusted total operating income decreased by USD 72 million or 4%. Net management fees decreased by USD 22 million to USD 1,778 million as higher income from higher average invested assets was more than offset by the absence of administration fees following the sale of our fund administration business, the reclassification of fund and custody expenses from operating expenses to operating income to better align these costs with their associated revenues within operating income, and continued pressure on margins. In addition, 2017 included an impairment loss of USD 12 million on a co-investment in an infrastructure fund.

Performance fees decreased by USD 50 million to USD 80 million, mainly driven by declines in Equities and Hedge Fund Businesses.

Operating expenses

Total operating expenses decreased by USD 89 million, or 6%, to USD 1,406 million and adjusted total operating expenses decreased by USD 43 million, or 3%, to USD 1,350 million.

Personnel expenses decreased by USD 28 million to USD 703 million. Excluding a credit of USD 10 million related to our Swiss pension plan, recognized in the first quarter of 2018, adjusted personnel expenses decreased by USD 24 million to USD 690 million, driven primarily by reduced expenses for variable compensation.

General and administrative expenses decreased by USD 33 million to USD 202 million. Adjusted general and administrative expenses decreased by USD 21 million to USD 192 million, primarily due to the aforementioned reclassification of fund and custody expenses to operating income, the exclusion of expenses associated with the fund administration business that we disposed of in October 2017, reduced marketing costs and lower professional fees, partly offset by higher research expenses.

Net expenses for services from Corporate Center and other business divisions decreased by USD 26 million to USD 498 million. Adjusted net expenses for services from Corporate Center and other business divisions increased by USD 4 million, primarily reflecting higher expenses from Group Technology, which were partly offset by reduced expenses from Group Operations following the sale of our fund administration business as well as the aforementioned reclassification of custody expenses to operating income.

Cost / income ratio

The cost / income ratio was 75.7% compared with 71.8%. On an adjusted basis, the ratio was 72.7% compared with 72.2%, and was above our 2018 target range of 60–70%.

Net new money

Excluding money market flows, net new money was USD 24.8 billion compared with inflows of USD 48.7 billion, primarily driven by our third-party institutional channel. The net new money growth rate, excluding money market flows, was positive 3.4% compared with positive 8.4%, and was within our 2018 target range of 3–5%. Net inflows were mainly driven by Europe, Middle East and Africa.

Invested assets

Invested assets decreased to USD 781 billion from USD 796 billion, mainly due to negative market performance of USD 33 billion and negative foreign currency translation effects of USD 15 billion, partly offset by inflows of USD 32 billion, including money market flows.

Personnel

Asset Management employed 2,301 personnel as of 31 December 2018, a decrease of 34 compared with 2,335 personnel as of 31 December 2017.

Investment performance

2018 was a challenging year for investments with a record low number of asset classes providing a positive annual return. Signs of slowing economic growth and tighter financial conditions led to a sharp drop across asset values, particularly in corporate bonds and equities.

In 2018, 60% of our active traditional funds outperformed their benchmark and 64% outperformed peer averages. Long-term performance remains strong despite a challenging 2018, with 86% outperforming their benchmark and 81% outperforming peer averages over five years.

Investment performance as of 31 December 2018

		Annualized	
Active funds versus benchmark	1 year	3 years	5 years
Percentage of fund assets exceeding benchmark			
Equities[1]	62	70	80
Fixed income[1]	70	92	92
Multi-asset[1]	10	76	73
Total traditional investments	**60**	**81**	**86**
Active funds versus peers			
Percentage of fund assets ranking in first or second quartile / exceeding peer index			
Equities[1]	64	78	94
Fixed income[1]	80	84	86
Multi-asset[1]	44	69	61
Total traditional investments	**64**	**78**	**81**
Passive funds tracking accuracy			
Percentage of passive fund assets within applicable tracking tolerance			
All asset classes[2]	91	94	93

1 Percentage of active fund assets above benchmark (gross of fees) / peer median. Based on the universe of European domiciled active wholesale funds available to UBS's wealth management businesses and other wholesale intermediaries as of 31 December 2018. Source of comparison versus peers: Thomson Reuters LIM (Lipper Investment Management). Source of comparison versus benchmark: UBS. Universe represents approximately 60% of all active fund assets and 16% of all actively managed assets (including segregated accounts) in these asset classes globally as of 31 December 2018. 2 Percentage of passive fund assets within applicable tracking tolerance on a gross of fees basis. Tracking accuracy information represents a universe of European domiciled institutional and wholesale funds representing approximately 37% of our total passive invested assets as of 31 December 2018. Source: UBS.

2017 compared with 2016

Results

Profit before tax increased by USD 130 million, or 29%, to USD 587 million, primarily driven by a gain of USD 153 million related to the sale of our fund administration business in Luxembourg and Switzerland to Northern Trust. Excluding this gain, adjusted profit before tax decreased by USD 22 million, or 4%, to USD 536 million, primarily reflecting lower operating income.

Operating income

Total operating income increased by USD 128 million, or 7%, to USD 2,083 million. Excluding the aforementioned gain on the sale of our fund administration business, adjusted total operating income decreased by USD 26 million or 1%. Net management fees decreased by USD 31 million to USD 1,800 million, reflecting lower revenues following the aforementioned sale of our fund administration business, the positive effect of fee true-ups of USD 17 million in 2016 as well as an impairment loss of USD 12 million on a co-investment in an infrastructure fund, partly offset by the effect of higher average invested assets.

Performance fees increased by USD 6 million to USD 130 million, with a decline in Real Estate & Private Markets being more than offset by Equities and Hedge Fund Businesses.

Operating expenses

Total operating expenses decreased by USD 3 million to USD 1,495 million and adjusted total operating expenses decreased by USD 4 million to USD 1,393 million.

Personnel expenses decreased by USD 5 million to USD 731 million and adjusted personnel expenses decreased by USD 7 million to USD 715 million, mainly driven by lower salary expenses.

General and administrative expenses decreased by USD 9 million to USD 235 million. Adjusted general and administrative expenses decreased by USD 16 million to USD 213 million, mainly driven by lower professional fees.

Net expenses for services from Corporate Center and other business divisions increased by USD 12 million to USD 524 million. Adjusted net expenses for services from Corporate Center and other business divisions increased by USD 20 million, mainly driven by higher expenses from Group Risk Control as well as increased costs for occupancy and strategic and regulatory initiatives.

Cost / income ratio

The cost / income ratio was 71.8% compared with 76.6%. On an adjusted basis, the cost / income ratio was 72.2% compared with 71.4%, and was above our 2017 target range of 60–70%.

Net new money

Excluding money market flows, net new money was USD 48.7 billion compared with net outflows of USD 23.0 billion, primarily driven by our third-party institutional channel. The net new money growth rate, excluding money market flows, was positive 8.4% compared with negative 3.9%, and was above our 2017 target range of 3–5%. Net inflows were mainly driven by Switzerland and Asia Pacific.

Invested assets

Invested assets increased to USD 796 billion from USD 645 billion, mainly due to positive market performance of USD 66 billion, and net new money inflows of USD 60 billion, including money market flows, and positive foreign currency translation effects of USD 29 billion.

Assets under administration

The aforementioned sale of our fund administration business concluded our exit from this line of business.

Personnel

Asset Management employed 2,335 personnel as of 31 December 2017, an increase of 27 compared with 2,308 personnel as of 31 December 2016.

Investment Bank

Investment Bank[1]

	As of or for the year ended			% change from
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.17
Results				
Corporate Client Solutions	2,626	2,870	2,410	(8)
Advisory	717	650	699	10
Equity Capital Markets	786	1,075	680	(27)
Debt Capital Markets	770	797	752	(3)
Financing Solutions	279	312	365	(11)
Risk Management	75	36	(86)	111
Investor Client Services	5,562	5,016	5,381	11
Equities	3,936	3,612	3,525	9
Foreign Exchange, Rates and Credit	1,626	1,405	1,856	16
Income	8,188	7,886	7,790	4
Credit loss (expense) / recovery	(38)	(92)	(11)	(58)
Total operating income	8,150	7,794	7,779	5
Personnel expenses	2,941	3,006	3,122	(2)
General and administrative expenses	651	675	812	(4)
Services (to) / from Corporate Center and other business divisions	2,889	2,824	2,798	2
of which: services from CC – Services	*2,811*	*2,729*	*2,707*	*3*
Depreciation and impairment of property, equipment and software	8	10	22	(17)
Amortization and impairment of intangible assets	12	12	12	5
Total operating expenses	6,501	6,527	6,765	0
Business division operating profit / (loss) before tax	1,649	1,267	1,014	30
Adjusted results[2]				
Total operating income as reported	8,150	7,794	7,779	5
of which: gains on sale of financial assets at fair value through OCI[3]		*137*	*77*	
Total operating income (adjusted)	8,150	7,658	7,702	6
Total operating expenses as reported	6,501	6,527	6,765	0
of which: personnel-related restructuring expenses[4]	*16*	*39*	*156*	
of which: non-personnel-related restructuring expenses[4]	*11*	*18*	*14*	
of which: restructuring expenses allocated from CC – Services[4]	*166*	*310*	*416*	
of which: gain related to changes to the Swiss pension plan	*(5)*			
of which: expenses from modification of terms for certain DCCP awards[5]		*26*		
Total operating expenses (adjusted)	6,313	6,135	6,179	3
Business division operating profit / (loss) before tax as reported	1,649	1,267	1,014	30
Business division operating profit / (loss) before tax (adjusted)	1,836	1,523	1,524	21

Investment Bank (continued)[1]

	As of or for the year ended			% change from
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.17
Performance measures[6]				
Pre-tax profit growth (%)	30.1	25.0	(49.1)	
Cost / income ratio (%)	79.4	82.8	86.8	
Return on attributed equity (%)[7]	16.1	13.3	13.1	
Adjusted performance measures[2,6]				
Pre-tax profit growth (%)	20.6	(0.1)	(36.5)	
Cost / income ratio (%)	77.1	79.2	80.1	
Return on attributed equity (%)[7]	17.9	16.0	19.7	
Additional information				
Average attributed equity (USD billion)[7]	10.2	9.5	7.7	8
Return on attributed tangible equity (%)[7]	16.3	13.6		
Risk-weighted assets (USD billion)[7]	87.3	77.0	69.2	13
of which: held by the Investment Bank (USD billion)	*86.9*	*76.5*	*69.2*	*14*
of which: held by CC – Group ALM on behalf of the Investment Bank (USD billion)[8]	*0.4*	*0.5*		*(16)*
Return on risk-weighted assets, gross (%)[9]	9.7	10.6	11.8	
Leverage ratio denominator (USD billion)[7]	256.2	290.9	227.2	(12)
of which: held by the Investment Bank (USD billion)	*240.1*	*271.0*	*227.2*	*(11)*
of which: held by CC – Group ALM on behalf of the Investment Bank (USD billion)[8]	*16.1*	*19.9*		*(19)*
Return on leverage ratio denominator, gross (%)[9]	2.9	2.8	2.9	
Goodwill and intangible assets (USD billion)	0.1	0.1	0.1	91
Compensation ratio (%)	35.9	38.1	40.1	
Average VaR (1-day, 95% confidence, 5 years of historical data)	11	10	9	15
Impaired loan portfolio as a percentage of total loan portfolio, gross (%)[10]	1.5	1.0	0.9	
Personnel (full-time equivalents)	5,205	4,822	4,734	8

1 Comparative figures in this table have been restated for the change of the presentation currency from Swiss francs to US dollars with assets, liabilities and total equity translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses translated at the respective average rates prevailing for the relevant periods. Comparatives may additionally differ due to adjustments following organizational changes, restatements due to the retrospective adoption of new accounting standards or changes in accounting policies, and events after the reporting period. 2 Adjusted results are non-GAAP financial measures as defined by SEC regulations. 3 Reflects a gain on the sale of our investment in London Clearing House in 2017 and gains on sales of our investment in IHS Markit in 2017 and 2016. Figures presented for periods prior to 2018 relate to financial assets available for sale. 4 Reflects restructuring expenses related to legacy cost programs. 5 Relates to the removal of the service period requirement for DCCP awards granted for the performance years 2012 and 2013. 6 Refer to the "Performance targets and measurement" section of this report for the definitions of our performance measures. 7 Refer to the "Capital management" section of this report for more information. 8 Represents risk-weighted assets (RWA) and leverage ratio denominator (LRD) held by Corporate Center – Group ALM that are directly associated with activity managed centrally on behalf of the business divisions and other Corporate Center units. Refer to "Equity attribution and return on attributed equity" in the "Capital management" section of this report for more information. 9 Based on total RWA and LRD. 10 Refer to the "Risk management and control" section of this report for more information on (credit-)impaired loan exposures.

2018 compared with 2017

Results

Profit before tax increased by USD 382 million, or 30%, to USD 1,649 million, mainly as a result of higher revenues in Investor Client Services, partly offset by lower revenues in Corporate Client Solutions. Adjusted profit before tax increased by USD 313 million or 21% to USD 1,836 million, reflecting higher operating income, partly offset by higher operating expenses.

Operating income

Total operating income increased by USD 356 million, or 5%, to USD 8,150 million. Excluding a gain of USD 108 million in 2017 related to the sale of our investment in IHS Markit and a gain of USD 29 million in 2017 related to the sale of our investment in London Clearing House, adjusted total operating income increased by USD 492 million, or 6%, to USD 8,150 million from USD 7,658 million. This mainly reflected USD 682 million higher revenues in Investor Client Services, partly offset by USD 244 million lower revenues in Corporate Client Services. Net credit loss expense was USD 38 million compared with USD 92 million. The prior year included an expense related to a margin loan to a single client following a significant decrease in the value of the collateral.

→ **Refer to the "Risk management and control" section of this report for more information on credit loss expenses**

Operating income by business unit

Corporate Client Solutions

Corporate Client Solutions revenues decreased by USD 244 million, or 8%, to USD 2,626 million, predominantly reflecting lower revenues in Equity Capital Markets.

Advisory revenues increased by USD 67 million to USD 717 million, primarily due to higher revenues from merger and acquisition transactions, where the global fee pool increased 8%.

Equity Capital Markets revenues decreased by USD 289 million to USD 786 million, reflecting a decrease in revenues from public offerings, where the global fee pool decreased 14%, as well as lower revenues from private transactions.

Debt Capital Markets revenues decreased by USD 27 million to USD 770 million, mainly due to lower investment grade revenues, where the global fee pool decreased 10%, partly offset by higher leveraged finance revenues, against a global fee pool decrease of 7%.

Financing Solutions revenues decreased by USD 33 million to USD 279 million, mainly due to lower real estate finance revenues.

Risk Management revenues were USD 75 million compared with USD 36 million, mainly reflecting reduced hedging costs and valuation gains on a restructured debt position.

Investor Client Services

Investor Client Services revenues increased by USD 546 million, or 11%, to USD 5,562 million. Excluding the aforementioned gains totaling USD 137 million in 2017, adjusted revenues increased by USD 682 million, or 14%, to USD 5,562 million, reflecting higher revenues in both the Equities and Foreign Exchange, Rates and Credit businesses.

Equities

Equities revenues increased by USD 324 million, or 9%, to USD 3,936 million, driven by increases across all product lines. Excluding a gain of USD 27 million in 2017 related to the sale of our investment in IHS Markit and a gain of USD 29 million in 2017 related to the sale of our investment in London Clearing House, adjusted revenues increased by USD 381 million, or 11%, to USD 3,936 million.

Adjusted Cash revenues increased by USD 73 million to USD 1,294 million, reflecting increased client activity.

Derivatives revenues increased by USD 154 million to USD 1,038 million, driven by improved client activity as market volatility increased.

Adjusted Financing Services revenues increased by USD 188 million to USD 1,663 million, mainly due to higher trading revenues in Equity Finance reflecting increased client activity.

Foreign Exchange, Rates and Credit

Foreign Exchange, Rates and Credit revenues increased by USD 221 million, or 16%, to USD 1,626 million and, excluding a gain of USD 81 million in 2017 related to the sale of our investment in IHS Markit increased by USD 302 million from USD 1,324 million on an adjusted basis. This increase was due to higher client activity levels and improved trading performance across the majority of products, as well as to the recognition of net income of around USD 100 million (comprised mainly of previously deferred day-1 profits), due to enhanced observability and revised valuations in the funding curve used to value UBS interest rate-linked notes. In addition, 2018 included revenues of USD 53 million from Corporate Center – Group Asset and Liability Management (Group ALM) for the rebalancing of the Group's currency exposures in connection with the change in functional and presentation currencies to US dollars.

Operating expenses

Total operating expenses were broadly unchanged at USD 6,501 million, and adjusted total operating expenses increased by USD 178 million, or 3%, to USD 6,313 million.

Personnel expenses decreased to USD 2,941 million from USD 3,006 million, and adjusted personnel expenses decreased to USD 2,930 million from USD 2,941 million, mainly driven by lower variable compensation expenses.

General and administrative expenses decreased by USD 24 million to USD 651 million and on an adjusted basis by USD 17 million to USD 640 million, driven by lower professional fees, partly offset by higher net expenses for the UK bank levy.

Net expenses for services from Corporate Center and other business divisions increased by USD 65 million to USD 2,889 million, and on an adjusted basis to USD 2,723 million from USD 2,515 million, driven mainly by higher net expenses from Group Technology and Group Risk Control.

Cost / income ratio

The cost / income ratio decreased to 79.4% from 82.8%. On an adjusted basis, the cost / income ratio decreased to 77.1% from 79.2% and was within our 2018 target range of 70–80%.

Return on attributed equity

Return on attributed equity for 2018 was 16.1%, and 17.9% on an adjusted basis, above our 2018 target of over 15%.

→ **Refer to "Equity attribution and return on attributed equity" in the "Capital management" section of this report for more information**

Risk-weighted assets

Risk-weighted assets (RWA), including RWA held by Corporate Center – Group ALM on behalf of the Investment Bank, increased by USD 10 billion to USD 87 billion as of 31 December 2018. This was driven by an increase in credit and counterparty credit risk RWA, mostly related to model updates as well as regulatory add-ons, and an increase in market risk RWA, reflecting higher average regulatory and stressed value-at-risk levels. RWA were within our 2018 guidance of around one-third of the Group RWA.

→ **Refer to the "Capital management" section of this report for more information**

Leverage ratio denominator

The leverage ratio denominator (LRD), including LRD held by Corporate Center – Group ALM on behalf of the Investment Bank, decreased by USD 35 billion to USD 256 billion as of 31 December 2018, mainly due to a decrease in trading portfolio assets, reflecting client-driven reductions and trade unwinds, lower prime brokerage receivables, as well as currency effects. The LRD was within our 2018 guidance of around one-third of the Group LRD.

→ **Refer to the "Capital management" section of this report for more information**

Personnel

The Investment Bank employed 5,205 personnel as of 31 December 2018, an increase of 383 compared with 4,822 personnel as of 31 December 2017, primarily as a result of the consolidation of UBS Securities China in December 2018.

2017 compared with 2016

Results

Profit before tax increased by USD 253 million, or 25%, to USD 1,267 million, as a result of lower operating expenses. Adjusted profit before tax was broadly unchanged at USD 1,523 million, as lower operating income was almost entirely offset by lower operating expenses.

Operating income

Total operating income increased by USD 15 million to USD 7,794 million. Excluding gains of USD 77 million in 2016 and USD 108 million in 2017 related to sales of our investment in IHS Markit and a gain of USD 29 million in 2017 related to the sale of our investment in London Clearing House, adjusted total operating income decreased by USD 44 million, or 1%, to USD 7,658 million from USD 7,702 million. An increase in Corporate Client Solutions revenues of USD 460 million was partly offset by a decrease in Investor Client Services revenues of USD 424 million. Net credit loss expense was USD 92 million compared with USD 11 million, mainly related to a margin loan to a single client following a significant decrease in the value of the collateral.

Operating income by business unit

Corporate Client Solutions

Corporate Client Solutions revenues increased by USD 460 million, or 19%, to USD 2,870 million, largely driven by higher revenues in Equity Capital Markets.

Advisory revenues decreased by USD 49 million to USD 650 million, reflecting lower revenues from private transactions, and lower revenues from merger and acquisition transactions against a global fee pool decline of 2%.

Equity Capital Markets revenues increased by USD 395 million to USD 1,075 million, mainly as a result of higher revenues from public offerings as the global fee pool increased 26%, as well as higher revenues from private transactions.

Debt Capital Markets revenues increased by USD 45 million to USD 797 million, largely reflecting higher revenues from leveraged finance against a global fee pool increase of 11%. This increase was partly offset by lower investment grade revenues.

Financing Solutions revenues decreased by USD 53 million to USD 312 million, reflecting lower client activity across all products.

Risk Management revenues were positive USD 36 million compared with negative USD 86 million, mainly related to lower costs related to portfolio hedges.

Investor Client Services

Investor Client Services revenues decreased by USD 365 million, or 7%, to USD 5,016 million. Excluding the aforementioned gains totaling USD 137 million in 2017 and USD 77 million in 2016, adjusted revenues decreased by USD 424 million, or 8%, to USD 4,880 million, reflecting lower revenues in Foreign Exchange, Rates and Credit.

Equities

Equities revenues increased by USD 87 million to USD 3,612 million. Excluding a gain of USD 27 million in 2017 related to the sale of our investment in IHS Markit and a gain of USD 29 million in 2017 related to the sale of our investment in London Clearing House, adjusted revenues increased by USD 31 million to USD 3,555 million.

Adjusted Cash revenues decreased by USD 21 million to USD 1,220 million, resulting from lower trading revenues.

Derivatives revenues increased by USD 159 million to USD 884 million, reflecting increased client activity levels and stronger trading revenues.

Adjusted Financing Services revenues decreased by USD 72 million to USD 1,476 million, as a result of weaker trading revenues in Equity Finance.

Foreign Exchange, Rates and Credit

Foreign Exchange, Rates and Credit revenues decreased by USD 451 million to USD 1,405 million. Excluding gains of USD 81 million in 2017 and USD 77 million in 2016, related to sales of our investment in IHS Markit, adjusted revenues decreased to USD 1,324 million from USD 1,779 million, mainly reflecting reduced client activity across the majority of products reflecting persistent low market volatility.

Operating expenses

Total operating expenses decreased by USD 238 million, or 4%, to USD 6,527 million, and adjusted total operating expenses decreased by USD 44 million, or 1%, to USD 6,135 million.

Personnel expenses decreased to USD 3,006 million from USD 3,122 million, and adjusted personnel expenses decreased to USD 2,941 million from USD 2,965 million, mainly related to lower salary expenses as a result of our cost reduction programs, which were partly offset by higher variable compensation expenses. In addition, 2017 included an expense of USD 26 million related to the modification of terms of Deferred Contingent Capital Plan awards granted for the performance years 2012 and 2013. This was treated as an adjusting item.

General and administrative expenses decreased to USD 675 million from USD 812 million, and to USD 657 million from USD 798 million on an adjusted basis, mainly driven by an USD 83 million decrease in expenses for provisions for litigation, regulatory and similar matters. In addition, the net expense for the UK bank levy was USD 34 million compared with a net expense of USD 78 million, primarily as 2017 included a USD 43 million credit related to prior years.

Net expenses for services from Corporate Center and other business divisions increased to USD 2,824 million from USD 2,798 million and on an adjusted basis to USD 2,515 million from USD 2,381 million, mainly related to higher costs for strategic and regulatory initiatives and higher net expenses from Group Technology and Group Risk Control.

Cost / income ratio

The cost / income ratio decreased to 82.8% from 86.8%. On an adjusted basis, the cost / income ratio decreased to 79.2% from 80.1% and was within our 2017 target range of 70–80%.

Return on attributed equity

Return on attributed equity for 2017 was 13.3%, and 16.0% on an adjusted basis, above our 2017 target of over 15%.

Risk-weighted assets

RWA held by the Investment Bank increased by USD 7.3 billion to USD 76.5 billion as of 31 December 2017, driven by an increase in credit and counterparty credit risk RWA. This was mostly due to model updates and regulatory add-ons, partly offset by a decrease in market risk RWA. Total RWA, including RWA held by Corporate Center – Group ALM on behalf of the Investment Bank, were USD 77.0 billion as of 31 December 2017, below our 2017 short- to medium-term expectation of around USD 85 billion.

Leverage ratio denominator

LRD held by the Investment Bank increased by USD 44 billion to USD 271 billion as of 31 December 2017, mainly as a result of higher trading portfolio assets, reflecting client-driven increases and higher equity markets, and an increase in financial assets designated at fair value, available for sale and held to maturity. These increases were partly offset by lower off-balance sheet and net derivative exposures. Total LRD, including LRD held by Corporate Center – Group ALM on behalf of the Investment Bank, was USD 291 billion as of 31 December 2017 and remained below our 2017 short- to medium-term expectation of around USD 325 billion.

Personnel

The Investment Bank employed 4,822 personnel as of 31 December 2017, an increase of 88 compared with 4,734 personnel as of 31 December 2016. This was primarily related to the transfer of business-aligned personnel in our Business Solutions Centers from Corporate Center to the Investment Bank, partly offset by a decrease as a result of our cost reduction programs.

Corporate Center

Corporate Center[1]

	As of or for the year ended			% change from
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.17
Results				
Total operating income	(957)	(467)	(290)	105
Personnel expenses	4,002	3,935	3,946	2
General and administrative expenses	3,935	4,479	4,953	(12)
Services (to) / from business divisions	(8,447)	(8,230)	(8,029)	3
Depreciation and impairment of property, equipment and software	1,199	1,024	955	17
Amortization and impairment of intangible assets	2	7	21	(71)
Total operating expenses	692	1,215	1,846	(43)
Operating profit / (loss) before tax	(1,649)	(1,682)	(2,136)	(2)
Adjusted results[2]				
Total operating income as reported	(957)	(467)	(290)	105
of which: gains on sales of real estate	*31*		*123*	
of which: gain / (loss) on sale of subsidiaries and businesses	*25*			
of which: remeasurement loss related to UBS Securities China	*(270)*			
of which: net foreign currency translation gains / (losses)[3]		*(16)*	*(84)*	
Total operating income (adjusted)	(744)	(450)	(328)	65
Total operating expenses as reported	692	1,215	1,846	(43)
of which: personnel-related restructuring expenses[4]	*208*	*443*	*527*	
of which: non-personnel-related restructuring expenses[4]	*238*	*532*	*631*	
of which: restructuring expenses allocated from CC – Services[4]	*(450)*	*(945)*	*(1,081)*	
of which: gain related to changes to the Swiss pension plan	*(122)*			
Total operating expenses (adjusted)	819	1,185	1,769	(31)
Operating profit / (loss) before tax as reported	(1,649)	(1,682)	(2,136)	(2)
Operating profit / (loss) before tax (adjusted)	(1,562)	(1,635)	(2,098)	(4)
Additional information				
Average attributed equity (USD billion)[5]	20.5	23.5	29.4	(13)
Risk-weighted assets (USD billion)[5,6]	57.7	58.0	56.1	(1)
Leverage ratio denominator (USD billion)[5,6]	302.3	278.5	295.4	9
Personnel (full-time equivalents)	30,581	25,817	23,955	18

1 Comparative figures in this table have been restated for the change of the presentation currency from Swiss francs to US dollars with assets, liabilities and total equity translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses translated at the respective average rates prevailing for the relevant periods. Comparatives may additionally differ due to adjustments following organizational changes, restatements due to the retrospective adoption of new accounting standards or changes in accounting policies, and events after the reporting period. 2 Adjusted results are non-GAAP financial measures as defined by SEC regulations. 3 Related to the disposal of foreign subsidiaries and branches. 4 Reflects restructuring expenses related to legacy cost programs. 5 Refer to the "Capital management" section of this report for more information. 6 Prior to attributions to business divisions and other Corporate Center units for the purpose of attributing equity.

Corporate Center – Services

Corporate Center – Services[1]

	As of or for the year ended			% change from
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.17
Results				
Total operating income	(513)	(157)	(103)	228
Personnel expenses	3,927	3,857	3,847	2
General and administrative expenses	3,789	4,336	4,192	(13)
Depreciation and impairment of property, equipment and software	1,199	1,024	955	17
Amortization and impairment of intangible assets	2	7	21	(72)
Total operating expenses before allocations to BDs and other CC units	8,917	9,224	9,016	(3)
Services (to) / from business divisions and other CC units	(8,624)	(8,445)	(8,263)	2
of which: services to Global Wealth Management	*(3,740)*	*(3,626)*	*(3,520)*	*3*
of which: services to Personal & Corporate Banking	*(1,285)*	*(1,251)*	*(1,201)*	*3*
of which: services to Asset Management	*(541)*	*(562)*	*(537)*	*(4)*
of which: services to Investment Bank	*(2,811)*	*(2,729)*	*(2,707)*	*3*
of which: services to CC – Group ALM	*(169)*	*(145)*	*(112)*	*16*
of which: services to CC – Non-core and Legacy Portfolio	*(153)*	*(198)*	*(227)*	*(23)*
Total operating expenses	293	779	753	(62)
Operating profit / (loss) before tax	(806)	(935)	(856)	(14)
Adjusted results[2]				
Total operating income as reported	(513)	(157)	(103)	228
of which: gains on sales of real estate	*31*		*123*	
of which: gain / (loss) on sale of subsidiaries and businesses	*25*			
of which: remeasurement loss related to UBS Securities China	*(270)*			
Total operating income (adjusted)	(300)	(157)	(226)	92
Total operating expenses as reported before allocations	8,917	9,224	9,016	(3)
of which: personnel-related restructuring expenses[3]	*208*	*442*	*526*	*(53)*
of which: non-personnel-related restructuring expenses[3]	*238*	*532*	*631*	*(55)*
Total operating expenses (adjusted) before allocations	8,593	8,250	7,859	4
Services (to) / from BDs and other CC units	(8,624)	(8,445)	(8,263)	2
of which: restructuring expenses allocated to BDs and other CC units[3]	*(456)*	*(954)*	*(1,101)*	*(52)*
of which: gain related to changes to the Swiss pension plan	*(122)*			
Total operating expenses as reported after allocations	293	779	753	(62)
Total operating expenses (adjusted) after allocations	425	759	697	(44)
Operating profit / (loss) before tax as reported	(806)	(935)	(856)	(14)
Operating profit / (loss) before tax (adjusted)	(725)	(915)	(923)	(21)
Additional information				
Average attributed equity (USD billion)[4]	16.1	19.4	23.0	(16)
Risk-weighted assets (USD billion)[4]	31.8	29.9	27.1	6
of which: held by CC – Services (USD billion)	*31.8*	*29.9*	*27.1*	*6*
Leverage ratio denominator (USD billion)[4]	8.2	7.0	5.7	17
of which: held by CC – Services (USD billion)	*7.9*	*6.9*	*5.7*	*15*
of which: held by CC – Group ALM on behalf of CC – Services (USD billion)[5]	*0.3*	*0.1*		*157*
Personnel (full-time equivalents)	30,364	25,623	23,750	19

1 Comparative figures in this table have been restated for the change of the presentation currency from Swiss francs to US dollars with assets, liabilities and total equity translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses translated at the respective average rates prevailing for the relevant periods. Comparatives may additionally differ due to adjustments following organizational changes, restatements due to the retrospective adoption of new accounting standards or changes in accounting policies, and events after the reporting period. 2 Adjusted results are non-GAAP financial measures as defined by SEC regulations. 3 Reflects restructuring expenses related to legacy cost programs. 4 Refer to the "Capital management" section of this report for more information. 5 Represents leverage ratio denominator held by Corporate Center – Group ALM that is directly associated with activity managed centrally on behalf of the business divisions and other Corporate Center units. Refer to "Equity attribution and return on attributed equity" in the "Capital management" section of this report for more information.

2018 compared with 2017

Corporate Center – Services recorded a loss before tax of USD 806 million compared with USD 935 million, and USD 725 million on an adjusted basis compared with USD 915 million.

Operating income

Operating income was negative USD 513 million compared with negative USD 157 million. Excluding the remeasurement loss of USD 270 million related to the increase of our shareholding in UBS Securities China and the gain on the sale of Widder Hotel of USD 56 million in 2018, adjusted operating income was negative USD 300 million compared with negative USD 157 million, mainly driven by higher funding costs relating to Corporate Center – Services' balance sheet assets.

Operating expenses

Operating expenses before service allocations to business divisions and other Corporate Center units

Before service allocations to business divisions and other Corporate Center units, total operating expenses decreased by USD 307 million, or 3%, to USD 8,917 million, including lower restructuring costs and a credit of USD 122 million related to changes to our Swiss pension plan. Adjusted total operating expenses before allocations increased by USD 343 million, or 4%, to USD 8,593 million, mainly due to higher Group Technology investment as well as increased depreciation and impairment costs, partly offset by USD 259 million lower net expenses for provisions for litigation, regulatory and similar matters.

Personnel expenses increased by USD 70 million to USD 3,927 million including the aforementioned credit of USD 122 million related to changes to our Swiss pension plan. On an adjusted basis, personnel expenses increased by USD 426 million to USD 3,841 million mainly driven by continued insourcing of certain activities and staff from third-party vendors to our Business Solutions Centers.

General and administrative expenses decreased by USD 547 million to USD 3,789 million and adjusted general and administrative expenses decreased by USD 209 million, mainly due to USD 259 million lower net expenses for provisions for litigation, regulatory and similar matters, lower expenses for outsourcing and decreased professional fees. These reductions were partly offset by higher expenses from Group Technology.

Depreciation and impairment of property, equipment and software increased to USD 1,199 million from USD 1,024 million, reflecting increased depreciation expenses related to internally generated capitalized software and asset impairment costs.

Services to / from business divisions and other Corporate Center units

Corporate Center – Services allocated expenses of USD 8,624 million to the business divisions and other Corporate Center units compared with USD 8,445 million. Adjusted allocated expenses were USD 8,168 million compared with USD 7,491 million.

Operating expenses after service allocations to / from business divisions and other Corporate Center units

Corporate Center – Services retains costs related to Group governance functions and other corporate activities, certain strategic and regulatory projects and certain restructuring expenses. Total operating expenses remaining in Corporate Center – Services after allocations decreased to USD 293 million from USD 779 million and to USD 425 million from USD 759 million on an adjusted basis, mainly reflecting a USD 259 million reduction in expenses for provisions for litigation, regulatory and similar matters.

2017 compared with 2016

Corporate Center – Services recorded a loss before tax of USD 935 million compared with USD 856 million, and USD 915 million on an adjusted basis compared with USD 923 million.

Operating income

Operating income was negative USD 157 million compared with negative USD 103 million, partly as 2016 included gains on sales of real estate of USD 123 million. On an adjusted basis, operating income was negative USD 157 million compared with negative USD 226 million, mainly due to higher treasury-related income from Corporate Center – Group Asset and Liability Management (Group ALM), resulting from a change made in the first quarter of 2017 to the methodology used to allocate revenues from the investment of equity and the funding costs for long-term debt that contributes to total loss-absorbing capacity. This was partly offset by higher funding costs relating to Corporate Center – Services' balance sheet assets.

Operating expenses

Operating expenses before service allocations to business divisions and other Corporate Center units

Before service allocations to business divisions and other Corporate Center units, total operating expenses increased by USD 207 million, or 2%, to USD 9,224 million. Restructuring expenses were USD 974 million compared with USD 1,157 million and mainly related to our transitioning activities to nearshore and offshore locations, as well as outsourcing of IT and other services. Adjusted total operating expenses before allocations increased by USD 391 million, or 5%, to USD 8,250 million.

Personnel expenses increased by USD 10 million to USD 3,857 million. Excluding restructuring expenses, adjusted personnel expenses increased by USD 94 million to USD 3,415 million, mainly driven by increased staffing levels and insourcing of certain activities from third-party vendors to our Business Solutions Centers.

General and administrative expenses increased by USD 144 million to USD 4,336 million and adjusted general and administrative expenses increased by USD 238 million, mainly due to USD 250 million higher net expenses for provisions for litigation, regulatory and similar matters, partly offset by lower marketing costs.

Depreciation and impairment of property, equipment and software increased to USD 1,024 million from USD 955 million, reflecting increased depreciation expenses related to internally generated capitalized software.

Services to / from business divisions and other Corporate Center units

Corporate Center – Services allocated expenses of USD 8,445 million to the business divisions and other Corporate Center units compared with USD 8,263 million. Adjusted allocated expenses for services to the business divisions and other Corporate Center units were USD 7,491 million compared with USD 7,162 million, mainly as the costs allocated to business divisions and other Corporate Center units in 2016 were lower than the actual costs incurred by Corporate Center – Services on their behalf. Since 2017, costs have been allocated to the business divisions and other Corporate Center units based on actual costs incurred by Corporate Center – Services.

Operating expenses after service allocations to / from business divisions and other Corporate Center units

Corporate Center – Services retains costs related to Group governance functions and other corporate activities, certain strategic and regulatory projects and certain restructuring expenses. Total operating expenses remaining in Corporate Center – Services after allocations increased to USD 779 million from USD 753 million and to USD 759 million from USD 697 million on an adjusted basis, driven by the aforementioned higher net expenses for provisions for litigation, regulatory and similar matters, largely offset by lower retained expenses as the costs allocated to the business divisions and other Corporate Center units in 2016 were lower than the actual costs incurred by Corporate Center – Services on their behalf.

Corporate Center – Group Asset and Liability Management

Corporate Center – Group ALM[1]

	As of or for the year ended			% change from
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.17
Results				
Business division-aligned risk management net income	378	726	856	(48)
Capital investment and issuance net income	(302)	(121)	45	150
Group structural risk management net income	(919)	(522)	(553)	76
Total risk management net income before allocations	(844)	83	348	
Allocations to business divisions and other CC units	295	(268)	(517)	
of which: Global Wealth Management	*(90)*	*(377)*	*(512)*	*(76)*
of which: Personal & Corporate Banking	*(56)*	*(184)*	*(336)*	*(70)*
of which: Asset Management	*(15)*	*(19)*	*(7)*	*(22)*
of which: Investment Bank	*391*	*351*	*264*	*11*
of which: CC – Services	*(43)*	*(123)*	*(37)*	*(65)*
of which: CC – Non-core and Legacy Portfolio	*108*	*84*	*112*	*29*
Total risk management net income after allocations	(549)	(185)	(167)	197
Accounting asymmetries related to economic hedges	(105)	(62)	38	69
Hedge accounting ineffectiveness[2]	13	(13)	5	
Net foreign currency translation gains / (losses)[3]		(16)	(84)	
Other	33	(11)	54	
Total operating income as reported	(609)	(288)	(155)	112
Total operating income (adjusted)[4]	(609)	(271)	(71)	125
Personnel expenses	41	34	31	18
General and administrative expenses	42	27	17	58
Depreciation and impairment of property, equipment and software	0	0	0	
Amortization and impairment of intangible assets	0	0	0	
Services (to) / from business divisions and other CC units	1	(13)	(49)	
Total operating expenses as reported	84	48	(1)	75
of which: personnel-related restructuring expenses[5]	*0*	*1*	*0*	
of which: non-personnel-related restructuring expenses[5]	*0*	*0*	*0*	
of which: restructuring expenses allocated from CC – Services[5]	*3*	*3*	*0*	
Total operating expenses (adjusted)	81	44	(1)	87
Operating profit / (loss) before tax as reported	(693)	(336)	(154)	106
Operating profit / (loss) before tax (adjusted)[4]	(690)	(315)	(70)	119
Additional information				
Average attributed equity (USD billion)[6]	3.2	2.8	4.3	14
Risk-weighted assets (USD billion)[6]	12.0	11.5	10.4	4
of which: held by CC – Group ALM on behalf of BDs and other CC units (USD billion)[7]	*4.0*	*4.0*		*0*
Leverage ratio denominator (USD billion)[6]	283.5	256.3	267.7	11
of which: held by CC – Group ALM on behalf of BDs and other CC units (USD billion)[7]	*124.9*	*127.6*		*(2)*
Personnel (full-time equivalents)	173	143	142	21

1 Comparative figures in this table have been restated for the change of the presentation currency from Swiss francs to US dollars with assets, liabilities and total equity translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses translated at the respective average rates prevailing for the relevant periods. Comparatives may additionally differ due to adjustments following organizational changes, restatements due to the retrospective adoption of new accounting standards or changes in accounting policies, and events after the reporting period. 2 Excludes ineffectiveness of hedges of net investments in foreign operations. 3 Related to the disposal of foreign subsidiaries and branches. 4 Adjusted results are non-GAAP financial measures as defined by SEC regulations. 5 Reflects restructuring expenses related to legacy cost programs. 6 Refer to the "Capital management" section of this report for more information. 7 Represents risk-weighted assets and leverage ratio denominator held by Corporate Center – Group ALM that are directly associated with activity managed centrally on behalf of the business divisions and other Corporate Center units. Refer to "Equity attribution and return on attributed equity" in the "Capital management" section of this report for more information.

2018 compared with 2017

Corporate Center – Group Asset and Liability Management (Group ALM) recorded a loss before tax of USD 693 million compared with a loss of USD 336 million. On an adjusted basis, the loss before tax was USD 690 million compared with a loss of USD 315 million, driven by lower Group structural risk management net income and higher retained operating expenses.

Operating income

Total operating income was negative USD 609 million compared with negative USD 288 million. Adjusted total operating income retained by Group ALM was negative USD 609 million compared with negative USD 271 million.

Total risk management net income before allocations

Total risk management net income before allocations to business divisions and other Corporate Center units was negative USD 844 million compared with USD 83 million, mainly reflecting lower net income from business division-aligned risk management activities and Group structural risk management, in addition to negative net income from capital investment and issuance.

Business division-aligned risk management net income

Net income from business division-aligned risk management activities was USD 378 million compared with USD 726 million, mainly driven by the ongoing effect of negative Swiss franc and euro interest rates and the expiration of an interest rate hedge portfolio in November 2017. In addition, during the third quarter of 2018, Group ALM's interest rate risk management capability was extended to the management of Global Wealth Management's interest rate risk in the US. This resulted in lower business division-aligned risk management net income. Previously, this income was realized in Group ALM and fully allocated to Global Wealth Management. The change did not have an effect on Global Wealth Management's net interest income.

Capital investment and issuance net income

Net income from capital investment and issuance activities was negative USD 302 million compared with negative USD 121 million. This decrease was due to higher net interest expense as a result of an increase in total outstanding long-term debt that is eligible for total loss-absorbing capital and changes we made to our internal funds transfer pricing rates on these instruments.

Group structural risk management net income

Net income from Group structural risk management activities was negative USD 919 million compared with negative USD 522 million. This decline was due to increased net interest expense from the management of Group ALM's portfolio of internal funding as a result of higher London Interbank Offered Rate (LIBOR) rates on floating-rate liabilities and the inclusion of the interest expense on a portfolio of long-dated cross-currency swaps, following a change in accounting policy in the first quarter of 2018. The interest expense of that portfolio was previously recognized in *Other net income from fair value changes on financial instruments* (prior to 1 January 2018: *Net trading income)* and reported in *Accounting asymmetries related to economic hedges*. These effects were partly offset by the aforementioned changes made to our internal funds transfer pricing rates.

Allocations to business divisions and other Corporate Center units

Combined allocations from risk management activities to business divisions and other Corporate Center units were negative USD 295 million compared with positive USD 268 million. This decrease primarily reflects the aforementioned lower net income from capital investment and issuance activities, which is fully allocated to the business divisions and other Corporate Center units in proportion to their attributed equity, and lower net income from business division-aligned risk management activities, which is allocated to the business divisions, predominantly Global Wealth Management and Personal & Corporate Banking.

Total risk management net income after allocations

Group ALM retained negative USD 549 million from its risk management activities after allocations compared with negative USD 185 million.

Retained income from risk management activities is entirely related to Group structural risk management and is mainly the net result of costs from buffers that are maintained by Group ALM at levels above the total consumption of the business divisions and the revenues generated by Group ALM from the management of the Group's high-quality liquid assets (HQLA) portfolio relative to the benchmark rates used to allocate the costs.

Accounting asymmetries related to economic hedges

Net income retained by Group ALM due to accounting asymmetries related to economic hedges was negative USD 105 million compared with negative USD 62 million, primarily due to a loss of USD 35 million compared with a gain of USD 71 million on certain internal funding transactions due to the widening of own credit funding spreads. This was partly offset by reduced expense from the aforementioned change in accounting policy in the first quarter of 2018 on a portfolio of long-dated cross-currency swaps, now reported in *Group structural risk management net income.*

Hedge accounting ineffectiveness

Net income related to hedge accounting ineffectiveness was positive USD 13 million compared with negative USD 13 million. This ineffectiveness primarily arises from changes in the spread between LIBOR and the overnight index swap (OIS) rate due to differences in the way these affect the valuation of the hedged items and hedging instruments through either the benchmark rate determining cash flows or the discount rate.

Other

Other net income was positive USD 33 million compared with negative USD 11 million, mainly reflecting higher mark-to-market effects from hedging activity not designated in hedge accounting relationships.

Operating expenses

Total operating expenses were USD 84 million compared with USD 48 million, mainly due to higher temporary regulatory costs. In addition, from June 2017, Group ALM retained costs related to Group structural risk management net income to the extent that such income is not allocated to the business divisions and other Corporate Center units. Prior to this, Group ALM allocated all costs to business divisions and other Corporate Center units.

Balance sheet assets

Balance sheet assets increased by USD 28 billion to USD 280 billion as of 31 December 2018, reflecting decreased net funding consumption by the business divisions. Funding available in excess of the business divisions' requirements is transferred to Group ALM's balance sheet to be reinvested, or to be reduced over time if business needs remain lower. As a result, Group ALM's balance sheet is mainly driven by the volume of liabilities created across the Group rather than centrally managed asset requirements.

→ **Refer to the "Treasury management" section of this report for more information**

Risk-weighted assets

Risk-weighted assets (RWA) remained stable at USD 12 billion.

→ **Refer to the "Capital management" section of this report for more information**

Leverage ratio denominator

The leverage ratio denominator (LRD) increased to USD 284 billion from USD 256 billion, consistent with the increase in balance sheet assets.

→ **Refer to the "Capital management" section of this report for more information**

2017 compared with 2016

Group ALM recorded a loss before tax of USD 336 million compared with a loss of USD 154 million. On an adjusted basis, the loss before tax was USD 315 million compared with a loss of USD 70 million, driven by lower net income on accounting asymmetries related to economic hedges and higher retained operating expenses.

Operating income

Total operating income was negative USD 288 million compared with negative USD 155 million. Adjusted total operating income retained by Group ALM was negative USD 271 million compared with negative USD 71 million.

Total risk management net income before allocations

Total risk management net income before allocations to business divisions and other Corporate Center units was USD 83 million compared with USD 348 million, mainly reflecting lower net income from business division-aligned risk management activities and negative net income from capital investment and issuance.

Business division-aligned risk management net income

Net income from business division-aligned risk management activities was USD 726 million compared with USD 856 million, mainly reflecting reduced interest rate risk management revenues in the banking book for Global Wealth Management and Personal & Corporate Banking. This decrease was mainly due to lower interest income from managing euro- and Swiss franc-denominated deposits in the current negative interest rate environment.

Capital investment and issuance net income

Net income from capital investment and issuance activities was negative USD 121 million compared with positive USD 45 million. This decrease was due to USD 89 million higher net interest expense as a result of an increase in total outstanding long-term debt that is eligible for total loss-absorbing capital and USD 78 million lower interest income from the investment of the Group's equity due to maturing positions being replaced at lower long-term interest rates.

Group structural risk management net income

Net income from Group structural risk management activities was negative USD 522 million compared with negative USD 553 million. An increase in income of USD 130 million from the management of the Group's HQLA, mainly due to wider spreads between certain HQLA and internal funding liabilities, was largely offset by an increase in net interest expense of USD 109 million due to issuances of long-term debt during 2017.

Allocations to business divisions and other Corporate Center units

Combined allocations from risk management activities to business divisions and other Corporate Center units were USD 268 million compared with USD 517 million. This decrease primarily reflects the aforementioned lower net income from capital investment and issuance activities, which is fully allocated to the business divisions and other Corporate Center units in proportion to their attributed equity, and lower net income from business division-aligned risk management activities, which is allocated to the business divisions, predominantly Global Wealth Management and Personal & Corporate Banking.

Total risk management net income after allocations

Group ALM retained negative USD 185 million from its risk management activities after allocations compared with negative USD 167 million.

Retained income from risk management activities is entirely related to Group structural risk management and is mainly the net result of costs from buffers that are maintained by Group ALM at levels above the total consumption of the business divisions and the revenues generated by Group ALM from the management of the Group's HQLA portfolio relative to the benchmark rates used to allocate the costs.

Accounting asymmetries related to economic hedges

Net income retained by Group ALM due to accounting asymmetries related to economic hedges was negative USD 62 million compared with positive USD 38 million, primarily due to a loss of USD 172 million compared with a loss of USD 38 million on Group ALM's cross-currency and interest rate derivatives hedges related to its portfolio of internal funding as well as lower fair value gains of USD 71 million compared with USD 179 million on certain internal funding transactions due to the tightening of own credit funding spreads. This was partly offset by a gain of USD 39 million compared with a loss of USD 36 million related to HQLA classified as available for sale.

Hedge accounting ineffectiveness

Net income related to hedge accounting ineffectiveness was negative USD 13 million compared with positive USD 5 million. This ineffectiveness primarily arises from changes in the spread between LIBOR and the OIS rate due to differences in the way these affect the valuation of the hedged items and hedging instruments through either the benchmark rate determining cash flows or the discount rate.

Other

Other net income was negative USD 11 million compared with positive USD 54 million, mainly reflecting lower interest income retained by Group ALM on behalf of non-controlling interests.

Operating expenses

Total operating expenses were USD 48 million compared with negative USD 1 million. From June 2017, Group ALM retained costs related to Group structural risk management income to the extent that such income was not allocated to the business divisions and other Corporate Center units. Previously, Group ALM allocated all costs to business divisions and other Corporate Center units.

Balance sheet assets

Balance sheet assets decreased by USD 10 billion to USD 252 billion as of 31 December 2017, reflecting increased net funding consumption by the business divisions. Group ALM is responsible for investing any funding generated that is surplus to the requirements of the business divisions. As a result, Group ALM's balance sheet is mainly driven by the volume of liabilities created across the Group rather than centrally managed asset requirements.

Risk-weighted assets

RWA increased by USD 1 billion to USD 12 billion as of 31 December 2017 mainly due to higher credit risk in the Group's HQLA portfolio.

Leverage ratio denominator

LRD decreased to USD 256 billion from USD 268 billion, consistent with the decrease in balance sheet assets.

Corporate Center – Non-core and Legacy Portfolio

Corporate Center – Non-core and Legacy Portfolio[1]

	As of or for the year ended			% change from
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.17
Results				
Income	172	(11)	(20)	
Credit loss (expense) / recovery	(8)	(11)	(12)	(33)
Total operating income	165	(22)	(32)	
Personnel expenses	35	44	67	(20)
General and administrative expenses	104	117	744	(11)
Services (to) / from business divisions and other CC units	176	228	283	(23)
of which: services from CC – Services	*153*	*198*	*227*	*(23)*
Depreciation and impairment of property, equipment and software	0	0	0	(31)
Amortization and impairment of intangible assets	0	0	0	(100)
Total operating expenses	315	388	1,094	(19)
Operating profit / (loss) before tax	(150)	(411)	(1,126)	(63)
Adjusted results[2]				
Total operating income as reported	165	(22)	(32)	
Total operating income (adjusted)	165	(22)	(32)	
Total operating expenses as reported	315	388	1,094	(19)
of which: personnel-related restructuring expenses[3]	*0*	*0*	*1*	
of which: non-personnel-related restructuring expenses[3]	*0*	*0*	*0*	
of which: restructuring expenses allocated from CC – Services[3]	*3*	*6*	*21*	
Total operating expenses (adjusted)	312	382	1,073	(18)
Operating profit / (loss) before tax as reported	(150)	(411)	(1,126)	(63)
Operating profit / (loss) before tax (adjusted)	(148)	(405)	(1,105)	(64)
Additional information				
Average attributed equity (USD billion)[4]	1.2	1.4	2.1	(15)
Risk-weighted assets (USD billion)[4]	13.9	16.6	18.6	(16)
of which: held by CC – Non-core and Legacy Portfolio (USD billion)	*13.9*	*16.5*	*18.6*	*(16)*
Leverage ratio denominator (USD billion)[4]	12.5	17.1	22.0	(27)
of which: held by CC – Non-core and Legacy Portfolio (USD billion)	*10.8*	*15.3*	*22.0*	*(29)*
of which: held by CC – Group ALM on behalf of CC – Non-core and Legacy Portfolio (USD billion)[5]	*1.7*	*1.8*		*(7)*
Personnel (full-time equivalents)	44	52	63	(15)

1 Comparative figures in this table have been restated for the change of the presentation currency from Swiss francs to US dollars with assets, liabilities and total equity translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses translated at the respective average rates prevailing for the relevant periods. Comparatives may additionally differ due to adjustments following organizational changes, restatements due to the retrospective adoption of new accounting standards or changes in accounting policies, and events after the reporting period. 2 Adjusted results are non-GAAP financial measures as defined by SEC regulations. 3 Reflects restructuring expenses related to legacy cost programs. 4 Refer to the "Capital management" section of this report for more information. 5 Represents leverage ratio denominator held by Corporate Center – Group ALM that is directly associated with activity managed centrally on behalf of the business divisions and other Corporate Center units. Refer to "Equity attribution and return on attributed equity" in the "Capital management" section of this report for more information.

Composition of Non-core and Legacy Portfolio

An overview of the composition of Non-core and Legacy Portfolio is presented in the table below.

The groupings of positions by category and the order in which these are listed are not necessarily representative of the magnitude of the risks associated with them, nor do the metrics shown in the table necessarily represent the risk measures used to manage and control these positions.

Exposure category[1]	Description	RWA		Total assets[2]		LRD[3]	
		31.12.18	31.12.17	**31.12.18**	31.12.17	**31.12.18**	31.12.17
Linear rates	Consists of linear OTC products (primarily vanilla interest rate, inflation, basis and cross-currency swaps for all major currencies and some emerging markets) and non-linear OTC products (vanilla and structured options). More than 95% of gross positive replacement values (PRVs) are collateralized and more than 99% of uncollateralized exposures are rated investment grade. 30% of gross PRVs are due to mature by the end of 2021.	**1.1**	1.3	**22.1**	29.3	**4.2**	6.4
Non-linear rates		**0.5**	0.2	**5.8**	8.6	**1.3**	1.2
Credit	Remaining positions include an equity investment and residual loan population with minimal risk exposures.	**0.1**	0.3	**0.0**	0.7	**0.1**	0.9
Securitizations	Consists primarily of a portfolio of CDS positions referencing ABS assets with related cash and synthetic hedges to mitigate the effect of directional movements. The majority of the remaining positions are expected to settle by 2020.	**1.2**	1.9	**0.6**	0.9	**0.6**	0.8
Auction preferred stocks (APSs) and auction rate securities (ARSs)	Portfolio of long-dated APSs and municipal ARSs. All APSs were rated A or above and all ARS exposures were rated Baa2 or above as of 31 December 2018.	**0.4**	0.6	**1.7**	2.2	**1.7**	2.2
Municipal swaps and options	Swaps and options with US state and local governments. More than 99% of the PRVs are with counterparties that were rated investment grade as of 31 December 2018.	**0.4**	0.5	**1.6**	2.2	**1.0**	1.5
Other	Diverse portfolio of smaller positions.	**1.0**	1.0	**2.9**	3.5	**1.9**	2.3
Operational risk	Operational risk risk-weighted assets allocated to Non-core and Legacy Portfolio.	**9.2**	10.6				
Total		**13.9**	16.5	**34.7**	47.4	**10.8**	15.3

1 The groupings of positions by category and the order in which these are listed are not necessarily representative of the magnitude of the risks associated with them, nor do the metrics shown in the table necessarily represent the risk measures used to manage and control these positions. 2 Total assets of USD 34.7 billion as of 31 December 2018 (USD 47.4 billion as of 31 December 2017) include positive replacement values (gross exposure excluding the effect of any counterparty netting) of USD 29.3 billion (USD 39.0 billion as of 31 December 2017). 3 Swiss SRB leverage ratio denominator.

2018 compared with 2017

Corporate Center – Non-core and Legacy Portfolio recorded a loss before tax of USD 150 million compared with USD 411 million.

Operating income

Operating income was positive USD 165 million compared with negative USD 22 million. The improved result was mainly due to valuation gains on auction rate securities, which were measured at amortized cost in 2017 and are now measured at fair value through profit or loss effective 1 January 2018 upon adoption of IFRS 9.

Operating expenses

Total operating expenses decreased by USD 73 million, or 19%, to USD 315 million. Net expenses for services from business divisions and other Corporate Center units decreased by USD 52 million and professional fees declined by USD 28 million. Furthermore, 2018 included USD 69 million net expenses for provisions for litigation, regulatory and similar matters compared with USD 52 million.

Balance sheet assets

Non-core and Legacy Portfolio total assets decreased by USD 13 billion to USD 35 billion, mainly due to a reduction in derivatives and cash collateral receivables on derivative instruments, primarily reflecting maturities and trade terminations. Total assets excluding derivatives and cash collateral receivables on derivative instruments decreased by USD 1 billion to USD 4 billion.

Risk-weighted assets

Risk-weighted assets (RWA) decreased by USD 3 billion to USD 14 billion, mainly as a result of lower operational risk RWA.

→ **Refer to the "Capital management" section of this report for more information**

Leverage ratio denominator

The leverage ratio denominator (LRD), including LRD held by Corporate Center – Group Asset and Liability Management (Group ALM) on behalf of Non-core and Legacy Portfolio, decreased to USD 13 billion from USD 17 billion, mainly due to a reduction in the derivatives portfolio and associated cash collateral.

→ **Refer to the "Capital management" section of this report for more information**

2017 compared with 2016

Corporate Center – Non-core and Legacy Portfolio recorded a loss before tax of USD 411 million compared with USD 1,126 million.

Operating income

Operating income was negative USD 22 million compared with negative USD 32 million. The improved result was mainly due to income related to a claim on a defaulted counterparty position, largely allocated from Group ALM, and lower losses from novation and unwind activities.

Operating expenses

Total operating expenses decreased by USD 706 million, or 64%, to USD 388 million. 2017 included USD 52 million net expenses for provisions for litigation, regulatory and similar matters compared with USD 595 million. Net expenses for services from business divisions and other Corporate Center units decreased by USD 55 million as a result of reduced consumption of shared services. Furthermore, professional fees declined by USD 42 million and personnel expenses decreased by USD 23 million due to lower staff levels.

In addition, 2017 reflected a net credit for the UK bank levy of USD 12 million compared with a net expense of USD 31 million, primarily as 2017 included a USD 23 million credit related to prior years.

Balance sheet assets

During 2017, total assets decreased by USD 20 billion to USD 47 billion, mainly due to a USD 16 billion reduction in positive replacement values (PRVs), primarily reflecting trade terminations and maturities, mainly related to interest rate and foreign exchange contracts.

Total assets excluding PRVs decreased by USD 4 billion to USD 8 billion, mainly due to a reduction in cash collateral receivables on derivative instruments.

Assets classified as Level 3 in the fair value hierarchy totaled USD 1.7 billion as of 31 December 2017.

Risk-weighted assets

RWA decreased by USD 2 billion to USD 17 billion.

→ **Refer to the "Capital management" section of this report for more information**

Leverage ratio denominator

LRD, including LRD held by Group ALM on behalf of Non-core and Legacy Portfolio, decreased to USD 17 billion from USD 22 billion, consistent with the reduction in balance sheet assets.

→ **Refer to the "Capital management" section of this report for more information**

Risk, treasury and capital management

Management report

Audited information according to IFRS 7 and IAS 1

Risk and capital disclosures provided in line with the requirements of International Financial Reporting Standard 7 (IFRS 7), *Financial Instruments: Disclosures,* and International Accounting Standard 1 (IAS 1), *Presentation of Financial Statements,* form part of the financial statements included in the "Consolidated financial statements" section of this report and audited by the independent registered public accounting firm Ernst & Young Ltd, Basel. This information is marked as "Audited" within this section of the report. The risk profile of UBS AG consolidated does not differ materially from that of UBS Group AG consolidated. Audited information provided in the "Risk management and control" and "Treasury management" sections applies to both UBS Group AG consolidated and UBS AG consolidated.

Signposts

The **Audited |** signpost that is displayed at the beginning of a section, table or chart indicates that those items have been audited. A triangle symbol – ▲ – indicates the end of the audited section, table or chart.

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Risk management and control

Overview of risks arising from our business activities

The scale of our business activities is dependent on the capital we have available to cover the risks in our business, the size of our on- and off-balance sheet assets through their contribution to our capital, leverage and liquidity ratios, and our risk appetite.

Our overall credit risk profile remained stable over the year and we continued to manage market risks at generally low levels. Operational resilience, conduct and prevention of financial crime remain key focus topics.

The table on the next page shows risk-weighted assets (RWA), the leverage ratio denominator (LRD) and risk-based capital (RBC), as well as attributed tangible equity, total assets and operating profit before tax on both a reported and adjusted basis, for our business divisions and Corporate Center units. This illustrates how the activities in our business divisions and Corporate Center units are captured in the risk measures mentioned above the table, and it illustrates their financial performance in the context of these measures.

→ **Refer to the "Capital management" section of this report for more information on risk-weighted assets, leverage ratio denominator and our equity attribution framework**

→ **Refer to "Statistical measures" in this section for more information on risk-based capital**

→ **Refer to the "Performance by business division and Corporate Center unit – reported and adjusted" table in the "Group performance" section of this report for more information**

Key risks, risk measures and performance by business division and Corporate Center unit

Business divisions and Corporate Center units	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio
Key risks arising from business activities	**Credit risk** from lending against securities collateral and mortgages, and a small amount of derivatives trading activity **Market risk** from municipal securities and taxable fixed-income securities	**Credit risk** from retail business, mortgages, secured and unsecured corporate lending, and a small amount of derivatives trading activity Minimal contribution to **market risk**	Small amounts of credit and market risk	**Credit risk** from lending (including temporary loan underwriting activities), derivatives trading and securities financing **Market risk** from primary under-writing activities and secondary trading	No material risk exposures	**Credit and market risk** arising from management of the Group's balance sheet, capital, profit or loss and liquidity portfolios	**Credit risk** from remaining lending and derivative exposures **Market risk** is materially hedged

Operational risk is an inevitable consequence of being in business, as losses can result from inadequate or failed internal processes, people and systems, or from external events. It can arise as a result of our past and current business activities across all business divisions and Corporate Center units.

Risk measures and performance

	31.12.18							
USD billion, as of or for the year ended	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Group
Risk-weighted assets[1]	58.2	56.8	4.1	86.9	31.8	12.0	13.9	263.7
of which: credit and counterparty credit risk	*29.3*	*52.7*	*1.6*	*49.8*	*1.9*	*9.2*	*3.4*	*147.9*
of which: market risk	*1.3*	*0.0*	*0.0*	*16.8*[2]	*0.0*	*0.6*	*1.3*	*20.0*
of which: operational risk	*27.5*	*4.0*	*2.4*	*20.2*	*11.9*	*2.3*	*9.2*	*77.6*
Leverage ratio denominator[1]	207.4	152.2	2.7	240.1	7.9	283.5	10.8	904.6
Risk-based capital[3]	5.0	4.5	0.4	6.6	10.6	4.5	1.7	33.3
Average attributed tangible equity[4]	8.4	6.6	0.3	10.2	16.1	3.2	1.2	45.9
Total assets	200.0	138.8	24.4	258.7	21.7	280.1	34.7	958.5
Operating profit / (loss) before tax (as reported)	3.6	1.9	0.5	1.6	(0.8)	(0.7)	(0.2)	6.0
Operating profit / (loss) before tax (adjusted)[5]	3.7	1.6	0.5	1.8	(0.7)	(0.7)	(0.1)	6.1

	31.12.17							
USD billion, as of or for the year ended	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Group
Risk-weighted assets[1]	55.9	49.3	4.0	76.5	29.9	11.5	16.5	243.6
of which: credit and counterparty credit risk	*26.4*	*45.1*	*1.5*	*44.0*	*1.8*	*8.2*	*4.6*	*131.8*
of which: market risk	*1.7*	*0.0*	*0.0*	*12.0*	*(3.2)*[2]	*0.7*	*1.3*	*12.6*
of which: operational risk	*27.7*	*4.1*	*2.5*	*20.4*	*13.7*	*2.6*	*10.6*	*81.5*
Leverage ratio denominator[1]	205.0	151.9	2.8	271.0	6.9	256.3	15.3	909.0
Risk-based capital[3]	4.9	3.3	0.4	7.0	11.3	5.8	2.1	34.8
Average attributed tangible equity[4]	8.0	6.2	0.3	9.4	19.4	2.8	1.4	47.4
Total assets	195.0	139.1	14.6	269.7	21.4	252.1	47.4	939.3
Operating profit / (loss) before tax (as reported)	3.6	1.6	0.6	1.3	(0.9)	(0.3)	(0.4)	5.4
Operating profit / (loss) before tax (adjusted)[5]	4.2	1.7	0.5	1.5	(0.9)	(0.3)	(0.4)	6.3

1 Represents RWA and LRD prior to allocation of RWA and LRD held by Corporate Center – Group ALM that are directly associated with activity managed centrally on behalf of the business divisions and other Corporate Center units. Calculated in accordance with Swiss systemically relevant bank rules. Refer to the "Capital management" section of this report for more information. 2 As of 31 December 2018, the effect of portfolio diversification across businesses, which was previously reflected in Corporate Center – Services market risk RWA, was included in the Investment Bank market risk RWA. 3 Refer to "Statistical measures" in this section for more information on risk-based capital. 4 Attributed tangible equity equals attributed equity less goodwill and intangible assets. Refer to the "Capital management" section of this report for more information on our equity attribution framework. 5 Adjusted results are non-GAAP financial measures as defined by SEC regulations. Refer to the "Performance by business division and Corporate Center unit – reported and adjusted" table in the "Group performance" section of this report for more information.

Risk categories

We categorize the risk exposures of our business divisions and Corporate Center units as outlined in the table below.

Risk definitions

	Risk managed by	Independent oversight by	Captured in our risk appetite framework
Primary risks: the risks that our businesses may take to generate a return			
Audited | ***Credit risk:*** the risk of loss resulting from the failure of a client or counterparty to meet its contractual obligations toward UBS. This includes settlement risk and loan underwriting risk: *Settlement risk:* the risk of loss resulting from transactions that involve exchange of value (e.g., security versus cash) where we must deliver without first being able to determine with certainty that we will receive the countervalue *Loan underwriting risk:* the risk of loss arising during the holding period of financing transactions that are intended for further distribution ▲	Business management	Risk Control	●
Audited | ***Market risk (traded and non-traded):*** the risk of loss resulting from adverse movements in market variables. Market variables include observable variables, such as interest rates, foreign exchange rates, equity prices, credit spreads and commodity (including precious metal) prices, and variables that may be unobservable or only indirectly observable, such as volatilities and correlations. Market risk includes issuer risk and investment risk: *Issuer risk:* the risk of loss from changes in fair value resulting from credit-related events affecting an issuer to which we are exposed through tradable securities or derivatives referencing the issuer *Investment risk:* issuer risk associated with positions held as financial investments ▲	Business management Group Treasury	Risk Control	●
Country risk: the risk of losses resulting from country-specific events. It includes transfer risk, whereby a country's authorities prevent or restrict the payment of an obligation, as well as systemic risk events arising from country-specific political or macroeconomic developments	Business management	Risk Control	●
Consequential risks: the risks to which our businesses are exposed as a consequence of being in business			
Audited | ***Liquidity risk:*** the risk of being unable to generate sufficient funds from assets to meet payment obligations when they fall due, including in times of stress ▲	Group Treasury	Risk Control	●
Audited | ***Funding risk:*** the risk of higher-than-expected funding costs due to wider-than-expected UBS credit spreads when existing funding positions mature and need to be rolled over or replaced by other, more expensive funding sources. If a shortage of available funding sources is expected in a stress event, funding risk also covers potential additional losses from forced asset sales ▲			
Structural foreign exchange risk: the risk of decreases in our capital due to changes in foreign exchange rates with an adverse translation effect on capital held in currencies other than US dollars	Group Treasury	Risk Control	●
Operational risk: the risk resulting from inadequate or failed internal processes, people and systems, or from external causes (deliberate, accidental or natural) that have an impact (either financial or non-financial) on UBS, its clients or the markets in which it operates. Events may be direct financial losses or indirect in the form of revenue forgone as a result of business suspension. They may also result in damage to our reputation and to our franchise that have longer-term financial consequences:	Business management	Group Compliance, Regulatory & Governance (GCRG)	●
Legal risk: the financial or reputational implications resulting from the risk of (i) being held liable for a breach of applicable laws, rules or regulations; (ii) being held liable for a breach of contractual or other legal obligations; (iii) an inability or failure to enforce or protect contractual rights or non-contractual rights sufficiently to protect UBS's interests, including the risk of being party to a claim in respect of any of the above (and the risk of loss of attorney-client privilege in the context of any such claim); (iv) a failure to adequately develop, supervise and resource legal teams or adequately supervise external legal counsel advising on business legal risk and other matters; and (v) failure to adequately manage any potential, threatened and commenced litigation and legal proceedings, including civil, criminal, arbitration and regulatory proceedings and / or litigation risk or any dispute or investigation that may lead to litigation or threat of any litigation		Legal	
Conduct risk: the risk that the conduct of the firm or its individuals unfairly impacts clients or counterparties, undermines the integrity of the financial system or impairs effective competition to the detriment of consumers		GCRG	
Compliance risk: the risk incurred by the firm by not adhering to the applicable laws, rules and regulations, and our own internal standards		GCRG	
Cyber and information security risk: the risk of a material impact from an external or internal attack on our information systems with the purpose of data theft, fraud or denial of service. Cyberattacks are manifestations of a cyber threat into an act of aggression or criminal activity causing financial, regulatory or reputational harm or loss		Risk Control	
Financial crime risk: the risk that UBS fails to detect criminal activities, including internal and external theft and fraud, money laundering, bribery and corruption, fails to comply with sanctions and embargoes, or fails to report or respond to requests from relevant authorities related to these matters		GCRG	
Pension risk: the risk of a negative impact on our capital as a result of deteriorating funded status from decreases in the fair value of assets held in the defined benefit pension funds and / or changes in the value of defined benefit pension obligations due to changes in actuarial assumptions (e.g., discount rate, life expectancy, rate of pension increase) and / or changes to plan designs	Human Resources	Risk Control and Finance	●
Environmental and social risk: the possibility of UBS suffering reputational or financial harm from transactions, products, services or activities that involve a party associated with environmentally or socially sensitive activities **→ Refer to "Society" in the "How we create value for our stakeholders" section of this report for more information**	Business management	Risk Control	
Model risk: Model risk is the risk of adverse consequences via financial loss or non-financial impact (e.g., poor business and / or strategic decision making, or damage to the firm's reputation) resulting from decisions based on incorrect or misused model outputs and reports. Model risk may result from a number of sources: inputs, methodology, implementation, or use	Model owner	Risk Control	
Business risks: the risks arising from the commercial, strategic and economic environment in which our businesses operate			
Business risks: the potential negative impact on earnings from lower-than-expected business volumes and / or margins, to the extent they are not offset by a decrease in expenses	Business management	Finance	●
Reputational risks			
Reputational risk: the risk of damage to our reputation from the point of view of our stakeholders, such as clients, shareholders, staff and the general public	All businesses and functions	All control functions	

Top and emerging risks

The top and emerging risks disclosed below reflect those that we currently think have the potential to materialize within one year and that could significantly affect the Group. Investors should also carefully consider all information set out in the "Risk factors" section of this report, where we discuss these and other material risks we consider could have an effect on our ability to execute our strategy and may affect our business activities, financial condition, results of operations and prospects.

- We are exposed to a number of macroeconomic issues as well as general market conditions. As noted in "Market and macroeconomic risks" in the "Risk factors" section of this report, these external pressures may have a significant adverse effect on our business activities and related financial results, primarily through reduced margins and revenues, asset impairments and other valuation adjustments. Accordingly, these macroeconomic factors are considered in the development of stress testing scenarios for our ongoing risk management activities.
- We are exposed to substantial changes in the regulation of our businesses that could have a material adverse effect on our business, as discussed in the "Regulatory and legal developments" section of this report and in "Regulatory and legal risks" in the "Risk factors" section of this report.
- As a global financial services firm we are subject to many different legal, tax and regulatory regimes and extensive regulatory oversight. We are exposed to significant liability risk and we are subject to various claims, disputes, legal proceedings and government investigations, as noted in "Regulatory and legal risks" in the "Risk factors" section of this report. Information on litigation, regulatory and similar matters we consider significant is disclosed in "Note 21 Provisions and contingent liabilities" in the "Consolidated financial statements" section of this report.
- One of the most critical risks facing the broader industry is the threat of cyberattacks, which continue to evolve. Along with the rest of the industry, we face ongoing threats, such as data theft, disruption of service and cyber fraud, all of which have the potential to significantly affect our business. Additionally, as a result of the operational complexity of all our businesses, we are continually exposed to operational risks such as process error, failed execution, system failures and fraud. Conduct risks are inherent in our businesses. Financial crime, including money laundering, terrorist financing, sanctions violation, fraud, bribery and corruption, presents significant risk. Heightened regulatory expectations and attention require investment in people and systems, while emerging technologies and changing geopolitical risks further increase the complexity of identifying and preventing financial crime. Refer to "Operational risk" in this section and "Strategy, management and operations risks" in the "Risk factors" section of this report for more information.

Risk governance

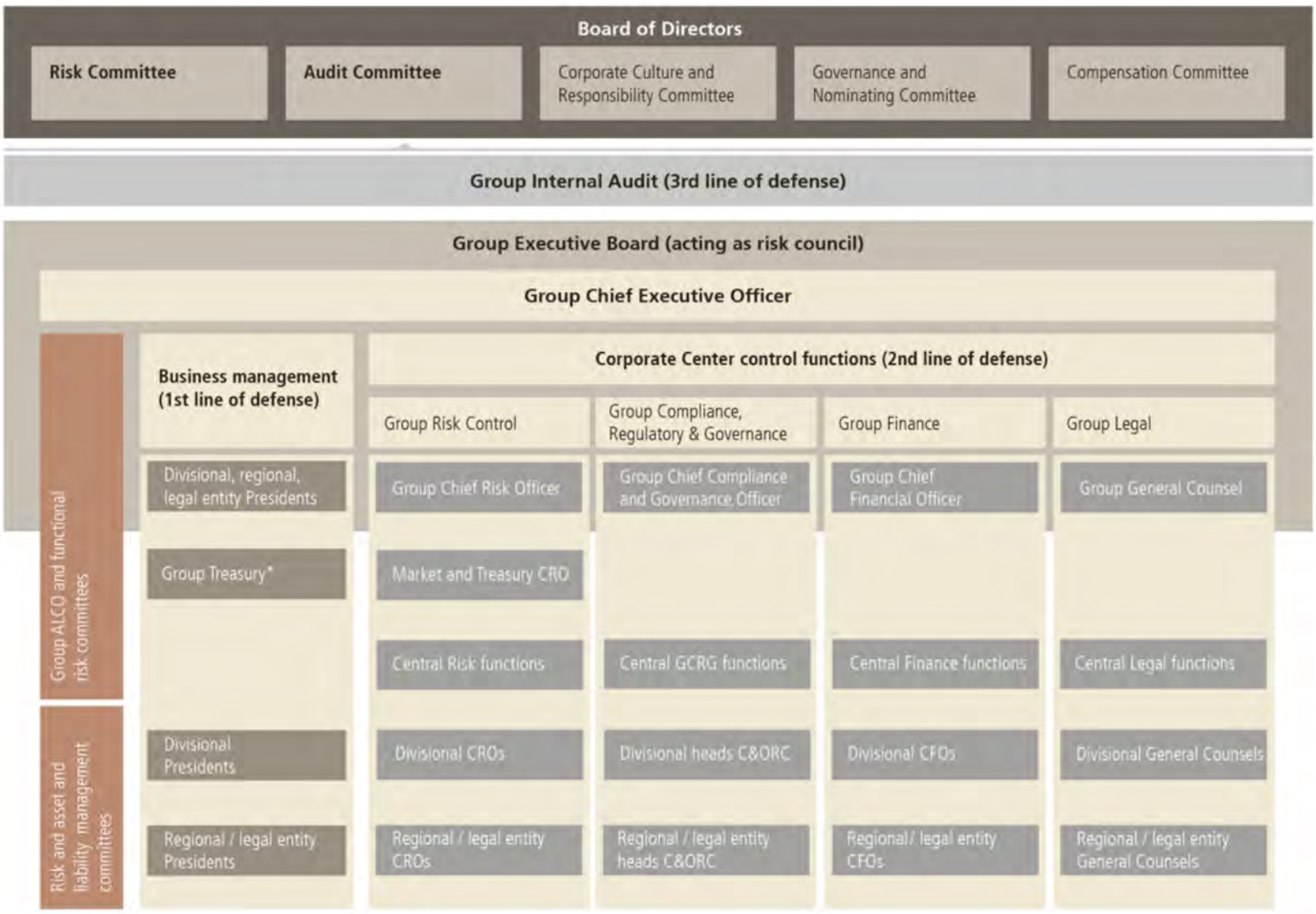
Our risk governance framework operates along three lines of defense. Our first line of defense, business management, owns its risk exposures and is required to maintain effective processes and systems to manage its risks, including robust and comprehensive internal controls and documented procedures. Business management has appropriate supervisory controls and review processes in place designed to identify control weaknesses and inadequate processes.

Our second line of defense is formed by the control functions, which are separate from the business and report directly to the Group CEO. Control functions provide independent oversight of risks, including setting risk appetite and protecting against non-compliance with applicable laws and regulations.

Our third line of defense, Group Internal Audit, reports to the Audit Committee of the Board of Directors and evaluates the overall effectiveness of governance, risk management and the control environment, including the assessment of how the first and second lines of defense meet their objectives.

The key roles and responsibilities for risk management and control are illustrated in the following chart and described on the following pages.

Audited | **Risk governance**



* Part of Group Finance

Audited | *The Board of Directors* (BoD) is responsible for determining the risk principles, risk appetite and related risk limits of the Group, including their allocation to the business divisions and Corporate Center units. The BoD is supported by the BoD Risk Committee, which monitors and oversees the Group's risk profile and the implementation of the risk framework as approved by the BoD, and approves the Group's risk appetite methodology. The Corporate Culture and Responsibility Committee supports the BoD in fulfilling its duty to safeguard and advance the Group's reputation for responsible and sustainable conduct. It reviews and assesses stakeholder concerns and expectations pertaining to UBS's societal performance and corporate culture, and recommends appropriate actions to the BoD.

The *Group Executive Board* (GEB) has overall responsibility for establishing and implementing risk management and control in the Group. It manages the risk profile of the Group as a whole.

The *Group Chief Executive Officer* (Group CEO) has responsibility and accountability for the management and performance of the Group, has risk authority over transactions, positions and exposures, and allocates risk limits approved by the BoD within the business divisions and Corporate Center units.

The *business division Presidents* are accountable for the success, risks, results and value of their business division. This includes actively managing their risk exposures and balancing profit potential, risk, balance sheet and capital usage. The *regional Presidents* facilitate the implementation of UBS's strategy in their region, and have the mandate to inform the GEB of any activities and issues that may give rise to actual or potentially material regulatory or reputational concerns.

The *Group Chief Risk Officer* (Group CRO) is responsible for independent oversight of credit, market, country, liquidity, funding, cyber and information security risks as well as model and environmental and social risk. This includes establishing methodologies to measure and assess risk, setting risk limits, and approving credit and market risk transactions and exposures. Risk Control is also the central function for model risk management for all models used in the firm. The risk control process is supported by a framework of policies and authorities. *Business division* and *regional Chief Risk Officers* have delegated authority for their respective divisions and regions. Moreover, authorities are delegated to risk officers according to their expertise, experience and responsibilities.

The *Group Chief Compliance and Governance Officer* is responsible for ensuring that all operational risks, including compliance and conduct risk, are identified, owned and managed in alignment with the firm's risk appetite, supported by an effective control framework, including appropriate measuring and aggregating processes, as well as appropriate reporting.

The *Group Chief Financial Officer* (Group CFO) is responsible for transparency in, appraisal of, and presentation of the financial performance of the Group and the business divisions, and for the Group's financial reporting, forecasting, planning and controlling processes in line with regulatory and financial reporting requirements, corporate governance standards and global best practice to maintain high quality and timeliness. Further responsibilities include managing UBS's tax affairs, as well as treasury and capital management, including the management of funding and liquidity risk and UBS's regulatory capital ratios.

The *Group General Counsel* (Group GC) is responsible for managing and reporting all litigation matters and proceedings of the Group, and for reviewing incidents of materialized legal risk as well as areas of emerging legal risk.

Group Internal Audit (GIA) independently assesses the adherence to our strategy, the effectiveness of governance, risk management and control processes at Group, business division and regional levels, including compliance with legal, regulatory and statutory requirements, as well as with internal policies and contracts. The Head GIA reports to the Chairman of the BoD and, in addition, GIA has a functional reporting line to the BoD Audit Committee.

Some of the above roles and responsibilities are replicated for certain significant legal entities of the Group. The legal entity risk officers are responsible for independent oversight and control of primary and consequential risks for certain significant legal entities of the Group as part of the legal entity control framework, which complements the Group's risk governance framework. ▲

Risk appetite framework

Our risk appetite is defined at the aggregate Group level and reflects the types of risk that we are willing to accept or intend to avoid. It is established via a complementary set of qualitative and quantitative risk appetite statements defined on a Group-wide level and is embedded throughout our business divisions and legal entities by means of Group, business division and legal entity policies, limits and authorities. The risk appetite statements are a critical foundation to maintaining a robust risk culture throughout our organization. The "Risk appetite framework" chart below shows the key elements of the framework. These elements are described in more detail in this section.

Qualitative statements aim to ensure we maintain the desired risk culture. Quantitative risk appetite objectives are designed to enhance the Group's resilience against the effect of potential severe adverse economic or geopolitical events. These risk appetite objectives cover the Group's minimum capital and leverage ratios, its solvency, earnings, liquidity and funding, and are subject to periodic review, including as part of the annual business planning process.

These objectives are complemented by operational risk appetite objectives, which are established for each of our operational risk categories, such as market conduct, theft, fraud, data confidentiality and technology risks. Operational risk events that exceed predetermined risk tolerances, expressed as percentages of the Group's operating income, must be escalated to the respective business division President or higher, as appropriate.

The quantitative risk appetite objectives are supported by a comprehensive suite of risk limits set at portfolio level. These may apply across the Group, within a business division or business unit, at legal entity level, or to an asset class. These additional quantitative controls are typically bottom-up and are designed to monitor specific portfolios and to identify potential risk concentrations.

Risk appetite framework

Risk reports aggregating measures of risk across products and businesses provide insight into the amounts, types, and sensitivities of the various risks in our portfolios and are intended to ensure compliance with defined limits. Risk officers, senior management and the BoD use this information to understand our risk profile and the performance of the portfolios.

The status of risk appetite objectives is evaluated each month and reported to the BoD and the GEB. Our risk appetite may change over time. Therefore, portfolio limits and associated approval authorities are subject to periodic reviews and changes, particularly in the context of our annual business planning process.

Our risk appetite framework is governed by a single overarching policy and conforms to the Financial Stability Board's Principles for an Effective Risk Appetite Framework published in 2013.

Risk principles and risk culture

We focus on maintaining a strong risk culture, which is a prerequisite for success in today's highly complex operating environment and a source of sustainable competitive advantage. By placing prudent and disciplined risk-taking at the center of every decision, we want to achieve our goals of delivering unrivaled client satisfaction, creating long-term value for stakeholders, and making UBS one of the most attractive companies to work for in the world.

Our risk appetite framework combines all the important elements of our risk culture, expressed in our Pillars, Principles and Behaviors, our risk management and control principles, our Code of Conduct and Ethics and our Total Reward Principles. Together, these aim to align the decisions we make with the Group's strategy, principles and risk appetite. They help provide a solid foundation for promoting risk awareness, leading to appropriate risk-taking and the establishment of robust risk management and control processes. These principles are supported by a range of initiatives covering employees at all levels. This includes the UBS House View on Leadership, which is a set of explicit expectations for leaders that establishes consistent leadership standards across UBS. These initiatives also include our principles of good supervision, which establish clear expectations of managers and employees with respect to supervisory responsibilities, specifically: to take responsibility, to know and organize their business, to know their employees and what they do, to create a good risk culture and to respond to and resolve issues.

→ **Refer to the "How we create value for our stakeholders" section of this report for more information on our Pillars, Principles and Behaviors**

→ **Refer to the Code of Conduct and Ethics of UBS at *www.ubs.com/code* for more information**

Risk management and control principles

Protection of financial strength	Protection of reputation	Business management accountability	Independent controls	Risk disclosure
Protecting UBS's financial strength by controlling our risk exposure and avoiding potential risk concentrations at individual exposure levels, at specific portfolio levels and at an aggregate firm-wide level across all risk types	Protecting our reputation through a sound risk culture characterized by a holistic and integrated view of risk, performance and reward, and through full compliance with our standards and principles, particularly our Code of Conduct and Ethics	Maintaining management accountability, whereby business management, as opposed to Risk Control, owns all risks assumed throughout the Group and is responsible for the continuous and active management of all risk exposures to provide for balanced risk and return	Independent control functions that monitor the effectiveness of the businesses' risk management and oversee risk-taking activities	Disclosure of risks to senior management, the BoD, investors, regulators, credit rating agencies and other stakeholders with an appropriate level of comprehensiveness and transparency

To maintain an environment where staff are comfortable in raising concerns, we have whistleblowing policies and procedures in place. These offer multiple channels through which individuals may, either openly or anonymously, escalate suspected breaches of laws, regulations, rules and other legal requirements, our Code of Conduct and Ethics, policies, or relevant professional standards. Our program is designed to ensure that whistleblowing concerns are investigated and that appropriate and consistent action is taken. We are committed to ongoing awareness training and communication to all staff.

We also have a mandatory training program in place for all employees. The program covers a range of compliance and risk-related topics, including anti-money laundering and operational risk. In addition, specialized training is provided for employees depending on their specific roles and responsibilities, such as credit risk and market risk training for those working in trading areas. Failure to satisfactorily complete mandatory training sessions within the given deadline results in consequences, including disciplinary action. Our operational risk framework, incorporating the conduct risk framework, aims to identify and manage financial, regulatory, and reputational risks, together with risks to clients and to markets.

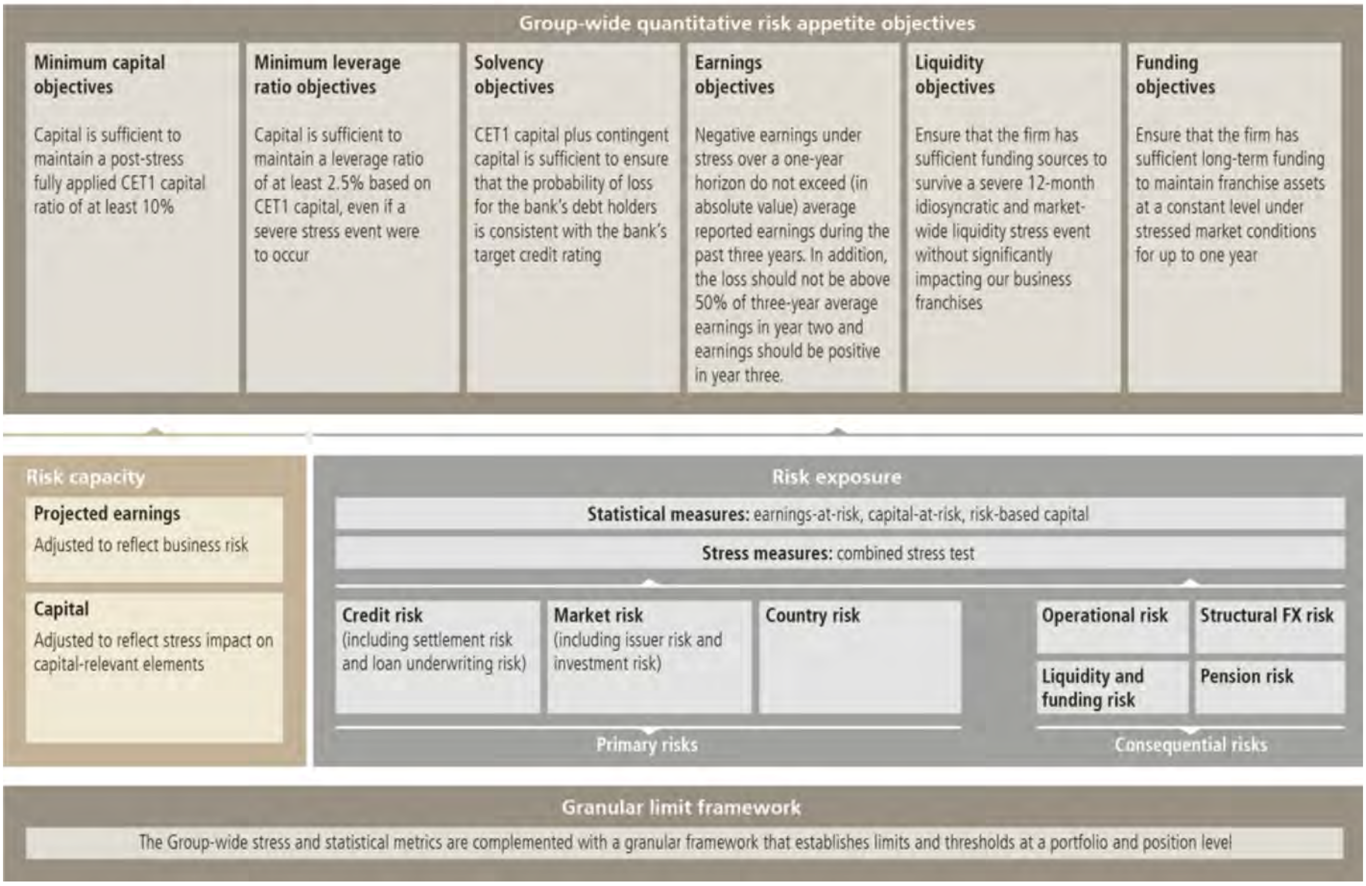
Quantitative risk appetite objectives

Through a set of quantitative risk appetite objectives, we aim to ensure that our aggregate risk exposure remains within our desired risk capacity, based on our capital and business plans. The specific definition of risk capacity for each objective seeks to ensure that we have sufficient capital, earnings, funding and liquidity to protect our business franchises and exceed minimum regulatory requirements under a severe stress event. The risk appetite objectives are evaluated as part of the annual business planning process, and are approved by the BoD. The comparison of risk exposure with risk capacity is a key consideration in management decisions on potential adjustments to the business strategy and the risk profile of the Group.

We make use of both scenario-based stress tests and statistical risk measurement techniques to assess the effect of a severe stress event at a Group-wide level. These complementary frameworks capture exposures to all material primary and consequential risks, as well as business risks across our business divisions and Corporate Center units.

→ **Refer to "Risk measurement" in this section for more information on our stress testing and statistical frameworks**

2018 quantitative risk appetite objectives



In determining our risk capacity in case of a severe stress event, we adjust projected earnings from the strategic plan for business risk to reflect lower expected earnings and lower expenses, such as the reversal of variable compensation accruals. We also adjust our capital to take into account the effect of stress on deferred tax assets, pension plan assets and liabilities, and accruals for capital returns to shareholders.

The chart on this page provides an overview of our quantitative risk appetite objectives during 2018. As compared with previous years, we have removed the going concern minimum capital and leverage ratio objectives as they would be satisfied when the corresponding common equity tier 1 (CET1) objective is met, given the amount of additional tier 1 (AT1) instruments that have been issued. Our earnings objectives consider the entire Group and potential losses under a stress event are compared with historical earnings.

Risk appetite statements at the business division level are derived from the Group-wide objectives. They may also comprise objectives specific to the division, related to the specific activities and risks in that division. Risk appetite objectives are also set for certain legal entities. These must be consistent with the Group-wide risk appetite framework and approved in accordance with the legal entity's and the Group's regulations. Differences may exist that reflect the specific nature, size, complexity and regulations applicable to the relevant legal entity.

Risk appetite following adoption of IFRS 9

The introduction of the expected credit loss (ECL) model under IFRS 9 has fundamentally changed how credit risk arising from loans, loan commitments, guarantees and certain revocable facilities is accounted for. Allowances and provisions (referred to as provisions in this section) are determined for every asset that is subject to amortized cost accounting and for financial assets that are measured at fair value through other comprehensive income (FVOCI), irrespective of whether the asset is considered to be credit-impaired. The amount of the provisions varies depending on changes in the risk perception of individual instruments, which is particularly relevant once an asset has been identified as carrying a significantly increased credit risk compared with the assessment at origination. In this case, the ECL provisions would have to cover ECL resulting from default events that are possible over the remaining lifetime of the financial instrument and not only a maximum period of 12 months after the reporting date, which would be the case if there were no significant deterioration in credit risk. The ECL provisions may result in greater volatility in credit loss expense as ECL changes in response to developments in the credit cycle and composition of our loan portfolio. The effect may be more pronounced in a deteriorating economic environment.

The effect that the requirement for accelerated recognition of credit losses has on our risk exposure in stressed conditions has been accounted for in our estimations. We expect to gain more insights into the behavior of these provisions once IFRS 9 has been in place for a longer period and under changing economic conditions, and may adjust our risk exposure further in the future.

Based on the current information and the effect IFRS 9 ECL provisions have on our solvency objectives, we have neither changed our risk appetite and management practices nor our strategy toward pricing and structuring of transactions following the adoption of IFRS 9.

→ **Refer to “Note 1 Summary of significant accounting policies” in the “Consolidated financial statements” section of this report for more information on the requirements of the ECL methodology under IFRS 9**

→ **Refer to “Note 23 Expected credit loss measurement” in the “Consolidated financial statements” section of this report for more information on ECL**

→ **Refer to “Credit risk” in this section for more information on the ECL methodology under IFRS 9**

Internal risk reporting

Comprehensive and transparent reporting of risks is central to the control and oversight responsibilities set out in our risk governance framework and is a requirement of our risk management and control principles. Accordingly, risks are reported at a frequency and to a level of detail commensurate with the extent and variability of the risk and the needs of the various governance bodies, regulators and risk authority holders.

On a monthly basis, the Group Risk Report provides a detailed qualitative and quantitative overview of developments in primary and consequential risks for the business divisions and Corporate Center units, along with aggregate views of risks at the Group-wide level, including the status of our risk appetite objectives and results of Group-wide stress testing. The Group Risk Report is distributed internally to the BoD Risk Committee and the GEB, and to senior members of Group Risk Control, Group Internal Audit, Finance and Legal. Key extracts from the Group Risk Report, along with extracts from the monthly Group Finance Report and Group Treasury Report, are included in the Monthly Performance Update provided to the GEB and BoD. Risk reports are also produced for our significant Group entities (entities that are subject to enhanced standards of corporate governance).

Granular divisional risk reports are provided to the respective business division Chief Risk Officers and the business division Presidents. This monthly reporting is supplemented with a suite of daily or weekly reports at various levels of granularity, covering market and credit risks for the business divisions and Corporate Center units to enable risk officers and senior management to monitor and control the Group's risk profile.

Our internal risk reporting, which covers primary and consequential risks, is supported by risk data and measurement systems that are also used for external disclosure and regulatory reporting. Dedicated units within Risk Control assume responsibility for measurement, analysis and reporting of risk and for overseeing the quality and integrity of risk-related data. Our risk data and measurement systems are subject to periodic review by Group Internal Audit following a risk-based audit approach.

Risk measurement

Audited | We apply a variety of methodologies and measurements to quantify the risks of our portfolios and potential risk concentrations. Risks that are not fully reflected within standard measures are subject to additional controls, which may include preapproval of specific transactions and the application of specific restrictions. Models to quantify risk are generally developed by dedicated units within control functions and are subject to independent validation. ▲

Models must be approved and are regularly reviewed in accordance with regulatory requirements as well as internal policies to test that they perform as expected, produce results comparable with actual events and values, and reflect best-in-practice approaches and recent academic developments. Our reviews assess whether models are performing satisfactorily, whether additional analysis is required and whether models need to be recalibrated or redeveloped. Results and conclusions are presented to the relevant governance body and, as required, to regulators.

The ongoing process of assessing model quality and performance in the production environment comprises two components: model validation, in which Model Risk Management & Control (MRMC) independently assesses a model's fitness for purpose, and model confirmation, the regular process of confirming the accuracy and appropriateness of the model output and its application, carried out by the model developers and reviewed by MRMC.

→ **Refer to "Credit risk," "Market risk" and "Operational risk" in this section for more information on model confirmation procedures**

Stress testing

We perform stress testing to estimate the loss that could result from extreme, yet plausible macroeconomic and geopolitical stress events. This enables us to identify, better understand and manage our potential vulnerabilities and risk concentrations. Stress testing plays a key role in our limits framework at Group-wide, business division, legal entity and portfolio levels. Stress test results are regularly reported to the BoD, the Risk Committee and the GEB. As described in "Risk appetite framework" above, stress testing, along with statistical loss measures, plays a central role in our risk appetite and business planning processes.

Our stress testing framework incorporates three pillars: (i) combined stress tests, (ii) a comprehensive range of portfolio- and risk type-specific stress tests and (iii) reverse stress testing.

Our *combined stress test (CST)* framework is scenario-based and aims to quantify overall Group-wide losses that could result from a number of potential global systemic events. The framework captures all material primary and consequential risks, as well as business risks, as indicated in "Risk categories" above. Scenarios are forward-looking and encompass macroeconomic and geopolitical stress events calibrated to different levels of severity. We implement each scenario through the expected evolution of market indicators and economic variables under that scenario. We then assess the resulting effect on our primary, consequential and business risks to estimate the overall loss and capital implications were the scenario to occur. At least once a year, the BoD Risk Committee approves the most relevant scenario, known as the binding scenario, to be used as the main scenario for regular CST reporting and for monitoring risk exposure against our minimum capital, earnings and leverage ratio objectives in our risk appetite framework. Results are reported to the Risk Committee, the BoD, the GEB and FINMA on a monthly basis.

We provide detailed stress loss analyses to FINMA and the regulators of our legal entities in accordance with their requirements. For example, in addition to CST, we perform Loss Potential Analysis (LPA) and Comprehensive Capital Analysis and Review (CCAR) as prescribed by FINMA and the US Board of Governors of the Federal Reserve System for the legal entities regulated by these respective agencies.

The Enterprise-wide Stress Committee (ESC) is responsible for ensuring the consistency and adequacy of the assumptions and scenarios used for our Group-wide stress measures. As part of these responsibilities, the ESC seeks to ensure that the suite of stress scenarios adequately reflects current and potential developments in the macroeconomic and geopolitical environment, our current and planned business activities, and actual or potential risk concentrations and vulnerabilities in our portfolios. The ESC meets at least quarterly and is comprised of Group, business division and legal entity representatives of Risk Control. In executing its responsibilities, the ESC considers input from the Think Tank, a panel of senior representatives from the business divisions, Risk Control and economic research, which meets quarterly to review the current and possible future market environment in order to identify potential stress scenarios that could materially affect the Group's profitability. This results in a range of internal stress scenarios that are developed and evolve over time, separate from the scenarios mandated by FINMA.

Each scenario captures a wide range of macroeconomic variables. These include gross domestic product (GDP), equity prices, interest rates, foreign exchange rates, commodity prices, property prices and unemployment. We use assumed changes in these macroeconomic and market variables in each scenario to stress the key risk drivers of our portfolios. For example, lower GDP growth and rising interest rates may reduce the income of clients to whom we have lent money, which leads to changes in the credit risk parameters for probability of default, loss given default and exposure at default, and results in higher predicted credit losses within the stress scenario. We also capture the business risk resulting from lower fee, interest and trading income net of lower expenses. These effects are measured across all material risk types and all businesses to calculate the aggregate estimated effect of the scenario on profit or loss, other comprehensive income, RWA, LRD and, ultimately, our capital and leverage ratios. The assumed changes in macroeconomic variables are updated periodically to account for changes in the current and possible future market environment.

Through 2018, the binding scenario for CST was the internal *Severe Eurozone Crisis scenario*. This scenario is characterized by a crisis in the eurozone; a lack of confidence in the trajectory of several peripheral European economies leads to a sudden spike in their bond yields, eventually resulting in their loss of market access. As Greece leaves the eurozone, emergency measures, including capital controls, bailouts and debt restructurings are required. In the ensuing global slowdown and market turbulence, China suffers a hard landing, which further weighs on global growth. Central banks in major developed economies with policy room cut rates back to zero in an attempt to stimulate growth and restore market confidence; however, this fails to avert a severe global recession.

The CST risk exposure was broadly stable over the year with most of the month-on-month variability arising primarily from temporary loan underwriting exposure in the Investment Bank.

As part of the CST framework, we routinely monitored four additional stress scenarios throughout 2018.

– *Failure of a Major Financial Institution scenario* represents renewed financial market turmoil reflecting the failure of a major global financial institution, leading to prolonged financial deleveraging and dramatically plunging activity around the globe.
– *US Monetary Crisis scenario* represents a loss of confidence in the US, which leads to international portfolio repositioning out of US dollar-denominated assets, sparking an abrupt and substantial US dollar sell-off. The US is pushed back into recession, other industrialized countries replicate this pattern and inflationary concerns lead to an overall higher interest rate level.
– *Global Depression scenario* represents a severe and prolonged eurozone crisis in which several peripheral countries default and exit the eurozone, and advanced economies are pulled into a prolonged period of economic stagnation.
– *Global Interest Rate Steepening scenario* represents a sudden shift in market sentiment causing a disorderly sell-off in long-dated bonds and a rapid steepening of the yield curve, exacerbated by a lack of liquidity in financial markets. This in turn triggers a sovereign crisis in Japan and a global recession.

We have updated the *Severe Eurozone Crisis scenario* to be used as the binding stress scenario in our CST framework for 2019. In line with the 2018 version of the scenario, the updated version remains a global scenario with a eurozone crisis at its core, but with fiscal concerns in Italy now acting as the trigger of the crisis. In addition, headwinds from global trade protectionism weigh on the recovery. A China hard landing remains a feature of the scenario.

Portfolio-specific stress tests are measures that are tailored to the risks of specific portfolios. Our portfolio stress loss measures are derived from data on past events, but also include forward-looking elements. For example, we derive the expected market movements within our liquidity-adjusted stress metric using a combination of historical market behavior, based on an analysis of historical events, and forward-looking analysis including consideration of defined scenarios that have never occurred. Results of portfolio-specific stress tests may be subject to limits to explicitly control risk-taking, or may be monitored without limits to identify vulnerabilities.

Reverse stress testing starts from a defined stress outcome (e.g., a specified loss amount, reputational damage, a liquidity shortfall or a breach of regulatory capital ratios) and works backward to identify the economic or financial scenarios that could result in such an outcome. As such, reverse stress testing is intended to complement scenario-based stress tests by assuming "what if" outcomes that could extend beyond the range normally considered, and thereby potentially challenge assumptions regarding severity and plausibility.

Additionally, we routinely analyze the effect of increases or decreases in interest rates and changes in the structure of yield curves.

Moreover, Group Treasury performs stress testing to determine the optimum asset and liability structure that allows us to maintain an appropriately balanced liquidity and funding position under various scenarios. These scenarios differ from those outlined above, because they are focused on specific situations that could generate liquidity and funding stress, as opposed to the scenarios used in the CST framework, which focus on the effect on profit or loss and capital.

→ **Refer to "Credit risk" and "Market risk" in this section for more information on stress loss measures**

→ **Refer to the "Treasury management" section of this report for more information on stress testing**

→ **Refer to "Our stated capital returns objective is based, in part, on capital ratios that are subject to regulatory change and may fluctuate significantly" in the "Risk factors" section of this report for more information**

Statistical measures

In addition to our scenario-based CST measures, we employ a statistical stress framework that allows us to calculate and aggregate risks using statistical techniques to derive stress events at chosen confidence levels.

We use this framework to derive a distribution of potential earnings based on historically observed market changes in combination with the firm's actual risk exposures, considering effects on both income and expenses. From this, we determine earnings-at-risk (EaR), which measures the potential shortfall in earnings (i.e., the deviation from forecast earnings) at a 95% confidence level and is evaluated over a one-year horizon. EaR is used for the assessment of the earnings objectives in our risk appetite framework.

We extend the EaR measure by incorporating the effects of gains and losses recognized through other comprehensive income, to derive a distribution of potential effects of stress events on CET1 capital. From this distribution, we derive our capital-at-risk (CaR) buffer measure at a 95% confidence level for the assessment of our capital and leverage ratio risk appetite objectives, and we derive our CaR solvency measure at a 99.9% confidence level for the assessment of our solvency risk appetite objective.

We also use the CaR solvency measure as the basis to derive the contributions of business divisions and Corporate Center units to risk-based capital (RBC), which is a component of our equity attribution framework. RBC measures the potential capital impairment from an extreme stress event at a 99.9% confidence level to estimate the capital required to absorb unexpected loss while remaining able to fully repay creditors.

→ **Refer to the "Capital management" section of this report for more information on the equity attribution framework**

Portfolio and position limits

The Group-wide stress and statistical metrics are complemented by more granular portfolio and position limits, triggers and targets. The combination of these measures provides a comprehensive, granular control framework that is applied to our business divisions and Corporate Center units, as well as the significant legal entities, as relevant to the key risks arising from their business models.

We apply limits to a variety of exposures at the portfolio level, using statistical and stress-based measures, such as value-at-risk, liquidity-adjusted stress, loan underwriting limits, economic value sensitivity and portfolio default simulations for our loan books. These are complemented with a set of controls for net interest income sensitivity, mark-to-market losses on available-for-sale portfolios, and the effect of foreign exchange movements on capital and capital ratios.

Portfolio measures are supplemented with position-level controls. Risk measures for position controls are based on market risk sensitivities and counterparty-level credit risk exposures. Market risk sensitivities include sensitivities to changes in general market risk factors, such as equity indices, foreign exchange rates and interest rates, and sensitivities to issuer-specific factors, such as changes in an issuer's credit spread or default risk. We monitor a significant number of market risk controls for the Investment Bank and Corporate Center – Group Asset and Liability Management and Corporate Center – Non-core and Legacy Portfolio on a daily basis. Counterparty measures capture the current and potential future exposure to an individual counterparty, taking into account collateral and legally enforceable netting agreements.

→ **Refer to "Credit risk" in this section for more information on counterparty limits**

Risk concentrations

Audited | A risk concentration exists where (i) a position is affected by changes in a group of correlated factors, or a group of positions are affected by changes in the same risk factor or a group of correlated factors, and (ii) the exposure could, in the event of large but plausible adverse developments, result in significant losses. The categories in which risk concentrations may occur include counterparties, industries, legal entities, countries or geographical regions, products and businesses.

The identification of risk concentrations requires judgment, as potential future developments cannot be accurately predicted and may vary from period to period. In determining whether we have a risk concentration, we consider a number of elements, both individually and collectively. These elements include the shared characteristics of the positions and our counterparties, the size of the position or group of positions, the sensitivity of the position or group of positions to changes in risk factors and the volatility and correlations of those factors. Also important in our assessment is the liquidity of the markets where the positions are traded, and the availability and effectiveness of hedges or other potential risk-mitigating factors. The value of a hedging instrument may not always move in line with the position being hedged, and this mismatch is referred to as basis risk. In addition, operational risk concentrations may result from a single issue that is large on its own (i.e., has the potential to produce a single high-impact loss or a number of losses that aggregated together are high-impact) or related issues that may link together to create a high impact.

Risk concentrations are subject to increased oversight by Risk Control and are assessed to determine whether they should be reduced or mitigated, depending on the available means to do so. It is possible that material losses could occur on asset classes, positions and hedges, particularly if the correlations that emerge in a stressed environment differ markedly from those envisaged by our risk models. ▲

→ **Refer to "Credit risk" and "Market risk" in this section for more information on the compositions of our portfolios**

→ **Refer to the "Risk factors" section of this report for more information**

Credit risk

Key developments

We have adopted IFRS 9, *Financial Instruments,* effective as of 1 January 2018. IFRS 9 introduces a forward-looking expected credit loss (ECL) approach, which is intended to result in an earlier recognition of credit losses compared with the incurred-loss impairment approach for financial instruments under IAS 39, *Financial Instruments: Recognition and Measurement,* and the loss-provisioning approach for financial guarantees and loan commitments under IAS 37, *Provisions, Contingent Liabilities and Contingent Assets*.

Total net credit loss expenses were USD 118 million in 2018, reflecting net credit losses of USD 95 million related to credit-impaired (stage 3) positions, mainly in Personal & Corporate Banking and to a lesser extent in the Investment Bank, as well as net expected credit losses of USD 23 million related to stage 1 and 2 positions.

→ **Refer to "Note 1 Summary of significant accounting policies," "Note 10 Financial assets at amortized cost and other positions in scope of expected credit loss measurement" and "Note 23 Expected credit loss measurement" in the "Consolidated financial statements" section of this report for more information on IFRS 9 and ECL**

Our Swiss lending portfolios, which account for approximately half of our loan exposure, continued to perform well, although we remain watchful for any signs of deterioration in the Swiss economy that could affect our counterparties and lead to an increase in credit loss expenses from the low levels recently observed.

Within the loan underwriting business in the Investment Bank, we continued to see a steady flow of transactions as leveraged loan markets remained relatively strong, although volatility and credit market weakness led to a general slowdown toward the year-end.

Audited | Main sources of credit risk

– A substantial portion of our lending exposure arises from our Swiss domestic business, which offers corporate loans and mortgage loans secured mainly against residential properties and income-producing real estate, and therefore depends on the performance of the Swiss economy.
– Within the Investment Bank, our credit exposure arises mainly from lending, derivatives trading and securities financing and is predominantly investment grade. Loan underwriting activity can be lower rated and gives rise to concentrated exposure of a temporary nature.
– Our wealth management businesses predominantly conduct securities-based lending and mortgage lending.
– Credit risk within Non-core and Legacy Portfolio relates to derivative transactions, predominantly carried out on a cash-collateralized basis, and securitized positions. ▲

Audited | Overview of measurement, monitoring and management techniques

– Credit risk arising from transactions with individual counterparties is measured based on our estimates of probability of default, exposure at default and loss given default. Limits are established for individual counterparties and groups of related counterparties covering banking and traded products as well as settlement amounts. Risk control authorities are approved by the Board of Directors and are delegated to the Group Chief Executive Officer, Group Chief Risk Officer and divisional Chief Risk Officers based on risk exposure amounts, internal credit rating and potential loss.
– Limits apply not only to the current outstanding amount, but also to contingent commitments and the potential future exposure of traded products.
– For the Investment Bank, our monitoring, measurement and limit framework distinguishes between exposures intended to be held to maturity (take-and-hold exposures) and those that are intended to be held for a short term, pending distribution or risk transfer (temporary exposures).
– We also use models to derive portfolio credit risk measures of expected loss, statistical loss and stress loss at the Group-wide and business division levels and establish portfolio limits at these levels.
– Credit risk concentrations can arise if clients are engaged in similar activities, are located in the same geographical region or have comparable economic characteristics; for example, if their ability to meet contractual obligations would be similarly affected by changes in economic, political or other conditions. To avoid credit risk concentrations, we establish limits and / or operational controls that constrain risk concentrations at portfolio and sub-portfolio levels with regard to sector exposure, country risk and specific product exposures. ▲

Credit risk profile of the Group

The exposures detailed in this section are based on our internal management view of credit risk, which differs in certain respects from the measurement requirements of IFRS.

Internally, we categorize credit risk exposures into two broad categories: banking products and traded products. Banking products comprise drawn loans, undrawn guarantees and loan commitments, amounts due from banks, balances at central banks and other financial assets at amortized cost. Traded products comprise over-the-counter derivatives, exchange-traded derivatives and securities financing transactions, comprised of securities borrowing and lending, as well as repurchase and reverse repurchase agreements.

Banking products

The breakdowns of our banking products exposures are shown gross before allowances and provisions for expected credit losses and related single-name credit hedges. The effect of portfolio hedges, such as index credit default swaps, is not reflected. Guarantees and loan commitments are shown on a notional basis, without applying credit conversion factors. The gross exposure for banking products of USD 518 billion corresponds to the IFRS 9 gross exposure of USD 685 billion, including other financial assets measured at amortized cost, but excluding cash, receivables from securities financing transactions, cash collateral receivables on derivative instruments, financial assets at fair value through other comprehensive income (FVOCI), irrevocable committed prolongation of existing loans, unconditionally revocable committed credit lines and forward starting reverse repurchase and securities borrowing agreements.

The "Banking and traded products exposure by business division and Corporate Center unit" table below and on the next page was enhanced to reflect the total exposures (stages 1–3) in scope of ECL (adding *Other financial assets measured at amortized cost* with an amount of USD 23 billion, which were previously not included) and to report allowances and provisions by ECL stages and separately credit-impaired exposures, gross (stage 3). Total gross banking products exposure was USD 518 billion as of 31 December 2018, compared with USD 481 billion at the end of the prior year. The net change relates mainly to the addition of other financial assets measured at amortized cost mentioned above and to an increase in balances at central banks.

→ **Refer to "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of this report for more information on the requirements of the expected credit loss methodology under IFRS 9**

→ **Refer to "Note 10 Financial assets at amortized cost and other positions in scope of expected credit loss measurement" and "Note 23 Expected credit loss measurement" in the "Consolidated financial statements" section of this report for more information on the expected credit loss measurement under IFRS 9**

→ **Refer to "Note 17a) Other financial assets measured at amortized cost" in the "Consolidated financial statements" section of this report for more details**

Banking and traded products exposure by business division and Corporate Center unit

	31.12.18							
USD million	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Group
Banking products[1, 2]								
Gross exposure (IFRS 9)	186,302	157,178	1,150	39,869	1,156	131,548	522	517,725
of which: loans and advances to customers (on-balance sheet)	*170,413*	*133,253*	*7*	*9,090*	*85*	*8,222*	*55*	*321,125*
of which: guarantees and loan commitments (off-balance sheet)	*6,111*	*20,609*	*0*	*22,290*	*77*	*271*	*0*	*49,358*
Traded products[3, 4]								
Gross exposure	10,606	873	0	30,771				42,250
of which: over-the-counter derivatives	*5,960*	*762*	*0*	*9,441*				*16,163*
of which: securities financing transactions	*153*	*0*	*0*	*16,004*				*16,157*
of which: exchange-traded derivatives	*4,494*	*111*	*0*	*5,325*				*9,930*
Other credit lines, gross[2, 5]	10,345	22,994	0	3,202	88	6	0	36,634
Total credit-impaired exposure, gross (stage 3)[1, 2]	625	1,974	0	140	0	26	389	3,154
Total allowances and provisions for expected credit losses (stages 1 to 3)[2]	223	697	0	108	0	3	23	1,054
of which: stage 1	*62*	*78*	*0*	*34*	*0*	*3*	*0*	*176*
of which: stage 2	*34*	*146*	*0*	*3*	*0*	*0*	*0*	*183*
of which: stage 3 (allowances and provisions for credit-impaired exposures)	*127*	*474*	*0*	*71*	*0*	*0*	*23*	*695*

1 IFRS 9 gross exposure including other financial assets at amortized cost, but excluding cash, receivables from securities financing transactions, cash collateral receivables on derivative instruments, financial assets at FVOCI, irrevocable committed prolongation of existing loans and unconditionally revocable committed credit lines and forward starting reverse repurchase and securities borrowing agreements. 2 Refer to "Note 1 Summary of significant accounting policies" and "Note 23 Expected credit loss measurement" in the "Consolidated financial statements" section of this report for more information on the adoption of IFRS 9 ECL. 3 Internal management view of credit risk, which differs in certain respects from IFRS. 4 As counterparty risk for traded products is managed at counterparty level, no further split between exposures in the Investment Bank, Corporate Center – Non-core and Legacy Portfolio and Corporate Center – Group ALM is provided. 5 Unconditionally revocable committed credit lines.

Banking and traded products exposure by business division and Corporate Center unit (continued)

	31.12.17							
USD million	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Group
Banking products[1,2,3,4]								
Gross exposure (IAS 39, IAS 37, internal risk view)	177,854	155,496	585	47,633	509	99,083	92	481,254
of which: loans and advances to customers (on-balance sheet)	*167,811*	*133,681*	*1*	*12,327*	*35*	*7,413*	*90*	*321,357*
of which: guarantees and loan commitments (off-balance sheet)	*4,770*	*19,195*	*0*	*26,323*	*109*	*2*	*2*	*50,401*
Traded products[1,5]								
Gross exposure	8,708	1,344	0	35,627				45,679
of which: over-the-counter derivatives	*5,717*	*1,266*	*0*	*11,740*				*18,722*
of which: securities financing transactions	*228*	*0*	*0*	*18,303*				*18,531*
of which: exchange-traded derivatives	*2,763*	*78*	*0*	*5,585*				*8,425*
Total credit-impaired exposure, gross	187	929	0	143	0	0	49	1,308
of which: impaired loan exposure, gross	*187*	*752*	*0*	*113*	*0*	*0*	*49*	*1,102*
Total allowances and provisions for credit losses	134[6]	484	0	63[6]	0	2	30[6]	712[6]

1 Internal management view of credit risk, which differs in certain respects from IFRS. 2 Excludes reclassified securities and similar acquired securities held by Corporate Center – Non-core and Legacy Portfolio and loans designated at fair value. 3 Upon adoption of IFRS 9 on 1 January 2018, certain Global Wealth Management customer brokerage receivable balances were reclassified from Loans and advances to customers to a separately reported Brokerage receivables line and are therefore no longer included in this table. For comparability, the corresponding customer brokerage receivable balances as of 31 December 2017, totaling USD 4.7 billion, have also been excluded from this table. In addition, as a result of certain balance sheet presentation changes, USD 1.1 billion of leasing receivables in Personal & Corporate Banking are no longer reported within Loans and advances to customers as of 31 December 2017. 4 As of 31 December 2017, Loans and advances to customers reported under IFRS for the Investment Bank and Corporate Center – Non-core and Legacy Portfolio were USD 11,454 million and USD 2,284 million, respectively. For all other business divisions and Corporate Center units, IFRS Loans and advances to customers exposure was the same as the internal management view. 5 As counterparty risk for traded products is managed at counterparty level, no further split between exposures in the Investment Bank, Corporate Center – Non-core and Legacy Portfolio and Corporate Center – Group ALM is provided. 6 Does not include allowances for Other assets of USD 19 million, of which USD 14 million were in Corporate Center – Non-core and Legacy Portfolio and USD 5 million were in the Investment Bank, as well as allowances of USD 84 million on loans to financial advisors in Global Wealth Management.

Global Wealth Management

Gross banking products exposure within Global Wealth Management increased to USD 186 billion from USD 178 billion. The net change relates mainly to the addition of other financial assets measured at amortized cost, as previously mentioned, and increases in mortgage loans.

Our Global Wealth Management loan portfolio is mainly secured by securities (Lombard loans) and by residential property. Most of the Lombard loans were of high quality, with 96% rated investment grade based on our internal ratings, and they are typically short term in nature, with an average duration of three to six months. Moreover, Lombard loans can be canceled immediately if the collateral quality deteriorates or margin calls are not met.

The portfolio of mortgage loans secured by properties outside Switzerland, excluding Global Wealth Management Region Americas, increased to USD 6.5 billion from USD 6.3 billion, driven mainly by the inclusion of mortgage loans resulting from acquisitions. The overall quality of this portfolio remained high over the year.

In Global Wealth Management Region Americas, the portfolio of loans secured by residential property consists primarily of residential mortgage loans offered in the US. Gross exposure increased to USD 14.9 billion from USD 11.7 billion. The overall quality of this portfolio remained high, with an average loan-to-value ratio (LTV) of 56%, compared with 58% as of 31 December 2017, and we have experienced negligible credit losses since the inception of the mortgage program in 2009. The five largest geographic concentrations in the portfolio were in California (28%), New York (14%), Florida (9%), Texas (4%) and New Jersey (4%).

Global Wealth Management and Personal & Corporate Banking loans and advances to customers, gross[1]

	Global Wealth Management		Personal & Corporate Banking	
USD million	31.12.18	31.12.17	31.12.18	31.12.17
Secured by residential property	51,251	47,201	96,841	97,848
Secured by commercial / industrial property	2,233	2,125	16,887	17,049
Secured by cash	15,529	14,904	1,467	1,496
Secured by securities	90,946	93,950	1,647	1,917
Secured by guarantees and other collateral	9,469	8,893	5,754	5,512
Unsecured loans and advances to customers	986	739	10,657	9,860
Total loans and advances to customers, gross	170,413	167,811	133,253	133,681
Allowances[2]	(102)	(133)	(594)	(442)
Total loans and advances to customers, net of allowances	170,312	167,678	132,659	133,239

1 Balances as of 31 December 2018 are comprised of the balance sheet line "Loans and advances to customers." Upon adoption of IFRS 9 on 1 January 2018, certain Global Wealth Management customer brokerage receivable balances were reclassified from "Loans and advances to customers" to a separately reported "Brokerage receivables" line and are therefore no longer included in this table. For comparability, the corresponding customer brokerage receivable balances as of 31 December 2017, totaling USD 4.7 billion, have also been excluded from this table. In addition, as a result of certain balance sheet presentation changes, USD 1.1 billion of finance lease receivables in Personal & Corporate Banking are no longer reported within "Loans and advances to customers" as of 31 December 2017. 2 Allowances as of 31 December 2018 were calculated in accordance with the expected credit loss requirements of IFRS 9 (stages 1-3) for the balance sheet line "Loans and advances to customers." Allowances as of 31 December 2017 were calculated in accordance with IAS 39 and have been adjusted to exclude allowances related to certain customer brokerage receivables and finance lease receivables as described in the previous footnote. Refer to "Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9, Financial Instruments" in the "Consolidated financial statements" section of this report for more information on IFRS 9.

Personal & Corporate Banking

Gross banking products exposure within Personal & Corporate Banking increased to USD 157 billion from USD 155 billion. Net banking products exposure was USD 157 billion, compared with USD 155 billion, of which approximately 63% was classified as investment grade compared with 60% in the prior year. Around 50% of the exposure is categorized in the lowest loss given default (LGD) bucket of 0–25%, compared with 53% in 2017. The size of Personal & Corporate Banking's gross loan portfolio decreased slightly to USD 133 billion. As of 31 December 2018, 92% of this portfolio was secured by collateral, mainly residential and commercial property. Of the total unsecured amount, 79% related to cash flow-based lending to corporate counterparties and 7% related to lending to public authorities. Based on our internal ratings, 47% of the unsecured loan portfolio was rated investment grade, compared with 51% in 2017.

Credit loss expense for banking products remained low in 2018.

Our Swiss corporate banking products portfolio, which remained at USD 27 billion, consists of loans, guarantees and loan commitments to multinational and domestic counterparties. The small and medium-sized enterprises portfolio, especially, is well diversified across industries. However, such companies are reliant on the domestic economy and the economies to which they export, in particular the EU and the US. In addition, the development of the EUR / CHF exchange rate is an important risk factor for Swiss corporates.

The delinquency ratio was 0.3% for the corporate loan portfolio, compared with 0.6% at the end of 2017. The reduction is caused by the change in the definition of the delinquency ratio from "ratio of past due but not impaired loans to total loans" under IAS 39 to "ratio of past due but not credit-impaired loans to total loans" under IFRS 9.

→ **Refer to "Credit risk models" in this section for more information on loss given default, rating grades and rating agency mappings**

Swiss mortgage loan portfolio

Our Swiss mortgage loan portfolio secured by residential and commercial real estate in Switzerland continues to be our largest loan portfolio. These mortgage loans totaling USD 141 billion mainly originate from Personal & Corporate Banking, but also from Global Wealth Management Region Switzerland. USD 129 billion of these mortgage loans related to residential properties that the borrower was either occupying or renting out, with full recourse to the borrower. Of this USD 129 billion, USD 94 billion is related to properties occupied by the borrower, with an average LTV ratio of 56%, unchanged from the prior period. The average LTV for newly originated loans for this portion was 66%, compared with 65% in 2017. The remaining USD 35 billion of the Swiss residential mortgage loan portfolio relates to properties rented out by the borrower and the average LTV of this portfolio was 55%, compared with 57% as of 31 December 2017. The average LTV for newly originated Swiss residential mortgage loans for properties rented out by the borrower was 57%, compared with 60% in 2017.

As illustrated in the "Swiss mortgages: distribution of net exposure at default (EAD) across exposure segments and loan-to-value (LTV) buckets" table on the next page, over 99% of the aggregate amount of Swiss residential mortgage loans would continue to be covered by the real estate collateral even if the value assigned to that collateral were to decrease by 20%, and 98% would remain covered by the real estate collateral even if the value assigned to that collateral were to decrease by 30%. In this table, the amount of each mortgage loan is allocated across the LTV buckets to indicate the portion at risk at the various value levels shown. For example, a loan of 75 with an LTV ratio of 75% (collateral value of 100) would result in allocations of 30 in the less-than-30% LTV bucket, 20 in the 31–50% bucket, 10 in the 51–60% bucket, 10 in the 61–70% bucket and 5 in the 71–80% bucket.

Personal & Corporate Banking: distribution of banking products exposure across internal UBS ratings and loss given default (LGD) buckets

USD million, except where indicated	31.12.18						31.12.17	
		LGD buckets				Weighted average		Weighted average
Internal UBS rating[1]	Exposure	0–25%	26–50%	51–75%	76–100%	LGD (%)	Exposure	LGD (%)
Investment grade	97,922	54,255	32,275	9,455	1,937	27	92,302	26
Sub-investment grade	59,256	22,369	23,786	11,063	2,039	35	63,195	32
of which: 6–9	*53,143*	*20,716*	*20,524*	*10,127*	*1,777*	*34*	*57,171*	*32*
of which: 10–12	*4,067*	*1,598*	*1,467*	*748*	*254*	*35*	*4,144*	*32*
of which: 13 and defaulted	*2,046*	*55*	*1,795*	*187*	*8*	*40*	*1,879*	*39*
Total exposure before deduction of allowances and provisions	157,178	76,624	56,062	20,518	3,975	30	155,496	28
Less: allowances and provisions	(663)						(484)	
Net banking products exposure	**156,515**						**155,013**	

1 The ratings of the major credit rating agencies, and their mapping to our internal rating scale, are shown in the "Internal UBS rating scale and mapping of external ratings" table in this section.

Personal & Corporate Banking: unsecured loans by industry sector

	31.12.18		31.12.17	
	USD million	%	USD million	%
Construction	133	1.2	130	1.3
Financial institutions	2,139	20.1	1,192	12.1
Hotels and restaurants	79	0.7	85	0.9
Manufacturing	1,632	15.3	1,825	18.5
Private households	1,489	14.0	1,402	14.2
Public authorities	709	6.7	900	9.1
Real estate and rentals	170	1.6	186	1.9
Retail and wholesale	2,274	21.3	2,029	20.6
Services	1,774	16.6	1,868	18.9
Other	257	2.4	242	2.5
Exposure, gross	**10,657**	**100.0**	**9,860**	**100.0**

Swiss mortgages: distribution of net exposure at default (EAD) across exposure segments and loan-to-value (LTV) buckets

USD billion, except where indicated		31.12.18								31.12.17
		LTV buckets								
Exposure segment		≤30%	31–50%	51–60%	61–70%	71–80%	81–100%	>100%	Total	Total
Residential mortgages	Net EAD	72.4	33.5	9.9	5.3	2.0	0.3	0.0	123.4	118.4
	as a % of row total	59	27	8	4	2	0	0	100	
Income-producing real estate	Net EAD	11.4	4.7	1.1	0.5	0.2	0.0	0.0	17.9	18.4
	as a % of row total	64	26	6	3	1	0	0	100	
Corporates	Net EAD	5.7	2.2	0.6	0.3	0.1	0.1	0.0	9.0	9.1
	as a % of row total	63	24	6	3	2	1	0	100	
Other segments	Net EAD	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.7	0.9
	as a % of row total	66	21	6	4	2	0	0	100	
Mortgage-covered exposure	Net EAD	89.9	40.6	11.6	6.1	2.3	0.4	0.0	151.0	146.7
	as a % of total	60	27	8	4	2	0	0	100	
Mortgage-covered exposure 31.12.17	Net EAD	86.2	39.7	11.6	6.3	2.4	0.5	0.1	146.7	
	as a % of total	59	27	8	4	2	0	0	100	

Asset Management

Gross banking products exposure within Asset Management was USD 1.2 billion as of 31 December 2018, compared with USD 0.6 billion as of 31 December 2017. The change related mainly to the inclusion of other financial assets measured at amortized cost mentioned above. Banking products relate primarily to cash at banks held by individual Asset Management legal entities, liquid assets and receivables.

Investment Bank

The Investment Bank's lending activities are largely associated with corporate and non-bank financial institutions. The business is broadly diversified across industry sectors, but concentrated in North America.

The gross banking products exposure as of 31 December 2018 was USD 40 billion, compared with USD 48 billion as of 31 December 2017. This change relates mainly to the alignment of the internal risk management view to the IFRS 9 exposure view, as previously mentioned. Based on our internal ratings, 61% of the Investment Bank's gross banking products exposure was classified as investment grade. The vast majority of the Investment Bank's gross banking products exposure had an estimated LGD of between 0% and 50%.

The Investment Bank actively manages the credit risk of this portfolio and, as of 31 December 2018, held USD 0.6 billion of single-name credit default swap hedges against its exposures to corporates and other non-banks, a decrease of USD 1.2 billion year on year.

Within the loan underwriting business, we continued to see a steady flow of transactions as leveraged loan markets remained relatively strong. However, volatility and credit market weakness led to a general slowdown toward the end of the year. Total temporary loan underwriting exposure ended 2018 at USD 2.3 billion, USD 0.5 billion lower than the previous year. Overall, our ability to distribute remained sound. Loan underwriting exposures are classified as held for trading, with fair values reflecting market conditions at the end of 2018.

→ **Refer to "Credit risk models" in this section for more information on loss given default, rating grades and rating agency mappings**

Investment Bank: distribution of banking products exposure across internal UBS ratings and loss given default (LGD) buckets

USD million, except where indicated	31.12.18						31.12.17	
		LGD buckets				Weighted average		Weighted average
Internal UBS rating[1]	Exposure	0–25%	26–50%	51–75%	76–100%	LGD (%)	Exposure	LGD (%)
Investment grade	24,239	6,243	14,364	2,482	1,150	39	21,239	49
Sub-investment grade	15,630	4,953	4,001	6,595	81	15	16,351	22
of which: 6–9	*12,169*	*3,681*	*2,009*	*6,407*	*72*	*11*	*10,644*	*17*
of which: 10–12	*3,204*	*1,075*	*1,992*	*138*	*0*	*30*	*5,419*	*33*
of which: 13 and defaulted	*256*	*197*	*0*	*51*	*9*	*24*	*288*	*19*
Banking products exposure	39,869[2]	11,196	18,365	9,077	1,231	30	37,591[3]	37

1 The ratings of the major credit rating agencies, and their mapping to our internal rating scale, are shown in the "Internal UBS rating scale and mapping of external ratings" table in this section. 2 IFRS 9 banking products subject to ECL, includes USD 0.1 billion of balances at central banks, USD 7.1 billion of loans and advances to banks and USD 1.3 billion of other financial assets measured at amortized cost. 3 Prior-year net internal risk view, which excluded balances at central banks, internal risk adjustments and the vast majority of due from banks exposures, after credit protection bought of USD 1.8 billion.

Investment Bank: banking products exposure by geographical region

	31.12.18		31.12.17	
	USD million	%	USD million	%
Asia Pacific	6,123	15.4	1,461	3.9
Latin America	1,170	2.9	168	0.4
Middle East and Africa	471	1.2	75	0.2
North America	18,865	47.3	27,788	73.9
Switzerland	2,588	6.5	138	0.4
Rest of Europe	10,652	26.7	7,962	21.2
Exposure	39,869[1]	100.0	37,591[2]	100.0

1 IFRS 9 banking products subject to ECL, includes USD 0.1 billion of balances at central banks, USD 7.1 billion of loans and advances to banks and USD 1.3 billion of other financial assets measured at amortized cost. 2 Prior-year net internal risk view, which excluded balances at central banks, internal risk adjustments and the vast majority of due from banks exposures, after credit protection bought of USD 1.8 billion.

Investment Bank: Banking products exposure by industry sector

	31.12.18		31.12.17	
	USD million	%	USD million	%
Banks	6,779	17.0	1,435	6.2
Chemicals	711	1.8	865	8.2
Electricity, gas, water supply	1,765	4.4	2,488	5.0
Financial institutions, excluding banks	14,488	36.3	13,549	40.1
Manufacturing[1]	2,342	5.9	4,230	8.4
Mining[1]	1,759	4.4	2,826	5.7
Public authorities	706	1.8	988	3.2
Real estate and construction	1,553	3.9	3,426	7.2
Retail and wholesale	2,488	6.2	996	1.7
Technology and communications	2,372	5.9	2,756	6.3
Transport and storage[1]	719	1.8	2,870	6.3
Other	4,188	10.5	1,160	1.5
Exposure[1]	39,869[2]	100.0	37,591[3]	100.0
of which: oil and gas[1]	*1,582*	*4.0*	*4,401*	*10.2*

1 As of 31 December 2018, the USD 1.6 billion Investment Bank banking products exposure to the oil and gas sector comprised USD 1.5 billion related to mining, USD 0.0 billion related to transport and storage and USD 0.1 billion related to manufacturing. As of 31 December 2017, the USD 4.4 billion Investment Bank banking products exposure to the oil and gas sector comprised USD 2.4 billion related to mining, USD 1.5 billion related to transport and storage and USD 0.4 billion related to manufacturing. 2 IFRS 9 banking products subject to ECL, includes USD 0.1 billion of balances at central banks, USD 7.1 billion of loans and advances to banks and USD 1.3 billion of other financial assets measured at amortized cost. 3 Prior-year net internal risk view, which excluded balances at central banks, internal risk adjustments and the vast majority of due from banks exposures, after credit protection bought of USD 1.8 billion.

Corporate Center – Group Asset and Liability Management

Gross banking products exposure within Corporate Center – Group Asset and Liability Management (Group ALM), which arises primarily in connection with treasury activities, increased by USD 32 billion to USD 132 billion. This was driven by an increase in balances at central banks of USD 20 billion, mainly resulting from lower client-driven activity, which reduced business division consumption.

→ **Refer to "Balance sheet assets" in the "Treasury management" section of this report for more information**

Corporate Center – Non-core and Legacy Portfolio

→ **Refer to the "Corporate Center – Non-core and Legacy Portfolio" section under "Financial and operating performance" of this report for more information**

Traded products

Audited | Counterparty credit risk arising from traded products, which include over-the-counter (OTC) derivatives, exchange-traded derivatives (ETD) exposures and securities financing transactions (SFTs) originating in the Investment Bank, Corporate Center – Non-core and Legacy Portfolio and Corporate Center – Group ALM, is generally managed on a close-out basis. This takes into account the possible effect of market movements on the exposure and any associated collateral over the time it would take to close out our positions. In the Investment Bank, limits are applied to the potential future exposure per counterparty, with the size of the limit driven by the view of the creditworthiness of the counterparty as determined by Credit Risk Control. Limit frameworks are also applied to control overall exposure to specific classes or categories of collateral on a portfolio level. Such portfolio limits are monitored and reported to senior management.

Trading in OTC derivatives is conducted through central counterparties (CCPs) where practicable. Where CCPs are not used, we have clearly defined policies and processes for trading on a bilateral basis. Trading is typically conducted under bilateral International Swaps and Derivatives Association (ISDA) or similar master netting agreements, which generally allow for the close-out and netting of transactions in the event of default subject to applicable law. For most major market participant counterparties, we employ two-way collateral agreements under which either party can be required to provide collateral in the form of cash or marketable securities when the exposure exceeds specified levels. This collateral typically consists of well-rated government debt or other collateral permitted by applicable regulations. For certain counterparties, initial margin is taken to cover some or all of the calculated close-out exposure. This is in addition to the variation margin taken to settle changes in the market value of transactions. Regulations governing the margining of uncleared OTC derivatives continue to evolve. These generally expand the scope of bilateral derivatives activity subject to margining. In addition, they will result in greater amounts of initial margin received from, and posted to, certain bilateral trading counterparties than had been required in the past. These changes should result in lower close-out risk over time. ▲

→ **Refer to "Note 11 Derivative instruments" in the "Consolidated financial statements" section of this report for more information on our over-the-counter derivatives settled through central counterparties**

→ **Refer to "Note 25 Offsetting financial assets and financial liabilities" in the "Consolidated financial statements" section of this report for more information on the effect of netting and collateral arrangements on our derivative exposures**

Credit risk arising from traded products, after the effects of master netting agreements but excluding credit valuation adjustments and hedges, decreased by USD 3 billion to USD 42 billion as of 31 December 2018. OTC derivatives accounted for USD 16 billion, exposures from SFTs were USD 16 billion, and ETD exposures amounted to USD 10 billion. OTC derivatives exposures are generally measured as net positive replacement values after the application of legally enforceable netting agreements and the deduction of cash and marketable securities held as collateral. SFT exposures are reported taking into account collateral received, and ETD exposures take into account collateral margin calls.

The majority of the gross traded products exposures were within the Investment Bank, Corporate Center – Non-core and Legacy Portfolio and Corporate Center – Group ALM, totaling USD 31 billion compared with USD 36 billion as of 31 December 2017. As counterparty risk for traded products is managed at counterparty level, no further split is provided between exposures in the Investment Bank and those in Corporate Center – Non-core and Legacy Portfolio and Corporate Center – Group ALM. The traded products exposure includes OTC derivatives exposures of USD 9 billion in the Investment Bank and Corporate Center – Non-core and Legacy Portfolio, a decrease of USD 2 billion from the prior year. During 2018, SFT exposures decreased by USD 2 billion to USD 16 billion and ETD exposures decreased slightly to USD 5 billion. The tables on the following page provide more information on the OTC derivatives, SFT and ETD exposures of the Investment Bank, Corporate Center – Non-core and Legacy Portfolio and Corporate Center – Group ALM.

Investment Bank, Non-core and Legacy Portfolio and Group ALM: traded products exposure

USD million	OTC derivatives	SFTs	ETD	Total	Total
		31.12.18			31.12.17
Total exposure, before deduction of credit valuation adjustments and hedges	9,440	16,004	5,325	30,769	35,593
Less: credit valuation adjustments and allowances	(136)	0	0	(136)	(305)
Less: credit protection bought (credit default swaps, notional)	(288)	0	0	(288)	(447)
Net exposure after credit valuation adjustments, allowances and hedges	9,016	16,004	5,325	30,346	34,842

Investment Bank, Non-core and Legacy Portfolio and Group ALM: distribution of net OTC derivatives and SFT exposure across internal UBS ratings and loss given default (LGD) buckets

USD million, except where indicated	31.12.18						31.12.17	
		LGD buckets						
Internal UBS rating[1]	Exposure	0–25%	26–50%	51–75%	76–100%	Weighted average LGD (%)	Exposure	Weighted average LGD (%)
Net OTC derivatives exposure								
Investment grade	8,737	220	7,199	1,081	236	46	10,337	45
Sub-investment grade	280	88	65	30	96	54	649	41
of which: 6–9	*242*	*69*	*62*	*25*	*86*	*56*	*232*	*62*
of which: 10–12	*19*	*8*	*3*	*5*	*3*	*45*	*61*	*41*
of which: 13 and defaulted	*19*	*11*	*0*	*0*	*7*	*37*	*358*	*27*
Total net OTC derivatives exposure, after credit valuation adjustments and hedges	9,016	308	7,265	1,111	332	47	10,987	45
Net SFT exposure								
Investment grade	15,668	3	13,870	1,534	262	41	17,749	44
Sub-investment grade	336	8	191	2	135	63	521	72
Total net SFT exposure	16,004	11	14,060	1,536	396	41	18,271	44

1 The ratings of the major credit rating agencies, and their mapping to our internal rating scale, are shown in the "Internal UBS rating scale and mapping of external ratings" table in this section.

Investment Bank, Non-core and Legacy Portfolio and Group ALM: net OTC derivatives and SFT exposure by geographical region

	Net OTC derivatives				Net SFT exposure			
	31.12.18		31.12.17		31.12.18		31.12.17	
	USD million	%	USD million	%	USD million	%	USD million	%
Asia Pacific	1,309	14.5	1,184	10.8	3,408	21.3	3,718	20.3
Latin America	104	1.2	61	0.5	62	0.4	148	0.8
Middle East and Africa	109	1.2	147	1.3	549	3.4	638	3.5
North America	2,621	29.1	3,508	31.9	3,014	18.8	4,351	23.8
Switzerland	276	3.1	300	2.7	1,375	8.6	791	4.3
Rest of Europe	4,597	51.0	5,788	52.7	7,597	47.5	8,624	47.2
Exposure	9,016	100.0	10,987	100.0	16,004	100.0	18,271	100.0

Investment Bank, Non-core and Legacy Portfolio and Group ALM: net OTC derivatives and SFT exposure by industry sector

	Net OTC derivatives				Net SFT exposure			
	31.12.18		31.12.17		31.12.18		31.12.17	
	USD million	%	USD million	%	USD million	%	USD million	%
Banks	3,813	42.3	4,677	42.6	3,495	21.8	5,425	29.7
Chemicals	5	0.1	11	0.1	0	0.0	0	
Electricity, gas, water supply	87	1.0	170	1.5	0	0.0	0	
Financial institutions, excluding banks	3,425	38.0	3,693	33.6	11,404	71.3	11,267	61.7
Manufacturing	89	1.0	143	1.3	0	0.0	0	
Mining	12	0.1	7	0.1	0	0.0	0	
Public authorities	1,198	13.3	1,552	14.1	1,102	6.9	1,539	8.4
Retail and wholesale	10	0.1	9	0.1	0	0.0	3	0.0
Transport, storage and communication	284	3.1	296	2.7	0	0.0	0	
Other	92	1.0	428	3.9	3	0.0	36	0.2
Exposure	9,016	100.0	10,987	100.0	16,004	100.0	18,271	100.0

Credit risk mitigation

Audited | We actively manage the credit risk in our portfolios by taking collateral against exposures and by utilizing credit hedging. ▲

Lending secured by real estate

Audited | We use a scoring model as part of a standardized front-to-back process to support credit decisions for the origination or modification of Swiss mortgage loans. The two key factors within this model are an affordability calculation relative to gross income and the loan-to-value (LTV) ratio. ▲

The calculation of affordability takes into account interest payments, minimum amortization requirements, potential property maintenance costs and, in the case of properties expected to be rented out, the level of rental income. Interest payments are estimated using a predefined framework, which takes into account the potential for significant increases in interest rates during the lifetime of the loan. The interest rate is set at 5% per annum.

For residential properties occupied by the borrower, the maximum LTV allowed within the standard approval process is 80%. This is reduced to 60% in the case of vacation properties and luxury real estate. For other properties, the maximum LTV allowed within the standard approval process ranges from 30% to 80%, depending on the type of property, the age of the property and the amount of renovation work required.

Audited | The value assigned by UBS to each property is based on the lowest value determined from internally calculated valuations, the purchase price and, in some cases, an additional external valuation. ▲

We use two separate models provided by a market-leading external vendor to derive property valuations for owner-occupied residential properties (ORP) and income-producing real estate. For ORP, we estimate the current value of properties by using a regression model (hedonic model) to compare detailed characteristics for each property against a database of property transactions. In addition to the model-derived values, valuations for ORP are updated quarterly throughout the lifetime of the loan by using region-specific real estate price indices. The price indices are sourced from an external vendor and are subject to internal validation and benchmarking against two other external vendors. On a quarterly basis, we use these valuations to compute indexed LTV for all ORP and consider these together with other risk measures (e.g., rating migration and behavioral information) to identify higher-risk loans, which are then reviewed individually by client advisors and credit officers, with actions taken where they are considered necessary.

For income-producing real estate, the capitalization model is used to determine the property valuation by discounting estimated sustainable future income using a capitalization rate based on various attributes. These attributes consider regional as well as specific property characteristics, such as market and location data (e.g., vacancy rates), benchmarks (e.g., for running costs) and certain other standardized input parameters (e.g., property condition). Rental income from properties is reviewed at a minimum once every three years, but indications of significant changes in the amount of rental income or in the vacancy rate can trigger an interim reappraisal.

To take market developments into account for these models, the external vendor regularly updates the parameters and / or refines the architecture for each model. Model changes and parameter updates are subject to the same validation procedures as for our internally developed models.

Audited | We similarly apply underwriting guidelines for our Global Wealth Management Region Americas mortgage loan portfolio, taking into account affordability of the loans and sufficiency of collateral. The maximum LTV within the standard approval process for any type of mortgage is 80%. A stratification of LTVs exists for the various mortgage types, such as residential mortgage or investment property, based on associated risk factors, such as property types, loan size and loan purpose. Maximum LTVs go as low as 45%. Additionally, other credit risk metrics are applied, based upon property and borrower characteristics, such as debt-to-income ratios, FICO credit scores and required client reserves.

A risk limit framework is applied to the Global Wealth Management Region Americas mortgage portfolio. Limits have been established to govern exposures within LTV categories, geographic concentrations, portfolio growth and high-risk mortgage segments such as interest-only loans. These limits are monitored by a specialized credit risk monitoring team and reported to senior management. Supplementing this limit framework is a real estate lending policy and procedures framework, established to govern the real estate lending activities. Quality assurance and quality control programs are in place to monitor compliance with mortgage underwriting and documentation requirements. ▲

→ **Refer to "Swiss mortgage loan portfolio" in this section for more information on loan-to-value in our Swiss mortgage portfolio**

→ **Refer to "Global Wealth Management" in this section for more information on loan-to-value in our Global Wealth Management Region Americas mortgage portfolio**

Lombard lending

Audited | Lombard loans are secured by a pledge of marketable securities, guarantees and other forms of collateral. Eligible financial securities primarily include transferable securities (such as bonds and equities) that are liquid and actively traded, and other transferable securities such as approved structured products for which regular prices are available and for which the issuer of the security provides a market. To a lesser degree, less liquid collateral is also financed.

We apply discounts (haircuts) to reflect the collateral's risk and to derive the lending value. Haircuts for marketable securities are calculated to cover the possible change in the market value over a given close-out period and confidence level. The haircut applied will vary, depending on the view of the counterparty's creditworthiness. Less liquid or more volatile collateral will typically attract larger haircuts. For less liquid instruments, such as structured products, some bonds and products with long redemption periods, the assumed close-out period may be much longer than that for highly liquid instruments, or an assessment is made as to the expected recovery on the asset in the event of the counterparty's default, resulting in a larger haircut. For cash, life insurance policies, guarantees and letters of credit, haircuts are determined on a product- or client-specific basis.

We also consider concentration and correlation risks across collateral posted on a counterparty level as well as at a divisional level across counterparties. Additionally, we perform targeted Group-wide reviews of concentrations. A concentration of collateral in single securities, issuers or issuer groups, industry sectors, countries, regions or currencies may result in higher risk and reduced liquidity. In such cases, the lending value of the collateral, margin call and close-out levels are adjusted accordingly. ▲

Exposures and collateral values are monitored on a daily basis with the intention of ensuring that the credit exposure continues to be within the established risk appetite. A shortfall occurs when the lending value drops below the exposure. If a shortfall exceeds a defined trigger level, a margin call is initiated, requiring the client to provide additional collateral, reduce the exposure or take other action to bring the exposure in line with the agreed lending value of the collateral. If the extent of the shortfall increases and exceeds a further trigger level, or is not corrected within the required period, a close-out is initiated, through which collateral is liquidated, open derivative positions are closed and guarantees are called.

We also conduct stress testing of collateralized exposures to simulate market events that reduce the value of the collateral, increase the exposure of traded products, or both. For certain classes of counterparties, limits on such calculated stress exposures are applied and controlled on a counterparty level. In addition, there are portfolio limits applied across certain businesses or collateral types.

→ **Refer to "Stress loss" in this section for more information on our stress testing**

Credit hedging

Audited | We utilize single-name credit default swaps (CDSs), credit index CDSs, bespoke protection and other instruments to actively manage credit risk in the Investment Bank and Corporate Center – Non-core and Legacy Portfolio. This is aimed at reducing concentrations of risk from specific counterparties, sectors or portfolios and, in the case of counterparty credit risk, the profit or loss effect arising from changes in credit valuation adjustments (CVA).

We maintain strict guidelines for taking credit hedges into account for credit risk mitigation purposes. For example, when monitoring exposures against counterparty limits, we do not usually apply certain credit risk mitigants such as proxy hedges (credit protection on a correlated but different name) or credit index CDSs to reduce counterparty exposures. Buying credit protection also creates credit exposure against the protection provider. We monitor and limit our exposures to credit protection providers and the effectiveness of credit hedges as part of our overall credit exposures to the relevant counterparties. Trading with such counterparties is typically collateralized. For credit protection purchased to hedge the lending portfolio, this includes monitoring mismatches between the maturity of the credit protection purchased and the maturity of the associated loan. Such mismatches result in basis risk and may reduce the effectiveness of the credit protection. Mismatches are routinely reported to credit officers and mitigating actions are taken when deemed necessary. ▲

→ **Refer to "Note 11 Derivative instruments" in the "Consolidated financial statements" section of this report for more information**

Mitigation of settlement risk

To mitigate settlement risk, we reduce our actual settlement volumes through the use of multilateral and bilateral agreements with counterparties, including payment netting.

Our most significant source of settlement risk is foreign exchange transactions. We are a member of Continuous Linked Settlement (CLS), an industry utility that provides a multilateral framework to settle transactions on a delivery-versus-payment basis, thereby significantly reducing foreign exchange-related settlement risk relative to the volume of business. However, the mitigation of settlement risk through CLS and other means does not fully eliminate our credit risk in foreign exchange transactions resulting from changes in exchange rates prior to settlement, which is managed as part of our overall credit risk management of OTC derivatives.

Credit risk models

Basel III – A-IRB credit risk models

Audited | We have developed tools and models in order to estimate future credit losses that may be implicit in our current portfolio.

Exposures to individual counterparties are measured on the basis of three generally accepted parameters: probability of default (PD), loss given default (LGD) and exposure at default (EAD). For a given credit facility, the product of these three parameters results in the expected loss. These parameters are the basis for the majority of our internal measures of credit risk, and are key inputs for the regulatory capital calculation under the advanced internal ratings-based (A-IRB) approach of the Basel III framework governing international convergence of capital measurement and standards. We also use models to derive the portfolio credit risk measures of expected loss, statistical loss and stress loss. ▲

The "Key features of our main credit risk models" table on the next page shows the number and key features of the models that we use to derive PD, LGD and EAD for our main portfolios and asset classes, and is followed by more detailed explanations of these models and parameters.

→ **Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors* for more information on the regulatory capital calculation under the advanced internal ratings-based approach**

Key features of our main credit risk models

	Portfolio in scope	Asset class	Model approach	Number of main models	Main drivers	Number of years loss data[1]
Probability of default	Sovereigns and central banks	Central governments and central banks	Score card	1	Political, institutional and economic indicators	10
	Owner-occupied mortgages in Switzerland and the US	Retail: residential mortgages	Score card	2	Behavioral data, affordability relative to income, property type, loan-to-value. Separate models for mortgages in Switzerland and the US	24
	Income-producing real estate mortgages	Retail: residential mortgages, Corporates: specialized lending	Score card	1	Loan-to-value, debt service coverage, financial data (for large corporates only), behavioral data; Weights of risk drivers differ between corporate and private clients	24
	Lombard lending	Retail: other	Merton type	1	Loan-to-value, historical asset returns, behavioral data	5–10
	Small and medium-sized enterprises	Corporates: other lending	Score card	1	Financial data including balance sheet ratios and profit and loss, behavioral data. Weights of risk drivers differ depending on the corporate client sub-segment	24
	Banks	Banks and securities dealers	Score card	4	Financial data including balance sheet ratios and profit and loss. Separate models for banks – developed markets, banks – emerging markets, broker-dealers and investment banks, private banks	11
	Commodity traders	Corporates: specialized lending	Rating template	1	Financial data including balance sheet ratios and profit and loss, as well as non-financial criteria	20
	Aircraft financing	Corporates: other lending	Rating template	1	Financial structure of the transaction	12
	Large corporates	Corporates: other lending	Score card / market data	4	Financial data including balance sheet ratios and profit and loss, and market data. Separate models for corporates with publicly traded and highly liquid stocks (Market Intelligence Tool), private corporates, leveraged corporates and corporates in construction and real estate business	11
	Other portfolios	Corporates: other lending, Public-sector entities and multilateral development banks	Score card / pooled rating approach / rating template	13	Financial data and/or historical portfolio performance for pooled ratings. Separate models for hedge funds, managed funds, insurance companies, retail aggregators, commercial real estate loans, mortgage originators, Australian protected lending clients, ETD-only clients, sub-sovereigns / public-sector entities and multilateral development banks / supranationals.	11
Loss given default	Owner-occupied mortgages in Switzerland and the US	Retail: residential mortgages	Statistical model	2	Loan-to-value, time since last valuation. Separate models for mortgages in Switzerland and the US	11
	Income-producing real estate mortgages	Retail: residential mortgages, Corporates: specialized lending	Statistical model	1	Loan-to-value, time since last valuation, property type, location indicator	11
	Lombard lending	Retail: other	Statistical model, simulation	1	Historical observed loss rates	10–15
	Small and medium-sized enterprises	Corporates: other lending	Statistical model	2	Separate models for mortgage and non-mortgage LGDs. Mortgage models: loan-to-value, time since last valuation, property type, location indicator. Non-mortgage models: historical observed loss rates	11–17
	Investment Bank – all counterparties	Across the asset classes	Statistical model	2	Counterparty and facility specific, including industry segment, collateral, seniority, legal environment and bankruptcy procedures. Specific model for sovereign LGDs based on econometric modelling of past default events using GDP per capita, government debt, and other quantitative and qualitative factors such as the share of multilateral debt service, the size of the banking sector and institutional quality.	5–10
Exposure at default	Banking products	Across the asset classes	Statistical model	3	Separate models based on exposure type (committed credit lines, revocable credit lines, contingent products)	>10
	Traded products	Across the asset classes	Statistical model	2	Product-specific market drivers, e.g., interest rates. Separate models for OTC derivatives, ETDs and SFTs that generate the simulation of risk factors used for the credit exposure measure	n/a

1 For sovereign and Investment Bank PD models, the length of internal portfolio history is shown in Number of years loss data.

Audited |

Internal UBS rating scale and mapping of external ratings

Internal UBS rating	1-year PD range in %	Description	Moody's Investors Service mapping	Standard & Poor's mapping	Fitch mapping
0 and 1	0.00–0.02	Investment grade	Aaa	AAA	AAA
2	0.02–0.05		Aa1 to Aa3	AA+ to AA–	AA+ to AA–
3	0.05–0.12		A1 to A3	A+ to A–	A+ to A–
4	0.12–0.25		Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB
5	0.25–0.50		Baa3	BBB–	BBB–
6	0.50–0.80	Sub-investment grade	Ba1	BB+	BB+
7	0.80–1.30		Ba2	BB	BB
8	1.30–2.10		Ba3	BB–	BB–
9	2.10–3.50		B1	B+	B+
10	3.50–6.00		B2	B	B
11	6.00–10.00		B3	B–	B–
12	10.00–17.00		Caa	CCC	CCC
13	>17		Ca to C	CC to C	CC to C
Counterparty is in default	Default	Defaulted		D	D

Probability of default

The probability of default (PD) is an estimate of the likelihood of a counterparty defaulting on its contractual obligations over the next 12 months. PD ratings are used for credit risk measurement and are an important input for determining credit risk approval authorities. For the calculation of risk weighted assets (RWA), a 3-basis-point PD floor is applied to Banks, Corporates and Retail exposures as required under the Basel III framework. Additionally, for the Swiss owner-occupied mortgages we apply an 8-basis-point PD floor and for the Lombard loans a 4-basis-point PD floor.

PD is assessed using rating tools tailored to the various categories of counterparties. Statistically developed score cards, based on key attributes of the obligor, are used to determine PD for many of our corporate clients and for loans secured by real estate. Where available, market data may also be used to derive the PD for large corporate counterparties. For low-default portfolios, where available, we take into account relevant external default data in the rating tool development. For Lombard loans, Merton-type historical return-based model simulations taking into account potential changes in the value of securities collateral are used in our rating approach. These categories are also calibrated to our internal credit rating scale (masterscale), which is designed to ensure a consistent assessment of default probabilities across counterparties. Our masterscale expresses one-year default probabilities that we determine through our various rating tools by means of distinct classes, whereby each class incorporates a range of default probabilities. Counterparties migrate between rating classes as our assessment of their PD changes.

The ratings of the major credit rating agencies, and their mapping to our internal rating masterscale and internal PD bands, are shown in the "Internal UBS rating scale and mapping of external ratings" table above. The mapping is based on the long-term average of one-year default rates available from the rating agencies. For each external rating category, the average default rate is compared with our internal PD bands to derive a mapping to our internal rating scale. Our internal rating of a counterparty may therefore diverge from one or more of the correlated external ratings shown in the table. Observed defaults by rating agencies may vary through economic cycles, and we do not necessarily expect the actual number of defaults in our equivalent rating band to equal the rating agencies' average in any given period. We periodically assess the long-term average default rates of credit rating agencies' grades, and we adjust their mapping to our masterscale as necessary to reflect any material changes.

Loss given default

Loss given default (LGD) is the magnitude of the likely loss if there is a default. Our LGD estimates, which consider downturn conditions, include loss of principal, interest and other amounts (such as workout costs, including the cost of carrying an impaired position during the workout process) less recovered amounts. We determine LGD based on the likely recovery rate of claims against defaulted counterparties, which depends on the type of counterparty and any credit mitigation by way of collateral or guarantees. Our estimates are supported by our internal loss data and external information where available. Where we hold collateral, such as marketable securities or a mortgage on a property, loan-to-value ratios typically are a key parameter in determining LGD. For low-default portfolios, where available, we take into account relevant external default data in the rating tool development. In the RWA calculation, the regulatory LGD floor of 10% is applied for exposures secured by residential properties. Additionally, we applied a 30% LGD floor for Lombard loans in Global Wealth Management outside Region Americas and a 25% LGD floor for Lombard loans in Global Wealth Management Region Americas. All other LGDs are subject to a 5% floor.

Exposure at default

Exposure at default (EAD) represents the amount we expect to be owed by a counterparty at the time of a possible default. We derive EAD from our current exposure to the counterparty and the possible future development of that exposure.

The EAD of a loan is the drawn or face value of the loan. For loan commitments and guarantees, the EAD includes the amount drawn as well as potential future amounts that may be drawn, which are estimated using credit conversion factors (CCFs) based on historical observations. To comply with regulatory guidance, we floor individual observed CCF values at zero in the CCF model; i.e., we assume that the drawn exposure at default will be no less than the drawn amount one year prior to default.

For traded products, we derive the EAD by modeling the range of possible exposure outcomes at various points in time using scenario and statistical techniques. We assess the net amount that may be owed to us or that we may owe to others, taking into account the effect of market moves over the potential time it would take to close out our positions. For exchange-traded derivatives, our calculation of EAD takes into account collateral margin calls. When measuring individual counterparty exposure against credit limits, we consider the maximum likely exposure measured to a high level of confidence. However, when aggregating exposures to different counterparties for portfolio risk measurement purposes, we use the expected exposure to each counterparty at a given time period (usually one year) generated by the same model.

We assess our exposures where there is a material correlation between the factors driving the credit quality of the counterparty and those driving the potential future value of our traded products exposure (wrong-way risk), and we have established specific controls to mitigate these risks.

Expected loss

Credit losses are an inherent cost of doing business and the occurrence and amount of credit losses can be erratic. In order to quantify future credit losses that may be implicit in our current portfolio, we use the concept of expected loss. The expected loss for a given credit facility is a product of the three components described above: PD, EAD and LGD. We aggregate the expected loss for individual counterparties to derive our expected portfolio credit losses.

Expected loss (EL) for regulatory and internal risk control purposes is a statistical measure used to estimate the average annual costs we expect to experience from positions that become impaired. Expected loss is the basis for quantifying credit risk in all our portfolios. We use a statistical modeling approach to estimate the loss profile of each of our credit portfolios over a one-year period to a specified level of confidence. The mean value of this loss distribution is the expected loss. The loss estimates deviate from the mean value, reflecting statistical uncertainty on the defaulting counterparties and to systematic default relationships among counterparties within and between segments. The statistical measure is sensitive to concentration risks on individual counterparties and groups of counterparties. The outcome provides an indication of the level of risk in our portfolio and the way it may develop over time. Some parameters have to be estimated on a conservative basis in order to meet the regulatory requirements for banks applying the internal ratings-based approach to determine RWA.

IFRS 9 – ECL credit risk models

With a view to the introduction of IFRS 9, which is based on an expected credit loss (ECL) concept that differs from the other applications in some important aspects, we have developed specific parameters and additional models, which are generally derivations from our standard credit risk models.

→ **Refer to "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of this report for more information on the requirements of the expected credit loss methodology under IFRS 9**

Probability of default

The PD represents the likelihood of a default over a specified time period. A 12-month PD represents the likelihood of default determined for the next 12 months and a lifetime PD represents the probability of default over the remaining lifetime of the instrument. The lifetime PD calculation is based on a series of 12-month point-in-time (PIT) PDs that are derived from through-the-cycle (TTC) PDs and scenario forecasts. This modeling is region-, industry- and client segment-specific and considers both scenario-systematic and client-idiosyncratic information. To derive the cumulative lifetime PD per scenario, the series of 12-month PIT PDs are transformed into marginal PIT PDs, taking any assumed default events from previous periods into account.

Loss given default

The LGD represents an estimate of the loss at the time of a potential default occurring during the life of a financial instrument. The determination of the LGD takes into account expected future cash flows from collateral and other credit enhancements, or expected payouts from bankruptcy proceedings for unsecured claims and, where applicable, time to realization of collateral and the seniority of claims. The LGD is commonly expressed as a percentage of the EAD.

Exposure at default

The EAD represents an estimate of the exposure to credit risk at the time of a potential default occurring during the life of a financial instrument. It represents the cash flows outstanding at the time of default, considering expected repayments, interest payments and accruals, discounted at the effective interest rate. Future drawdowns on facilities are considered through a CCF that is reflective of historical drawdown and default patterns and the characteristics of the respective portfolios. IFRS 9-specific CCFs have been modeled to capture client segment- and product-specific patterns after removing Basel standard-specific limitations, i.e., conservatism, and focus on a 12-month period prior to default.

Expected credit loss

ECL for accounting purposes is an adjustment of the gross carrying value of assets that are accounted for under the amortized cost approach of IFRS 9 and subject to different principles and material differences. Rather than focusing on an average TTC expected annual loss, its purpose is to estimate the amount of losses inherent in a portfolio based on current conditions and future outlook (a PIT measure), whereby such forecast has to include all information that is available without undue cost and effort, and address multiple scenarios where there is a perceived non-linearity between changes in economic conditions and their effect on credit losses. From a credit risk modeling perspective, ECL parameters are generally a derivation of the factors assessed for EL.

Comparison of Basel III EL and IFRS 9 ECL

Depending on the application, there are a number of key differences in the estimation process and the result. Most notably, regulatory Basel III EL parameters are TTC / downturn estimates, which might include a margin of conservatism, while IFRS 9 ECL parameters are typically PIT, reflecting current economic conditions and future outlook. The main differences are summarized in the table below.

The estimation of expected (credit) loss is not a forecast of the annual charge to *Credit loss expense* resulting from loans and off-balance sheet exposures that become impaired. The Basel III EL is not particularly sensitive to prevailing economic conditions with its TTC / downturn view. ECL, in contrast, is grounded in PIT economic conditions, but measured as an average of different scenarios, and for time periods that are dependent on the maturity profile of the book at reporting date and the particular stage classification required by IFRS 9. They do not cover therefore a PIT credit loss expense expectation measured over a quarter or a calendar year.

Further key aspects of credit risk models

Stress loss

We complement our statistical modeling approach with scenario-based stress loss measures. Stress tests are run on a regular basis to monitor the potential effect of extreme, but nevertheless plausible, events on our portfolios, under which key credit risk parameters are assumed to deteriorate substantially. Where we consider it appropriate, we apply limits on this basis.

In the table below we illustrate the main differences between the two expected loss measures:

	Basel III EL (advanced internal ratings-based approach)	IFRS 9 ECL
Scope	The Basel III advanced internal ratings-based (A-IRB) approach applies to most credit risk exposures. It includes transactions measured at amortized cost, at fair value through profit or loss and at fair value through OCI, including loan commitments and financial guarantees.	The IFRS 9 expected credit loss (ECL) calculation mainly applies to financial assets measured at amortized cost and debt instruments measured at fair value through OCI, as well as loan commitments and financial guarantee contracts not at fair value through profit or loss.
12-month versus lifetime expected loss	The Basel III A-IRB approach takes into account expected losses resulting from expected default events occurring within the next 12 months.	In the absence of a significant increase in credit risk (SICR) event, a maximum 12-month ECL is recognized to reflect lifetime cash shortfalls that will result if a default event occurs in the 12 months after the reporting date (or a shorter period if the expected lifetime is less). Once an SICR event has occurred, a lifetime ECL is recognized considering expected default events over the life of the transaction.
Exposure at default (EAD)	EAD is the amount we expect a counterparty to owe us at the time of a possible default. For banking products, the EAD equals the book value as of the reporting date, whereas for traded products, such as securities financing transactions, the EAD is modeled. The EAD is expected to remain constant over the 12-month period. For loan commitments, a credit conversion factor is applied to model expected future drawdowns over the 12-month period, irrespective of the actual maturity of a particular transaction. The credit conversion factor includes downturn adjustments.	EAD is generally calculated on the basis of the cash flows that are expected to be outstanding at the individual points in time during the life of the transaction, discounted to the reporting date using the effective interest rate. For loan commitments, a credit conversion factor is applied to model expected future drawdowns over the life of the transaction without including downturn assumptions. In both cases, the time period is capped at 12 months, unless an SICR has occurred.
Probability of default (PD)	PD estimates are determined on a through–the-cycle (TTC) basis. They represent historical average PDs, taking into account observed losses over a prolonged historical period, and are therefore less sensitive to movements in the underlying economy.	PD estimates will be determined on a point-in-time (PIT) basis, based on current conditions and incorporating forecasts for future economic conditions at the reporting date.
Loss given default (LGD)	LGD includes prudential adjustments, such as downturn LGD assumptions and floors. Similar to PD, LGD is determined on a TTC basis.	LGD should reflect the losses that are reasonably expected and prudential adjustments should therefore not be applied. Similar to PD, LGD is determined on the basis of a PIT approach.
Use of scenarios	N/A	Multiple forward-looking scenarios have to be taken into account to determine a probability-weighted ECL.

Stress scenarios and methodologies are tailored to the nature of the portfolios, ranging from regionally focused to global systemic events, and varying in time horizon. For example, for our loan underwriting portfolio, we apply a global market event under which, simultaneously, the market for loan syndication freezes, market conditions significantly worsen, and credit quality deteriorates. Similarly, for Lombard lending, we apply a range of scenarios representing instantaneous market shocks to all collateral and exposure positions, taking into consideration their liquidity and potential concentrations. The portfolio-specific stress test for our mortgage lending business in Switzerland reflects a multi-year event, and the overarching stress test for global wholesale and counterparty credit risk to corporates uses a one-year global stress event and takes into account exposure concentrations to single counterparties.

→ **Refer to "Stress testing" in this section for more information on our stress testing framework**

Credit risk model confirmation

Our approach to model confirmation involves both quantitative methods, including monitoring compositional changes in the portfolios and the results of backtesting, and qualitative assessments, including feedback from users on the model output as a practical indicator of the performance and reliability of the model.

Material changes in a portfolio composition may invalidate the conceptual soundness of the model. We therefore perform regular analysis of the evolution of portfolios to identify such changes in the structure and credit quality of portfolios. This includes analysis of changes in key attributes, changes in portfolio concentration measures, as well as changes in RWA.

→ **Refer to "Risk measurement" in this section for more information on our approach to model confirmation procedures**

Backtesting

We monitor the performance of our models by backtesting and benchmarking them, whereby model outcomes are compared with actual results, based on our internal experience as well as externally observed results. To assess the predictive power of our credit exposure models for traded products such as OTC derivatives and ETD products, we statistically compare the predicted future exposure distributions at different forecast horizons with the realized values.

For PD, we use statistical modeling to derive a predicted distribution of the number of defaults. The observed number of defaults is then compared with this distribution, allowing us to derive a statistical level of confidence in the model conservatism. In addition, we derive a lower and upper bound for the average default rate. If the portfolio average PD lies outside the derived interval, the rating tool is, as a general rule, recalibrated.

For LGD, the backtesting statistically tests whether the mean difference between the observed and predicted LGD is zero. If the test fails, then there is evidence that our predicted LGD is too low. In such cases, and where these differences are outside expectations, models are recalibrated.

Main credit models backtesting by regulatory asset class

	Length of time series used for the calibration (in years)	Actual rates in %			Estimated average rates at the start of 2018 in %
		Average of last 5 years[1]	Min. of last 5 years[2]	Max. of last 5 years[2]	
Probability of default[3]					
Central governments and central banks	>10[4]	0.00	0.00	0.00	0.20
Banks and securities dealers	>10	0.16	0.00	0.53	0.67
Public-sector entities, multilateral development banks	>10	0.00	0.00	0.00	0.18
Corporates: specialized lending	>10	0.31	0.15	0.60	1.23
Corporates: other lending	>10	0.24	0.21	0.29	0.46
Retail: residential mortgages	>20	0.19	0.12	0.28	0.53
Retail: other	>10	0.00	0.00	0.01	0.31
Loss given default					
Central governments and central banks	>10				57.48
Banks and securities dealers	>10	0.00			50.29
Public-sector entities, multilateral development banks	>10				26.23
Corporates: specialized lending	>10	4.02	0.00	17.07	21.48
Corporates: other lending	>10	19.98	12.90	23.15	37.02
Retail: residential mortgages	>20	0.82	0.00	1.48	20.37
Retail: other	>10	64.62	65.26	65.26	27.44
Credit conversion factors					
Corporates	>10	19.05	6.87	44.32	43.13

1 Average of all observations over the last five years. 2 Minimum / maximum annual average of observations in any single year from the last five years. Yearly averages are only calculated where five or more observations occurred during that year. 3 Average PD estimation is based on all rated clients in the portfolio. 4 Sovereign PD model is calibrated to UBS masterscale, length of time series shows span of internal history for this portfolio.

Credit conversion factors (CCFs), used for the calculation of EAD for undrawn facilities with corporate counterparties, are dependent on several contractual dimensions of the credit facility. We compare the predicted amount drawn with observed historical utilization of such facilities for defaulted counterparties. If any statistically significant deviation is observed, the relevant CCFs are redefined.

The "Main credit models backtesting by regulatory asset class" table on the previous page compares the current model calibration for PD, LGD and CCFs with historical observed values over the last five years.

Changes to models and model parameters during the period

As part of our continuous efforts to enhance models to reflect market developments and newly available data, we updated several models in the course of 2018.

Within Personal & Corporate Banking, we recalibrated the PD and LGD parameters for the aircraft financing portfolio.

→ **Refer to "Risk-weighted assets" in the "Capital management" section of this report for more information on the effect of the changes to models and model parameters on credit risk RWA**

A new specific model for sovereign LGDs based on econometric modelling and qualitative factors was introduced. The model is also applied in the Group Liquidity Reserve. Within the Investment Bank, besides the introduction of the new sovereign LGD model, there were no material changes of PD / LGD methodologies. With regard to the EAD, we implemented credit conversion factors for Lombard loan facilities that are entirely undrawn in Global Wealth Management, as well as a new set of models to simulate equity, interest rates and exchange rates for OTC derivative exposures in the Investment Bank portfolio. Where required, changes to models and model parameters were approved by the Swiss Financial Market Supervisory Authority (FINMA) prior to implementation.

Future credit risk-related regulatory capital developments

In December 2017, the Basel Committee on Banking Supervision published the final Basel III framework to be implemented on 1 January 2022. The updated framework has made a number of revisions to the internal ratings-based (IRB) approaches, namely: (i) removing the possibility of using the advanced IRB (A-IRB) approach for certain asset classes (including large and medium-sized corporates, banks and other financial institutions); (ii) placing floors on certain model inputs under the IRB approach, such as for PD and LGD; and (iii) introducing various requirements to reduce RWA variability, for example, for LGD.

The published framework has a number of requirements that are subject to national discretion. In addition, revisions to the credit valuation adjustment (CVA) framework were published, including the removal of the advanced CVA (A-CVA) approach. UBS maintains a close dialog with FINMA to discuss in more detail the implementation objectives and to ensure a smooth transition of the capital regime for credit risk.

→ **Refer to "Capital management objectives, planning and activities" in the "Capital management" section of this report for more information on the development of RWA**

→ **Refer to "Risk measurement" in this section for more information on our approach to model confirmation procedures**

→ **Refer to the "Regulatory and legal developments" and "Risk factors" sections of this report for more information**

Credit policies for distressed assets

We have adopted IFRS 9, *Financial Instruments*, effective as of 1 January 2018. IFRS 9 introduces a forward-looking expected credit loss (ECL) approach, which is intended to result in an earlier recognition of credit losses compared with the incurred-loss impairment approach for financial instruments under IAS 39, *Financial Instruments: Recognition and Measurement,* and the loss-provisioning approach for financial guarantees and loan commitments under IAS 37, *Provisions, Contingent Liabilities and Contingent Assets*.

→ **Refer to "Note 1 Summary of significant accounting policies," "Note 23 Expected credit loss measurement" and "Note 24d Valuation adjustments" in the "Consolidated financial statements" section of this report for more information**

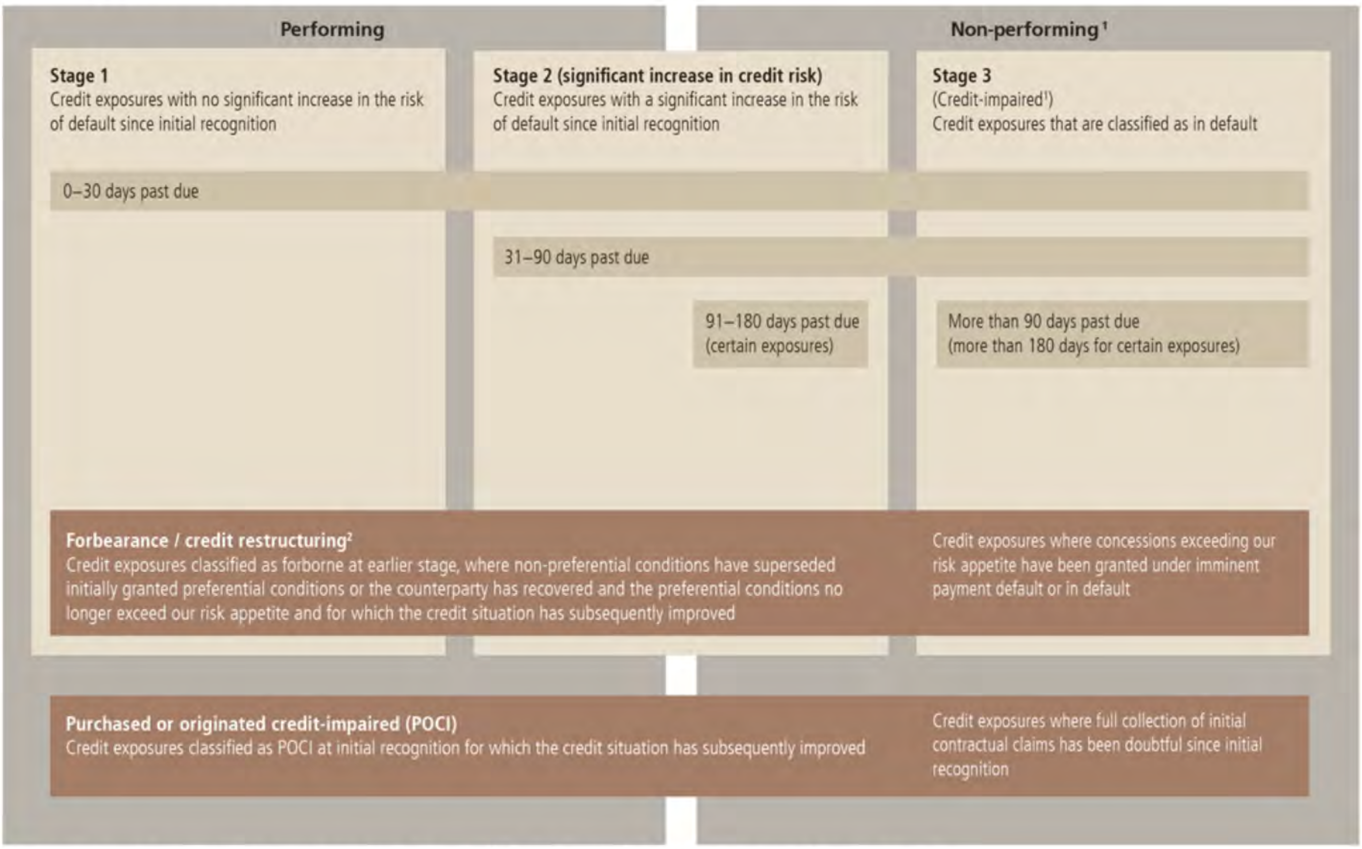
The "Exposure categorization" chart on the next page illustrates how we categorize banking products and SFTs as non-performing, defaulted, credit-impaired and purchased or originated credit-impaired.

Audited | In line with the regulatory definition, we report a claim as non-performing when (i) it is more than 90 days past due; (ii) it is subject to restructuring proceedings, where preferential conditions concerning interest rates, subordination, tenor etc. have been granted in order to avoid default of the counterparty (forbearance); or (iii) the counterparty is subject to bankruptcy / enforced liquidation proceedings in any form, even if there is sufficient collateral to cover the due payment.

UBS applies a single definition of default for classifying assets and determining the PD of its obligors for risk modeling purposes. The definition of default is based on quantitative and qualitative criteria. A counterparty is classified as defaulted at the latest when material payments of interest, principal or fees are overdue for more than 90 days, or more than 180 days for certain exposures in relation to loans to private and commercial clients in Personal & Corporate Banking, and to private clients of Global Wealth Management Region Switzerland. UBS does not consider the general 90-day presumption for default recognition appropriate for these latter portfolios based on an analysis of the cure rates, which demonstrated that strict application of the 90-day criterion would not accurately reflect the inherent credit risk. Counterparties are also classified as defaulted when bankruptcy, insolvency proceedings or enforced liquidation have commenced; obligations have been restructured on preferential terms (forbearance); or there is other evidence that payment obligations will not be fully met without recourse to collateral. The latter may be the case even if, to date, all contractual payments have been made when due. If a counterparty is defaulted, generally all claims against the counterparty are treated as defaulted.

An instrument is classified as credit-impaired if the counterparty is defaulted, and / or the instrument is identified as purchased or originated credit-impaired (POCI). An instrument is POCI if it has been purchased with a material discount to its carrying amount following a risk event of the issuer or originated with a defaulted counterparty. Once a financial asset is classified as defaulted / credit-impaired (except POCI), it is reported as a stage 3 instrument and remains as such unless all past due amounts have been rectified, additional payments have been made on time, the position is not classified as credit-restructured, and there is general evidence of credit recovery. A three-month probation period is applied before a transfer back to stages 1 or 2 can be triggered. However, most instruments remain in stage 3 for a longer period. ▲

Exposure categorization



1 Excluding purchased or originated credit-impaired instruments (POCIs). 2 May include purchased or originated credit-impaired instruments (POCIs).

Forbearance (credit restructuring)

Audited | Under imminent payment default or where default has already occurred, we may grant concessions to borrowers in financial difficulties that we would otherwise not consider in the normal course of our business, such as preferential interest rates, extension of maturity, modifying the schedule of repayments, debt / equity swap, subordination, etc. When a forbearance measure takes place, each case is considered individually and the exposure is generally classified in default. Forbearance classification will remain, until the loan is collected or written off, non-preferential conditions are granted that supersede the preferential conditions or until the counterparty has recovered and the preferential conditions no longer exceed our risk appetite.

Contractual adjustments when there is no evidence of imminent payment default, or where changes to terms and conditions are within our usual risk appetite, are not considered to be forborne. ▲

Loss history statistics

Since adopting IFRS 9 on 1 January 2018, an instrument is classified as credit-impaired if the counterparty has defaulted. This also includes credit-impaired exposures for which no loss has occurred or for which no allowance has been recognized (e.g., because they are expected to be fully recoverable through the collateral held).

The "Loss history statistics" table below provides a five-year history of our credit loss experience for loans and advances to banks and customers, and ratios of those credit losses relative to our credit-impaired and non-performing loans and advances to banks and customers. For the years 2014 to 2017, the amounts are based on IAS 37 and IAS 39; for 2018 the amounts are based on IFRS 9.

Gross credit-impaired loans and advances (including loans and advances to banks) were USD 2.3 billion as of 31 December 2018. As of 31 December 2017, impaired loans were USD 1.1 billion. The change is mainly caused by the adoption of IFRS 9, with the alignment of the term "credit-impaired" as described before.

The majority of the credit-impaired exposure relates to loans and advances in our Swiss domestic business. The ratio of credit-impaired loans and advances to banks and customers to total loans and advances to banks and customers was 0.7%.

→ **Refer "Note 10 Financial assets at amortized cost and other positions in scope of expected credit loss measurement" and "Note 23 Expected credit loss measurement" in the "Consolidated financial statements" section of this report for more information on the expected credit loss measurement under IFRS 9**

→ **Refer to "Note 17a) Other financial assets measured at amortized cost" in the "Consolidated financial statements" section of this report for more details**

Loss history statistics

USD million, except where indicated	31.12.18 IFRS 9	31.12.17 IAS 37, IAS 39	31.12.16 IAS 37, IAS 39	31.12.15 IAS 37, IAS 39	31.12.14 IAS 37, IAS 39
Loans and advances to banks and customers (gross)	338,000	342,604	314,485	324,059	331,631
Credit-impaired loans and advances to banks and customers	2,300	1,104	958	1,224	1,211
Non-performing loans and advances to banks and customers	2,419	2,149	2,357	1,627	1,611
ECL allowances and provisions for credit losses[1,2]	1,054	712	642	726	739
of which: allowances for loans and advances to banks and customers[1]	*780*	*678*	*589*	*691*	*712*
Net write-offs[3,4]	210	101	121	116	125
of which: net write-offs for loans and advances to banks and customers[4]	*192*	*101*	*121*	*116*	*125*
Credit loss (expense) / recovery[5]	(118)	(131)	(38)	(118)	(77)
Ratios					
Credit-impaired loans and advances to banks and customers as a percentage of loans and advances to banks and customers (gross)	0.7	0.3	0.3	0.4	0.4
Non-performing loans and advances to banks and customers as a percentage of loans and advances to banks and customers (gross)	0.7	0.6	0.7	0.5	0.5
ECL allowances as a percentage of loans and advances to banks and customers (gross)	0.3	0.2	0.2	0.2	0.2
Net write-offs as a percentage of average loans and advances to banks and customers (gross) outstanding during the period	0.1	0.0	0.0	0.0	0.0

1 Includes collective loan loss allowances (until 31 December 2017). Until 31 December 2017 did not include allowances for other receivables (31 December 2017: USD 19 million; 31 December 2016: USD 0 million; 31 December 2015: USD 0 million; 31 December 2014: USD 0 million). 2 Includes provisions for ECL of guarantees and loan commitments and allowances for securities financing transactions. 3 Includes net write-offs for loan commitments and securities financing transactions. 4 The increase in net write-offs was mainly driven by a margin loan to a single client following a significant decrease in the value of the collateral. 5 Includes credit loss (expense) / recovery for other financial assets at amortized cost, guarantees, loan commitments, and securities financing transactions.

Market risk

Key developments

We continued to manage market risks at generally low levels of management value-at-risk (VaR). Average management VaR (1-day, 95% confidence level) increased slightly to USD 12 million from USD 11 million in the previous year, despite periods of significant market volatility. The number of negative backtesting exceptions within a 250-business-day window increased from one to two by the end of the year. The FINMA VaR multiplier for market risk RWA remained unchanged at 3.0 as of 31 December 2018.

Audited | Main sources of market risk

Market risks arise from both our trading and non-trading business activities.

- Trading market risks arise mainly in connection with primary debt and equity underwriting, securities and derivatives trading for market-making and client facilitation within our Investment Bank, as well as the remaining positions within Corporate Center – Non-core and Legacy Portfolio and our municipal securities trading business within Global Wealth Management.
- Non-trading market risk arises predominantly in the form of interest rate and foreign exchange risks in connection with personal banking and lending in our wealth management businesses, our personal and corporate banking business in Switzerland and the Investment Bank's lending business, in addition to treasury activities.
- Corporate Center – Asset and Liability Management (Group ALM) assumes market risks in the process of managing interest rate risk, structural foreign exchange risk and the liquidity and funding profile (including high-quality liquid assets) of the Group.
- Equity and debt investments can also give rise to market risks, as can some aspects of our employee benefits, such as defined benefit pension schemes. ▲

Audited | Overview of measurement, monitoring and management techniques

- Market risk limits are set for the Group, the business divisions and Corporate Center units and at granular levels within the various business lines, reflecting the nature and magnitude of the market risks.
- Management VaR measures exposures under the market risk framework. This includes trading market risks and parts of non-trading market risks. Non-trading market risks not included in VaR are also covered in the risks controlled by Market & Treasury Risk Control as set out further below.
- Our primary portfolio measures of market risk are liquidity-adjusted stress (LAS) loss and VaR. Both are common to all our business divisions and subject to limits that are approved by the Board of Directors (BoD).
- These measures are complemented by concentration and granular limits for general and specific market risk factors. Our trading businesses are subject to multiple market risk limits. These limits take into account the extent of market liquidity and volatility, available operational capacity, valuation uncertainty and, for our single-name exposures, the credit quality of issuers.
- Trading market risks are managed on an integrated basis at a portfolio level. As risk factor sensitivities change due to new transactions, transaction expiries or changes in market levels, risk factors are dynamically rehedged to remain within limits. Accordingly, in the trading portfolio, we do not generally seek to distinguish between specific positions and associated hedges.
- Issuer risk is controlled by limits applied at the business division level based on jump-to-zero measures, which estimate our maximum default exposure (the loss in the case of a default event assuming zero recovery).
- Non-trading foreign exchange risks are managed under market risk limits, with the exception of Corporate Center – Group ALM's management of consolidated capital activity.

Our Market & Treasury Risk Control function applies a holistic risk framework, which sets the appetite for treasury-related risk-taking activities across the Group. A key element of the framework is an overarching economic value sensitivity limit, set by the BoD. This limit is linked to the level of Basel III common equity tier 1 (CET1) capital and takes into account risks arising from interest rates, foreign exchange and credit spreads. In addition, the sensitivity of net interest income to changes in interest rates is monitored against targets set by the Group Chief Executive Officer, in order to analyze the outlook and volatility of net interest income based on market-expected interest rates. Limits are also set by the BoD to balance the effect of foreign exchange movements on our CET1 capital and CET1 capital ratio. Non-trading interest rate and foreign exchange risks are included in our Group-wide statistical and stress testing metrics, which flow into our risk appetite framework.

Equity and debt investments are subject to a range of risk controls, including preapproval of new investments by business management and Risk Control and regular monitoring and reporting. They are also included in our Group-wide statistical and stress testing metrics, which flow into our risk appetite framework. ▲

→ **Refer to "Currency management" in the "Treasury management" section of this report for more information on Corporate Center – Group ALM's management of foreign exchange risks**

→ **Refer to the "Capital management" section of this report for more information on the sensitivity of our CET1 capital and CET1 capital ratio to currency movements**

Market risk stress loss

In addition to VaR, which is discussed below, we measure and manage our market risks through a comprehensive framework of non-statistical measures and related limits. This includes an extensive series of stress tests and scenario analyses, which we continuously evaluate with the intention of ensuring that any losses resulting from an extreme, yet plausible event do not exceed our risk appetite.

Liquidity-adjusted stress

Our primary measure of stress loss for Group-wide market risk is LAS. The LAS framework is designed to capture the economic losses that could arise under specified stress scenarios. This is in part achieved by replacing the standard one-day and 10-day holding period assumptions used for management and regulatory VaR with liquidity-adjusted holding periods, as explained below. Shocks are then applied to positions based on the expected market movements over the liquidity-adjusted holding periods resulting from the specified scenario.

The holding periods used in LAS are calibrated to reflect the amount of time it would take to reduce or hedge the risk of positions in each major risk factor in a stressed environment, assuming maximum utilization of the relevant position limits. We also apply minimum holding periods, regardless of observed liquidity levels, reflecting the fact that identification of and reaction to a crisis may not always be immediate.

The expected market movements are derived using a combination of historical market behavior, based on an analysis of historical events, and forward-looking analysis that includes consideration of defined scenarios that have not occurred historically.

LAS-based limits are applied at a number of levels: Group, business division and Corporate Center unit, business area and sub-portfolio. In addition, LAS forms the core market risk component of our combined stress test framework and is therefore integral to our overall risk appetite framework.

→ **Refer to "Risk appetite framework" in this section for more information**

→ **Refer to "Stress testing" in this section for more information on our stress testing framework**

Value-at-risk

VaR definition

Audited | VaR is a statistical measure of market risk, representing the market risk losses that could potentially be realized over a set time horizon (holding period) at an established level of confidence. The measure assumes no change in the Group's trading positions over the set time horizon.

We calculate VaR on a daily basis. The profit or loss distribution from which VaR is derived is generated by our internally developed VaR model. The VaR model simulates returns over the holding period of those risk factors to which our trading positions are sensitive, and subsequently quantifies the profit or loss effect of these risk factor returns on the trading positions. Risk factor returns associated with the risk factor classes of general interest rates, foreign exchange and commodities are based on a pure historical simulation approach, taking into account a five-year look-back window. Risk factor returns for selected issuer-based risk factors, such as equity price and credit spreads, are decomposed into systematic and residual, issuer-specific components using a factor model approach. Systematic returns are based on historical simulation, and residual returns are based on a Monte Carlo simulation. The VaR model profit and loss distribution is derived from the sum of the systematic and residual returns in such a way that we consistently capture systematic and residual risk. Correlations among risk factors are implicitly captured via the historical simulation approach. In modeling the risk factor returns, we consider the stationarity properties of the historical time series of risk factor changes. Depending on the stationarity properties of the risk factors within a given risk factor class, we choose to model the risk factor returns using absolute returns or logarithmic returns. The risk factor return distributions are updated on a fortnightly basis.

Although our VaR model does not have full revaluation capability, we source full revaluation grids and sensitivities from our front-office systems, enabling us to capture material non-linear profit or loss effects.

We use a single VaR model for both internal management purposes and determining market risk risk-weighted assets (RWA), although we consider different confidence levels and time horizons. For internal management purposes, we establish risk limits and measure exposures using VaR at the 95% confidence level with a one-day holding period, aligned to the way we consider the risks associated with our trading activities. The regulatory measure of market risk used to underpin the market risk capital requirement under Basel III requires a measure equivalent to a 99% confidence level using a 10-day holding period. In the calculation of a 10-day holding period VaR, we employ 10-day risk factor returns, whereby all observations are equally weighted.

Additionally, the population of the portfolio within management and regulatory VaR is slightly different. The population within regulatory VaR meets regulatory requirements for inclusion in regulatory VaR. Management VaR includes a broader population of positions. For example, regulatory VaR excludes the credit spread risks from the securitization portfolio, which are treated instead under the securitization approach for regulatory purposes.

We also use stressed VaR (SVaR) for the calculation of market risk RWA. SVaR adopts broadly the same methodology as regulatory VaR and is calculated using the same population, holding period (10-day) and confidence level (99%). However, unlike regulatory VaR, the historical data set for SVaR is not limited to five years, but spans the time period from 1 January 2007 to the present. In deriving SVaR, we search for the largest 10-day holding period VaR for the current Group portfolio across all one-year look-back windows that fall into the interval from 1 January 2007 to the present. SVaR is computed weekly. ▲

→ **Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors* for more information on the regulatory capital calculation under the advanced internal ratings-based approach**

Management VaR for the period

The tables below show minimum, maximum, average and period-end management VaR by business division and Corporate Center unit, and by general market risk type. We continued to manage management VaR at low levels with average VaR increasing slightly to USD 12 million from USD 11 million in the previous year.

Audited |

Management value-at-risk (1-day, 95% confidence, 5 years of historical data) by business division and Corporate Center unit and general market risk type[1]

				For the year ended 31.12.18					
USD million	Min.	Max.	Average	31.12.18	Equity	Interest rates	Credit spreads	Foreign exchange	Commodities
Min.					3	5	5	1	1
Max.					22	11	9	13	4
Average					8	8	7	3	2
31.12.18					5	7	5	6	2
Total management VaR, Group	5	26	12	12	*Average (per business division and risk type)*				
Global Wealth Management	0	2	1	1	*0*	*1*	*2*	*0*	*0*
Personal & Corporate Banking	0	0	0	0	*0*	*0*	*0*	*0*	*0*
Asset Management	0	0	0	0	*0*	*0*	*0*	*0*	*0*
Investment Bank	4	25	11	10	*8*	*6*	*6*	*3*	*2*
CC – Services	0	0	0	0	*0*	*0*	*0*	*0*	*0*
CC – Group ALM	3	6	4	6	*0*	*4*	*1*	*1*	*0*
CC – Non-core and Legacy Portfolio	2	3	2	2	*1*	*2*	*1*	*0*	*0*
Diversification effect[2,3]			(7)	(7)	*(1)*	*(5)*	*(4)*	*(1)*	*0*

				For the year ended 31.12.17					
USD million	Min.	Max.	Average	31.12.17	Equity	Interest rates	Credit spreads	Foreign exchange	Commodities
Min.					1	6	5	1	0
Max.					15	12	8	5	7
Average					6	10	6	3	2
31.12.17					5	9	8	3	2
Total management VaR, Group	5	19	11	10	*Average (per business division and risk type)*				
Global Wealth Management	0	1	1	1	*0*	*1*	*1*	*0*	*0*
Personal & Corporate Banking	0	0	0	0	*0*	*0*	*0*	*0*	*0*
Asset Management	0	0	0	0	*0*	*0*	*0*	*0*	*0*
Investment Bank	4	18	9	8	*6*	*7*	*5*	*2*	*2*
CC – Services	0	0	0	0	*0*	*0*	*0*	*0*	*0*
CC – Group ALM	3	8	6	4	*0*	*5*	*2*	*1*	*0*
CC – Non-core and Legacy Portfolio	3	6	3	3	*1*	*2*	*2*	*0*	*0*
Diversification effect[2,3]			(8)	(6)	*(1)*	*(6)*	*(4)*	*(1)*	*0*

1 Statistics at individual levels may not be summed to deduce the corresponding aggregate figures. The minima and maxima for each level may well occur on different days, and likewise, the VaR for each business line or risk type, being driven by the extreme loss tail of the corresponding distribution of simulated profits and losses for that business line or risk type, may well be driven by different days in the historical time series, rendering invalid the simple summation of figures to arrive at the aggregate total. 2 Difference between the sum of the standalone VaR for the business divisions and Corporate Center units and the VaR for the Group as a whole. 3 As the minimum and maximum occur on different days for different business divisions and Corporate Center, it is not meaningful to calculate a portfolio diversification effect.

▲

VaR limitations

Audited | Actual realized market risk losses may differ from those implied by our VaR for a variety of reasons.

- The VaR measure is calibrated to a specified level of confidence and may not indicate potential losses beyond this confidence level.
- The one-day time horizon used for VaR for internal management purposes, or 10-day in the case of the regulatory VaR measure, may not fully capture the market risk of positions that cannot be closed out or hedged within the specified period.
- In certain cases, VaR calculations approximate the effect of changes in risk factors on the values of positions and portfolios. This may happen because the number of risk factors included in the VaR model is necessarily limited.
- The effect of extreme market movements is subject to estimation errors, which may result from non-linear risk sensitivities, as well as the potential for actual volatility and correlation levels to differ from assumptions implicit in the VaR calculations.
- The use of a five-year window means that sudden increases in market volatility will tend not to increase VaR as quickly as the use of shorter historical observation periods, but the increase will affect our VaR for a longer period of time. Similarly, following a period of increased volatility, as markets stabilize, VaR predictions will remain more conservative for a period of time influenced by the length of the historical observation period.

SVaR is subject to the same limitations as noted for VaR above, but the use of one-year data sets avoids the smoothing effect of the five-year data set used for VaR, and the absence of the five-year window provides for a longer history of potential loss events. Therefore, although the significant period of stress during the financial crisis of 2007–2009 is no longer contained in the historical five-year period used for management and regulatory VaR, SVaR will continue to use this data. This approach is intended to reduce the procyclicality of the regulatory capital requirements for market risks.

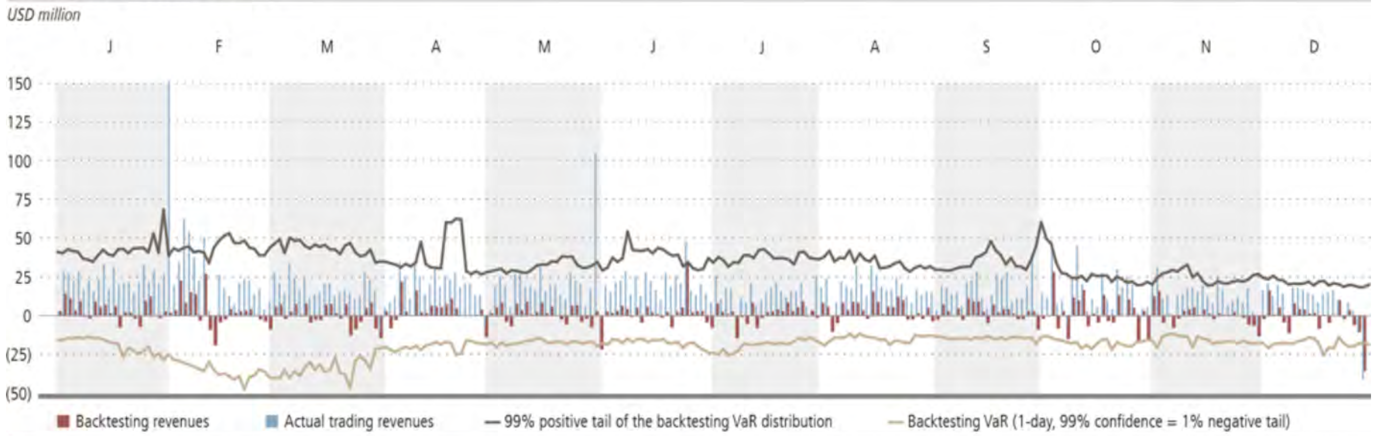
We recognize that no single measure may encompass the entirety of risks associated with a position or portfolio. Consequently, we employ a suite of various metrics with both overlapping and complementary characteristics in order to create a holistic framework that seeks to ensure material completeness of risk identification and measurement. As a statistical aggregate risk measure, VaR supplements our liquidity-adjusted stress and comprehensive stress testing frameworks.

We also have a framework to identify and quantify potential risks that are not fully captured by our VaR model. We refer to these risks as risks-not-in-VaR. This framework is used to underpin these potential risks with regulatory capital, calculated as a multiple of regulatory VaR and stressed VaR. ▲

Backtesting of VaR

VaR backtesting is a performance measurement process in which the 1-day VaR prediction is compared with the realized 1-day profit & loss (P&L). We compute backtesting VaR using a 99% confidence level and one-day holding period for the population included within regulatory VaR. Since 99% VaR at UBS is defined as a risk measure that operates on the lower tail of the P&L distribution, 99% backtesting VaR is a negative number. Backtesting revenues exclude non-trading revenues, such as valuation reserves, fees and commissions and revenues from intraday trading, to provide for a like-for-like comparison. A backtesting exception occurs when backtesting revenues are lower than the previous day's backtesting VaR.

Group: development of regulatory backtesting revenues[1] and actual trading revenues[2] against backtesting VaR[3] (1-day, 99% confidence)



1 Excludes non-trading revenues, such as valuation reserves, commissions and fees, and revenues from intraday trading. 2 Includes backtesting revenues and revenues from intraday trading. 3 Based on Basel III regulatory VaR, excludes CVA positions and their eligible hedges which are subject to the standalone CVA charge.

Statistically, given the confidence level of 99%, two or three backtesting exceptions per year can be expected. More than four exceptions could indicate that the VaR model is not performing appropriately, as could too few exceptions over a prolonged period of time. However, as noted in the VaR limitations above, a sudden increase or decrease in market volatility relative to the five-year window could lead to a higher or lower number of exceptions, respectively. Accordingly, Group-level backtesting exceptions are investigated, as are exceptional positive backtesting revenues, with results being reported to senior business management, the Group Chief Risk Officer and the Chief Risk Officer Market & Treasury Risk. Backtesting exceptions are also reported to internal and external auditors and to the relevant regulators.

The "Group: development of regulatory backtesting revenues and actual trading revenues against backtesting VaR" chart on the previous page shows the 12-month development of backtesting VaR against the Group's backtesting revenues and actual trading revenues for 2018. The chart shows both the 99% and the 1% backtesting VaR. The asymmetry between the negative and positive tails is due to the long gamma risk profile that has been run historically in the Investment Bank.

The actual trading revenues include, in addition to backtesting revenues, intraday revenues.

The number of negative backtesting exceptions within a 250-business-day window increased from one to two by the end of the year. The FINMA VaR multiplier for market risk RWA remained unchanged at 3.0 as of 31 December 2018.

VaR model confirmation

In addition to backtesting performed for regulatory purposes as described above, we also conduct extended backtesting for our internal model confirmation purposes. This includes observing model performance across the entire profit or loss distribution, not just the tails, and at multiple levels within the business division and Corporate Center unit hierarchies.

→ **Refer to "Risk measurement" in this section for more information on our approach to model confirmation procedures**

VaR model developments in 2018

Audited | We did not make any material changes to the VaR model in 2018. ▲

Future market risk-related regulatory capital developments

In January 2019, the Basel Committee on Banking Supervision published the final rules on the minimum capital requirements for market risk (the Fundamental Review of the Trading Book). The new accord will come into effect starting 1 January 2022. The extension aligns implementation with the Basel III revisions to credit risk and operational risk and recognizes that some of the market risk-related rules are still being finalized by the Basel Committee.

Key elements of the revised market risk framework include: (i) changes to the internal model-based approach, including changes to the model approval and performance measurement process; (ii) changes to the standardized approach with the aim of it being a credible fallback method for an internal model-based approach; and (iii) a revised boundary between trading book and banking book. UBS maintains a close dialog with FINMA to discuss in more detail the implementation objectives and to ensure a smooth transition of the capital regime for market risk.

→ **Refer to "Capital management objectives, planning and activities" in the "Capital management" section of this report for more information on the development of RWA**

→ **Refer to "Risk measurement" in this section for more information on our approach to model confirmation procedures**

→ **Refer to the "Regulatory and legal developments" and "Risk factors" sections of this report for more information**

Interest rate risk in the banking book

Sources of interest rate risk in the banking book

Audited | Interest rate risk in the banking book arises from balance sheet positions such as Loans*, Financial assets at fair value not held for trading, Financial assets measured at amortized cost, Financial assets measured at fair value through other comprehensive income (OCI), Customer deposits, Debt issued measured at amortized cost*, and derivatives, including those used for cash flow hedge accounting purposes. These positions may affect *OCI* or the income statement, depending on their accounting treatment.

Our largest banking book interest rate exposures arise from client deposits and lending products in Global Wealth Management and Personal & Corporate Banking. For Global Wealth Management and Personal & Corporate Banking, the inherent interest rate risks are transferred either by means of back-to-back transactions or, in the case of products with no contractual maturity date or direct market-linked rate, by replicating portfolios from the originating business into Corporate Center – Group ALM, which manages the risks on an integrated basis, allowing for netting interest rate risks across different sources. Any residual interest rate risks in Global Wealth Management and Personal & Corporate Banking that are not transferred to Corporate Center – Group ALM are managed locally and are subject to independent monitoring and control by local risk control units as well as centrally by Market & Treasury Risk Control. To manage the interest rate risk centrally, Corporate Center – Group ALM uses derivative instruments, most of which are in designated hedge accounting relationships. A significant amount of interest rate risk also arises from Corporate Center – Group ALM financing and investing activities, such as the investment and refinancing of non-monetary corporate balance sheet items with indefinite maturities, including equity, goodwill and real estate. For these items, senior management has defined specific target durations as a basis for our funding and investment activities, as applicable. These targets are defined by replication portfolios, which establish rolling benchmarks to execute against. As of 31 December 2018, the target replication portfolios for equity, goodwill and real estate were defined as follows: in Swiss francs with an average duration of approximately three and a half years and fair value sensitivity of USD 4 million per basis point; in US dollars with an average duration of approximately four and a half years and a sensitivity of USD 13 million per basis point. Corporate Center – Group ALM also maintains a portfolio of debt investments as part of its management of the Group's liquidity needs.

Banking book interest rate exposure in the Investment Bank arises predominantly from the structured financing business within Corporate Client Solutions, where transactions are subject to approval on a case-by-case basis.

Corporate Center – Non-core and Legacy Portfolio assets, primarily debt securities classified as *Financial assets at fair value not held for trading*, also give rise to non-trading interest rate risk. ▲

Effect of interest rate changes on shareholders' equity and CET1 capital

The "Accounting and capital effect of changes in interest rates" table below illustrates the accounting and CET1 capital treatment of gains and losses resulting from changes in interest rates. For instruments held at fair value, a change in interest rates results in an immediate fair value gain or loss recognized either in the income statement or through OCI. For assets and liabilities measured at amortized cost, a change in interest rates does not result in a change in the carrying amount of the instruments, but could affect the amount of interest income or expense recognized over time in the income statement.

Typically, increases in interest rates would lead to an immediate reduction in the value of our long-term assets held at fair value, but we would expect this to be offset over time through higher net interest income (NII) on our core banking products.

In addition to the differing accounting treatments, our banking book positions have different sensitivities to different points on yield curves. For example, our portfolios of debt securities, whether measured at amortized cost or at fair value, and interest rate swaps, whether designated as cash flow hedges or transacted as economic hedges, on the whole, are more sensitive to changes in longer-duration interest rates, whereas our deposits and a significant portion of our loans contributing to NII are more sensitive to short-term rates. These factors are important as yield curves may not shift on a parallel basis and could, for example, exhibit an initial steepening, followed by a flattening over time.

By virtue of the accounting treatment and yield curve sensitivities outlined above, in a rising rate scenario we would expect to recognize an initial decrease in shareholders' equity as a result of fair value losses recognized in OCI. This would be compensated over time by increased NII as increases in interest rates affect the shorter end of the yield curve in particular. The effect on CET1 capital would be less pronounced, as gains and losses on interest rate swaps measured as cash flow hedges are not recognized for regulatory capital purposes. Fair value losses on instruments designated at fair value are expected to be offset by economic hedges.

We subject the interest rate-sensitive banking book exposures to a suite of interest rate scenarios in order to assess the effect on expected NII over a one-year time horizon assuming constant business volumes. The scenario assessment also includes the estimated effect through OCI on shareholders' equity and CET1 capital from pension fund assets and liabilities. While certain standard scenarios, such as a parallel rise in all yield curves of 100 basis points, are retained and regularly used, other scenarios are adopted as a function of changing market conditions.

Accounting and capital effect of changes in interest rates[1]

	Recognition		Shareholders' equity		CET1 capital	
	Timing	Income statement / OCI	Gains	Losses	Gains	Losses
Financial assets at fair value through other comprehensive income	Immediate	OCI	●	●		●
Derivatives transacted as economic hedges	Immediate	Income statement	●	●	●	●
Derivatives designated as cash flow hedges	Immediate	OCI[2]	●	●		
Loans and deposits at amortized cost[3]	Gradual	Income statement	●	●	●	●
Financial assets at fair value through profit or loss	Immediate	Income statement	●	●	●	●
Other financial assets at amortized cost[3]	Gradual	Income statement	●	●	●	●

1 Refer to the "Reconciliation of IFRS equity to Swiss SRB common equity tier 1 capital" table in the "Capital management" section of this report for more information on the differences between shareholders' equity and CET1 capital. 2 Excluding hedge ineffectiveness that is recognized in the income statement in accordance with IFRS. 3 For fixed-rate financial instruments, changes in interest rates affect the income statement when these instruments roll over and reprice.

At the end of 2018, the following scenarios were analyzed in detail:

- Negative Interest Rates: Yield curves drop 100 basis points in parallel with no zero-floor applied and therefore can become negative, or more negative.
- Rates Bull Flattener: Yield curves across all currencies undergo a sharp decrease for long tenors, with a modest decrease in the short end of the curve: -70 basis points for tenors up to 3 months, -100 basis points for the 3-year tenor and -130 basis points for +10-year tenors.
- Rates Bull Steepener: Yield curves across all currencies undergo a sharp decrease for short tenors, with a modest decrease in the long end of the curve: -130 basis points for tenors up to 3 months, -100 basis points for the 3-year tenor and -70 basis points for +10-year tenors.
- Rates Bear Steepener: Yield curves across all currencies undergo a sharp increase for long tenors, with a modest increase in the short end of the curve: +70 basis points for tenors up to 3 months, +100 basis points for the 3-year tenor and +130 basis points for +10-year tenors.
- Rates Bear Flattener: Yield curves across all currencies undergo a sharp increase for short tenors, with a modest increase in the long end of the curve: +130 basis points for tenors up to 3 months, +100 basis points for the 3-year tenor and +70 basis points for +10-year tenors.
- Parallel +100 basis points: All yield curves rise 100 basis points in parallel.
- Constant Rates: All rates stay at current levels.

With the exception of the Constant Rates scenario, immediately after the shock, interest rates evolve according to market-implied forward rates of that scenario.

The results are compared with a baseline NII, which is calculated assuming that interest rates in all currencies develop according to their market-implied forward rates and under the assumption of constant business volumes and no specific management actions. Over a one-year horizon, the most adverse scenario is the Rates Bull Steepener, resulting in a deterioration in Baseline NII of approximately 6%, while the most beneficial scenario is the Rates Bear Flattener which would lead to an improvement in Baseline NII of approximately 11%. In addition to the above scenario analysis, we also monitor the sensitivity of the NII to immediate parallel shocks of –200 and +200 basis points against the defined thresholds, under the assumption of a constant balance sheet volume and structure.

As of 31 December 2018, the baseline NII would have been approximately 13% lower under a parallel shock of –200 basis points, whereas under a parallel +200-basis-point shock, the baseline NII would have been approximately 24% higher.

To shelter the level of our NII from the persistently low and negative interest rate environment in Swiss francs in particular, we rely on the self-funding of our lending businesses through our deposit base in Global Wealth Management and Personal & Corporate Banking, along with appropriate additional adjustments to our interest rate-linked product pricing. Should we lose this equilibrium on the balance sheet, for example, due to unattractive pricing relative to our peers for either our mortgages or deposits, this could lead to a decrease in our NII in a persistently low and negative interest rate environment. As we assume constant business volumes, these risks do not appear in the aforementioned interest rate scenarios.

Moreover, should the low and negative interest rate environment persist or worsen, this could lead to additional pressure on our NII and we could face additional costs for holding our Swiss franc high-quality liquid asset portfolio. A reduction of the Swiss National Bank's deposit exemption threshold for banks would also lead to increased costs that we might not be able to offset, for example, by passing on some of the costs to our depositors. Should euro interest rates also decline significantly further into negative territory, this could likewise increase our liquidity costs and put our NII generated from euro-denominated loans and deposits at risk of volume imbalances. Depending on the overall economic and market environment, sustained and significant negative rates could also lead to our Global Wealth Management and Personal & Corporate Banking clients paying down their loans together with reducing any excess cash they hold with us as deposits. This would reduce the underlying business volume and lower our NII accordingly.

A net decrease in deposits would require replacement funding at a potential relative cost increase that would depend on various factors, including the term and nature of the replacement funding, whether such funding is raised in the wholesale markets or from swapping with available funding denominated in another currency. On the other hand, imbalances leading to an excess deposit position could require additional investments at negative yields, which we might not be able to compensate for sufficiently as a result of our excess deposit balance charging mechanisms.

Interest rate risk sensitivity to parallel shifts in yield curves

Audited | Interest rate risk in the banking book is not underpinned for capital purposes, but is subject to a regulatory threshold. As of 31 December 2018, the economic-value effect of an adverse parallel shift in interest rates of ±200 basis points on our banking book interest rate risk exposures was significantly below both the current threshold of 20% of eligible capital recommended by regulators and the new threshold of 15% of tier 1 capital applicable as of 2019.

The interest rate risk sensitivity figures presented in the "Interest rate sensitivity – banking book" table on the next page represent the effect of +1-, ±100- and ±200-basis-point parallel moves in yield curves on present values of future cash flows, irrespective of accounting treatment. In the prevailing negative interest rate environment for the Swiss franc in particular, and to a lesser extent for the euro and the Japanese yen, interest rates for Global Wealth Management and Personal & Corporate Banking client transactions are generally floored at 0%. Accordingly, for the purpose of this disclosure table, downward moves of 100 / 200 basis points are floored to ensure that the resulting shocked interest rates do not turn negative. The flooring results in non-linear sensitivity behavior.

The sensitivity of the banking book to rising rates was positive USD 1.0 million per basis point compared with approximately nil at prior year-end. This was mainly due to changes in the US dollar sensitivity. In the third quarter of 2018, we implemented a transfer process of the interest rate risk from Global Wealth Management Region Americas to Corporate Center – Group ALM, and adopted a replication model for the non-maturing deposits held in the US. This decreased the exposure to rising rates in Global Wealth Management to negative USD 0.1 million per basis point from negative USD 1.8 million per basis point.

The sensitivity of the banking book to rising rates includes the interest rate sensitivities arising from debt investments classified as *Financial assets measured at fair value through OCI*. The sensitivity of these positions to a 1-basis-point parallel increase in the yields of the respective instruments was approximately negative USD 2 million, unchanged from the prior year.

The sensitivity of the banking book to rising interest rates also includes interest rate sensitivities arising from interest rate swaps designated in cash flow hedges. Fair value gains or losses associated with the effective portion of these hedges are recognized directly in other comprehensive income within equity. When the hedged forecast cash flows affect profit or loss, the associated gains or losses on the hedging derivatives are reclassified from *other comprehensive income* (OCI) to profit or loss. These swaps are predominantly denominated in US dollars, euros and Swiss francs. A 1-basis-point parallel increase of underlying LIBOR curves would have decreased OCI by approximately USD 22 million, excluding adjustments for tax. ▲

→ **Refer to "Note 14 Financial assets measured at fair value through other comprehensive income" in the "Consolidated financial statements" section of this report for more information**

→ **Refer to the "Group performance" section of this report for more information on sensitivity to interest rate movements**

Audited |

Interest rate sensitivity – banking book[1]

	31.12.18				
USD million	–200 bps	–100 bps	+1 bp	+100 bps	+200 bps
CHF	(8.5)	(8.5)	0.8	78.6	158.6
EUR	(167.9)	(141.3)	0.1	6.9	15.6
GBP	(88.2)	(56.0)	0.1	11.1	20.5
USD	(355.3)	(96.5)	0.0	(73.6)	(202.3)
Other	8.8	3.7	0.1	10.4	21.3
Total effect on fair value of interest rate-sensitive banking book positions	(611.1)	(298.5)	1.0	33.4	13.6
of which: Global Wealth Management	*30.5*	*15.0*	*(0.1)*	*(14.4)*	*(28.3)*
of which: Investment Bank	*18.1*	*9.7*	*(0.1)*	*(8.1)*	*(17.1)*
of which: CC – Group ALM	*(573.0)*	*(280.6)*	*0.9*	*18.8*	*(9.9)*
of which: CC – Non-core and Legacy Portfolio	*(89.5)*	*(44.1)*	*0.4*	*39.6*	*73.7*

	31.12.17				
USD million	–200 bps	–100 bps	+1 bp	+100 bps	+200 bps
CHF	(32.7)	(32.7)	1.0	100.2	196.2
EUR	(145.8)	(92.9)	0.2	15.6	31.9
GBP	(59.1)	(56.8)	0.1	11.5	21.8
USD	27.3	14.8	(1.4)	(138.5)	(287.8)
Other	4.4	0.8	0.1	5.2	10.7
Total effect on fair value of interest rate-sensitive banking book positions	(205.8)	(166.8)	0.0	(6.1)	(27.3)
of which: Global Wealth Management	*148.4*	*60.5*	*(1.8)*	*(179.9)*	*(371.3)*
of which: Investment Bank	*33.8*	*18.8*	*(0.2)*	*(15.8)*	*(31.6)*
of which: CC – Group ALM	*(279.6)*	*(193.0)*	*1.5*	*142.3*	*287.2*
of which: CC – Non-core and Legacy Portfolio	*(108.9)*	*(53.4)*	*0.5*	*47.8*	*89.6*

1 In the prevailing negative interest rate environment for the Swiss franc in particular, and to a lesser extent for the euro, interest rates for Global Wealth Management (excluding Americas) and Personal & Corporate Banking client transactions are generally floored at non-negative levels. Accordingly, for the purpose of this disclosure table, downward moves of 100 / 200 basis points are floored to ensure that the resulting shocked interest rates do not turn negative. The flooring results in non-linear sensitivity behavior.

▲

Other market risk exposures

Own credit

We are exposed to changes in UBS's own credit that are reflected in the valuation of financial liabilities designated at fair value when UBS's own credit risk would be considered by market participants. We also estimate debit valuation adjustments (DVA) to incorporate own credit in the valuation of derivatives.

→ **Refer to "Note 24 Fair value measurement" in the "Consolidated financial statements" section of this report for more information on own credit**

Structural foreign exchange risk

Upon consolidation, assets and liabilities held in foreign operations are translated into US dollars at the closing foreign exchange rate on the balance sheet date. Value changes (in US dollars) of non-US dollar assets or liabilities due to foreign exchange movements are recognized in OCI and therefore affect shareholders' equity and CET1 capital.

Corporate Center – Group ALM employs strategies to manage this foreign currency exposure, including matched funding of assets and liabilities and net investment hedging.

→ **Refer to the "Treasury management" section of this report for more information on our exposure to and management of structural foreign exchange risk**

→ **Refer to "Note 11 Derivative instruments" in the "Consolidated financial statements" section of this report for more information on our hedges of net investments in foreign operations**

Equity investments

Audited | Under International Financial Reporting Standards (IFRS) effective on 31 December 2018, equity investments not in the trading book may be classified as *Financial assets at fair value not held for trading* or *Investments in associates*.

We make direct investments in a variety of entities and buy equity holdings in both listed and unlisted companies for a variety of purposes. This includes investments such as exchange and clearing house memberships held to support our business activities. We may also make investments in funds that we manage in order to fund or seed them at inception or to demonstrate that our interests align with those of investors. We also buy, and are sometimes required by agreement to buy, securities and units from funds that we have sold to clients.

The fair value of equity investments tends to be influenced by factors specific to the individual investments. Equity investments are generally intended to be held for the medium or long term and may be subject to lock-up agreements. For these reasons, we generally do not control these exposures by using the market risk measures applied to trading activities. However, such equity investments are subject to a different range of controls, including preapproval of new investments by business management and Risk Control, portfolio and concentration limits, and regular monitoring and reporting to senior management. They are also included in our Group-wide statistical and stress testing metrics, which flow into our risk appetite framework.

As of 31 December 2018, we held equity investments totaling USD 2.5 billion, of which USD 1.4 billion were classified as *Financial assets at fair value not held for trading* and USD 1.1 billion as *Investments in associates*. This was broadly unchanged from the prior year. ▲

→ **Refer to "Note 24 Fair value measurement" and "Note 31 Interests in subsidiaries and other entities" in the "Consolidated financial statements" section of this report for more information**

→ **Refer to "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of this report for more information on the classification of financial instruments**

Debt investments

Audited | Debt investments classified as *Financial assets measured at fair value through OCI* as of 31 December 2018 were measured at fair value with changes in fair value recorded through *Equity*, and can broadly be categorized as money market instruments and debt securities primarily held for statutory, regulatory or liquidity reasons.

The risk control framework applied to debt instruments classified as *Financial assets measured at fair value through OCI* depends on the nature of the instruments and the purpose for which we hold them. Our exposures may be included in market risk limits or be subject to specific monitoring and interest rate sensitivity analysis. They are also included in our Group-wide statistical and stress testing metrics, which flow into our risk appetite framework.

Debt instruments classified as *Financial assets measured at fair value through OCI* had a fair value of USD 6.7 billion as of 31 December 2018 compared with USD 8.1 billion as of 31 December 2017. ▲

→ **Refer to "Note 24 Fair value measurement" in the "Consolidated financial statements" section of this report for more information**

→ **Refer to "Interest rate risk sensitivity to parallel shifts in yield curves" in this section for more information**

→ **Refer to "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of this report for more information on the classification of financial instruments**

Pension risk

We provide a number of pension plans for past and current employees, some of which are classified as defined benefit pension plans under IFRS. These defined benefit plans can have a material effect on our IFRS equity and CET1 capital.

In order to meet the expected future benefit payments, the plans invest employee and employer contributions in various asset classes. The funded status of the plan is the difference between the fair value of these assets and the present value of the expected future benefit payments to plan members, i.e., the defined benefit obligation.

Pension risk is the risk that the funded status of defined benefit plans might decrease, negatively affecting our IFRS equity and / or our CET1 capital. This can arise from a fall in the plan assets' value or in the investment returns, an increase in defined benefit obligations, or a combination of these.

Important risk factors affecting the fair value of the plan assets are, among other things, equity market returns, interest rates, bond yields and real estate prices. Important risk factors affecting the present value of the expected future benefit payments include high-grade bond yields, interest rates, inflation rates and life expectancy.

Pension risk is included in our Group-wide statistical and stress testing metrics, which flow into our risk appetite framework. The potential effects are thus captured in the calculation of our post-stress CET1 capital ratio.

→ **Refer to "Note 1 Summary of significant accounting policies" and "Note 29 Pension and other post-employment benefit plans" in the "Consolidated financial statements" section of this report for more information on defined benefit plans**

UBS own share exposure

Group Treasury holds UBS Group AG shares to hedge future share delivery obligations related to employee share-based compensation and participation plans. In addition, the Investment Bank holds a very limited number of UBS Group AG shares, primarily in its capacity as a market-maker in UBS Group AG shares and related derivatives and to hedge certain issued structured debt instruments.

We began a share repurchase program in March 2018. We may repurchase up to an aggregate of CHF 2 billion of UBS Group AG shares until March 2021 under the repurchase program in accordance with Swiss regulations. During 2018, we acquired shares for aggregate consideration of CHF 750 million (USD 762 million). Consistent with our capital returns policy, we intend to establish an additional share repurchase program when we have completed the current program. Shares acquired through the share repurchase program are purchased for the purpose of capital reduction. Until the shareholders of UBS Group AG approve cancelation of the shares, shares acquired in the repurchase program will be held in Group Treasury.

→ **Refer to "UBS shares" in the "Capital management" section of this report for more information**

Country risk

Country risk framework

Country risk includes all country-specific events that occur within a sovereign's jurisdiction and may lead to an impairment of UBS's exposures. Country risk may take the form of sovereign risk, which refers to the ability and willingness of a government to honor its financial commitments; transfer risk, which would arise if an issuer or counterparty could not acquire foreign currencies following a moratorium of a central bank on foreign exchange transfers; or "other" country risk. "Other" country risk may manifest itself through increased and multiple counterparty and issuer default risk (systemic risk) on the one hand, and on the other hand through events that may affect the standing of a country, such as adverse shocks affecting political stability or the institutional and legal framework. We maintain a well-established risk control framework, through which we assess the risk profile of all countries where we have exposure.

We attribute to each foreign country a sovereign rating, which expresses the probability of the sovereign defaulting on its own financial obligations in foreign currency. Our ratings are expressed by statistically derived default probabilities as described under "Probability of default" in this section. Based on this internal analysis, we also define the probability of a transfer event occurring and establish rules as to how the aspects of "other" country risk should be incorporated into the analysis of the counterparty rating of entities that are domiciled in the respective country.

Our risk exposure to foreign countries considers the credit ratings assigned to those countries. A country risk ceiling (i.e., maximum aggregate exposure) applies to our exposures to counterparties or issuers of securities and financial investments in the respective foreign country. We may limit the extension of credit, transactions in traded products or positions in securities based on a country risk ceiling, even if our exposure to a counterparty is otherwise acceptable.

For internal measurement and control of country risk, we also consider the financial effect of market disruptions arising prior to, during and after a country crisis. These may take the form of a severe deterioration in a country's debt, equity or other asset markets, or a sharp depreciation of the currency. We use stress testing to assess the potential financial effect of a severe country or sovereign crisis. This involves the development of plausible stress scenarios for combined stress testing and the identification of countries that may potentially be subject to a crisis event, determining potential losses and making assumptions about recovery rates depending on the types of credit transactions involved and their economic importance to the affected countries.

Our exposures to market risks are also subject to regular stress tests that cover major global scenarios, which are used for combined stress testing as well, whereby we apply market shock factors to equity indices, interest rates and currency rates in all relevant countries and consider the potential liquidity of the instruments.

Country risk exposure

Country risk exposure measure

The presentation of country risk follows our internal risk view, whereby the basis for measurement of exposures depends on the product category into which we have classified our exposures. In addition to the classification of exposures into banking products and traded products, as defined in "Credit risk profile of the Group" in this section, within trading inventory we classify issuer risk on securities such as bonds and equities, as well as the risk relating to the underlying reference assets for derivative positions. This includes those linked to credit protection we buy or sell, loan or security underwriting commitments pending distribution and single-stock margin loans for syndication.

As we manage the trading inventory on a net basis, we net the value of long positions against short positions with the same underlying issuer. Net exposures are, however, floored at zero per issuer in the figures presented in the following tables. We therefore do not recognize the potentially offsetting benefit of certain hedges and short positions across issuers.

We do not recognize any expected recovery values when reporting country exposures as exposure before hedges, except for the risk-reducing effects of master netting agreements and collateral held in the form of either cash or portfolios of diversified marketable securities, which we deduct from the basic positive exposure values. Within banking products and traded products, the risk-reducing effect of any credit protection is taken into account on a notional basis when determining the net of hedges exposures.

Country risk exposure allocation

In general, exposures are shown against the country of domicile of the contractual counterparty or the issuer of the security. For some counterparties whose economic substance in terms of assets or source of revenues is primarily located in a different country, the exposure is allocated to the risk domicile of that issuer.

This is the case, for example, with legal entities incorporated in financial offshore centers, which have their main assets and revenue streams outside the country of domicile. The same principle applies to exposures for which we hold third-party guarantees or collateral, where we report the exposure against the country of domicile of either the guarantor or the issuer of the underlying security, or against the country where pledged physical assets are located.

We apply a specific approach for banking products exposures to branches of banks that are located in a country other than the legal entity's domicile. In such cases, exposures are recorded in full against the country of domicile of the counterparty and additionally in full against the country in which the branch is located.

In the case of derivatives, we show the counterparty risk associated with the positive replacement value (PRV) against the country of domicile of the counterparty (presented within traded products). In addition, the risk associated with the instantaneous fall in value of the underlying reference asset to zero (assuming no recovery) is shown against the country of domicile of the issuer of the reference asset (presented within trading inventory). This approach allows us to capture both the counterparty and, where applicable, issuer elements of risk arising from derivatives and applies comprehensively for all derivatives, including single-name credit default swaps (CDSs) and other credit derivatives.

As a basic example: if CDS protection for a notional value of 100 bought from a counterparty domiciled in country X referencing debt of an issuer domiciled in country Y has a PRV of 20, we record (i) the fair value of the CDS (20) against country X (within traded products) and (ii) the hedge benefit (notional minus fair value) of the CDS (100 – 20 = 80) against country Y (within trading inventory). In the example of protection bought, the 80 hedge benefit would offset any exposure arising from securities held and issued by the same entity as the reference asset, floored at zero per issuer. In the case of protection sold, this would be reflected as a risk exposure of 80 in addition to any exposure arising from securities held and issued by the same entity as the reference asset. In the case of derivatives referencing a basket of assets, the issuer risk against each reference entity is calculated as the expected change in fair value of the derivative given an instantaneous fall in value to zero of the corresponding reference asset (or assets) issued by that entity. Exposures are then aggregated by country across issuers, floored at zero per issuer.

Exposures to selected eurozone countries

Our exposure to peripheral European countries remains limited, but we nevertheless remain watchful regarding the potential broader implications of adverse developments in the eurozone. As noted under "Stress testing" in this section, a eurozone crisis remains a core part of the new binding *Severe Eurozone Crisis scenario* for combined stress test purposes, making it central to the regular monitoring of risk exposure against the minimum capital, earnings and leverage ratio objectives in our risk appetite framework.

The "Exposures to eurozone countries rated lower than AAA / Aaa by at least one major rating agency" table on the next page provides an overview of our exposures to such rated countries as of 31 December 2018.

CDSs are primarily bought and sold in relation to our trading businesses, but are also used to hedge parts of our risk exposure, including that related to certain eurozone countries. As of 31 December 2018, and not taking into account the risk-reducing effect of master netting agreements, we had purchased approximately USD 7 billion gross notional of single-name CDS protection on issuers domiciled in Greece, Italy, Ireland, Portugal and Spain (GIIPS) and had sold USD 8 billion gross notional of single-name CDS protection for these same countries. On a net basis, taking into account the risk-reducing effect of master netting agreements, this equates to approximately USD 1 billion notional purchased and USD 2 billion notional sold. All gross protection purchased was from investment grade counterparties (based on our internal ratings) and on a collateralized basis. The vast majority of this was from financial institutions domiciled outside the eurozone. The gross protection purchased from counterparties domiciled in a GIIPS country was USD 50 million, with no protection purchased from counterparties domiciled in the same country as the reference entity.

Exposures to eurozone countries rated lower than AAA / Aaa by at least one major rating agency

USD million	Total		Banking products (loans, guarantees, loan commitments)			Traded products (counterparty risk from derivatives and securities financing) after master netting agreements and net of collateral		Trading inventory (securities and potential benefits / remaining exposure from derivatives)
31.12.18		Net of hedges[1]	Exposure before hedges	Net of hedges[1]	*of which: unfunded*	Exposure before hedges	Net of hedges	Net long per issuer
Austria	379	298	79	78	*27*	244	164	56
Sovereign, agencies and central bank	205	126				205	125	0
Local governments	0	0						0
Banks	136	136	55	55		27	27	54
Other[2]	38	36	24	22		12	12	2
Belgium	425	420	280	276	*3*	87	87	58
Sovereign, agencies and central bank	38	38						38
Local governments								
Banks	284	284	276	276		3	3	5
Other[2]	103	99	4	0		84	84	15
Finland	310	310	10	10	*2*	103	103	197
Sovereign, agencies and central bank								
Local governments	35	35				35	35	
Banks	208	208	10	10		24	24	174
Other[2]	67	67	0	0		44	44	23
France	3,475	3,381	613	611	*377*	1,030	938	1,832
Sovereign, agencies and central bank	1,880	1,788				293	201	1,587
Local governments	0	0						0
Banks	573	573	299	299		219	219	55
Other[2]	1,023	1,020	314	312		518	518	190
Greece	6	4	3	1	*0*	0	0	2
Sovereign, agencies and central bank	0	0						0
Local governments								
Banks	3	2	3	1		0	0	0
Other[2]	3	2	0	0				2
Ireland[3]	1,100	1,093	238	230	*73*	32	32	831
Sovereign, agencies and central bank								
Local governments								
Banks	63	63	34	34		9	9	20
Other[2]	1,038	1,030	203	196		23	23	811
Italy	1,181	1,041	763	652	*518*	292	262	127
Sovereign, agencies and central bank	58	31				36	9	21
Local governments	62	60				57	54	6
Banks	394	394	373	373		18	18	2
Other[2]	667	556	389	279		180	180	98
Portugal	27	27	21	21	*20*	4	4	2
Sovereign, agencies and central bank	1	1				1	1	
Local governments								
Banks	24	24	21	21		2	2	0
Other[2]	3	3	0	0		0	0	2
Spain	635	633	385	383	*342*	50	50	199
Sovereign, agencies and central bank	58	58						58
Local governments								
Banks	96	96	67	67		7	7	22
Other[2]	480	479	318	316		44	44	119
Other[4]	307	290	275	257	*6*	6	6	27
Total	7,845	7,497	2,667	2,519		1,848	1,646	3,331

1 Before deduction of IFRS 9 ECL allowances and provisions. 2 Includes corporates, insurance companies and funds. 3 The majority of the Ireland exposure relates to funds and foreign bank subsidiaries.
4 Represents aggregate exposures to Andorra, Cyprus, Estonia, Latvia, Lithuania, Malta, Monaco, Montenegro, San Marino, Slovakia and Slovenia.

Exposure from single-name credit default swaps referencing Greece, Italy, Ireland, Portugal or Spain (GIIPS)

	Protection bought						Protection sold		Net position (after application of counterparty master netting agreements)			
USD million			*of which: counterparty domiciled in GIIPS country*		*of which: counterparty domicile is the same as the reference entity domicile*							
31.12.18	Notional	RV	Notional	RV	Notional	RV	Notional	RV	Buy notional	Sell notional	PRV	NRV
Greece	4	0	0	0	0	0	(7)	1	0	(3)	0	0
Italy	6,161	78	0	0	0	0	(6,672)	(139)	655	(1,166)	38	(99)
Ireland	127	(9)	0	0	0	0	(27)	3	109	(9)	0	(7)
Portugal	170	(2)	0	0	0	0	(204)	2	107	(141)	1	(1)
Spain	542	(12)	50	0	0	0	(620)	14	190	(267)	8	(6)
Total	7,004	54	50	0	0	0	(7,529)	(120)	1,061	(1,586)	48	(113)

Holding CDS for credit default protection does not necessarily protect the buyer of protection against losses, as the contracts will only pay out under certain scenarios. The effectiveness of our CDS protection as a hedge of default risk is influenced by a number of factors, including the contractual terms under which the CDS was written. Generally, only the occurrence of a credit event as defined by the CDS terms (which may include, among other events, failure to pay, restructuring or bankruptcy) results in a payment under the purchased credit protection contracts. For CDS contracts on sovereign obligations, repudiation can also be deemed as a default event. The determination as to whether a credit event has occurred is made by the relevant International Swaps and Derivatives Association (ISDA) determination committees (comprised of various ISDA member firms) based on the terms of the CDS and the facts and circumstances surrounding the event.

Exposure to emerging market countries

The "Emerging market net exposure by major geographical region and product type" table on the following page shows the five largest emerging market country exposures in each major geographical area by product type as of 31 December 2018 compared with 31 December 2017. Based on the sovereign rating categories, as of 31 December 2018, 84% of our emerging market country exposure was rated investment grade, compared with 79% as of 31 December 2017.

Our direct net exposure to China was USD 6.3 billion, up USD 1.2 billion from the prior year, mainly in the trading book. Trading inventory, which is measured at fair value, continues to account for the majority of our exposure to China.

Emerging markets net exposure[1] by internal UBS country rating category

USD million	31.12.18	31.12.17
Investment grade	15,763	14,384
Sub-investment grade	3,039	3,870
Total	18,803	18,254

1 Net of credit hedges (for banking products and for traded products); net long per issuer (for trading inventory). Before deduction of IFRS 9 ECL allowances and provisions.

Emerging market net exposures by major geographical region and product type

USD million	Total		Banking products (loans, guarantees, loan commitments)		Traded products (counterparty risk from derivatives and securities financing) after master netting agreements and net of collateral		Trading inventory (securities and potential benefits / remaining exposure from derivatives)	
	Net of hedges[1]		Net of hedges[1]		Net of hedges		Net long per issuer	
	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
Emerging America	1,505	1,441	820	410	262	274	422	757
Brazil	1,137	834	573	134	183	231	381	469
Mexico	174	364	102	152	56	21	16	193
Panama	45	10	42	3	2	2	1	5
El Salvador	33	30	33	30			0	0
Colombia	30	31	22	18	7	4	1	8
Other	86	172	48	73	14	16	23	82
Emerging Asia	13,890	12,398	4,307	4,057	1,693	1,749	7,890	6,591
China	6,302	5,150	1,060	724	473	339	4,769	4,087
Hong Kong	2,920	2,600	1,377	1,482	442	413	1,101	703
South Korea	1,282	1,491	523	541	391	623	368	327
Thailand	1,176	809	147	140	25	8	1,005	662
India	909	879	553	479	144	169	212	231
Other	1,301	1,469	647	691	218	197	435	581
Emerging Europe	1,189	1,667	1,015	1,153	125	95	49	419
Turkey	434	566	413	520	4	22	16	24
Russia	400	624	270	211	111	52	19	360
Azerbaijan	145	224	139	216	1	1	5	5
Bulgaria	76	51	76	51				
Ukraine	53	62	50	57			3	4
Other	82	141	67	96	10	21	6	26
Middle East and Africa	2,219	2,747	1,245	1,355	659	828	315	565
United Arab Emirates	572	547	418	257	142	286	11	3
Kuwait	379	222	71	19	308	202		0
South Africa	362	909	73	354	60	126	229	429
Saudi Arabia	275	286	166	140	108	147		
Qatar	205	155	182	148	22	6	1	0
Other	427	629	336	437	18	61	73	133
Total	18,803	18,254	7,387	6,976	2,739	2,946	8,676	8,331

1 Before deduction of IFRS 9 ECL allowances and provisions.

Operational risk

Key developments

The pervasive consequential risk themes that continue to challenge UBS and the financial industry are operational resilience, conduct and financial crime.

Operational resilience remains a key focus for the firm as we continually enhance our ability to respond to disruptions and maintain effective day-to-day business activities. Cybersecurity and data protection are critical elements of operational resilience. Our cybersecurity objectives are set in line with prevailing international standards and our data protection standards are intended to align with applicable data protection regulations and standards. We are investing in preemptive and detection measures to defend UBS against evolving and highly sophisticated cyberattacks, to achieve our objectives and meet applicable standards. Our investment priorities focus on increasing readiness to identify and respond to cyber threats and data loss, employee training and behaviors, and application and infrastructure security (including vulnerability management).

UBS has not been affected by any significant business continuity events in 2018; where local events have occurred, our business continuity procedures have allowed us to monitor the safety of staff and to continue our operations with minimal disruption.

Achieving fair outcomes for our clients, upholding market integrity and cultivating the highest standards of employee conduct are of critical importance to the firm. Management of conduct risks is an integral part of our operational risk framework. In managing conduct risk, we continue to focus on embedding the conduct risk framework, enhancing management information and maintaining momentum on improving culture. Conduct-related management information is reviewed at the business and regional governance level, providing metrics on employee conduct, clients and markets. Employee conduct is a central consideration in the annual compensation process. Our incentive schemes distinguish clearly between quantitative performance and conduct-related behaviors, so that achievement against financial targets is not the only determinant of our employees' performance assessment. Furthermore, we continue to pursue behavioral initiatives, such as the "Principles of Good Supervision," and provide mandatory compliance and risk training.

Suitability risk, product selection, cross-divisional service offerings, quality of advice and price transparency also remain areas of heightened focus for UBS and for the industry as a whole, as low interest rates and major legislative change programs, such as the Markets in Financial Instruments Directive II (MiFID II) in the EU, continue. We regularly monitor our suitability, product and conflicts of interest control frameworks to assess whether they are reasonably designed to facilitate our adherence to applicable laws and regulatory expectations.

Financial crime (including money laundering, terrorist financing, sanctions violations, fraud, bribery and corruption) continues to present a risk, as technological innovation and geopolitical developments increase the complexity of doing business and heightened regulatory attention persists. An effective financial crime prevention program remains essential for the firm. Money laundering and financial fraud techniques are becoming increasingly sophisticated, while geopolitical volatility makes the sanctions landscape more complex. During 2018, we made significant progress in strengthening our anti-money laundering (AML), terrorist financing, sanctions and fraud control framework capabilities in response to the continued elevated regulatory and financial crime challenges.

We continue to invest heavily in our detection capabilities and core systems as part of our financial crime prevention program. We are exploring new technologies to combat financial crime, and implementing rule-based monitoring by applying self-learning systems to identify suspicious transactions. Furthermore, we are actively participating in AML public-private partnerships with public-sector stakeholders, including law enforcement, to improve information sharing and better detect financial crimes.

With financial crime and AML as the primary areas of supervisory concern, in May 2018, the Office of the Comptroller of the Currency issued UBS a Cease and Desist Order relating to certain of UBS's US branches. In response, UBS has developed a comprehensive and sustainable program to drive the consolidated and strategic remediation of US-relevant Bank Secrecy Act / AML issues across all US legal entities, in alignment with our global AML policies.

Cross-border risk remains an area of regulatory attention for global financial institutions, with a strong focus on fiscal transparency and increased legislation, such as the automatic exchange of information. We continue to adapt our cross-border control framework to adhere to the regulatory expectations and facilitate compliant client-driven cross-border business.

Regulatory reporting remains a challenging area due to both new and increasing reporting requirements and a general trend toward increasing scrutiny from regulators globally. In 2018, we continued to focus on this area, updating our regulatory process management framework and enhancing our regulatory developments tracking.

As the overall regulatory environment continues to undergo major change with the introduction of new regulation, increasing international collaboration among regulators, and increased focus on individual liability and industry operating models, it is important that we maintain strong relationships with our industry's regulatory bodies and demonstrate observable progress in achieving and sustaining corrective actions.

→ **Refer to the "Risk factors" section of this report for more information**

Operational risk framework

Operational risk is an inherent part of our business. Losses can result from inadequate or flawed internal processes, decisions and systems, or from external events. We provide a Group-wide framework that supports identifying, assessing and mitigating material operational risks and their potential concentrations, to achieve a suitable balance between risk and return. The divisional Presidents and the Corporate Center function heads are ultimately accountable for the effectiveness of operational risk management and for implementing the operational risk framework. Responsibility for the front-to-back control environment and risk management is held by the Chief Operating Officers. Management in all functions is responsible for establishing a robust operational risk management environment, including establishing and maintaining internal controls, effective supervision and a strong risk culture. In 2018, we further improved our operational risk framework, streamlined administrative processes, strengthened our abilities to detect and mitigate operational risk and better embedded the framework as a key tool used by the business to manage its risks day-to-day.

Compliance & Operational Risk Control (C&ORC) is responsible for providing an independent and objective view of the adequacy of operational risk management across the Group, and ensuring that all our operational risks, including compliance and conduct risk, are understood, owned and managed to suit the firm's risk appetite. C&ORC sits within the Group Compliance, Regulatory & Governance (GCRG) function, reporting to the Group Chief Compliance and Governance Officer, who is a member of the Group Executive Board. The operational risk framework establishes general requirements for managing and controlling operational risks, including compliance and conduct risk at UBS. It is built on the following pillars:

- classifying inherent risks through the operational risk taxonomy
- assessing the design and operating effectiveness of controls through the control assessment process
- assessing inherent and residual risk through the risk assessment processes with remediation planned to address identified deficiencies that are outside accepted levels of residual risk
- defining operational risk appetite through quantitative metrics and thresholds and qualitative measures, and identifying levels of operational risk that exceed appetite and taking appropriate measures to bring residual risk back within the defined appetite

The operational risk taxonomy provides a clear and logical classification of our inherent operational, compliance and conduct risks, across all divisions. Throughout the organizational hierarchy, a level of risk appetite must be agreed for each of the taxonomy categories, together with a minimum set of internal controls and associated performance thresholds considered necessary to keep risk exposure within acceptable levels.

All functions within our firm are required to assess internal controls periodically, whereby they evaluate and evidence the design and operating effectiveness of their key controls. This also forms the basis for the assessment and testing of internal controls over financial reporting as required by the Sarbanes-Oxley Act, section 404 (SOX 404). The framework facilitates the identification of SOX 404-relevant controls for independent testing, functional assessments, management affirmation and, where control weaknesses are identified, remediation tracking. We employ a consistent global framework to assess the aggregated effect of control deficiencies and the adequacy of remediation efforts.

The UBS risk assessment approach covers all business activities and internal as well as external identified or known factors posing a threat to the UBS Group. Aggregated with any identified or known weaknesses in the control environment, the risk assessment articulates the current residual operational risk exposure against the firm's risk appetite.

Key control deficiencies that surface during the internal control and risk assessment processes must be reported in the operational risk inventory, and sustainable remediation has to be defined and executed. These issues are assigned to owners at the senior management level and must be reflected in the respective manager's annual performance measurement and management objectives. To assist with prioritizing the known operational risk issues and measuring aggregated risk exposure, irrespective of origin, a common rating methodology is adopted by all internal control functions and both internal and external audit. Group Internal Audit conducts an issue assurance process after a risk issue has been closed to maintain rigorous management discipline in the sustainable mitigation and control of operational risk issues.

Advanced measurement approach model

The operational risk framework detailed above is aligned with and underpins the calculation of regulatory capital for operational risk, which in turn allows us to quantify operational risk and to define effective management incentives.

We measure operational risk exposure and calculate operational risk regulatory capital by using the advanced measurement approach (AMA) in accordance with FINMA requirements.

An entity-specific AMA model has been applied for UBS Switzerland AG, but for other regulated entities, the basic indicator or standardized approaches are adopted for regulatory capital in agreement with local regulators. In addition, the underlying methodology of the Group AMA is leveraged for entity-specific Internal Capital Adequacy Assessment Processes and for UBS Bank USA's Dodd-Frank Act stress test submissions.

Currently, the model includes 15 AMA units of measure (UoM), which are aligned with our operational risk taxonomy. For each of the model's UoM, a frequency and severity distribution is calibrated. The modeled distribution functions for both frequency and severity are then leveraged to generate the annual loss distribution. The resulting 99.9% quantile of the overall annual operational risk loss distribution across all UoM determines the required regulatory capital. Currently, we do not reflect mitigation through insurance or any other risk transfer mechanism in our AMA model.

A key assumption when calibrating the data-driven frequency and severity distributions is that historical losses form a reasonable proxy for future events. In line with regulatory expectations, the Group AMA utilizes both historical internal losses and external losses suffered by the broader industry. A statistical mechanism aims to ensure that only those industry losses that are statistically consistent with the internal UBS loss profile are used in modeling.

AMA model calibration and review

Initial model outputs are reviewed and adjusted to reflect fast-changing external developments such as new regulations, geopolitical change, volatile market and economic conditions, as well as internal factors including changes in business strategy and internal control framework enhancements. The data-driven frequency and severity distributions are reviewed by subject matter experts and where necessary adjusted based on a review of qualitative information on the Business Environment and Internal Control Factors as well as expert judgment with the aim of accurately forecasting loss.

To maintain risk sensitivity, our model is reviewed semi-annually and has to be recalibrated at least annually. Any changes to regulatory capital as a result of a recalibration or methodology changes are presented to FINMA for approval prior to their utilization for disclosure purposes.

AMA model confirmation

The Group AMA model is subject to an annual independent validation performed by Model Risk Management & Control in line with the Group's model risk management framework.

Future operational risk-related regulatory capital developments

In December 2017, the Basel Committee on Banking Supervision published the final Basel III framework. Based on the published framework, the regulatory capital requirements for operational risks will be determined by the standardized measurement approach (SMA), which will replace the AMA capital regime.

The SMA is mainly based on two components: a business indicator component, which is basically utilized as a size proxy for the banks in the SMA context, and a historical loss experience component. With regard to the loss experience component, the published framework has a number of parameters that are subject to national discretion. UBS maintains a close dialog with FINMA to discuss the implementation objectives in more detail and to provide for a smooth transition of the capital regime for operational risks.

→ **Refer to "Capital management objectives, planning and activities" in the "Capital management" section of this report for more information on the development of risk-weighted assets**

→ **Refer to "Risk measurement" in this section for more information on our approach to model confirmation procedures**

→ **Refer to the "Regulatory and legal developments" and "Risk factors" sections of this report for more information**

Treasury management

Balance sheet, liquidity and funding management

Strategy, objectives and governance

Audited | We manage our balance sheet, liquidity and funding positions with the overall objective of optimizing the value of our franchise across a broad range of market conditions while considering current and future regulatory constraints. We employ a number of measures to monitor these positions under normal and stressed conditions. In particular, we use stress scenarios to apply behavioral adjustments to our balance sheet and calibrate the results from these internal stress models with external measures, primarily the liquidity coverage ratio and the net stable funding ratio. Our liquidity and funding strategy is proposed by Group Treasury, approved by the Group Asset and Liability Management Committee (Group ALCO), which is a committee of the Group Executive Board, and is overseen by the Risk Committee of the Board of Directors (BoD). ▲

This section provides more detailed information on regulatory requirements, our governance structure, our balance sheet, liquidity and funding management (including our sources of liquidity and funding), and our contingency planning and stress testing. The balances disclosed in this section represent year-end positions, unless indicated otherwise. Intra-period balances fluctuate in the ordinary course of business and may differ from year-end positions.

Group Treasury monitors and oversees the implementation and execution of our liquidity and funding strategy and is responsible for adherence to policies, limits and targets. This enables close control of both our cash and collateral, including our high-quality liquid assets, and centralizes the Group's general access to wholesale cash markets in Corporate Center – Group Asset and Liability Management. In addition, should a crisis require contingency funding measures to be invoked, Group Treasury is responsible for coordinating liquidity generation with representatives of the relevant business areas. Group Treasury reports on the Group's overall liquidity and funding position, including funding status and concentration risks, at least monthly to the Group ALCO and the Risk Committee of the BoD.

Audited | Liquidity and funding limits and targets are set at Group and, where appropriate, at legal entity and business division levels, and are reviewed and reconfirmed at least once a year by the BoD, the Group ALCO, the Group Chief Financial Officer, the Group Treasurer and the business divisions, taking into consideration current and projected business strategy and risk tolerance. The principles underlying our limit and target framework are designed to maximize and sustain the value of our business franchise and maintain an appropriate balance in the asset and liability structure. Structural limits and targets focus on the structure and composition of the balance sheet, while supplementary limits and targets are designed to drive the utilization, diversification and allocation of funding resources. To complement and support this framework, Group Treasury monitors the markets for early warning indicators reflecting the current liquidity situation. The liquidity status indicators are used at Group level to assess both the overall global and regional situations for potential threats. Market & Treasury Risk Control provides independent oversight over liquidity and funding risks. ▲

→ **Refer to the "Corporate governance" section of this report for more information**

→ **Refer to the "Risk management and control" section of this report for more information**

Adoption of IFRS 9

Effective 1 January 2018, we adopted IFRS 9, *Financial Instruments*. The adoption of IFRS 9 has resulted in changes to the classification and measurement of certain financial instruments, which have been applied prospectively from 1 January 2018.

The tables below and on the following pages also present the balances as of 31 December 2017 under IAS 39, and then upon adoption of IFRS 9 on 1 January 2018. The analysis of movements in balance sheet assets and liabilities on the following pages has been performed in comparison with these balances as of 1 January 2018 (i.e., after the adoption of IFRS 9 classification and measurement changes). The most significant effects from the adoption of IFRS 9 are outlined below.

→ **Refer to "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of this report for more information on the adoption of IFRS 9**

Lending

USD 3 billion of financial assets previously included within *Lending* were reclassified to fair value and are now reflected under *Other financial assets at amortized cost / fair value*. In addition, USD 5 billion of client brokerage receivables were reclassified from *Lending* to *Brokerage receivables*.

Securities financing transactions at amortized cost

USD 5 billion of securities financing transaction assets and USD 5 billion of securities financing transaction liabilities were reclassified to fair value. As a result, these assets and liabilities are now reflected under *Other financial assets at amortized cost / fair value* and *Other financial liabilities at amortized cost / fair value*, respectively.

Trading portfolio

USD 12 billion of financial assets for unit-linked investment contracts were reclassified from *Trading portfolio* to *Non-financial assets and financial assets for unit-linked investment contracts* in the table below.

Other financial assets at amortized cost / fair value

As previously mentioned, USD 3 billion of financial assets and USD 5 billion of securities financing transaction assets formerly included within *Lending* and *Securities financing transactions at amortized cost*, respectively, were reclassified to fair value and are now reflected under *Other financial assets at amortized cost / fair value*. These increases were offset by a decrease related to USD 20 billion of brokerage receivables, which were reclassified from *Other financial assets at amortized cost* to the new reporting line *Brokerage receivables*.

Non-financial assets and financial assets for unit-linked investment contracts

USD 12 billion of financial assets for unit-linked investment contracts were reclassified from *Trading portfolio* to *Non-financial assets and financial assets for unit-linked investment contracts*.

Customer deposits

USD 5 billion of client brokerage payables previously included within *Customer deposits* were reclassified to fair value and are now reflected under the new reporting line *Brokerage payables*.

Other financial liabilities at amortized cost / fair value

USD 5 billion of securities financing transaction liabilities were reclassified to fair value and are now reflected under the reporting line *Other financial liabilities at amortized cost / fair value*. This increase was more than offset by a decrease of USD 30 billion of brokerage payables, which were reclassified from *Other financial liabilities at amortized cost* to *Brokerage payables*.

Assets and liquidity management

Audited | Our liquidity risk management aims to maintain a sound liquidity position to meet all our liabilities when due and to provide adequate time and financial flexibility to respond to a firm-specific liquidity crisis in a generally stressed market environment, without incurring unacceptable losses or risking sustained damage to our businesses.

Our liquid assets are managed using limits and targets to maintain an appropriate level of diversification (issuer, tenor and other risk characteristics) in response to any anticipated or unanticipated volatility in funding availability or requirements caused by adverse market, operational or other firm-specific events. The liquid asset portfolio size is managed to operate within the risk appetite of the Board of Directors and relevant local authorities at Group and legal entity level. ▲

Assets

	As of			% change from
USD billion	31.12.18 (IFRS 9)	1.1.18 (IFRS 9)[1]	31.12.17 (IAS 39)	1.1.18 (IFRS 9)
Cash and balances at central banks	108.4	90.0	90.0	20
Lending[2]	337.2	332.6	340.8	1
Securities financing transactions at amortized cost	95.3	86.9	92.0	10
Trading portfolio[3,4]	104.4	118.3	129.4	(12)
Derivatives and cash collateral receivables on derivative instruments	149.8	145.3	145.3	3
Brokerage receivables	16.8	24.4	0.0	(31)
Other financial assets at AC / FV[5]	90.5	95.1	107.2	(5)
Non-financial assets and financial assets for unit-linked investment contracts[4]	56.1	46.3	34.6	21
Total assets	958.5	938.8	939.3	2
Total assets excluding derivatives and cash collateral	808.7	793.5	794.0	2

1 Opening balance sheet upon adoption of IFRS 9 on 1 January 2018. Refer to "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of this report for more information. 2 Consists of loans and advances to banks and customers. 3 Consists of financial assets at fair value held for trading. 4 As of 1 January 2018, financial assets for unit-linked investment contracts are reported with non-financial assets. Prior to 1 January 2018, these assets were reported within the trading portfolio. 5 Primarily held in Group ALM. Consists of financial assets at fair value not held for trading, financial assets measured at fair value through other comprehensive income and other financial assets measured at amortized cost, but excludes financial assets for unit-linked investment contracts (from 1 January 2018) and cash collateral receivables on derivative instruments.

Balance sheet assets

Group (31 December 2018 vs 1 January 2018)

As of 31 December 2018, balance sheet assets totaled USD 958 billion, an increase of USD 20 billion from 1 January 2018, driven mainly by increases in cash and balances at central banks, non-financial assets and financial assets for unit-linked investment contracts and receivables for securities financing transactions at amortized cost, which were partly offset by decreases in trading portfolio assets and brokerage receivables. Total assets excluding derivatives and cash collateral receivables on derivative instruments increased by USD 15 billion to USD 809 billion as of 31 December 2018. Excluding currency effects, total assets excluding derivatives and cash collateral receivables on derivative instruments increased by USD 26 billion.

Cash and balances at central banks increased by USD 18 billion, mainly in Corporate Center – Group Asset and Liability Management (Group ALM), primarily resulting from changes in client activity, which reduced net funding consumption by the business divisions. Funding available in excess of the business divisions' requirements is transferred to Group ALM's balance sheet to be reinvested, or to be reduced over time if business needs remain lower. This increase was partly offset by maturities of short-term borrowings and a shift to receivables from securities financing transactions.

Non-financial assets and financial assets for unit-linked investment contracts increased by USD 10 billion, driven by an increase in unit-linked investment contracts in Asset Management, with a related increase in the associated liabilities.

Receivables from securities financing transactions at amortized cost increased by USD 8 billion, mainly in Group ALM, reflecting a reinvestment of higher cash balances resulting from the aforementioned changes in business division funding consumption, partly offset by client-driven decreases and fair value movements in the Investment Bank.

Lending increased by USD 5 billion, mainly in Global Wealth Management, mainly reflecting an increase in the mortgage portfolio in the Americas and Switzerland and an increase in the Investment Bank relating to segregated deposits, partly offset by currency effects.

Derivatives and cash collateral receivables on derivative instruments increased by USD 4 billion, mainly in the Equities and Foreign Exchange, Rates and Credit businesses in the Investment Bank, reflecting increased client activity, partly offset by a decrease in Corporate Center – Non-core and Legacy Portfolio, mainly reflecting maturities and trade terminations.

These increases were partly offset by a USD 14 billion decrease in trading portfolio assets, mainly reflecting client-driven reductions and trade unwinds in our Equities and Foreign Exchange, Rates and Credit businesses in the Investment Bank. Brokerage receivables decreased by USD 8 billion, relating to client-driven reductions in the Investment Bank.

Other financial assets measured at amortized cost and fair value decreased by USD 5 billion, mainly reflecting fair value changes in our Corporate Client Solutions business in the Investment Bank.

→ **Refer to the "Consolidated financial statements" section of this report for more information**

Investment Bank (31 December 2018 vs 1 January 2018)

Investment Bank total assets decreased by USD 11 billion to USD 259 billion.

Trading portfolio assets in the Investment Bank decreased by USD 12 billion, mainly in our Equities business, primarily reflecting client-driven reductions and trade unwinds. Brokerage receivables were USD 7 billion lower, resulting from lower client activity. Receivables from securities financing transactions at amortized cost decreased by USD 4 billion as a result of lower client activity as well as a reduction in the stock borrowings used to hedge certain financing transactions, resulting from fair value movements in the underlying share price. Other financial assets measured at amortized cost and fair value decreased by USD 3 billion, primarily related to fair value changes.

Derivatives and cash collateral receivables on derivative instruments increased by USD 14 billion, mainly in the Equities and Foreign Exchange, Rates and Credit businesses, reflecting increased client activity on higher market volatility.

Group ALM (31 December 2018 vs 1 January 2018)

Group ALM total assets increased by USD 28 billion to USD 280 billion, primarily reflecting an USD 18 billion increase in cash and balances at central banks that mainly resulted from changes in client activity, which reduced net funding consumption by the business divisions, partly offset by maturities of short-term borrowings and a shift to receivables from securities financing transactions. In addition, receivables from securities financing transactions at amortized cost increased by USD 13 billion, reflecting a reinvestment of higher cash balances resulting from the aforementioned changes in business division funding consumption.

Non-core and Legacy Portfolio (31 December 2018 vs 1 January 2018)

Non-core and Legacy Portfolio total assets decreased by USD 12 billion to USD 35 billion, mainly driven by an USD 11 billion reduction in derivatives and cash collateral receivables on derivative instruments, primarily as a result of maturities and trade terminations. Total assets excluding derivatives and cash collateral receivables on derivative instruments decreased by USD 1 billion to USD 4 billion.

Other business divisions (31 December 2018 vs 1 January 2018)

Global Wealth Management total assets increased by USD 5 billion, mainly driven by an increase of USD 3 billion in derivatives and cash collateral receivables on derivative instruments reflecting higher client activity. In addition, lending increased by USD 3 billion, driven by higher mortgage loans, partly offset by a decrease in Lombard lending.

Asset Management total assets increased by USD 10 billion to USD 24 billion, reflecting an increase in financial assets for unit-linked investment contracts driven by net new money inflows, with an increase in the corresponding liabilities.

Personal & Corporate Banking total assets were stable at USD 139 billion.

High-quality liquid assets

High-quality liquid assets (HQLA) are low-risk unencumbered assets under the control of Group Treasury that are easily and immediately convertible into cash at little or no loss of value, in order to meet liquidity needs. Our HQLA predominantly consist of assets that qualify as Level 1 in the liquidity coverage ratio (LCR) framework, including cash, central bank reserves and government bonds. Group HQLA are held by UBS AG and its subsidiaries, and may include amounts that are available to meet funding and collateral needs in certain jurisdictions, but are not readily available for use by the Group as a whole. These limitations are typically the result of local regulatory requirements, including local LCR and large exposure requirements. Funds that are effectively restricted are excluded from the calculation of Group HQLA to the extent they exceed the outflow assumptions for the subsidiary that holds the relevant HQLA. On this basis, USD 34 billion of assets were excluded from our daily average Group HQLA for the fourth quarter of 2018. Amounts held in excess of local liquidity requirements that are not subject to other restrictions are generally available for transfer within the Group.

The total weighted liquidity value of HQLA decreased by USD 12 billion to USD 173 billion.

Liquidity coverage ratio

The LCR measures the short-term resilience of a bank's liquidity profile by comparing whether sufficient HQLA are available to survive expected net cash outflows from a significant liquidity stress scenario, as defined by the relevant regulator.

The Basel Committee on Banking Supervision standards require an LCR of at least 100% by 2019, with a phase-in period that started in 2015. UBS is required to maintain a minimum total Group LCR of 110% as communicated by the Swiss Financial Market Supervisory Authority (FINMA), as well as a Swiss franc LCR of 100%. In addition, both UBS AG and UBS Switzerland AG are subject to minimum LCR requirements on a standalone basis. In a period of financial stress, FINMA may allow banks to use their HQLA and let their LCR temporarily fall below the minimum threshold.

We monitor the LCR in all significant currencies in order to manage any currency mismatches between HQLA and the net expected cash outflows in times of stress.

In December 2017, FINMA amended its circular "Liquidity risks – banks" following the Federal Council's amendment to a number of provisions on bank liquidity in the Liquidity Ordinance. The changes to the circular have been effective since 1 January 2018.

Our daily average LCR for the fourth quarter of 2018 was 136%, compared with 143% in the fourth quarter of 2017, remaining above the 110% Group LCR minimum communicated by FINMA. The decrease in the LCR mainly reflected reduced HQLA, primarily driven by an increase in assets subject to transfer restrictions in the US branches of UBS AG. In addition, net cash outflows decreased, mainly driven by lower net cash outflows from unsecured wholesale funding, partly offset by a decrease of inflows from fully performing exposures and a decrease in other cash outflows related to the aforementioned revised regulatory requirements in 2018.

→ **Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors* for more information on the liquidity coverage ratio**

→ **Refer to the "Significant regulated subsidiary and sub-group information" section of this report for more information on the liquidity coverage ratio of UBS AG and UBS Switzerland AG**

Liquidity coverage ratio

USD billion, except where indicated	Average 4Q18[1]	Average 4Q17[1]
High-quality liquid assets[2]		
Cash balances[3]	96	104
Securities (on- and off-balance sheet)	78	81
Total high-quality liquid assets[4]	173	185
Cash outflows[5]		
Retail deposits and deposits from small business customers	26	27
Unsecured wholesale funding	102	106
Secured wholesale funding	76	80
Other cash outflows	42	45
Total cash outflows	246	257
Cash inflows[5]		
Secured lending	79	84
Inflows from fully performing exposures	29	33
Other cash inflows	10	10
Total cash inflows	119	128
Liquidity coverage ratio		
High-quality liquid assets	173	185
Net cash outflows	127	130
Liquidity coverage ratio (%)	136	143

1 Calculated based on an average of 64 data points in the fourth quarter of 2018 and 63 data points in the fourth quarter of 2017. 2 Calculated after the application of haircuts. 3 Includes cash and balances at central banks and other eligible balances as prescribed by FINMA. 4 Calculated in accordance with FINMA requirements. 5 Calculated after the application of inflow and outflow rates.

Asset encumbrance

The table on the next page provides a breakdown of on- and off-balance sheet assets between encumbered assets, unencumbered assets and assets that cannot be pledged as collateral.

Assets are presented as *Encumbered* if they have been pledged as collateral against an existing liability or if they are otherwise not available for the purpose of securing additional funding. Included within the latter category are assets protected under client asset segregation rules, assets held by the Group's insurance entities to back related liabilities to policy holders, assets held in certain jurisdictions to comply with explicit minimum local asset maintenance requirements and assets held in consolidated bankruptcy remote entities, such as certain investment funds and other structured entities.

→ **Refer to "Note 26 Restricted and transferred financial assets" in the "Consolidated financial statements" section of this report for more information**

Assets that cannot be pledged as collateral represent those assets that are not encumbered, but by their nature are not considered available to secure funding or to meet collateral needs. These mainly include collateral trading assets, derivative financial assets, cash collateral receivables on derivative instruments, deferred tax assets, goodwill and intangible assets and other assets.

All other assets are presented as *Unencumbered*. Assets that are considered to be readily available to secure funding on a Group and / or legal entity level are shown separately and consist of cash and securities readily realizable in the normal course of business. These include our HQLA and unencumbered positions in our trading portfolio. Unencumbered assets that are considered to be available to secure funding on a legal entity level may be subject to restrictions that limit the total amount of assets that is available to the Group as a whole. Other unencumbered assets, which are not considered readily available to secure funding on a Group and / or legal entity level, primarily consist of loans and amounts due from banks.

Asset encumbrance as of 31 December 2018

	Encumbered		Unencumbered			
USD million	Assets pledged as collateral	Assets otherwise restricted and not available to secure funding	Cash and securities available to secure funding on a Group and/or legal entity level	Other realizable assets	Assets that cannot be pledged as collateral	Total Group assets (IFRS)
On-balance sheet assets						
Cash and balances at central banks			108,370			108,370
Loans and advances to banks		5,140		11,703	25	16,868
Receivables from securities financing transactions					95,349	95,349
of which: cash collateral on securities borrowed					*13,061*	*13,061*
of which: reverse repurchase agreements					*82,288*	*82,288*
Cash collateral receivables on derivative instruments		3,205			20,397	23,602
Loans and advances to customers	18,804	935		294,307	6,306	320,352
of which: mortgage loans	*18,804*			*151,301*		*170,105*
Other financial assets measured at amortized cost		197	13,446	1,091	7,828	22,563
Total financial assets measured at amortized cost	**18,804**	**9,477**	**121,816**	**307,101**	**129,905**	**587,104**
Financial assets at fair value held for trading[1]	**43,292[2]**	**3,589**	**53,924**	**3,566**		**104,370**
of which: trading assets – treasury bills / bonds	*4,776*		*6,385*			*11,161*
of which: trading assets – mortgage-backed securities			*258*			*258*
of which: trading assets – other asset-backed securities			*134*			*134*
of which: trading assets – other bonds	*1,660*	*187*	*4,921*			*6,768*
of which: trading assets – investment fund units	*3,541*	*898*	*5,277*			*9,716*
of which: trading assets – equity instruments	*33,315*	*2,504*	*36,949*			*72,768*
of which: loans				*3,566*		*3,566*
Derivative financial instruments					**126,210**	**126,210**
Brokerage receivables					**16,840**	**16,840**
of which: customer brokerage					*4,384*	*4,384*
of which: prime brokerage					*12,457*	*12,457*
Financial assets at fair value not held for trading[1]		**23,514**	**39,186**	**9,826**	**10,163**	**82,690**
Total financial assets measured at fair value through profit or loss	**43,292**	**27,104**	**93,110**	**13,392**	**153,213**	**330,110**
Financial assets measured at fair value through other comprehensive income		**171**	**6,495**			**6,667**
Investments in associates				1,099		1,099
Property, equipment and software				9,348		9,348
Goodwill and intangible assets					6,647	6,647
Deferred tax assets					10,105	10,105
Other non-financial assets		6	4,298		3,106	7,410
Total non-financial assets		**6**	**4,298**	**10,447**	**19,858**	**34,608**
Total on-balance sheet assets	**62,096**	**36,758**	**225,719**	**330,940**	**302,976**	**958,489**

	Encumbered		Unencumbered			
USD million	Assets pledged as collateral	Assets otherwise restricted and not available to secure funding	Cash and securities available to secure funding on a Group and/or legal entity level	Other realizable assets	Assets that cannot be pledged as collateral	Total Group assets (IFRS)
Off-balance sheet assets						
Fair value of assets received that can be sold or repledged	**356,745**	**14,954**	**109,310**	**2,678**		**483,688**
of which: money market paper as collateral	*10,110*	*390*	*3,922*			*14,421*
of which: other debt instruments as collateral	*211,156*	*11,204*	*87,788*			*310,148*
of which: equity instruments as collateral	*130,853*	*3,356*	*16,598*			*150,807*
of which: investment fund units as collateral	*4,621*	*4*	*1,003*			*5,628*
of which: other	*5*			*2,678*		*2,683*
Total on- and off-balance sheet assets as of 31 December 2018	418,841	51,712	335,029	333,618	302,976	
of which: high-quality liquid assets			*184,361*			

1 Financial assets for unit-linked investment contracts were reclassified from Financial assets at fair value held for trading to Financial assets at fair value not held for trading upon adoption of IFRS 9 as of 1 January 2018. Refer to "Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9, Financial Instruments" in the "Consolidated financial statements" section of this report for more information on IFRS 9. 2 Includes USD 32,121 million of assets pledged as collateral that may be sold or repledged by counterparties.

Asset encumbrance as of 31 December 2017

	Encumbered		Unencumbered			
USD million	Assets pledged as collateral	Assets otherwise restricted and not available to secure funding	Cash and securities available to secure funding on a Group and/or legal entity level	Other realizable assets	Assets that cannot be pledged as collateral	Total Group assets (IFRS)
On-balance sheet assets						
Cash and balances at central banks			90,045			90,045
Loans and advances to banks		3,364		10,702	28	14,094
Receivables from securities financing transactions					91,951	91,951
of which: cash collateral on securities borrowed					*12,713*	*12,713*
of which: reverse repurchase agreements					*79,238*	*79,238*
Cash collateral receivables on derivative instruments		3,921			20,120	24,040
Loans and advances to customers	18,087	1,289		295,355	12,015	326,746
of which: mortgage loans	*18,087*			*149,256*		*167,343*
Other financial assets measured at amortized cost		60	9,403	1,086	27,266	37,815
Total financial assets measured at amortized cost	**18,087**	**8,633**	**99,448**	**307,143**	**151,379**	**584,691**
Financial assets at fair value held for trading	**47,414[3]**	**12,591**	**65,456**	**3,946**		**129,407**
of which: trading assets – treasury bills / bonds	*4,510*		*8,676*			*13,186*
of which: trading assets – mortgage-backed securities	*8*		*153*			*161*
of which: trading assets – other asset-backed securities			*216*			*216*
of which: trading assets – other bonds	*2,367*	*979*	*6,204*			*9,550*
of which: trading assets – investment fund units	*2,559*	*768*	*6,554*			*9,881*
of which: trading assets – equity instruments	*37,970*	*10,843*	*43,653*			*92,466*
of which: loans				*3,946*		*3,946*
Derivative financial instruments					**121,285**	**121,285**
Brokerage receivables						
of which: customer brokerage						
of which: prime brokerage						
Financial assets at fair value not held for trading	**174**	**2,669**	**46,284**	**10,709**	**621**	**60,457**
Total financial assets measured at fair value through profit or loss	**47,588**	**15,260**	**111,739**	**14,655**	**121,906**	**311,148**
Financial assets measured at fair value through other comprehensive income		**253**	**8,637**			**8,889**
Investments in associates				1,045		1,045
Property, equipment and software				9,057		9,057
Goodwill and intangible assets					6,563	6,563
Deferred tax assets					10,056	10,056
Other non-financial assets		37	4,681		3,112	7,830
Total non-financial assets		**37**	**4,681**	**10,102**	**19,731**	**34,551**
Total on-balance sheet assets	**65,676**	**24,183**	**224,505**	**331,899**	**293,016**	**939,279**

	Encumbered		Unencumbered			
USD million	Assets pledged as collateral	Assets otherwise restricted and not available to secure funding	Cash and securities available to secure funding on a Group and/or legal entity level	Other realizable assets	Assets that cannot be pledged as collateral	Total Group assets (IFRS)
Off-balance sheet assets						
Fair value of assets received that can be sold or repledged	**346,243**	**13,341**	**117,097**	**4,584**		**481,265**
of which: money market paper as collateral	*9,799*	*784*	*1,707*			*12,290*
of which: other debt instruments as collateral	*188,792*	*9,373*	*75,856*			*274,022*
of which: equity instruments as collateral	*144,099*	*3,184*	*37,429*			*184,711*
of which: investment fund units as collateral	*3,535*		*2,017*			*5,552*
of which: other	*18*		*88*	*4,584*		*4,690*
Total on- and off-balance sheet assets as of 31 December 2017	**411,919**	**37,524**	**341,602**	**336,484**	**293,016**	
of which: high-quality liquid assets			*176,849*			

3 Includes USD 36,277 million of assets pledged as collateral that may be sold or repledged by counterparties.

Unencumbered assets available to secure funding on a Group and / or legal entity level by currency

USD million	31.12.18	31.12.17
Swiss franc	79,595	64,827
US dollar	131,838	143,312
Euro	36,874	43,860
Other	86,720	89,603
Total	335,029	341,602

Stress testing

Audited | We perform stress testing to determine the optimal asset and liability structure that allows us to maintain an appropriately balanced liquidity and funding position under various scenarios. Liquidity crisis scenario analysis and contingency funding planning support the liquidity management process and ensure that immediate corrective measures to absorb potential sudden liquidity shortfalls can be put into effect. ▲

We model our liquidity exposures under two main potential scenarios that encompass stressed and acute market conditions, including considering the possible effect on our access to markets from stress events affecting all parts of our business. These models and their assumptions are reviewed regularly to incorporate the latest business and market developments. We continuously refine the assumptions used to maintain a robust, actionable and tested contingency plan.

→ **Refer to "Risk measurement" in the "Risk management and control" section of this report for more information on stress testing**

Stressed scenario

As a liquidity crisis could have myriad causes, the stressed scenario encompasses potential stress effects across all markets, currencies and products, but it is typically not firm-specific. In addition to the loss of the ability to replace maturing wholesale funding, it assumes a gradual decline of otherwise stable client deposits and liquidity outflows corresponding to a two-notch downgrade in our long-term credit rating and a corresponding downgrade in our short-term rating.

We use a cash capital model that incorporates the stress scenario and measures the amount of long-term funding available to fund illiquid assets. The illiquid portion of an asset is the difference between the carrying value of the asset and its effective cash value when used as collateral in a secured funding transaction. Long-term funding used as cash capital to support illiquid assets is comprised of unsecured funding with a remaining time to maturity of at least one year, shareholders' equity and core deposits, which are the portion of our customer deposits that are deemed to have a behavioral maturity of at least one year.

Acute scenario

The acute scenario represents an extreme stress event that combines a firm-specific crisis with market disruption. This scenario assumes: (i) substantial outflows on otherwise stable client deposits, mainly due on demand, (ii) inability to renew or replace maturing unsecured wholesale funding, (iii) unusually large drawdowns on loan commitments, (iv) reduced capacity to generate liquidity from trading assets, (v) liquidity outflows corresponding to a three-notch downgrade in our long-term credit rating and a corresponding downgrade in our short-term rating, (vi) triggering contractual obligations to unwind derivative positions or to deliver additional collateral, and (vii) additional collateral requirements due to adverse movements in the market values of derivatives. It is run daily to project potential cash outflows under an acute scenario and is assessed as part of ongoing risk management activities.

Contingency Funding Plan

Audited | Our Group Contingency Funding Plan is an integral part of our global crisis management framework, which covers various types of crisis events. This Contingency Funding Plan contains an assessment of contingent funding sources in a stressed environment, liquidity status indicators and metrics, and contingency procedures. Our funding diversification and global scope help protect our liquidity position in the event of a crisis. We regularly assess and test all material known and expected cash flows, as well as the level and availability of high-grade collateral that could be used to raise additional funding if required. Our contingent funding sources include our HQLA portfolio, available and unutilized liquidity facilities at several major central banks, and contingent reductions of liquid trading portfolio assets. ▲

Liabilities and funding management

Audited | Group Treasury regularly monitors our funding status, including concentration risks, to ensure we maintain a well-balanced and diversified liability structure. Our funding risk management aims for the optimal asset and liability structure to finance our businesses reliably and cost-efficiently, and our funding activities are planned by analyzing the overall liquidity and funding profile of our balance sheet, taking into account the amount of stable funding that would be needed to support ongoing business activities through periods of difficult market conditions. ▲

The funding strategy of UBS Group AG is set annually in the Funding Plan and is reviewed on a quarterly basis under its Funding Management Policy governance framework. The Funding Plan is developed by Group Treasury and approved by the Group ALCO considering factors such as currency, market and tenor diversification. The operational execution of funding transactions defined in the Funding Plan for specific product types is delegated to the business divisions (e.g., structured notes to the Investment Bank). Nevertheless, Group Treasury retains overall responsibility and oversight over all product types.

Group Treasury proposes, sets and oversees limits and targets for funding generation including concentration limits, weighted average maturity floors and volume. To ensure effective diversification and address potential funding concentration, actual results (monthly and year-to-date activity) are monitored on a monthly basis and are aggregated in the Group Treasury Report. Funding diversification is monitored continuously, with a focus on product type, single-counterparty exposure (as a percentage of the total), maturity profile, as well as overall contribution of a particular funding source to the liability mix.

Our business activities generate asset and liability portfolios that are highly diversified with respect to market, product, tenor and currency. This reduces our exposure to individual funding sources, provides a broad range of investment opportunities and reduces liquidity risk.

Global Wealth Management and Personal & Corporate Banking provide significant, cost-efficient and reliable sources of funding. These include core deposits and Swiss covered bonds, which use (as a pledge) a portion of our portfolio of Swiss residential mortgages as collateral to generate long-term funding. In addition, we have several short-, medium- and long-term funding programs under which we issue senior unsecured debt and structured notes, as well as short-term debt. These programs allow institutional and private investors in Europe, the US and Asia Pacific to customize their investments in UBS's debt. Collectively, these broad product offerings and funding sources, together with the global scope of our business activities, support our funding stability.

Balance sheet liabilities (31 December 2018 vs 1 January 2018)

Total liabilities increased by USD 19 billion to USD 905 billion as of 31 December 2018. Non-financial liabilities and amounts due under unit-linked investment contracts increased by USD 10 billion, driven by an increase in liabilities for unit-linked investment contracts, with a corresponding increase in associated assets.

Long-term debt issued, which represented 22% of our funding sources as of 31 December 2018, increased by USD 9 billion. This reflected a USD 6 billion increase in debt issued designated at fair value, driven by higher issuances of structured debt. In addition, long-term debt held at amortized cost increased by USD 2 billion, primarily as a result of the issuance of USD 3.4 billion equivalent of euro- and Japanese yen-denominated senior unsecured debt that contributes to our total loss-absorbing capacity (TLAC), the issuance of USD 9.7 billion equivalent of senior unsecured debt, and the issuance of USD 2.5 billion equivalent of US dollar- and Singapore dollar-denominated high-trigger loss-absorbing additional tier 1 capital instruments. These issuances were partly offset by the maturity or early redemption of USD 10.0 billion equivalent of senior unsecured debt and USD 1.5 billion equivalent of a tier 2 capital instrument.

Customer deposits increased by USD 6 billion, mainly driven by higher deposits in Personal & Corporate Banking and in Global Wealth Management, partly offset by currency effects. As of 31 December 2018, customer deposits represented 60% of our funding sources and our ratio of customer deposits to outstanding loan balances was 131% (31 December 2017: 128%). Derivatives and cash collateral payables increased by USD 4 billion, in line with the aforementioned increase in derivative assets and cash collateral receivables.

Short-term borrowings decreased by USD 10 billion, mainly reflecting net redemptions of commercial paper and certificates of deposit, related to a reduction in business division net funding consumption. Short-term borrowings represented 7% of our funding sources.

→ **Refer to the document "UBS Group AG consolidated capital instruments and TLAC-eligible senior unsecured debt" under "Bondholder information" at *www.ubs.com/investors* for more information**

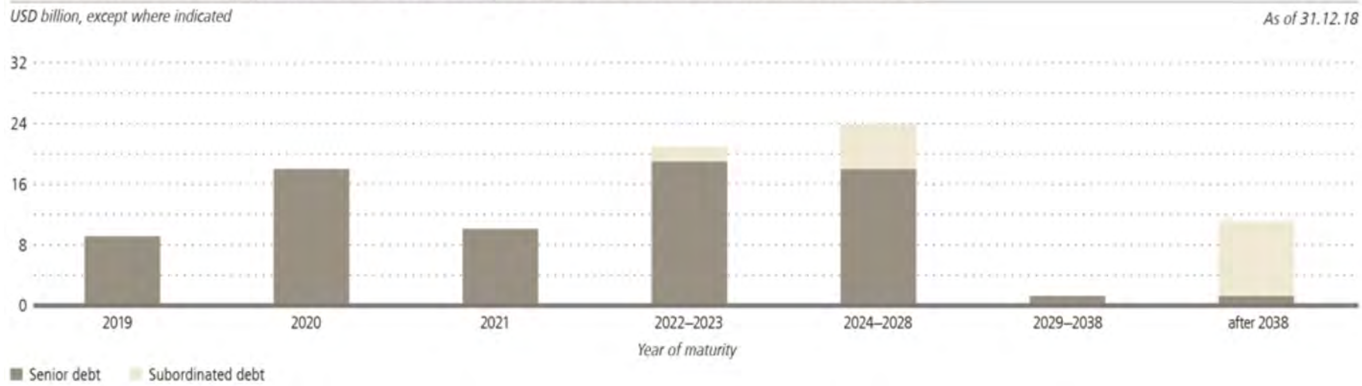
→ **Refer to the "Consolidated financial statements" section of this report for more information**

Liabilities and equity

	As of			% change from
USD billion	31.12.18 (IFRS 9)	1.1.18 (IFRS 9)[1]	31.12.17 (IAS 39)	1.1.18 (IFRS 9)
Short-term borrowings[2]	50.0	60.0	60.0	(17)
Securities financing transactions at amortized cost	10.3	12.3	17.5	(16)
Customer deposits	419.8	414.1	419.6	1
Long-term debt issued[3]	150.3	141.7	141.7	6
Trading portfolio[4]	28.9	31.3	31.3	(7)
Derivatives and cash collateral payables on derivative instruments	154.6	150.2	150.2	3
Brokerage payables	38.4	35.8	0.0	7
Other financial liabilities at AC / FV[5]	18.8	16.9	42.1	11
Non-financial liabilities and amounts due under unit-linked investment contracts	34.2	24.6	24.5	39
Total liabilities	905.4	886.9	886.7	2
Total liabilities excluding derivatives and cash collateral	750.8	736.6	736.6	2
Share capital	0.3	0.3	0.3	0
Share premium	20.8	23.6	23.6	(12)
Treasury shares	(2.6)	(2.2)	(2.2)	19
Retained earnings	30.4	25.4	25.9	20
Other comprehensive income[6]	3.9	4.8	4.8	(17)
Total equity attributable to shareholders	52.9	51.9	52.5	2
Equity attributable to non-controlling interests	0.2	0.1	0.1	200
Total equity	53.1	52.0	52.6	2
Total liabilities and equity	958.5	938.8	939.3	2

1 Opening balance sheet upon adoption of IFRS 9 on 1 January 2018. Refer to "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of this report for more information. 2 Consists of short-term debt issued measured at amortized cost and amounts due to banks. 3 Consists of long-term debt issued measured at amortized cost and debt issued designated at fair value. The classification of debt issued into short-term and long-term does not consider any early redemption features. 4 Consists of financial liabilities at fair value held for trading. 5 Consists of other financial liabilities measured at amortized cost and other financial liabilities designated at fair value, but excludes cash collateral payables on derivative instruments and amounts due under unit-linked investment contracts. 6 Excludes defined benefit plans and own credit that are recorded directly in Retained earnings.

Contractual maturity profile of outstanding long-term debt held at amortized cost



Funding by product and currency

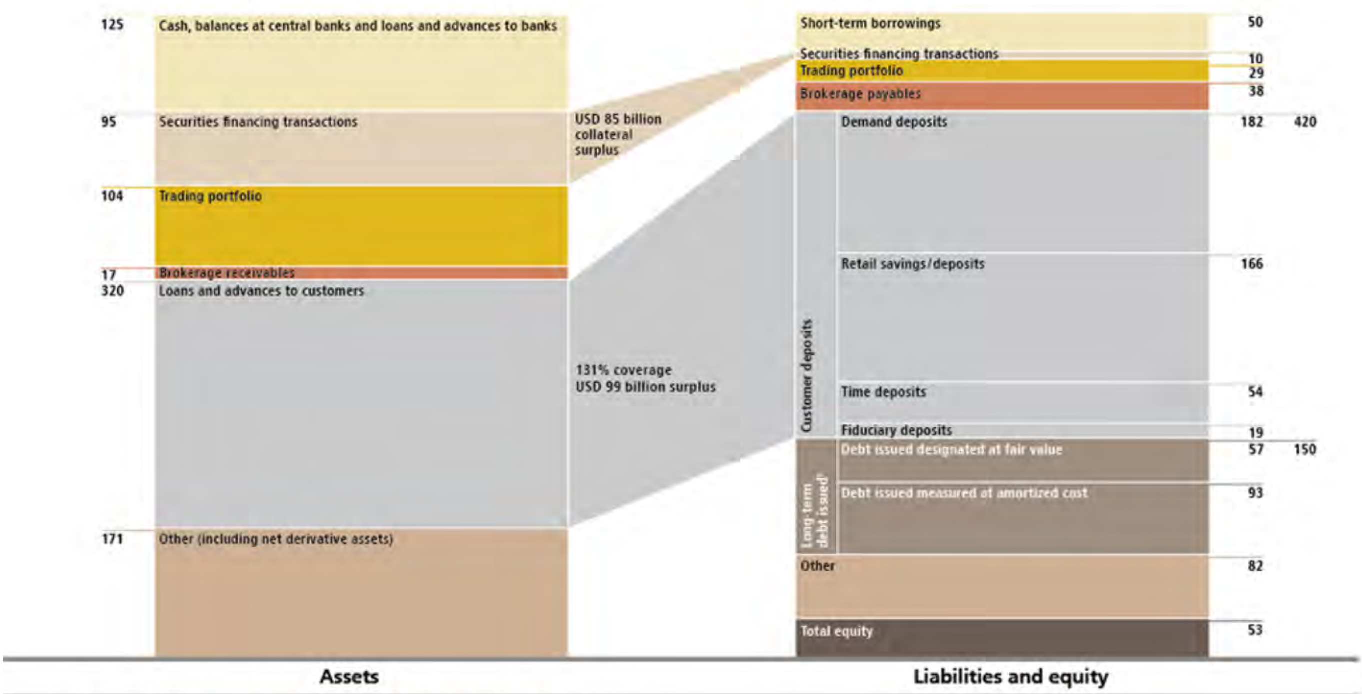
	USD billion		As a percentage of total funding sources (%)									
	All currencies		All currencies		USD		CHF		EUR		Other	
	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
Short-term borrowings	50.0	60.0	7.2	8.6	4.0	3.7	0.5	0.5	1.7	3.1	1.0	1.3
of which: due to banks	*11.0*	*7.7*	*1.6*	*1.1*	*0.5*	*0.3*	*0.4*	*0.4*	*0.2*	*0.1*	*0.4*	*0.2*
of which: short-term debt issued[1]	*39.0*	*52.3*	*5.6*	*7.5*	*3.5*	*3.4*	*0.0*	*0.1*	*1.4*	*2.9*	*0.7*	*1.1*
Securities financing transactions	10.3	17.5	1.5	2.5	1.2	2.0	0.0	0.0	0.0	0.3	0.3	0.2
Cash collateral payables on derivative instruments	28.9	31.0	4.1	4.4	1.9	2.1	0.1	0.1	1.3	1.4	0.8	0.8
Customer deposits	419.8	419.6	60.2	59.9	20.5	22.4	26.0	24.9	8.0	7.2	5.7	5.5
of which: demand deposits	*181.9*	*193.5*	*26.1*	*27.6*	*5.8*	*8.1*	*9.9*	*9.1*	*6.7*	*6.4*	*3.6*	*4.0*
of which: retail savings / deposits	*165.8*	*166.0*	*23.8*	*23.7*	*7.8*	*8.3*	*15.2*	*14.6*	*0.8*	*0.8*	*0.0*	*0.0*
of which: time deposits	*53.6*	*48.6*	*7.7*	*6.9*	*4.9*	*4.6*	*0.8*	*1.0*	*0.1*	*0.1*	*1.9*	*1.3*
of which: fiduciary deposits	*18.6*	*11.5*	*2.7*	*1.6*	*2.0*	*1.4*	*0.1*	*0.1*	*0.4*	*0.0*	*0.2*	*0.1*
Long-term debt issued[2]	150.3	141.7	21.5	20.2	6.8	12.1	1.4	1.8	4.3	4.8	9.1	1.5
Brokerage payables	38.4	30.4	5.5	4.3	3.8	2.5	0.1	0.1	0.4	0.5	1.2	1.3
Total	697.7	700.2	100.0	100.0	38.2	44.8	28.0	27.4	15.7	17.3	18.1	10.5

1 Short-term debt issued is comprised of certificates of deposit, commercial paper, acceptances and promissory notes, and other money market paper. 2 Long-term debt issued also includes debt with a remaining time to maturity of less than one year.

Asset funding

USD billion, except where indicated

As of 31.12.18



1 Long-term debt issued also includes debt with a remaining time to maturity of less than one year.

Equity

Effective from 1 October 2018, the functional currency of UBS Group AG and UBS AG's Head Office in Switzerland changed from Swiss francs to US dollars and that of UBS AG's London Branch from British pounds to US dollars. The presentation currency of UBS Group AG's consolidated financial statements has also changed from Swiss francs to US dollars to align with the functional currency changes of significant Group entities. Prior periods have been restated for this presentation currency change. This has resulted in a change in our foreign currency translation other comprehensive income (OCI) life-to-date balance, with offsetting effects on other components of equity.

→ **Refer to "Note 1b Changes in accounting policies, comparability and other adjustments, excluding the effects of adoption of IFRS 9, *Financial Instruments*" in the "Consolidated financial statements" section of this report for more information**

Equity attributable to shareholders increased by USD 432 million to USD 52,928 million as of 31 December 2018. This increase included the effects from the adoption of new accounting standards, which decreased equity attributable to shareholders by USD 617 million.

Total comprehensive income attributable to shareholders was positive USD 4,225 million, reflecting net profit of USD 4,516 million and negative OCI of USD 290 million. Negative OCI included foreign currency translation losses of USD 541 million, net losses on cash flow hedges of USD 269 million and negative OCI related to financial assets measured at fair value through OCI of USD 45 million, partly offset by own credit gains of USD 509 million and net gains on defined benefit plans of USD 56 million.

Share premium decreased by USD 2,755 million, primarily as a result of the distribution of USD 2,440 million out of the capital contribution reserve and a reduction of USD 1,009 million from the delivery of treasury shares under share-based compensation plans, which were partly offset by an increase of USD 676 million due to the amortization of deferred equity compensation awards in the income statement.

Net treasury share activity decreased equity attributable to shareholders by USD 421 million, mainly as a result of share repurchases of USD 762 million in 2018 under our share buyback program, which were partly offset by the net disposal of treasury shares related to employee share-based compensation awards.

Equity attributable to non-controlling interests increased by USD 117 million to USD 176 million, primarily related to the increase of our stake in UBS Securities China from 24.99% to 51% in 2018, resulting in consolidation of this entity and recognition of non-controlling interest.

→ **Refer to "Note 1c Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9, *Financial Instruments*" in the "Consolidated financial statements" section of this report for more information**

→ **Refer to the "Group performance" and "Consolidated financial statements" sections of this report for more information**

Net stable funding ratio

The net stable funding ratio (NSFR) framework is intended to limit overreliance on short-term wholesale funding, to encourage a better assessment of funding risk across all on- and off-balance sheet items and to promote funding stability. The NSFR has two components: available stable funding (ASF) and required stable funding (RSF). ASF is the portion of capital and liabilities expected to be available over the period of one year. RSF is a measure of the stable funding requirement of an asset based on its maturity, encumbrance and other characteristics, as well as the potential for contingent calls on funding liquidity from off-balance sheet exposures. The Basel Committee on Banking Supervision (BCBS) NSFR regulatory framework requires a ratio of at least 100% from 2018.

We report our estimated pro forma NSFR based on current guidance from FINMA and will adjust our NSFR reporting according to the final implementation of the BCBS NSFR disclosure standards in Switzerland. The calculation of our pro forma NSFR includes interpretation and estimates of the effect of the NSFR rules, and will be refined as regulatory interpretations evolve and as new models and associated systems are enhanced. In November 2018, the Swiss Federal Council informed that the introduction of the NSFR, which was originally planned for 1 January 2018, will be reconsidered at the end of 2019.

As of 31 December 2018, our estimated pro forma NSFR was 110%, an increase of 5 percentage points from 31 December 2017. This primarily reflected a USD 10 billion decrease in required stable funding, mainly related to a reduction in trading assets and prime brokerage receivables as well as an increase in available stable funding, mainly driven by new issuances and deposit increases.

Pro forma net stable funding ratio

USD billion, except where indicated	31.12.18	31.12.17
Available stable funding	469	458
Required stable funding	426	436
Pro forma net stable funding ratio (%)	110	105

Internal funding and funds transfer pricing

We employ an integrated liquidity and funding framework to govern the liquidity management of all our branches and subsidiaries, and our major sources of liquidity are channeled through entities that are fully consolidated. Group ALM meets internal demands for funding by channeling funds from entities generating surplus cash to those in need of financing, except in those circumstances where transfer restrictions exist.

Funding costs and benefits are allocated to our business divisions and Non-core and Legacy Portfolio according to our liquidity and funding risk management framework. Our internal funds transfer pricing system, which is governed by Group Treasury, is designed to provide the proper liability structure to support the assets and planned activities of each business division. The funds transfer pricing mechanism aims to allocate funding and liquidity costs to the activities generating the liquidity and funding risks, and deals with the movement of funds from those businesses in surplus to those that have a shortfall. Funding is internally transferred or allocated among businesses at rates and tenors that reflect each business's asset composition, liquidity and reliable external funding, and, for major subsidiaries, is entity-specific. We regularly review our internal funds transfer pricing mechanisms and make enhancements where appropriate to help better accomplish our liquidity and funding management objectives.

Credit ratings

Credit ratings can affect the cost and availability of funding, especially funding from wholesale unsecured sources. Our credit ratings can also influence the performance of some of our businesses and the levels of client and counterparty confidence. Rating agencies take into account a range of factors when assessing creditworthiness and setting credit ratings. These include the company's strategy, its business position and franchise value, stability and quality of earnings, capital adequacy, risk profile and management, liquidity management, diversification of funding sources, asset quality and corporate governance. Credit ratings reflect the opinions of the rating agencies and can change at any time.

In evaluating our liquidity and funding requirements, we consider the potential effect of a reduction in UBS's long-term credit ratings and a corresponding reduction in short-term ratings.

If our credit ratings were to be downgraded, rating trigger clauses could result in an immediate cash settlement or the need to deliver additional collateral to counterparties from contractual obligations related to over-the-counter derivative positions and other obligations. Based on our credit ratings as of 31 December 2018, USD 0.0 billion, USD 0.4 billion and USD 1.2 billion would have been required for such contractual obligations in the event of a one-notch, two-notch and three-notch reduction in long-term credit ratings, respectively. Of these, the portion related to additional collateral is USD 0.0 billion, USD 0.3 billion and USD 1.0 billion, respectively.

There were three main rating actions on UBS Group AG's and UBS AG's solicited credit ratings in 2018.

On 29 January 2018, Standard & Poor's Global Ratings downgraded UBS Group AG's high-trigger additional tier 1 capital instruments rating to BB (stable outlook) from BB+.

On 18 June 2018, Moody's Investors Service (Moody's) upgraded UBS AG's long-term senior unsecured debt ratings to Aa3 (stable outlook) from A1, following the ratings being placed on review for upgrade on 5 April 2018. Moody's rates the TLAC-eligible senior unsecured debt guaranteed by UBS Group AG on an unsolicited basis (issuance out of UBS Group Funding (Switzerland) AG). Moody's also upgraded its long-term rating for this debt to A3 (stable outlook) from Baa1 on 18 June 2018.

On 22 November 2018, Rating and Investment Information (R&I) affirmed UBS Group AG's issuer rating of A while revising its outlook from stable to positive.

→ **Refer to "Liquidity and funding management are critical to our ongoing performance" in the "Risk factors" section of this report for more information**

Maturity analysis of assets and liabilities

The tables on the following pages provide an analysis of on- and off-balance sheet assets and liabilities by residual contractual maturity as of the balance sheet date. The contractual maturity of liabilities is based on carrying amounts and the earliest date on which we could be required to pay. The contractual maturity of assets is based on carrying amounts and includes the effect of callable features. The presentation of liabilities at carrying value in this table differs from "Note 27 Maturity analysis of financial liabilities" in the "Consolidated financial statements" section of this report, where these liabilities are presented on an undiscounted basis, as required by International Financial Reporting Standards.

Derivative financial instruments and Financial assets and liabilities at fair value held for trading are assigned to the column *Due within 1 month,* noting that the respective contractual maturities may extend over significantly longer periods.

Assets held to hedge unit-linked investment contracts (presented within Financial assets at fair value not held for trading) are assigned to the column *Due within 1 month*, consistent with the maturity assigned to the related amounts due under unit-linked investment contracts (presented within Other financial liabilities designated at fair value).

Other financial assets and liabilities with no contractual maturity, such as equity securities, are included in the *Perpetual / Not applicable* time bucket. Undated or perpetual instruments are classified based on the contractual notice period that the counterparty of the instrument is entitled to give. Where there is no contractual notice period, undated or perpetual contracts are included in the *Perpetual / Not applicable* time bucket.

Non-financial assets and liabilities with no contractual maturity are generally included in the *Perpetual / Not applicable* time bucket.

Loan commitments are classified on the basis of the earliest date they can be drawn down.

Maturity analysis of assets and liabilities

USD billion	Due within 1 month	Due between 1 and 3 months	Due between 3 and 6 months	Due between 6 and 9 months	Due between 9 and 12 months	Due between 1 and 2 years	Due between 2 and 5 years	Due over 5 years	Perpetual / Not applicable	Total
Assets										
Cash and balances at central banks	108.3							0.1		108.4
Loans and advances to banks	15.4	0.8	0.4	0.1	0.1	0.0	0.0	0.0		16.9
Receivables from securities financing transactions	67.6	17.5	4.8	2.6	1.7	1.3				95.3
Cash collateral receivables on derivative instruments	23.6									23.6
Loans and advances to customers	118.5	35.1	13.0	7.7	10.2	25.5	63.2	47.2		320.4
Other financial assets measured at amortized cost	5.2	0.7	0.4	0.7	0.7	2.0	4.5	8.3		22.6
Total financial assets measured at amortized cost	338.6	54.1	18.4	11.2	12.7	28.8	67.7	55.6		587.1
Financial assets at fair value held for trading	104.4									104.4
of which: assets pledged as collateral that may be sold or repledged by counterparties	*32.1*									*32.1*
Derivative financial instruments	126.2									126.2
Brokerage receivables	16.8									16.8
Financial assets at fair value not held for trading	34.3	8.8	5.4	5.5	6.1	7.8	11.0	2.4	1.4	82.7
Total financial assets measured at fair value through profit or loss	281.7	8.8	5.4	5.5	6.1	7.8	11.0	2.4	1.4	330.1
Financial assets measured at fair value through other comprehensive income	0.1	0.2	0.4	0.3	0.1	0.8	0.6	4.2		6.7
Investments in associates									1.1	1.1
Property, equipment and software									9.3	9.3
Goodwill and intangible assets									6.6	6.6
Deferred tax assets									10.1	10.1
Other non-financial assets	6.1						1.3	0.0		7.4
Total assets as of 31 December 2018	626.5	63.0	24.2	17.0	18.9	37.4	80.6	62.2	28.6	958.5
Total assets as of 31 December 2017	589.1	72.5	26.5	18.0	23.5	36.0	86.6	59.0	28.1	939.3

Maturity analysis of assets and liabilities (continued)

USD billion	Due within 1 month	Due between 1 and 3 months	Due between 3 and 6 months	Due between 6 and 9 months	Due between 9 and 12 months	Due between 1 and 2 years	Due between 2 and 5 years	Due over 5 years	Perpetual / Not applicable	Total
Liabilities										
Amounts due to banks	7.9	1.0	0.6	0.7	0.2	0.0	0.5	0.0		11.0
Payables from securities financing transactions	9.5	0.5	0.3		0.0					10.3
Cash collateral payables on derivative instruments	28.9									28.9
Customer deposits	395.8	13.0	4.5	1.2	1.2	2.3	1.8	0.0		419.8
Debt issued measured at amortized cost	4.5	5.4	17.4	13.3	7.5	18.4	30.7	24.8	10.2	132.3
Other financial liabilities measured at amortized cost	6.9									6.9
Total financial liabilities measured at amortized cost	453.5	19.9	22.8	15.3	9.0	20.7	33.0	24.9	10.2	609.2
Financial liabilities at fair value held for trading	28.9									28.9
Derivative financial instruments	125.7									125.7
Brokerage payables designated at fair value	38.4									38.4
Debt issued designated at fair value	15.9	18.0	4.8	2.2	2.8	1.8	4.6	7.1		57.0
Other financial liabilities designated at fair value	30.1	0.4	1.0	0.1	0.0	1.2	0.1	0.8		33.6
Total financial liabilities measured at fair value through profit or loss	239.1	18.4	5.8	2.3	2.7	2.9	4.7	7.8		283.7
Provisions	3.5									3.5
Other non-financial liabilities	3.6	3.2							2.3	9.0
Total liabilities as of 31 December 2018	699.7	41.4	28.6	17.6	11.7	23.6	37.7	32.7	12.5	905.4
Total liabilities as of 31 December 2017	684.8	41.8	31.6	16.2	15.0	14.3	38.9	35.3	8.8	886.7
Guarantees, commitments and forward starting transactions										
Loan commitments	34.1	0.3	0.2	0.1	0.1					34.7
Guarantees	19.8									19.8
Reverse repurchase agreements	9.0				0.0					9.0
Securities borrowing agreements	0.0									0.0
Total as of 31 December 2018	63.0	0.3	0.2	0.1	0.2	0.0	0.0	0.0		63.6
Total as of 31 December 2017	71.9	0.2	0.1	0.1	0.0	0.1	0.0	0.0		72.5

Off-balance sheet

Off-balance sheet arrangements

In the normal course of business, we enter into transactions that may not be recognized in whole or in part on our balance sheet in accordance with International Financial Reporting Standards. These transactions include derivative instruments, guarantees and similar arrangements, as well as some purchased and retained interests in non-consolidated structured entities, which are transacted for a number of reasons, including hedging and market-making activities, to meet specific needs of our clients or to offer investment opportunities to clients through entities that are not controlled by us.

When we incur an obligation or become entitled to an asset through these arrangements, we recognize them on the balance sheet. It should be noted that in certain instances the amount recognized on the balance sheet does not represent the full gain or loss potential inherent in such arrangements.

→ **Refer to "Note 1a Significant accounting policies," items 1, 3a and 3d, and "Note 31 Interests in subsidiaries and other entities" in the "Consolidated financial statements" section of this report for more information**

Off-balance sheet development in 2018

Forward starting reverse repurchase agreements decreased by USD 4 billion and forward starting repurchase agreements were stable at USD 8 billion. Guarantees increased by USD 1 billion, primarily in Global Wealth Management. Loan commitments decreased by USD 5 billion, primarily reflecting a decrease in our Corporate Client Solutions business in the Investment Bank resulting from commitments that were funded, canceled or syndicated during the year.

Off-balance sheet[1]

	As of		% change from
USD billion	31.12.18	31.12.17	31.12.17
Total guarantees[2]	17.0	16.4	4
Loan commitments[2]	34.1	39.0	(13)
Forward starting reverse repurchase agreements	9.0	13.0	(31)
Forward starting repurchase agreements	8.3	8.4	(1)

1 The information provided in this table is aligned with the scope disclosed in "Note 34 Guarantees, commitments and forward starting transactions" in the "Consolidated financial statements" section of this report. 2 Total guarantees and Loan commitments are shown net of sub-participations.

The paragraphs on the next page provide more information on several distinct off-balance sheet arrangements. Additional off-balance sheet information is primarily provided in Notes 10, 11, 21, 23, 24i, 26, 31 and 33 in the "Consolidated financial statements" section of this report, as well as in the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors.*

Risk disclosures, including our involvement with off-balance sheet vehicles

Refer to the "Risk management and control" section of this report for comprehensive credit, market and liquidity risk information related to our exposures, which includes exposures to off-balance sheet vehicles.

Support provided to non-consolidated investment funds

In 2018, the Group did not provide material support, financial or otherwise, to unconsolidated investment funds when the Group was not contractually obligated to do so, nor does the Group have an intention to do so.

Guarantees and similar arrangements

In the normal course of business, we issue various forms of guarantees, commitments to extend credit, standby and other letters of credit to support our clients, commitments to enter into forward starting transactions, note issuance facilities and revolving underwriting facilities. With the exception of related premiums, generally these guarantees and similar obligations are kept as off-balance sheet items unless a provision to cover probable losses or expected credit losses is required.

As of 31 December 2018, the net exposure (gross values less sub-participations) from guarantees and similar instruments was USD 17.0 billion compared with USD 16.4 billion as of 31 December 2017. Fee income from issuing guarantees was not significant to total revenues in 2018 and 2017.

Guarantees represent irrevocable assurances that, subject to the satisfaction of certain conditions, we will make payments in the event that our clients fail to fulfill their obligations to third parties. We also enter into commitments to extend credit in the form of credit lines that are available to secure the liquidity needs of our clients. The majority of these unutilized credit lines range in maturity from one month to five years. If customers fail to meet their obligations, our maximum exposure to credit risk is the contractual amount of these instruments. The risk is similar to the risk involved in extending loan facilities and is subject to the same risk management and control framework. In 2018, we recognized net credit loss expenses of USD 12 million related to loan commitments, guarantees and other credit facilities in scope of expected credit loss measurement compared with a net credit loss recovery of USD 22 million in 2017. Provisions recognized for guarantees and loan commitments were USD 116 million as of 31 December 2018 and USD 34 million as of 31 December 2017.

→ **Refer to "Note 10 Financial assets at amortized cost and other positions in scope of expected credit loss measurement" and "Note 23 Expected credit loss measurement" in the "Consolidated financial statements" section of this report for more information on provisions for loan commitments and guarantees**

For certain obligations, we enter into partial sub-participations to mitigate various risks from guarantees and loan commitments. A sub-participation is an agreement by another party to take a share of the loss in the event that the obligation is not fulfilled by the obligor and, where applicable, to fund a part of the credit facility. We retain the contractual relationship with the obligor, and the sub-participant has only an indirect relationship. We only enter into sub-participation agreements with banks to which we ascribe a credit rating equal to or better than that of the obligor.

Furthermore, we provide representations, warranties and indemnifications to third parties in the normal course of business.

Clearing house and exchange memberships

We are a member of numerous securities and derivative exchanges and clearing houses. In connection with some of those memberships, we may be required to pay a share of the financial obligations of another member who defaults or we may be otherwise exposed to additional financial obligations. While the membership rules vary, obligations generally would arise only if the exchange or clearing house had exhausted its resources. We consider the probability of a material loss due to such obligations to be remote.

Deposit insurance

Swiss banking law and the deposit insurance system require Swiss banks and securities dealers to jointly guarantee an amount of up to CHF 6 billion for privileged client deposits in the event that a Swiss bank or securities dealer becomes insolvent. FINMA estimates our share in the deposit insurance system to be CHF 0.9 billion.

As a member of the Deposit Protection Fund of the Association of German Banks (the Fund), we are required to provide an indemnity to the Fund related to its coverage of certain non-institutional deposits for amounts above EUR 100,000 and below EUR 210.1 million per depositor in the event that a German bank becomes unable to meet its obligations.

The aforementioned deposit insurance requirements represent a contingent payment obligation and expose us to additional risk. As of 31 December 2018, we considered the probability of a material loss from our obligations to be remote.

Contractual obligations

	Payment due by period				
USD million	Within 1 year	1–3 years	3–5 years	Over 5 years	Total
Long-term debt obligations	56,118	37,271	27,457	45,749	166,595
Finance lease obligations	3	2	0	18	24
Operating lease obligations	684	1,189	938	1,877	4,688
Purchase obligations	1,057	820	266	180	2,324
Total as of 31 December 2018	57,862	39,283	28,661	47,823	173,630

Contractual obligations

The table above summarizes payments due by period under contractual obligations as of 31 December 2018.

All contractual obligations included in this table, with the exception of purchase obligations (i.e., those in which we are committed to purchasing determined volumes of goods and services), are either recognized as liabilities on our balance sheet or, in the case of operating leases, disclosed in "Note 33 Operating leases and finance leases" in the "Consolidated financial statements" section of this report.

Long-term debt obligations as of 31 December 2018 were USD 167 billion. They consisted of debt issued designated at fair value (USD 59 billion) and long-term debt issued (USD 107 billion) and represent estimated future interest and principal payments on an undiscounted basis.

→ **Refer to "Note 27 Maturity analysis of financial liabilities" in the "Consolidated financial statements" section of this report for more information**

Approximately half of total long-term debt obligations had a variable rate of interest. Amounts due on interest rate swaps used to hedge interest rate risk inherent in fixed-rate debt issued, and designated in fair value hedge accounting relationships, are not included in the table above. The notional amount of these interest rate swaps was USD 64 billion as of 31 December 2018. Debt issued designated at fair value mainly consists of structured notes and is generally economically hedged, but it would not be practicable to estimate the amount and / or timing of the payments on interest swaps used to hedge these instruments as interest rate risk inherent in respective liabilities is generally risk managed on a portfolio level.

Within purchase obligations, the obligation to employees under mandatory notice periods is excluded (i.e., the period in which we must pay contractually agreed salaries to employees leaving the firm).

Our liabilities recognized on the balance sheet as *Amounts due to banks*, *Payables from securities financing transactions, Cash collateral payables on derivative instruments, Customer deposits, Other financial liabilities measured at amortized cost, Financial liabilities at fair value held for trading, Derivative financial instruments, Brokerage payables designated at fair value, Other financial liabilities designated at fair value, Provisions* and *Other non-financial liabilities* are excluded from the table above.

→ **Refer to the respective Notes, including "Note 28 Hedge accounting," in the "Consolidated financial statements" section of this report for more information**

Currency management

Strategy, objectives and governance

Beginning 1 October 2018, the US dollar has become the presentation currency of the Group. As a result of the change, our Group currency management activities have been recalibrated to reduce adverse currency effects on our reported financial results in US dollars, within limits set by the BoD. Group ALM focuses on three principal areas of currency risk management: (i) currency-matched funding and investment of non-US dollar assets and liabilities; (ii) sell-down of non-US dollar profits and losses; and (iii) selective hedging of anticipated non-US dollar profits and losses to further mitigate the effect of structural imbalances in the balance sheet. Non-trading foreign exchange risks arising from transactions denominated in a currency other than the reporting entity's functional currency are managed under market risk limits. Activities performed by Group ALM include the management of the structural currency composition at the consolidated Group level.

Currency-matched funding and investment of non-US dollar assets and liabilities

For monetary balance sheet items and non-core investments, as far as it is practical and efficient, we follow the principle of matching the currencies of our assets and liabilities for funding purposes. This avoids profits and losses arising from the translation of non-US dollar assets and liabilities.

Net investment hedge accounting is applied to non-US dollar core investments to balance the effect of foreign exchange movements on both common equity tier 1 (CET1) capital and the CET1 capital ratio.

→ **Refer to "Note 1a Significant accounting policies" and "Note 11 Derivative instruments" in the "Consolidated financial statements" section of this report for more information**

Sell-down of non-US dollar reported profits and losses

Income statement items of foreign subsidiaries and branches with a functional currency other than the US dollar are translated into US dollars on a monthly basis using the relevant month-end rate. To reduce earnings volatility on the translation of previously recognized earnings in foreign currencies, Group ALM centralizes the profits and losses arising in UBS AG and its branches and sells or buys the profit or loss for US dollars. Our foreign subsidiaries follow a similar monthly sell-down process into their own functional currencies. Retained earnings in foreign subsidiaries with a functional currency other than the US dollar are integrated and managed as part of our net investment hedge accounting program.

Hedging of anticipated non-US dollar profits and losses

The Group ALCO may at any time instruct Group ALM to execute hedges to protect anticipated future profits and losses in foreign currencies against possible adverse trends of foreign exchange rates. Although intended to hedge future earnings, these transactions are accounted for as open currency positions and are subject to internal market risk limits for value-at-risk and stress loss limits.

→ **Refer to the "Capital management" section of this report for more information on our active management of sensitivity to currency movements and its effect on our key ratios**

Cash flows

As a global financial institution, our cash flows are complex and often may bear little relation to our net earnings and net assets. Consequently, we believe that a traditional cash flow analysis is less meaningful in evaluating our liquidity position than the liquidity, funding and capital management frameworks and measures described elsewhere in the "Risk, treasury and capital management" section of this report.

Cash and cash equivalents

As of 31 December 2018, cash and cash equivalents totaled USD 126.1 billion, an increase of USD 21.2 billion from 31 December 2017, driven by net cash inflows from operating activities, partly offset by net cash outflows from investing activities.

Operating activities

In 2018, net cash inflows from operating activities were USD 28.9 billion. Net operating cash flow, before changes in operating assets and liabilities and income taxes paid, was an outflow of USD 0.2 billion. Changes in operating assets and liabilities resulted in net cash inflows of USD 29.1 billion, mainly driven by an USD 11.4 billion net inflow related to brokerage receivables and payables, a USD 11.1 billion net inflow from financial assets at fair value not held for trading and other financial assets and liabilities, a USD 11.1 billion inflow from financial assets and liabilities at fair value held for trading and derivative financial instruments, and a USD 9.1 billion inflow from customer deposits. These inflows were partly offset by a net outflow from securities financing transactions of USD 11.2 billion and a net outflow from lending balances to customers of USD 5.2 billion.

In 2017, net cash outflows from operating activities were USD 52.1 billion. Net operating cash flow, before changes in operating assets and liabilities and income taxes paid, was an inflow of USD 6.7 billion. Changes in operating assets and liabilities resulted in net cash outflows of USD 58.8 billion, mainly driven by a USD 23.5 billion net outflow related to financial assets and liabilities at fair value held for trading and derivative financial instruments, a USD 14.5 billion net outflow from loans and advances to customers, and a USD 13.0 billion net outflow from customer deposits.

Investing activities

Investing activities resulted in a net cash outflow of USD 6.1 billion in 2018, primarily related to net cash outflows of USD 3.8 billion from the purchase and redemption of debt securities measured at amortized cost.

In 2017, investing activities resulted in a net cash inflow of USD 5.2 billion, primarily related to gross cash inflows of USD 15.3 billion from the disposal and redemption of financial assets measured at fair value through other comprehensive income, partly offset by gross cash outflows of USD 8.6 billion related to the purchase of financial assets measured at fair value through other comprehensive income.

Financing activities

Financing activities resulted in a net cash inflow of USD 0.2 billion in 2018, mainly due to the net issuance of USD 16.3 billion of long-term debt, which includes debt issued designated at fair value, partly offset by net repayments of USD 12.2 billion of short-term debt, a dividend distribution to shareholders of USD 2.4 billion and net cash used to acquire treasury shares of USD 1.4 billion.

In 2017, financing activities resulted in a net cash inflow of USD 27.0 billion, mainly due to the net issuance of USD 24.5 billion of short-term debt and USD 6.3 billion of long-term debt, which includes debt issued designated at fair value, partly offset by a dividend distribution to shareholders of USD 2.3 billion.

→ **Refer to "Primary financial statements" in the "Consolidated financial statements" section of this report for more information on cash flows**

Statement of cash flows (condensed)

	For the year ended	
USD million	31.12.18	31.12.17
Net cash flow from / (used in) operating activities	28,913	(52,099)
Net cash flow from / (used in) investing activities	(6,132)	5,186
Net cash flow from / (used in) financing activities	190	26,988
Effects of exchange rate differences on cash and cash equivalents	(1,726)	5,745
Net increase / (decrease) in cash and cash equivalents	21,245	(14,180)
Cash and cash equivalents at the end of the year	126,079	104,834

Capital management

Capital management objectives, planning and activities

Capital management objectives

Audited | An adequate level of total loss-absorbing capacity (TLAC) in accordance with both our internal assessment and regulatory requirements is a prerequisite to conducting our business activities.▲ We are therefore committed to maintaining a strong TLAC position and sound TLAC ratios at all times, in order to meet regulatory capital requirements and our target capital ratios, and to support the growth of our businesses.

We expect to meet known future increases in TLAC requirements mainly through a combination of retaining earnings and issuing high-trigger loss-absorbing additional tier 1 (AT1) capital instruments, including Deferred Contingent Capital Plan (DCCP) employee compensation awards, as well as issuing senior unsecured debt that contributes to our TLAC.

As of 31 December 2018, our common equity tier 1 (CET1) capital ratio and our CET1 leverage ratio were 12.9% and 3.8%, respectively, each of which is in line with our capital guidance and above the requirements for Swiss systemically relevant banks (SRBs) as well as the Basel Committee on Banking Supervision (BCBS) requirements. We believe that our capital strength is a source of confidence for our stakeholders, contributes to our strong credit ratings and is one of the foundations of our success.

In December 2017, the BCBS announced the finalization of the Basel III framework, which we expect to be implemented by FINMA into national law with an effective date of 1 January 2022. During 2018, we established a multi-year program to assess, design and eventually implement the applicable requirements prescribed by FINMA. We are currently assessing the final revisions of the market risk framework issued by the BCBS in January. Until the assessment is complete, we continue to estimate that the introduction of the revised Basel III framework will likely lead to a further net increase in risk-weighted assets (RWA) of approximately USD 35 billion, before taking into account mitigating actions. These estimates are based on our current understanding of the relevant standards and may change as a result of new or changed regulatory interpretations, implementation of the Basel III standards into national law, changes in business growth, market conditions and other factors. We plan to update our guidance on CET1 ratios when further details on the final implementation of the new Basel III rules into national law are available and we have assessed the effect of incorporating elements of the regulatory Loss Potential Analysis in our consolidated stress test.

We have adopted IFRS 16, *Leases*, as of 1 January 2019, which will increase RWA and leverage ratio denominator (LRD) by approximately USD 3.5 billion, respectively.

→ **Refer to the "Our strategy" and "Performance targets and measurement" sections of this report for more information on our capital and resource guidelines 2019 –2021**

→ **Refer to "Our stated capital returns objective is based, in part, on capital ratios that are subject to regulatory change and may fluctuate significantly" in the "Risk factors" section of this report for more information on the risks related to our capital ratios**

Capital planning and activities

Audited | We manage our balance sheet, RWA, LRD and TLAC ratio levels within our internal limits and targets and on the basis of our regulatory TLAC requirements. Our strategic focus is to achieve an optimal attribution and use of financial resources between our business divisions and Corporate Center, as well as between our legal entities, while remaining within the limits defined for the Group and allocated to the business divisions by the Board of Directors (BoD). These resource allocations, in turn, affect business plans and earnings projections, which are reflected in our capital plans.

The annual strategic planning process includes a capital-planning component that is key in defining medium- and longer-term capital targets. It is based on an attribution of Group RWA and LRD internal limits to the business divisions. Effective 1 January 2019, changes in resource allocation from Corporate Center to the business divisions will be reflected in the equity attribution to the business divisions, alongside other updates to the equity attribution framework.

→ **Refer to the "Significant accounting and financial reporting changes" section of this report for more information on the alignment of the equity attribution framework to the revised resource allocation methodology**

→ **Refer to "Equity attribution and return on attributed equity" in this section for more information on how equity is attributed to our business divisions**

Limits and targets are established at both the Group and business division levels, and are submitted to the BoD for approval at least annually. In the target-setting process, we take into account the current and potential future TLAC requirements, our aggregate risk exposure in terms of capital-at-risk, the assessment by rating agencies, comparisons with peers and the effect of expected accounting policy changes.▲ Monitoring is based on these internal limits and targets and provides indications if changes are required. Any breach of the limits in place triggers the imposition of a series of required remediating actions.

Group Treasury plans for, and monitors, consolidated TLAC information on an ongoing basis, also considering developments in capital regulations. In addition, capital planning and monitoring are performed at the legal entity level for our significant subsidiaries that are subject to prudential supervision and must meet capital and other supervisory requirements.

→ **Refer to "Capital and capital ratios of our significant regulated subsidiaries" in this section for more information**

Audited | In 2018, we continued to focus on meeting the Swiss SRB capital requirements applicable as of 1 January 2020. Therefore, we executed a series of transactions, including:

- the issuance of USD 2.5 billion equivalent of high-trigger loss-absorbing additional tier 1 (AT1) capital instruments denominated in US dollars and Singapore dollars;
- the issuance of USD 3.4 billion equivalent of TLAC-eligible senior unsecured debt denominated in euros and Japanese yen,
- the issuance of USD 0.4 billion of high-trigger loss-absorbing AT1 capital instruments related to DCCP awards granted for the performance year 2018; and
- the call of USD 1.4 billion equivalent of low-trigger tier 2 capital instruments.▲

As of 31 December 2018, these transactions contributed to our TLAC ratio amounting to 31.7% of our RWA and 9.3% of our LRD compared with the respective minimum requirements of 26.3%, excluding countercyclical buffer requirements, and 9.2%, which are applicable as of 1 January 2020. These minimum requirements include the current applicable rebates.

→ **Refer to the "Swiss SRB going and gone concern requirements – time series" table in this section for more information**

Swiss SRB total loss-absorbing capacity framework

Disclosures in this section are provided for UBS Group AG on a consolidated basis and focus on information in accordance with the Basel III framework as applicable to Swiss systemically relevant banks (SRBs).

Information in accordance with the Basel Committee on Banking Supervision (BCBS) framework, including requirements for global systemically important banks as of 31 December 2018 for UBS Group AG consolidated, is provided in the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors.*

Capital and other regulatory information as of 31 December 2018 for UBS AG consolidated is provided in the UBS Group AG and UBS AG Annual Report 2018 under "Annual reporting" and in the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors.*

Capital and other regulatory information as of 31 December 2018 for UBS AG standalone, UBS Switzerland AG standalone, UBS Limited standalone and UBS Americas Holding LLC consolidated is provided in the "Financial and regulatory key figures for our significant regulated subsidiaries and sub-groups" section of this report and in the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors.*

Regulatory framework

The Basel III framework came into effect in Switzerland on 1 January 2013 and is embedded in the Swiss Capital Adequacy Ordinance (CAO). The CAO also includes the too big to fail provisions applicable to Swiss SRBs, which became effective on 1 July 2016 and will be transitioned in until 1 January 2020.

Under the Swiss SRB framework, going and gone concern requirements represent the total loss-absorbing capacity (TLAC) requirement of the Group. TLAC encompasses regulatory capital, such as common equity tier 1 (CET1), loss-absorbing additional tier 1 (AT1) and tier 2 capital instruments, as well as liabilities that can be written down or converted into equity in case of resolution or for the purpose of restructuring measures.

Common equity tier 1 capital

The Basel III framework includes prudential filters for the calculation of capital. These prudential filters consist mainly of capital deductions for deferred tax assets (DTAs) recognized for tax loss carry-forwards, DTAs on temporary differences that exceed a certain threshold and effects related to defined benefit plans. Effective from 1 January 2018, these filters are fully phased in and entirely reflected in our capital, RWA and capital ratios.

Capital and other instruments contributing to our total loss-absorbing capacity

In addition to CET1 capital, the following instruments contribute to our loss-absorbing capacity:
- loss-absorbing AT1 capital instruments (high- and low-trigger)
- loss-absorbing tier 2 capital instruments (high- and low-trigger)
- non-Basel III-compliant tier 2 capital instruments
- TLAC-eligible senior unsecured debt instruments

Under the Swiss SRB rules applicable as of 1 January 2020, going concern capital includes CET1 and high-trigger loss-absorbing AT1 capital instruments. Under the transitional rules for the Swiss SRB framework, outstanding low-trigger loss-absorbing AT1 capital instruments are available to meet the going concern capital requirements until their first call date, even if the first call date is after 31 December 2019. As of their first call date, these instruments are eligible to meet the gone concern requirements.

Outstanding high- and low-trigger loss-absorbing tier 2 capital instruments are available to meet the going concern capital requirements until the earlier of (i) their maturity or first call date or (ii) 31 December 2019, and to meet gone concern requirements thereafter. Outstanding low-trigger loss-absorbing tier 2 capital instruments are subject to amortization starting five years prior to their maturity, with the amortized portion qualifying as gone concern loss-absorbing capacity.

Non-Basel III-compliant tier 2 capital instruments and TLAC-eligible senior unsecured debt instruments are eligible to meet gone concern requirements.

Instruments available to meet gone concern requirements are eligible until one year before maturity, with a haircut of 50% applied in the last year of eligibility.

→ **Refer to "Bondholder information" at *www.ubs.com/investors* for more information on the eligibility of capital and senior unsecured debt instruments and on key features and terms and conditions of capital instruments**

Total loss-absorbing capacity and leverage ratio requirements

Going concern capital requirements

Once the Swiss SRB requirements are fully implemented by 1 January 2020, total going concern minimum requirements for all Swiss SRBs are a capital ratio requirement of 12.86% of RWA and a leverage ratio requirement of 4.5%. In addition to these minimum requirements, an add-on reflecting the degree of systemic importance is applied based on market share and the leverage ratio denominator (LRD). The add-on for UBS is expected to be 1.44% of RWA and 0.5% of our LRD, resulting in total going concern capital requirements applicable starting as of 1 January 2020 of 14.3% of RWA (excluding countercyclical buffer requirements) and 5.0% of the LRD. Furthermore, of the total going concern capital requirement of 14.3% of RWA, at least 10% must be met with CET1 capital, while a maximum of 4.3% can be met with high-trigger loss-absorbing AT1 capital instruments. Similarly, of the total going concern leverage ratio requirement of 5.0%, 3.5% must be met with CET1 capital, while a maximum of 1.5% can be met with high-trigger loss-absorbing AT1 capital instruments.

National authorities can put in place a countercyclical buffer requirement of up to 2.5% of RWA for private-sector credit exposures in their jurisdictions. The requirement must also be met with CET1 capital. The Swiss Federal Council has activated a countercyclical buffer requirement of 2% of RWA for mortgage loans on residential property in Switzerland, applicable since 30 June 2014. Furthermore, since 1 July 2016, we are required to apply additional countercyclical buffer requirements implemented in other Basel Committee member jurisdictions. The requirements were phased in by and became fully effective on 1 January 2019. The effect as of 31 December 2018 was immaterial.

Gone concern loss-absorbing capacity requirements

As an internationally active Swiss SRB, UBS is also subject to gone concern loss-absorbing capacity requirements. The gone concern requirements also include add-ons for market share and the LRD, and may be met with senior unsecured debt that is TLAC eligible.

Under the Swiss SRB framework, banks are eligible for a rebate on the gone concern requirement if they take actions that facilitate recovery and resolvability beyond the minimum requirements to ensure the integrity of systemically important functions in the case of an impending insolvency. In addition, in the event that CET1 capital, loss-absorbing AT1 or certain low-trigger tier 2 capital instruments are used to meet the gone concern requirements, such requirements may be reduced by up to 2.86 percentage points for the RWA-based requirement and up to 1 percentage point for the LRD-based requirement. The combined reduction applied for resolvability measures and the aforementioned gone concern requirement reduction for the use of low-trigger loss-absorbing AT1 and tier 2 capital instruments may not exceed 5.72 percentage points for the RWA-based requirement of 14.3% and 2 percentage points for the LRD-based requirement of 5%. The amount of the rebate for improved resolvability is assessed annually by FINMA, and will be phased in until 1 January 2020. Based on actions we completed up to December 2017 to improve resolvability, FINMA granted a rebate on the gone concern requirement of 40% of the aforementioned maximum rebate in the fourth quarter of 2018, which resulted in a reduction of 2.29 percentage points for the RWA-based requirement and 0.8 percentage points for the LRD-based requirement. We also qualify for an additional rebate for the use of low-trigger tier 2 capital instruments to fulfill gone concern requirements, and have agreed with FINMA to quantify this rebate at a later date.

In this report, we refer to the RWA-based gone concern requirements as gone concern loss-absorbing capacity requirements, and the RWA-based gone concern ratio is referred to as the gone concern loss-absorbing capacity ratio.

Swiss SRB going and gone concern requirements – time series[1]

	Risk-weighted assets (%)			Leverage ratio (%)		
		Requirements			Requirements	
	31.12.18	1.1.19	1.1.20	31.12.18	1.1.19	1.1.20
Going concern						
Minimum capital	8.00	8.00	8.00	3.00	3.00	3.00
Buffer capital including applicable add-ons[2]	5.15	5.58	6.30	1.00	1.50	2.00
Total going concern	13.15	13.58	14.30	4.00	4.50	5.00
of which: common equity tier 1 capital[2]	*9.75*	*9.68*	*10.00*	*2.90*	*3.20*	*3.50*
of which: maximum high-trigger loss-absorbing additional tier 1 capital	*3.40*	*3.90*	*4.30*	*1.10*	*1.30*	*1.50*
Gone concern						
Base requirement including applicable add-ons and rebate	7.48	9.74	12.01	2.52	3.36	4.20
Total gone concern	7.48	9.74	12.01	2.52	3.36	4.20
Total loss-absorbing capacity	20.62	23.32	26.31	6.52	7.86	9.20

1 This table includes a rebate equal to 40% of the maximum rebate on the gone concern requirements, which was granted by FINMA due to improved resolvability. This resulted in a reduction of 2.29 percentage points for the RWA-based requirement and 0.8 percentage points for the LRD-based requirement and will be phased in until 1 January 2020. This table does not include a rebate for the usage of low-trigger loss-absorbing tier 2 capital instruments to meet the gone concern requirements. 2 Going concern capital ratio requirements as of 31 December 2018 include a countercyclical buffer requirement of 0.29%. Requirements for subsequent periods exclude the effect of the countercyclical buffer requirement, as potential future countercyclical buffer requirements are not yet known.

Swiss SRB going and gone concern requirements and information[1]

	Swiss SRB, including transitional arrangements							
As of 31.12.18	RWA				LRD			
USD million, except where indicated	Requirement (%)	Actual (%)	Requirement	Eligible	Requirement (%)	Actual (%)	Requirement	Eligible
Common equity tier 1 capital	9.75	12.94	25,711	34,119	2.90	3.77	26,233	34,119
Maximum high-trigger loss-absorbing additional tier 1 capital[2,3]	3.40	6.89	8,967	18,167	1.10	2.01	9,951	18,167
of which: high-trigger loss-absorbing additional tier 1 capital		*3.71*		*9,790*		*1.08*		*9,790*
of which: low-trigger loss-absorbing additional tier 1 capital		*0.90*		*2,369*		*0.26*		*2,369*
of which: low-trigger loss-absorbing tier 2 capital		*2.28*		*6,008*		*0.66*		*6,008*
Total going concern capital	13.15[4]	19.82	34,678	52,287	4.00[5]	5.78	36,184	52,287
Base gone concern loss-absorbing capacity, including applicable add-ons and rebate	7.48[6]	11.93	19,718	31,452	2.52[6]	3.48	22,796	31,452
Total gone concern loss-absorbing capacity	7.48	11.93	19,718	31,452	2.52	3.48	22,796	31,452
Total loss-absorbing capacity	20.62	31.75	54,396	83,738	6.52	9.26	58,980	83,738

	Swiss SRB as of 1.1.20							
As of 31.12.18	RWA				LRD			
USD million, except where indicated	Requirement (%)	Actual (%)	Requirement	Eligible	Requirement (%)	Actual (%)	Requirement	Eligible
Common equity tier 1 capital	10.29	12.94	27,135	34,119	3.50	3.77	31,661	34,119
Maximum high-trigger loss-absorbing additional tier 1 capital[2]	4.30	4.61	11,341	12,160	1.50	1.34	13,569	12,160
of which: high-trigger loss-absorbing additional tier 1 capital		*3.71*		*9,790*		*1.08*		*9,790*
of which: low-trigger loss-absorbing additional tier 1 capital		*0.90*		*2,369*		*0.26*		*2,369*
Total going concern capital	14.59[7]	17.55	38,476	46,279	5.00[8]	5.12	45,230	46,279
Base gone concern loss-absorbing capacity, including applicable add-ons and rebate	12.01[9]	14.20	31,681	37,460	4.20[9]	4.14	37,993	37,460
Total gone concern loss-absorbing capacity	12.01	14.20	31,681	37,460	4.20	4.14	37,993	37,460
Total loss-absorbing capacity	26.60	31.75	70,158	83,738	9.20	9.26	83,223	83,738

1 This table includes a rebate equal to 40% of the maximum rebate on the gone concern requirements, which was granted by FINMA and will be phased in until 1 January 2020. This table does not include a rebate for the usage of low-trigger loss-absorbing tier 2 capital instruments to meet the gone concern requirements. 2 Includes outstanding low-trigger loss-absorbing additional tier 1 (AT1) capital instruments, which are available under the transitional rules of the Swiss SRB framework to meet the going concern requirements until their first call date, even if the first call date is after 31 December 2019. As of their first call date, these instruments are eligible to meet the gone concern requirements. 3 Includes outstanding high- and low-trigger loss-absorbing tier 2 capital instruments, which are available under the transitional rules of the Swiss SRB framework to meet the going concern requirements until the earlier of (i) their maturity or first call date or (ii) 31 December 2019, and to meet gone concern requirements thereafter. Outstanding low-trigger loss-absorbing tier 2 capital instruments are subject to amortization starting five years prior to their maturity, with the amortized portion qualifying as gone concern loss-absorbing capacity. Instruments available to meet gone concern requirements are eligible until one year before maturity, with a haircut of 50% applied in the last year of eligibility. 4 Consists of a minimum capital requirement of 8% and a buffer capital requirement of 5.15%, including the effect of countercyclical buffers of 0.29%. 5 Consists of a minimum leverage ratio requirement of 3% and a buffer leverage ratio requirement of 1%. 6 Includes applicable add-ons of 0.72% for RWA and 0.25% for LRD and a rebate of 1.42% for RWA and 0.48% for LRD. 7 Consists of a minimum capital requirement of 8% and a buffer capital requirement of 6.59%, including the effect of countercyclical buffers of 0.29% and applicable add-ons of 1.44%. 8 Consists of a minimum leverage ratio requirement of 3% and a buffer leverage ratio requirement of 2%, including applicable add-ons of 0.5%. 9 Includes applicable add-ons of 1.44% for RWA and 0.5% for LRD and a rebate of 2.29% for RWA and 0.80% for LRD.

Total loss-absorbing capacity

Swiss SRB going and gone concern information

	Swiss SRB, including transitional arrangements		Swiss SRB as of 1.1.20	
USD million, except where indicated	31.12.18	31.12.17[1]	31.12.18	31.12.17
Going concern capital				
Common equity tier 1 capital	34,119[2]	36,412	34,119[2]	33,516
High-trigger loss-absorbing additional tier 1 capital	9,790	7,034	9,790	7,034
Low-trigger loss-absorbing additional tier 1 capital	2,369	1,115[3]	2,369	2,445
Total loss-absorbing additional tier 1 capital	12,160	8,150	12,160	9,479
Total tier 1 capital	46,279	44,562	46,279	42,995
High-trigger loss-absorbing tier 2 capital	0	447		
Low-trigger loss-absorbing tier 2 capital[4]	6,008	8,077		
Total tier 2 capital	6,008	8,524		
Total going concern capital	52,287	53,086	46,279	42,995
Gone concern loss-absorbing capacity[5]				
High-trigger loss-absorbing tier 2 capital				223
Low-trigger loss-absorbing tier 2 capital[4]	771	388	6,779	8,466
Non-Basel III-compliant tier 2 capital[6]	693	707	693	707
Total tier 2 capital	1,464	1,095	7,471	9,396
TLAC-eligible senior unsecured debt	29,988	27,937	29,988	27,937
Total gone concern loss-absorbing capacity	31,452	29,032	37,460	37,333
Total loss-absorbing capacity				
Total loss-absorbing capacity	83,738	82,118	83,738	80,328
Risk-weighted assets / leverage ratio denominator				
Risk-weighted assets	263,747	244,559	263,747	243,636
Leverage ratio denominator	904,598	910,591	904,598	909,032
Capital and loss-absorbing capacity ratios (%)				
Going concern capital ratio	19.8	21.7	17.5	17.6
of which: common equity tier 1 capital ratio	*12.9*	*14.9*	*12.9*	*13.8*
Gone concern loss-absorbing capacity ratio	11.9	11.9	14.2	15.3
Total loss-absorbing capacity ratio	31.7	33.6	31.7	33.0
Leverage ratios (%)				
Going concern leverage ratio	5.8	5.8	5.1	4.7
of which: common equity tier 1 leverage ratio	*3.77*	*4.00*	*3.77*	*3.69*
Gone concern leverage ratio	3.5	3.2	4.1	4.1
Total loss-absorbing capacity leverage ratio	9.3	9.0	9.3	8.8

1 As of 31 December 2017, the phase-in deduction applied for the purpose of the CET1 capital calculation was 80%. These effects are fully phased in from 1 January 2018. Prudential filters applied to RWA and LRD are also fully phased in from 1 January 2018. 2 IFRS 9 expected credit loss effects are considered on a phased-in basis in accordance with the FINMA guidance. Refer to "Introduction and basis for preparation" of our 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at www.ubs.com/investors for more information. 3 Low-trigger loss-absorbing additional tier 1 capital of USD 2,445 million was partly offset by required deductions for goodwill of USD 1,329 million. 4 Under the transitional rules of the Swiss SRB framework, outstanding low-trigger loss-absorbing tier 2 capital instruments are subject to amortization starting five years prior to their maturity, with the amortized portion qualifying as gone concern loss-absorbing capacity. 5 Instruments available to meet gone concern requirements are eligible until one year before maturity, with a haircut of 50% applied in the last year of eligibility. 6 Non-Basel III-compliant tier 2 capital instruments qualify as gone concern instruments.

Audited |

Reconciliation of IFRS equity to Swiss SRB common equity tier 1 capital

USD million	31.12.18	31.12.17
Total IFRS equity	53,103	52,554
Equity attributable to non-controlling interests	(176)	(59)
Defined benefit plans, net of tax	0	0
Deferred tax assets recognized for tax loss carry-forwards	(6,107)	(5,947)
Deferred tax assets on temporary differences, excess over threshold	(586)	(879)
Goodwill, net of tax[1]	(6,514)	(6,646)
Intangible assets, net of tax	(251)	(220)
Compensation-related components (not recognized in net profit)	(1,652)	(1,662)
Expected losses on advanced internal ratings-based portfolio less provisions[2]	(368)	(650)
Unrealized (gains) / losses from cash flow hedges, net of tax	(109)	(360)
Unrealized own credit related to financial liabilities designated at fair value, net of tax, and replacement values	(397)	136
Unrealized gains related to debt instruments at fair value through OCI, net of tax	(4)	(198)[3]
Prudential valuation adjustments	(120)	(61)
Accruals for proposed dividends to shareholders	(2,648)	(2,501)
Other	(52)	8
Total common equity tier 1 capital	34,119	33,516

1 Includes goodwill related to significant investments in financial institutions of USD 176 million (31 December 2017: USD 359 million) presented on the balance sheet line "Investments in associates." 2 From 1 January 2018, provisions have been calculated in accordance with IFRS 9. Provisions in prior periods have been calculated in accordance with International Accounting Standard (IAS) 39. 3 As of 31 December 2017 related to equity and debt instruments available for sale.

▲

Total loss-absorbing capacity and movement under Swiss SRB rules applicable as of 1 January 2020

Going concern capital and movement

Audited | Our CET1 capital mainly consists of share capital, share premium, which primarily consists of additional paid-in capital related to shares issued, and retained earnings. A detailed reconciliation of IFRS equity to CET1 capital is provided in the "Reconciliation of IFRS equity to Swiss SRB common equity tier 1 capital" table.

Our CET1 capital increased by USD 0.6 billion to USD 34.1 billion as of 31 December 2018, mainly as a result of operating profit before tax, partly offset by accruals for capital returns to shareholders and our share repurchase program.

→ **Refer to "UBS shares" in this section for more information on the share repurchase program**

Our loss-absorbing additional tier 1 (AT1) capital increased by USD 2.7 billion to USD 12.2 billion as of 31 December 2018, primarily due to the issuance of USD 2.5 billion equivalent of US dollar- and Singapore dollar-denominated AT1 capital instruments and a USD 0.4 billion increase related to Deferred Contingent Capital Plan (DCCP) awards granted for the performance year 2018, partly offset by currency effects.▲

Gone concern loss-absorbing capacity and movement

Audited | Our total gone concern loss-absorbing capacity included USD 30.0 billion of TLAC-eligible senior unsecured debt, and increased by USD 0.1 billion to USD 37.5 billion as of 31 December 2018.▲ The issuance of USD 3.4 billion of TLAC-eligible senior unsecured debt during the year was offset by a call of a low-trigger tier 2 capital instrument in the amount of USD 1.4 billion, a USD 1.1 billion decrease in eligibility of DCCP awards and two TLAC-eligible senior unsecured bonds due to the shortening of the residual tenor, and currency effects.

Loss-absorbing capacity and leverage ratios

Our CET1 capital ratio was 12.9%, a decrease of 0.8 percentage points compared with 31 December 2017, reflecting a USD 0.6 billion increase in CET1 capital and a USD 20.1 billion increase in risk-weighted assets (RWA).

Our CET1 leverage ratio increased 0.08 percentage points to 3.8% as of 31 December 2018, reflecting the aforementioned increase in CET1 capital and a USD 4 billion decrease in the leverage ratio denominator (LRD).

Our gone concern loss-absorbing capacity ratio decreased 1.1 percentage points to 14.2%, primarily driven by the aforementioned RWA increase. Our gone concern leverage ratio remained at 4.1%.

Swiss SRB total loss-absorbing capacity movement[1]

USD million	Swiss SRB, including transitional arrangements	Swiss SRB as of 1.1.20
Going concern capital		
Common equity tier 1 capital as of 31.12.17	36,412	33,516
Deferred tax assets recognized for tax loss carry-forwards, additional phase-in effect	(1,189)	
Deferred tax assets recognized for temporary differences, additional phase-in effect	(377)	
Goodwill, additional phase-in effect	(1,329)	
IFRS 9 transition effect	(284)	(284)
IFRS 15 transition effect	(28)	(28)
Common equity tier 1 capital as of 1.1.18	33,204	33,204
Operating profit before tax	5,991	5,991
Current tax (expense) / benefit	(1,043)	(1,043)
Foreign currency translation effects	(399)	(399)
Compensation- and own shares-related capital components (including share premium)	38	38
Defined benefit plans	(220)	(220)
Share repurchase program[2]	(762)	(762)
Accruals for proposed dividends to shareholders	(2,648)	(2,648)
Other	(42)	(42)
Common equity tier 1 capital as of 31.12.18	34,119	34,119
Loss-absorbing additional tier 1 capital as of 31.12.17	8,150	9,479
Goodwill, additional phase-in effect	1,329	
Loss-absorbing additional tier 1 capital as of 1.1.18	9,479	9,479
Issuance of high-trigger loss-absorbing additional tier 1 capital	2,931	2,931
Foreign currency translation and other effects	(251)	(251)
Loss-absorbing additional tier 1 capital as of 31.12.18	12,160	12,160
Tier 2 capital as of 31.12.17	8,524	
Call of a low-trigger loss-absorbing tier 2 capital instrument	(1,438)	
Amortization due to shortening of residual tenor	(379)	
Amortization of Deferred Contingent Capital Plan (DCCP) awards	(431)	
Foreign currency translation and other effects	(269)	
Tier 2 capital as of 31.12.18	6,008	
Total going concern capital as of 31.12.17	53,086	42,995
Total going concern capital as of 31.12.18	52,287	46,279
Gone concern loss-absorbing capacity		
Tier 2 capital as of 31.12.17	1,095	9,396
Amortized portion, which qualifies as gone concern loss-absorbing capacity	379	
Call of a low-trigger loss-absorbing tier 2 capital instrument		(1,438)
Decrease in eligibility due to shortening of residual tenor		(228)
Foreign currency translation and other effects	(10)	(258)
Tier 2 capital as of 31.12.18	1,464	7,471
TLAC-eligible senior unsecured debt as of 31.12.17	27,937	27,937
Issuance of TLAC-eligible senior unsecured debt instruments	3,394	3,394
Decrease in eligibility due to shortening of residual tenor	(877)	(877)
Foreign currency translation and other effects	(466)	(466)
TLAC-eligible senior unsecured debt as of 31.12.18	29,988	29,988
Total gone concern loss-absorbing capacity as of 31.12.17	29,032	37,333
Total gone concern loss-absorbing capacity as of 31.12.18	31,452	37,460
Total loss-absorbing capacity		
Total loss-absorbing capacity as of 31.12.17	82,118	80,328
Total loss-absorbing capacity as of 31.12.18	83,738	83,738

1 The movement table line items, except operating profit before tax, current taxes and foreign currency translation effects, represent the sum of the respective first quarter to third quarter 2018 movements (under the presentation currency Swiss franc translated at spot rates prevailing at each quarter end to US dollars) and the respective fourth quarter 2018 movements (under the presentation currency US dollars) disclosed in the fourth quarter 2018 report. 2 Refer to "UBS shares" in this section for more information.

Additional information

Active management of sensitivity to currency movements

Corporate Center – Group Asset and Liability Management (Group ALM) is mandated to minimize adverse effects from changes in currency rates on our CET1 capital and CET1 capital ratio. A significant portion of our capital and RWA are denominated in Swiss francs, euros, British pounds and other currencies. In order to hedge the CET1 capital ratio, CET1 capital needs to have foreign currency exposure, leading to currency sensitivity of CET1 capital. As a consequence, it is not possible to simultaneously fully hedge the capital and the capital ratio. As the proportion of RWA denominated in foreign currencies outweighs the capital in these currencies, a significant appreciation of the US dollar against these currencies could benefit our capital ratios, while a significant depreciation of the US dollar against these currencies could adversely affect our capital ratios. The Group Asset and Liability Management Committee, a committee of the Group Executive Board, can adjust the currency mix in capital, within limits set by the Board of Directors, to balance the effect of foreign exchange movements on the CET1 capital and capital ratio. Limits are in place for the sensitivity of both CET1 capital and the capital ratio to an appreciation or depreciation of 10% in the value of the US dollar against other currencies.

Sensitivity to currency movements

Risk-weighted assets

We estimate that a 10% depreciation of the US dollar against other currencies would have increased our RWA by USD 11 billion and our CET1 capital by USD 1.2 billion as of 31 December 2018 and reduced our CET1 capital ratio by 9 basis points. Conversely, we estimate that a 10% appreciation of the US dollar against other currencies would have reduced our RWA by USD 10 billion and our CET1 capital by USD 1.1 billion and increased our CET1 capital ratio by 9 basis points.

Leverage ratio denominator

Our leverage ratio is also sensitive to foreign exchange movements as a result of the currency mix of our capital and LRD. When adjusting the currency mix in capital, potential effects on the going concern leverage ratio are taken into account and the sensitivity of the going concern leverage ratio to an appreciation or depreciation of 10% in the value of the US dollar against other currencies is actively monitored.

We estimate that a 10% depreciation of the US dollar against other currencies would have increased our LRD by USD 57 billion and reduced our Swiss SRB going concern leverage ratio by 15 basis points. Conversely, we estimate that a 10% appreciation of the US dollar against other currencies would have reduced our LRD by USD 51 billion and increased our Swiss SRB going concern leverage ratio by 16 basis points.

The aforementioned sensitivities do not consider foreign currency translation effects related to defined benefit plans other than those related to the currency translation of the net equity of foreign operations.

Estimated effect on capital from litigation, regulatory and similar matters subject to provisions and contingent liabilities

We have estimated the loss in capital that we could incur as a result of the risks associated with the matters described in "Note 21 Provisions and contingent liabilities" in the "Consolidated financial statements" section of this report. We have used for this purpose the advanced measurement approach (AMA) methodology that we use when determining the capital requirements associated with operational risks, based on a 99.9% confidence level over a 12-month horizon. The methodology takes into consideration UBS and industry experience for the AMA operational risk categories to which those matters correspond, as well as the external environment affecting risks of these types, in isolation from other areas. On this standalone basis, we estimate the loss in capital that we could incur over a 12-month period as a result of our risks associated with these operational risk categories at USD 4.5 billion as of 31 December 2018, a reduction of USD 0.3 billion from 31 December 2017. This estimate is not related to and does not take into account any provisions recognized for any of these matters and does not constitute a subjective assessment of our actual exposure in any of these matters.

→ **Refer to "Operational risk" in the "Risk management and control" section of this report for more information**

→ **Refer to "Note 21 Provisions and contingent liabilities" in the "Consolidated financial statements" section of this report for more information**

Capital and capital ratios of our significant regulated subsidiaries

UBS Group AG is a holding company and conducts substantially all of its operations through UBS AG and its subsidiaries. UBS Group AG and UBS AG have contributed a significant portion of their respective capital and provide substantial liquidity to subsidiaries. Many of these subsidiaries are subject to regulations requiring compliance with minimum capital, liquidity and similar requirements. Regulatory capital components and capital ratios of our significant regulated subsidiaries determined under the regulatory framework of each subsidiary's home jurisdiction are provided in the "Financial and regulatory key figures for our significant regulated subsidiaries and sub-groups" section of this report. Supervisory authorities generally have discretion to impose higher requirements or to otherwise limit the activities of subsidiaries. Supervisory authorities also may require entities to measure capital and leverage ratios on a stressed basis and may limit the ability of the entity to engage in new activities or take capital actions based on the results of those tests.

→ **Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors* for more capital and other regulatory information on our significant regulated subsidiaries and sub-groups**

Joint liability of UBS AG and UBS Switzerland AG

In June 2015, upon the transfer of the Personal & Corporate Banking and Global Wealth Management businesses booked in Switzerland from UBS AG to UBS Switzerland AG, UBS AG and UBS Switzerland AG assumed joint liability for obligations transferred to UBS Switzerland AG and existing at UBS AG, respectively. Under certain circumstances, the Swiss Banking Act and FINMA's Banking Insolvency Ordinance authorize FINMA to modify, extinguish or convert to common equity liabilities of a bank in connection with a resolution or insolvency of such bank.

The joint liability amounts have declined as obligations matured, terminated or were novated following the transfer date. As of 31 December 2018, the liability of UBS Switzerland AG amounted to less than CHF 25.6 billion (or the US dollar equivalent of 26.1 billion). The respective liability of UBS AG has been substantially extinguished.

Risk-weighted assets

RWA development in 2018

As of 31 December 2018, RWA increased by USD 20.1 billion to USD 263.7 billion, mainly driven by a USD 16.2 billion increase in credit and counterparty credit risk and a USD 7.4 billion increase in market risk, partly offset by a USD 3.9 billion decrease in operational risk.

The total RWA increase was primarily driven by a USD 19.1 billion increase from model updates and methodology and policy changes, primarily relating to credit and counterparty credit risk. RWA also increased by USD 5.3 billion from asset size and other movements. These increases were partly offset by a decrease in currency effects of USD 2.6 billion and from lower net regulatory add-ons of USD 1.7 billion, whereby USD 5.9 billion lower regulatory add-ons for credit and counterparty credit risk were partly offset by USD 4.3 billion higher regulatory add-ons for market risk.

→ **Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors* for more information on RWA movements and definitions of RWA movement key drivers**

Movement in risk-weighted assets by key driver

USD billion	RWA as of 31.12.17	Currency effects	Methodology and policy changes	Model updates / changes	Regulatory add-ons	Asset size and other[1]	RWA as of 31.12.18
Credit and counterparty credit risk[2]	131.8	(2.3)	4.0	18.5	(5.9)	1.8	147.9
Non-counterparty-related risk	17.8	(0.3)	0.0	0.0	0.0	0.8	18.3
Market risk	12.6	0.0	0.0	0.0	4.3	3.2	20.0
Operational risk	81.5	0.0	0.0	(3.4)	0.0	(0.5)	77.6
Total	**243.6**	**(2.6)**	**4.0**	**15.1**	**(1.7)**	**5.3**	**263.7**

1 Includes the Pillar 3 categories "Asset size," "Credit quality of counterparties," "Acquisitions and disposals" and "Other." Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at www.ubs.com/investors for more information. 2 Includes settlement risk, credit valuation adjustments, equity exposures in the banking book and securitization exposures in the banking book.

Credit and counterparty credit risk

Credit and counterparty credit risk RWA increased by USD 16.2 billion to USD 147.9 billion as of 31 December 2018. This increase was primarily driven by increases from model updates of USD 18.5 billion, methodology and policy changes of USD 4.0 billion and asset size of USD 3.2 billion, and partly offset by decreases in regulatory add-ons of USD 5.9 billion, asset quality of USD 1.7 billion, currency effects and other changes.

Movement in credit and counterparty credit risk RWA by key driver[1]

USD billion	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Group
Total credit and counterparty credit risk RWA as of 31.12.17	**26.4**	**45.1**	**1.5**	**44.0**	**1.8**	**8.2**	**4.6**	**131.8**
Asset size	1.3	1.9	0.1	(0.5)	0.1	0.9	(0.5)	**3.2**
Asset quality	0.3	(2.8)	0.0	1.2	0.0	0.1	(0.5)	**(1.7)**
Model updates	2.8	15.6	0.0	0.1	0.0	0.0	0.0	**18.5**
Methodology and policy changes	0.1	0.3	0.0	3.5	0.0	0.1	0.0	**4.0**
Regulatory add-ons	(1.8)	(6.7)	0.0	2.6	0.0	0.0	0.0	**(5.9)**
Acquisitions and disposals	0.5	0.0	0.0	0.1	0.0	0.0	0.0	**0.6**
Foreign exchange movements	(0.3)	(0.4)	0.0	(1.3)	(0.1)	(0.1)	(0.1)	**(2.3)**
Other	0.0	(0.3)	0.0	0.0	0.0	0.0	0.0	**(0.3)**
Total movement	**2.9**	**7.6**	**0.1**	**5.8**	**0.0**	**1.0**	**(1.2)**	**16.2**
Total credit and counterparty credit risk RWA as of 31.12.18	29.3	52.7	1.6	49.8	1.9	9.2	3.4	147.9

1 Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at www.ubs.com/investors for the definitions of credit and counterparty credit risk RWA movement categories.

Model updates

The increase in credit and counterparty credit risk RWA from model updates of USD 18.5 billion was driven by the implementation of revised probability of default (PD) and loss given default (LGD) models, as part of our continuous efforts to enhance models to reflect market developments, and newly available data for residential mortgages and income-producing real estate, as well as a new LGD model for unsecured financing and commercial self-used real estate, resulting in an increase of USD 15.2 billion in Personal & Corporate Banking and USD 2.5 billion in Global Wealth Management. In addition, RWA increased by USD 0.8 billion due to the implementation of credit conversion factors for Lombard loan facilities that are entirely undrawn in Global Wealth Management, amounting to USD 0.3 billion, by USD 0.4 billion in Personal & Corporate Banking from the calibration of aircraft leasing PD and LGD parameters and by net USD 0.1 billion in the Investment Bank due to an increase of USD 0.3 billion from the revision of the modeled exposure methodology and a decrease of USD 0.2 billion from the LGD parameter update for sovereigns.

In the first quarter of 2019, we expect that there will be further regulatory-driven increases in credit risk RWA of USD 3 billion as well as an accounting-driven increase of USD 3.5 billion due to the implementation of IFRS 16, *Leases.* The extent and timing of RWA increases may vary as methodology changes and model updates are completed and receive regulatory approval, and as regulatory multipliers are adjusted. In addition, changes in composition of the relevant portfolios and other factors will affect our RWA.

→ **Refer to "Credit risk models" in the "Risk management and control" section of this report for more information on model updates**

Regulatory add-ons

The net RWA decrease from regulatory add-ons of USD 5.9 billion was primarily driven by the reduction of USD 8.5 billion following the aforementioned model updates to PD and LGD parameters for residential mortgages in Personal & Corporate Banking and Global Wealth Management. The decrease was partly offset by a USD 2.6 billion increase resulting from a higher internal ratings-based multiplier on Investment Bank exposures to corporates.

Methodology changes

Upon adoption of IFRS 9, equity instruments were reclassified from fair value through other comprehensive income (available for sale) to fair value through profit or loss as unrealized gains on such instruments (previously deducted) are now added back for the purpose of the RWA exposure calculation, resulting in a USD 0.7 billion increase in RWA. Additionally, the methodology applied for structured margin lending transactions was revised, as agreed with FINMA, thus leading to a USD 3.3 billion increase of RWA.

→ **Refer to the "Risk management and control" section of this report and the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors* for more information on credit and counterparty credit risk developments**

Market risk

Market risk RWA increased by USD 7.4 billion to USD 20.0 billion as of 31 December 2018, mainly driven by USD 4.3 billion higher regulatory add-ons and a USD 3.2 billion increase resulting from asset size and other movements.

The USD 4.3 billion higher RWA from regulatory add-ons reflected a combination of the concluding changes to our risks-not-in-VaR (RniV) framework as of the third quarter of 2018, as well as updates from the monthly RniV assessment, and higher levels of regulatory VaR and stressed VaR.

The USD 3.2 billion increase in asset size and other movements was primarily driven by higher average VaR and stressed VaR levels observed during the fourth quarter, mainly from increased market volatility and client flow in the Investment Bank's Equities business.

→ **Refer to the "Risk management and control" section of this report and the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors* for more information on market risk developments**

Operational risk

Operational risk RWA decreased by USD 3.9 billion to USD 77.6 billion as of 31 December 2018, driven by USD 3.4 billion from changes to the advanced measurement approach (AMA) model used for the calculation of operational risk capital as well as a consequential one-time translation effect of USD 0.5 billion due to the change of our presentation currency from Swiss franc to US dollar.

→ **Refer to "Operational risk" in the "Risk management and control" section of this report for more information on the AMA model**

Risk-weighted assets by business division and Corporate Center unit

USD billion	Global Wealth Management	Personal & Corporate Banking	Asset Manage-ment	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Total RWA
				31.12.18				
Credit and counterparty credit risk[1]	29.3	52.7	1.6	49.8	1.9	9.2	3.4	147.9
Non-counterparty-related risk[2]	0.1	0.1	0.1	0.0	18.1	0.0	0.0	18.3
Market risk	1.3	0.0	0.0	16.8[3]	0.0	0.6	1.3	20.0
Operational risk	27.5	4.0	2.4	20.2	11.9	2.3	9.2	77.6
Total[4]	58.2	56.8	4.1	86.9	31.8	12.0	13.9	263.7
RWA held by CC – Group ALM on behalf of business divisions and other CC units[5]	2.3	1.1	0.1	0.4	0.0	(4.0)	0.0	0.0
RWA after allocation from CC – Group ALM to business divisions and other CC units	60.5	57.9	4.2	87.3	31.8	8.0	13.9	263.7
				31.12.17				
Credit and counterparty credit risk[1]	26.4	45.1	1.5	44.0	1.8	8.2	4.6	131.8
Non-counterparty-related risk[2]	0.1	0.1	0.1	0.0	17.6	0.0	0.0	17.8
Market risk	1.7	0.0	0.0	12.0	(3.2)[3]	0.7	1.3	12.6
Operational risk	27.7	4.1	2.5	20.4	13.7	2.6	10.6	81.5
Total[4]	55.9	49.3	4.0	76.5	29.9	11.5	16.5	243.6
RWA held by CC – Group ALM on behalf of business divisions and other CC units[5]	2.3	1.1	0.1	0.5	0.0	(4.0)	0.0	0.0
RWA after allocation from CC – Group ALM to business divisions and other CC units	58.1	50.4	4.1	77.0	29.9	7.5	16.6	243.6
				31.12.18 vs 31.12.17				
Credit and counterparty credit risk[1]	2.9	7.6	0.1	5.8	0.0	1.0	(1.2)	16.2
Non-counterparty-related risk[2]	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5
Market risk	(0.4)	0.0	0.0	4.8	3.2	(0.1)	(0.1)	7.4
Operational risk	(0.2)	0.0	0.0	(0.1)	(1.8)	(0.3)	(1.4)	(3.9)
Total[4]	2.3	7.5	0.1	10.4	1.9	0.5	(2.7)	20.1
RWA held by CC – Group ALM on behalf of business divisions and other CC units[5]	0.0	0.0	0.0	(0.1)	0.0	0.0	0.0	0.0
RWA after allocation from CC – Group ALM to business divisions and other CC units	2.4	7.6	0.1	10.3	1.9	0.5	(2.7)	20.1

1 Includes settlement risk, credit valuation adjustments, equity exposures in the banking book and securitization exposures in the banking book. 2 Non-counterparty-related risk includes deferred tax assets recognized for temporary differences (31 December 2018: USD 8.8 billion; 31 December 2017: USD 8.6 billion), property, equipment and software (31 December 2018: USD 9.3 billion; 31 December 2017: USD 9.0 billion) and other items (31 December 2018: USD 0.2 billion; 31 December 2017: USD 0.2 billion). 3 As of 31 December 2018, the effect of portfolio diversification across businesses, which was previously reflected in Corporate Center – Services market risk RWA, was included in the Investment Bank market risk RWA. 4 Represents RWA held by the respective business division or Corporate Center unit. 5 Represents RWA held by Corporate Center – Group ALM that are directly associated with activity managed centrally on behalf of the business divisions and other Corporate Center units. Refer to "Equity attribution and return on attributed equity" in this section for more information.

Leverage ratio denominator

The leverage ratio denominator (LRD) decreased by USD 4 billion to USD 905 billion as of 31 December 2018, primarily driven by decreases from currency effects of USD 12 billion and incremental netting and collateral mitigation as well as policy changes of USD 2 billion, partly offset by an increase of USD 9 billion from asset size and other sources.

Movement in leverage ratio denominator by key driver

USD billion	LRD as of 31.12.17	Currency effects	Incremental netting and collateral mitigation	Policy changes	Asset size and other	LRD as of 31.12.18
On-balance sheet exposures (excluding derivative exposures and SFTs)[1]	663.6	(8.2)		(0.6)	8.3	663.1
Derivative exposures	100.6	(2.1)	(1.4)		(1.8)	95.4
Securities financing transactions	127.4	(1.4)			5.0	130.9
Off-balance sheet items	31.9	(0.3)			(2.5)	29.0
Deduction items	(14.5)	0.0		0.5	0.1	(13.8)
Total	**909.0**	**(12.1)**	**(1.4)**	**(0.1)**	**9.1**	**904.6**

1 Excludes positive replacement values, cash collateral receivables on derivative instruments, cash collateral on securities borrowed, reverse repurchase agreements, margin loans and prime brokerage receivables related to securities financing transactions, which are presented separately under Derivative exposures and Securities financing transactions in this table.

The LRD movements described below exclude currency effects.

On-balance sheet exposures (excluding derivative exposures and securities financing transactions (SFTs)) increased by USD 8 billion as a result of asset size and other movements. The net increase in Corporate Center – Group Asset and Liability Management (Group ALM) was driven by an increase in cash and balances at central banks due to lower client-driven activity that reduced funding consumption by the business divisions, especially the Investment Bank, and partly offset by maturities of short-term borrowings and a shift to receivables from securities financing transactions. Conversely, client-driven reductions and trade unwinds in the Investment Bank's Equities business reduced trading portfolio assets.

SFTs increased by USD 5 billion as a result of asset size and other movements, primarily reflecting the increase in Corporate Center – Group ALM due to reinvestment of higher cash balances resulting from the aforementioned changes in business division funding consumption, and partly offset by a decrease in our Investment Bank business, driven by lower prime brokerage receivables in the Equities business.

These increases were partly offset by a decrease in derivative exposures of USD 2 billion, because of asset size and other movements, primarily resulting from lower notional amounts and add-on exposures under the current exposure method driven by a net increase of client-driven trade terminations and maturities across the Equities and the Foreign Exchange, Rates and Credit businesses within the Investment Bank. Furthermore, a decrease of USD 1 billion was driven by incremental netting and collateral mitigation, mainly reflecting enhanced yields due to add-on netting benefits in the Investment Bank's Foreign Exchange, Rates and Credit business.

Off-balance sheet items decreased by USD 3 billion, primarily due to client-driven reductions of unutilized credit facilities within the Investment Bank's Corporate Client Solutions business and termination of forward starting transactions in Corporate Center – Group ALM.

→ **Refer to "Balance sheet, liquidity and funding management" in the "Treasury management" section of this report for more information on balance sheet movements**

Leverage ratio denominator by business division and Corporate Center unit

USD billion	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Total
				31.12.18				
Total IFRS assets	200.0	138.8	24.4	258.6	21.7	280.1	34.7	958.4
Difference in scope of consolidation[1]	(0.2)	0.0	(21.7)	(0.4)	(0.1)	0.1	0.0	(22.3)
Less: derivative exposures and SFTs[2]	(8.8)	(0.8)	0.0	(135.8)	0.0	(96.0)	(31.5)	(273.0)
On-balance sheet exposures	191.1	138.0	2.6	122.3	21.6	184.2	3.2	663.1
Derivative exposures	8.6	1.2	0.0	75.2	0.0	3.9	6.4	95.4
Securities financing transactions	2.7	0.0	0.0	32.0	0.0	95.0	1.2	130.9
Off-balance sheet items	5.0	13.0	0.0	10.6	0.1	0.4	0.0	29.0
Items deducted from Swiss SRB tier 1 capital					(13.8)			(13.8)
Total[3]	207.4	152.2	2.7	240.1	7.9	283.5	10.8	904.6
LRD held by CC – Group ALM on behalf of business divisions and other CC units[4]	63.2	41.2	2.5	16.1	0.3	(124.9)	1.7	0.0
LRD after allocation from CC – Group ALM to business divisions and other CC units	270.6	193.4	5.1	256.2	8.2	158.6	12.5	904.6
				31.12.17				
Total IFRS assets	195.0	139.1	14.6	269.7	21.4	252.1	47.4	939.3
Difference in scope of consolidation[1]	(0.2)	0.0	(11.9)	(0.3)	(0.1)	0.2	(0.1)	(12.5)
Less: derivative exposures and SFTs[2]	(4.9)	(1.2)	0.0	(134.0)	0.0	(80.1)	(43.0)	(263.2)
On-balance sheet exposures	**189.9**	**137.8**	**2.8**	**135.5**	**21.3**	**172.1**	**4.3**	**663.6**
Derivative exposures	8.3	1.8	0.0	74.9	0.0	6.0	9.7	100.6
Securities financing transactions	2.3	0.0	0.0	45.7	0.0	78.1	1.3	127.4
Off-balance sheet items	4.5	12.2	0.0	14.9	0.1	0.1	0.0	31.9
Items deducted from Swiss SRB tier 1 capital	0.0				(14.5)			(14.5)
Total[3]	**205.0**	**151.9**	**2.8**	**271.0**	**6.9**	**256.3**	**15.3**	**909.0**
LRD held by CC – Group ALM on behalf of business divisions and other CC units[4]	63.7	39.9	2.1	19.9	0.1	(127.6)	1.8	0.0
LRD after allocation from CC – Group ALM to business divisions and other CC units	**268.7**	**191.8**	**4.9**	**290.9**	**7.0**	**128.7**	**17.1**	**909.0**
				31.12.18 vs 31.12.17				
Total IFRS assets	5.0	(0.3)	9.7	(11.2)	0.3	28.0	(12.7)	19.1
Difference in scope of consolidation[1]	0.0	0.0	(9.9)	(0.1)	0.1	0.0	0.1	(9.8)
Less: derivative exposures and SFTs[2]	(3.9)	0.4	0.0	(1.9)	0.0	(15.9)	11.5	(9.8)
On-balance sheet exposures	**1.2**	**0.2**	**(0.1)**	**(13.2)**	**0.4**	**12.1**	**(1.0)**	**(0.5)**
Derivative exposures	0.3	(0.6)	0.0	0.4	0.0	(2.1)	(3.2)	(5.3)
Securities financing transactions	0.5	0.0	0.0	(13.7)	0.0	17.0	(0.2)	3.6
Off-balance sheet items	0.5	0.8	0.0	(4.3)	0.0	0.3	0.0	(2.8)
Items deducted from Swiss SRB tier 1 capital					0.7			0.7
Total[3]	**2.4**	**0.3**	**(0.1)**	**(30.8)**	**1.0**	**27.2**	**(4.4)**	**(4.4)**
LRD held by CC – Group ALM on behalf of business divisions and other CC units[4]	(0.5)	1.3	0.4	(3.8)	0.2	2.7	(0.1)	0.0
LRD after allocation from CC – Group ALM to business divisions and other CC units	**1.9**	**1.6**	**0.2**	**(34.7)**	**1.2**	**29.9**	**(4.6)**	**(4.4)**

1 Represents the difference between the IFRS and the regulatory scope of consolidation, which is the applicable scope for the LRD calculation. 2 Consists of derivative financial instruments, cash collateral receivables on derivative instruments, receivables from securities financing transactions, and margin loans as well as prime brokerage receivables and financial assets at fair value not held for trading, both related to securities financing transactions, in accordance with the regulatory scope of consolidation, which are presented separately under Derivative exposures and Securities financing transactions. 3 Represents LRD held by the respective business division or Corporate Center unit. 4 Represents LRD held by Corporate Center – Group ALM that is directly associated with activity managed centrally on behalf of the business divisions and other Corporate Center units. Refer to "Equity attribution and return on attributed equity" in this section for more information.

UBS AG consolidated total loss-absorbing capacity and leverage ratio information

Going and gone concern requirements and information

UBS is considered a systemically relevant bank (SRB) under Swiss banking law and, on a consolidated basis, both UBS Group AG and UBS AG are required to comply with regulations based on the Basel III framework as applicable for Swiss SRBs.

The Swiss SRB framework and requirements applicable to UBS AG consolidated are consistent with those applicable to UBS Group AG consolidated and are described in the "Capital management" section of this report.

→ **Refer to "Regulatory framework" in this section for more information on total loss-absorbing capacity, leverage ratio requirements and gone concern rebate**

UBS AG is subject to going concern requirements on a standalone basis. Capital and other regulatory information for UBS AG standalone is provided under "Holding company and significant regulated subsidiaries and sub-groups" at *www.ubs.com/investors* and in the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors*.

The table below provides the risk-weighted assets (RWA)- and leverage ratio denominator (LRD)-based requirements and information as of 31 December 2018 for UBS AG consolidated.

Swiss SRB going and gone concern requirements and information[1]

As of 31.12.18	Swiss SRB, including transitional arrangements				Swiss SRB as of 1.1.20			
USD million, except where indicated	RWA		LRD		RWA		LRD	
Required loss-absorbing capacity	in %		in %		in %		in %	
Common equity tier 1 capital	9.75	25,620	2.90	26,229	10.29	27,039	3.50	31,656
of which: minimum capital	*5.40*	*14,193*	*1.90*	*17,185*	*4.50*	*11,828*	*1.50*	*13,567*
of which: buffer capital	*4.06*	*10,671*	*1.00*	*9,045*	*5.50*	*14,456*	*2.00*	*18,089*
of which: countercyclical buffer[2]	*0.29*	*755*			*0.29*	*755*		
Maximum additional tier 1 capital	3.40	8,937	1.10	9,949	4.30	11,302	1.50	13,567
of which: high-trigger loss-absorbing additional tier 1 minimum capital	*2.60*	*6,834*	*1.10*	*9,949*	*3.50*	*9,199*	*1.50*	*13,567*
of which: high-trigger loss-absorbing additional tier 1 buffer capital	*0.80*	*2,103*			*0.80*	*2,103*		
Total going concern capital	13.15	34,556	4.00	36,178	14.59[3]	38,341	5.00[3]	45,223
Base gone concern loss-absorbing capacity, including applicable add-ons and rebate	7.48[4]	19,650	2.52[4]	22,792	12.01[5]	31,572	4.20[5]	37,987
Total gone concern loss-absorbing capacity	7.48	19,650	2.52	22,792	12.01	31,572	4.20	37,987
Total loss-absorbing capacity	20.62	54,206	6.52	58,971	26.60	69,913	9.20	83,210
Eligible loss-absorbing capacity								
Common equity tier 1 capital	13.17	34,608	3.83	34,608	13.17	34,608	3.83	34,608
High-trigger loss-absorbing additional tier 1 capital[6]	5.26	13,813	1.53	13,813	2.97	7,805	0.86	7,805
of which: high-trigger loss-absorbing additional tier 1 capital	*2.97*	*7,805*	*0.86*	*7,805*	*2.97*	*7,805*	*0.86*	*7,805*
of which: low-trigger loss-absorbing tier 2 capital	*2.29*	*6,008*	*0.66*	*6,008*				
Total going concern capital	18.42	48,421	5.35	48,421	16.14	42,413	4.69	42,413
Gone concern loss-absorbing capacity	12.87	33,830	3.74	33,830	15.16	39,837	4.40	39,837
of which: TLAC-eligible debt	*11.41*	*29,988*	*3.32*	*29,988*	*11.41*	*29,988*	*3.32*	*29,988*
Total gone concern loss-absorbing capacity	12.87	33,830	3.74	33,830	15.16	39,837	4.40	39,837
Total loss-absorbing capacity	31.29	82,251	9.09	82,251	31.29	82,251	9.09	82,251
Risk-weighted assets / leverage ratio denominator								
Risk-weighted assets		262,840				262,840		
Leverage ratio denominator				904,458				904,458

1 This table includes a rebate equal to 40% of the maximum rebate on the gone concern requirements, which was granted by FINMA and will be phased in until 1 January 2020. This table does not include a rebate for the usage of low-trigger loss-absorbing tier 2 capital instruments to meet the gone concern requirements. 2 Going concern capital ratio requirements include countercyclical buffer requirements of 0.29%. 3 Includes applicable add-ons of 1.44% for risk-weighted assets (RWA) and 0.5% for leverage ratio denominator (LRD). 4 Includes applicable add-ons of 0.72% for RWA and 0.25% for LRD and a rebate of 1.42% for RWA and 0.48% for LRD. 5 Includes applicable add-ons of 1.44% for RWA and 0.5% for LRD and a rebate of 2.29% for RWA and 0.8% for LRD. 6 Includes outstanding low-trigger loss-absorbing tier 2 capital instruments, which are available under the transitional rules of the Swiss SRB framework to meet the going concern requirements until the earlier of (i) their maturity or first call date or (ii) 31 December 2019, and to meet gone concern requirements thereafter. Outstanding low-trigger loss-absorbing tier 2 capital instruments are subject to amortization starting five years prior to their maturity, with the amortized portion qualifying as gone concern loss-absorbing capacity. Instruments available to meet gone concern requirements are eligible until one year before maturity, with a haircut of 50% applied in the last year of eligibility.

Swiss SRB going and gone concern information

	Swiss SRB, including transitional arrangements		Swiss SRB as of 1.1.20	
USD million, except where indicated	31.12.18	31.12.17[1]	31.12.18	31.12.17
Going concern capital				
Common equity tier 1 capital	34,608[2]	36,974	34,608[2]	34,100
High-trigger loss-absorbing additional tier 1 capital	7,805	2,432[3]	7,805	3,761
Total loss-absorbing additional tier 1 capital	7,805	2,432	7,805	3,761
Total tier 1 capital	42,413	39,406	42,413	37,861
Low-trigger loss-absorbing tier 2 capital[4]	6,008	8,077		
Total tier 2 capital	6,008	8,077		
Total going concern capital	48,421	47,483	42,413	37,861
Gone concern loss-absorbing capacity[5]				
Low-trigger loss-absorbing additional tier 1 capital[6]	2,378	1,213	2,378	1,213
Total tier 1 capital	2,378	1,213	2,378	1,213
Low-trigger loss-absorbing tier 2 capital[4]	771	388	6,779	8,466
Non-Basel III-compliant tier 2 capital[7]	693	707	693	707
Total tier 2 capital	1,464	1,095	7,471	9,172
TLAC-eligible debt	29,988	27,937	29,988	27,937
Total gone concern loss-absorbing capacity	33,830	30,245	39,837	38,323
Total loss-absorbing capacity				
Total loss-absorbing capacity	82,251	77,729	82,251	76,184
Risk-weighted assets / leverage ratio denominator				
Risk-weighted assets	262,840	243,598	262,840	242,725
Leverage ratio denominator	904,458	911,670	904,458	910,133
Capital and loss-absorbing capacity ratios (%)				
Going concern capital ratio	18.4	19.5	16.1	15.6
of which: common equity tier 1 capital ratio	*13.2*	*15.2*	*13.2*	*14.0*
Gone concern loss-absorbing capacity ratio	12.9	12.4	15.2	15.8
Total loss-absorbing capacity ratio	31.3	31.9	31.3	31.4
Leverage ratios (%)				
Going concern leverage ratio	5.4	5.2	4.7	4.2
of which: common equity tier 1 leverage ratio	*3.83*	*4.06*	*3.83*	*3.75*
Gone concern leverage ratio	3.7	3.3	4.4	4.2
Total loss-absorbing capacity leverage ratio	9.1	8.5	9.1	8.4

1 As of 31 December 2017, the phase-in deduction applied for the purpose of the CET1 capital calculation was 80%. These effects are fully phased in from 1 January 2018. Prudential filters applied to RWA and LRD are also fully phased in from 1 January 2018. 2 IFRS 9 expected credit loss effects are considered on a phased-in basis in accordance with the FINMA guidance. Refer to "Introduction and basis for preparation" of our 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at www.ubs.com/investors for more information. 3 High-trigger loss-absorbing additional tier 1 capital of USD 3,761 million was partly offset by required deductions for goodwill of USD 1,329 million. 4 Under the transitional rules of the Swiss SRB framework, outstanding low-trigger loss-absorbing tier 2 capital instruments are subject to amortization starting five years prior to their maturity, with the amortized portion qualifying as gone concern loss-absorbing capacity. 5 Instruments available to meet gone concern requirements are eligible until one year before maturity, with a haircut of 50% applied in the last year of eligibility. 6 The relevant capital instruments were issued after the new Swiss SRB framework had been implemented and therefore qualify as gone concern loss-absorbing capacity. 7 Non-Basel III-compliant tier 2 capital instruments qualify as gone concern instruments.

UBS Group AG vs UBS AG consolidated loss-absorbing capacity and leverage ratio information under Swiss SRB rules applicable as of 1 January 2020

As of 31 December 2018, going concern capital of UBS AG consolidated was USD 3.9 billion lower than for UBS Group AG consolidated, reflecting high- and low-trigger additional tier 1 (AT1) capital of USD 4.4 billion, partly offset by higher common equity tier 1 (CET1) capital of USD 0.5 billion. The gone concern loss-absorbing capacity was USD 2.4 billion higher due to low-trigger loss-absorbing AT1 capital.

The difference of USD 0.5 billion in CET1 capital was primarily due to compensation-related capital components, related regulatory capital accruals, liabilities and capital instruments that are reflected at the UBS Group AG level.

The difference of USD 3.9 billion in going concern loss-absorbing AT1 capital relates to loss-absorbing AT1 capital instruments issued at the UBS Group AG level, including USD 2.0 billion of high-trigger loss-absorbing Deferred Contingent Capital Plan (DCCP) awards granted to eligible employees for the performance years 2014 to 2018.

The difference of USD 2.4 billion in gone concern low-trigger AT1 capital relates to two capital instruments that were issued by UBS AG after the new Swiss SRB framework had been implemented and is therefore not recognized within going concern capital but qualifies as gone concern loss-absorbing capacity. Issuances of low-trigger AT1 capital from UBS Group AG were all made prior to implementation of the new Swiss SRB framework and therefore qualify as going concern capital.

Differences in capital between UBS Group AG consolidated and UBS AG consolidated related to employee compensation plans will reverse to the extent underlying services are performed by employees of, and are consequently charged to, UBS AG and its subsidiaries. Such reversal generally occurs over the service period of the employee compensation plans.

The leverage ratio framework for UBS AG consolidated is consistent with that of UBS Group AG consolidated. As of 31 December 2018, the going concern leverage ratio of UBS AG consolidated was 0.4 percentage points lower than that of UBS Group AG consolidated, mainly as the going concern capital of UBS AG consolidated was USD 3.9 billion lower.

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Reconciliation of IFRS equity to Swiss SRB common equity tier 1 capital (UBS Group AG vs UBS AG consolidated)

	As of 31.12.18		
USD million	UBS Group AG (consolidated)	UBS AG (consolidated)	Differences
Total IFRS equity	53,103	52,432	671
Equity attributable to preferred noteholders and non-controlling interests	(176)	(176)	1
Defined benefit plans	0	0	0
Deferred tax assets recognized for tax loss carry-forwards	(6,107)	(6,107)	0
Deferred tax assets on temporary differences, excess over threshold	(586)	(506)	(80)
Goodwill, net of tax	(6,514)	(6,514)	0
Intangible assets, net of tax	(251)	(251)	0
Compensation-related components (not recognized in net profit)	(1,652)		(1,652)
Expected losses on advanced internal ratings-based portfolio less provisions	(368)	(367)	(1)
Unrealized (gains) / losses from cash flow hedges, net of tax	(109)	(109)	0
Unrealized own credit related to financial liabilities designated at fair value, net of tax, and replacement values	(397)	(397)	0
Unrealized gains related to debt instruments at fair value through OCI, net of tax	(4)	(4)	0
Prudential valuation adjustments	(120)	(120)	0
Accruals for proposed dividends to shareholders	(2,648)	(3,250)	602
Other	(52)	(22)	(30)
Total common equity tier 1 capital	34,119	34,608	(489)

Swiss SRB going and gone concern information (UBS Group AG vs UBS AG consolidated)

As of 31.12.18	Swiss SRB, including transitional arrangements			Swiss SRB as of 1.1.20		
USD million, except where indicated	UBS Group AG (consolidated)	UBS AG (consolidated)	Differences	UBS Group AG (consolidated)	UBS AG (consolidated)	Differences
Going concern capital						
Common equity tier 1 capital[1]	34,119	34,608	(489)	34,119	34,608	(489)
High-trigger loss-absorbing additional tier 1 capital	9,790	7,805	1,985	9,790	7,805	1,985
Low-trigger loss-absorbing additional tier 1 capital	2,369		2,369	2,369		2,369
Total loss-absorbing additional tier 1 capital	12,160	7,805	4,354	12,160	7,805	4,354
Total tier 1 capital	46,279	42,413	3,865	46,279	42,413	3,865
High-trigger loss-absorbing tier 2 capital	0		0			
Low-trigger loss-absorbing tier 2 capital[2]	6,008	6,008	0			
Total tier 2 capital	6,008	6,008	0			
Total going concern capital	52,287	48,421	3,865	46,279	42,413	3,865
Gone concern loss-absorbing capacity[3]						
Low-trigger loss-absorbing additional tier 1 capital		2,378[4]	(2,378)		2,378[4]	(2,378)
Total tier 1 capital		2,378	(2,378)		2,378	(2,378)
Low-trigger loss-absorbing tier 2 capital[2]	771	771	0	6,779	6,779	0
Non-Basel III-compliant tier 2 capital	693	693	0	693	693	0
Total tier 2 capital	1,464	1,464	0	7,471	7,471	0
TLAC-eligible debt	29,988	29,988	0	29,988	29,988	0
Total gone concern loss-absorbing capacity	31,452	33,830	(2,378)	37,460	39,837	(2,378)
Total loss-absorbing capacity						
Total loss-absorbing capacity	83,738	82,251	1,488	83,738	82,251	1,488
Risk-weighted assets / leverage ratio denominator						
Risk-weighted assets	263,747	262,840	907	263,747	262,840	907
Leverage ratio denominator	904,598	904,458	140	904,598	904,458	140
Capital and loss-absorbing capacity ratios (%)						
Going concern capital ratio	19.8	18.4	1.4	17.5	16.1	1.4
of which: common equity tier 1 capital ratio	*12.9*	*13.2*	*(0.2)*	*12.9*	*13.2*	*(0.2)*
Gone concern loss-absorbing capacity ratio	11.9	12.9	(0.9)	14.2	15.2	(1.0)
Total loss-absorbing capacity ratio	31.7	31.3	0.5	31.7	31.3	0.5
Leverage ratios (%)						
Going concern leverage ratio	5.8	5.4	0.4	5.1	4.7	0.4
of which: common equity tier 1 leverage ratio	*3.8*	*3.8*	*(0.1)*	*3.8*	*3.8*	*(0.1)*
Gone concern leverage ratio	3.5	3.7	(0.3)	4.1	4.4	(0.3)
Total loss-absorbing capacity leverage ratio	9.3	9.1	0.2	9.3	9.1	0.2

1 IFRS 9 expected credit loss effects are considered on a phased-in basis in accordance with the FINMA guidance. Refer to "Introduction and basis for preparation" of our 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at www.ubs.com/investors for more information. 2 Under the transitional rules of the Swiss SRB framework, outstanding low-trigger loss-absorbing tier 2 capital instruments are subject to amortization starting five years prior to their maturity, with the amortized portion qualifying as gone concern loss-absorbing capacity. 3 Instruments available to meet gone concern requirements are eligible until one year before maturity, with a haircut of 50% applied in the last year of eligibility. 4 The relevant capital instruments were issued after the new Swiss SRB framework had been implemented and therefore qualify as gone concern loss-absorbing capacity.

Equity attribution and return on attributed equity

Average equity attributed to business divisions and Corporate Center decreased by USD 1.5 billion to USD 52.4 billion in 2018, primarily driven by the net write-down of deferred tax assets (DTAs) following a reduction in the US federal corporate tax rate after the enactment of the Tax Cuts and Jobs Act in the fourth quarter of 2017.

Equity attribution framework in 2018

Under our equity attribution framework, tangible equity is attributed based on a weighting of 50% each for average risk-weighted assets (RWA) and average leverage ratio denominator (LRD). Average RWA and LRD were converted to their common equity tier 1 (CET1) capital equivalents based on capital ratios of 11% and 3.75%, respectively. If the attributed tangible equity calculated under the weighted-driver approach were less than the CET1 capital equivalent of risk-based capital (RBC) for any business division, the CET1 capital equivalent of RBC was used as a floor for that business division.

LRD and RWA held by Corporate Center – Group Asset and Liability Management (Group ALM) directly associated with activities that Corporate Center – Group ALM manages centrally on behalf of the business divisions and other Corporate Center units were allocated to those business divisions and other Corporate Center units for the purpose of equity attribution. This allocation was primarily based on the level of high-quality liquid assets that was needed to meet the Group's minimum liquidity coverage ratio requirement of 110%. Corporate Center – Group ALM retains attributed equity related to liquidity and funding surpluses, i.e., at levels above regulatory requirements, together with that related to its own activities.

In addition to tangible equity, we allocated equity to our businesses to support goodwill and intangible assets.

Furthermore, we attributed all remaining Basel III capital deduction items to Corporate Center Group items. These deduction items included DTAs recognized for tax loss carry-forwards and DTAs on temporary differences in excess of the threshold, which together constituted the largest component of Corporate Center Group items, dividend accruals, unrealized gains from cash flow hedges and compensation- and own shares-related components.

Change in equity attribution framework as of 1 January 2019

We have updated our equity attribution framework by revising the capital ratio for RWA from 11% to 12.5% and incrementally allocating to business divisions approximately USD 2 billion of attributed equity that is related to certain CET1 deduction items previously held centrally, such as compensation-related components and the expected loss on advanced internal ratings-based portfolio less general provisions.

We continue to allocate tangible equity based on a weighting of 50% each for average RWA and average LRD, and apply a floor for business divisions if the attributed tangible equity calculated under the weighted-driver approach is less than the CET1 capital equivalent of RBC. Also, we continue to allocate equity to our businesses to support goodwill and intangible assets.

Given these changes, as well as changes in resource allocation from Corporate Center to the business divisions, we expect to allocate approximately USD 7 billion of additional attributed equity to the business divisions, of which approximately USD 3 billion will be allocated to the Investment Bank. The remaining attributed equity retained in Corporate Center will primarily relate to deferred tax assets, dividend accruals and Corporate Center – Non-core and Legacy Portfolio.

All of these changes are effective as of 1 January 2019, and we will provide restated prior-period information in advance of our first quarter results.

→ **Refer to the "Significant accounting and financial reporting changes" section of this report for more information on the alignment of the equity attribution framework with the revised resource allocation methodology**

Attributed equity

	For the year ended		
USD billion	31.12.18	31.12.17	31.12.16
Average attributed equity			
Global Wealth Management	13.4	13.0	6.1
Personal & Corporate Banking	6.6	6.2	4.1
Asset Management	1.7	1.7	1.4
Investment Bank	10.2	9.5	7.7
Corporate Center	20.5	23.5	29.4
of which: CC – Services	*16.1*	*19.4*	*23.0*
of which: Group items[1]	*14.3*	*17.6*	*21.6*
of which: CC – Group ALM	*3.2*	*2.8*	*4.3*
of which: CC – Non-core and Legacy Portfolio	*1.2*	*1.4*	*2.1*
Average equity attributed to business divisions and Corporate Center	52.4	53.9	48.8
Average attributed tangible equity[2, 3]			
Global Wealth Management	8.4	8.0	
Personal & Corporate Banking	6.6	6.2	
Asset Management	0.3	0.3	
Investment Bank	10.2	9.4	
Corporate Center	20.5	23.5	
of which: CC – Services	*16.1*	*19.4*	
of which: Group items[1]	*14.3*	*17.6*	
of which: CC – Group ALM	*3.2*	*2.8*	
of which: CC – Non-core and Legacy Portfolio	*1.2*	*1.4*	
Average tangible equity attributed to business divisions and Corporate Center	45.9	47.4	

1 Of the USD 14.3 billion of average equity attributed to Group items for the fourth quarter of 2018, USD 6.1 billion related to average DTAs recognized for tax loss carry-forwards and USD 0.4 billion related to average DTAs on temporary differences in excess of the 10% of CET1 capital threshold. Dividend accruals are also included in Group items. DTA amounts and dividend accruals represent average amounts. 2 Attributed tangible equity equals attributed equity less goodwill and intangible assets. 3 Attributed tangible equity is shown for the period for which return on attributed tangible equity is available. This is a measure introduced in 2017, accordingly no comparative-period information is available.

Return on attributed equity[1]

In %	For the year ended 31.12.18	31.12.17	31.12.16
Return on (attributed) equity[1]			
Reported			
Global Wealth Management	27.0	27.5	50.7
Personal & Corporate Banking	29.1	25.8	43.3
Asset Management	26.5	34.0	32.2
Investment Bank	16.1	13.3	13.1
UBS Group	8.6	1.8	6.1
Adjusted[3]			
Global Wealth Management	27.7	32.0	60.3
Personal & Corporate Banking	23.8	27.5	43.1
Asset Management	29.8	31.0	39.4
Investment Bank	17.9	16.0	19.7
UBS Group	8.7	3.2	7.8
Return on (attributed) tangible equity[1,2]			
Reported			
Global Wealth Management	44.0	45.5	
Personal & Corporate Banking	29.1	25.8	
Asset Management	139.4	186.2	
Investment Bank	16.3	13.6	
UBS Group	10.0	2.2	
Adjusted[3]			
Global Wealth Management	45.0	52.8	
Personal & Corporate Banking	23.8	27.5	
Asset Management	156.7	170.0	
Investment Bank	18.2	16.3	
UBS Group	10.1	3.7	

1 Return on attributed equity and return on attributed tangible equity shown for the business divisions. Return on equity attributable to shareholders and return on tangible equity shown for the UBS Group. Return on attributed equity and return on attributed tangible equity for Corporate Center is not shown, as it is not meaningful. 2 Attributed tangible equity is shown for the period for which return on attributed tangible equity is available. This is a measure introduced in 2017, accordingly no comparative-period information is available. 3 Adjusted results are non-GAAP financial measures as defined by SEC regulations.

UBS shares

UBS Group AG shares

Audited | As of 31 December 2018, IFRS equity attributable to shareholders amounted to USD 52,928 million, represented by 3,855,634,749 shares issued. Shares issued increased by 2,538,146 shares in 2018, reflecting the issuance of shares out of conditional share capital upon exercise of employee share options.

Each share has a par value of CHF 0.10 and entitles the holder to one vote at the UBS Group AG shareholders' meeting, if entered into the share register as having the right to vote, and also a proportionate share of distributed dividends. All shares are fully paid up. As the Articles of Association of UBS Group AG indicate, there are no other classes of shares and no preferential rights for shareholders. ▲

→ **Refer to the "Corporate governance" section of this report for more information on UBS shares**

UBS Group share information

	As of or for the year ended		% change from
	31.12.18	31.12.17	31.12.17
Shares issued	3,855,634,749	3,853,096,603	0
Treasury shares	166,467,802	132,301,550	26
Shares outstanding	3,689,166,947	3,720,795,053	(1)
Basic earnings per share (USD)[1]	1.21	0.26	365
Diluted earnings per share (USD)[1]	1.18	0.25	372
Basic earnings per share (CHF)[2]	1.18	0.26	354
Diluted earnings per share (CHF)[2]	1.14	0.26	338
Equity attributable to shareholders (USD million)	52,928	52,495	1
Less: goodwill and intangible assets (USD million)	6,647	6,563	1
Tangible equity attributable to shareholders (USD million)	46,281	45,932	1
Total book value per share (USD)	14.35	14.11	2
Tangible book value per share (USD)	12.55	12.34	2
Share price (USD)[3]	12.44	18.40	(32)
Market capitalization (USD million)[4]	45,907	68,477	(33)

1 Refer to "Note 9 Earnings per share (EPS) and shares outstanding" in the "Consolidated financial statements" section of this report for more information. 2 Basic and diluted earnings per share in Swiss francs are calculated based on a translation of net profit / (loss) under our US dollar presentation currency. As a consequence of the restatement to a US dollar presentation currency, amounts may differ from those originally published in our quarterly and annual reports. 3 Represents the share price as listed on the SIX Swiss Exchange, translated to US dollars using the respective spot rate. 4 The calculation of market capitalization has been amended to reflect total shares outstanding multiplied by the share price at the end of the period. The calculation was previously based on total shares issued multiplied by the share price at the end of the period. Market capitalization has been reduced by USD 2.1 billion as of 31 December 2018 and by USD 2.4 billion as of 31 December 2017 as a result.

Holding of UBS Group AG shares

Group Treasury holds UBS Group AG shares to hedge future share delivery obligations related to employee share-based compensation awards and also holds shares purchased under the share repurchase program, which will be canceled by means of a capital reduction to be proposed at future annual general meetings. In addition, the Investment Bank holds a limited number of UBS Group AG shares, primarily in its capacity as a market-maker in UBS Group AG shares and related derivatives and to hedge certain issued structured debt instruments. As of 31 December 2018, we held a total of 166,467,802 treasury shares (31 December 2017: 132,301,550), or 4.3% (31 December 2017: 3.4%) of shares issued.

Share delivery obligations related to employee share-based compensation awards totaled 146 million shares as of 31 December 2018 (31 December 2017: 166 million). Share delivery obligations are calculated on the basis of unvested notional share awards, options and stock appreciation rights, taking applicable performance conditions into account. Treasury shares held are delivered to employees at exercise or vesting. However, share delivery obligations related to certain options and stock appreciation rights can also be satisfied by shares issued out of conditional capital. As of 31 December 2018, the number of UBS Group AG shares that could have been issued out of conditional capital for this purpose was 125 million (31 December 2017: 128 million).

The table below outlines the market purchases of UBS Group AG shares by Group Treasury. It does not include the activities of the Investment Bank.

Treasury share purchases

	Share repurchase program[1]			Other treasury shares purchased[2]	
Month of purchase	Number of shares	Average price in CHF	Remaining volume of share repurchase program in CHF million	Number of shares	Average price in USD
January 2018					
February 2018					
March 2018					
April 2018	1,900,000	16.61	1,968		
May 2018	16,613,000	16.15	1,700		
June 2018	16,247,000	15.39	1,450		
July 2018			1,450		
August 2018			1,450		
September 2018	6,299,500	15.87	1,350		
October 2018	6,000,000	13.68	1,268	100	13.43
November 2018	1,259,300	14.23	1,250	12,000,000	13.91
December 2018			1,250[3]	20,000,000	12.45

1 On 22 January 2018, UBS announced its intention to buy back its own registered shares over three years starting from March 2018, amounting to a maximum of CHF 2 billion. The share repurchase information in this table is disclosed in Swiss francs as the share buybacks are transacted in Swiss francs on a separate trading line on the SIX Swiss Exchange. 2 This table excludes purchases for the purpose of hedging derivatives linked to UBS Group AG shares and for market-making in UBS Group AG shares. The table also excludes UBS Group AG shares purchased by pension and retirement benefit funds for UBS employees, which are managed by a board of UBS management and employee representatives in accordance with Swiss law. UBS's pension and other post-employment benefit funds purchased 888,572 UBS Group AG shares during the year and held 16,711,587 UBS Group AG shares as of 31 December 2018. 3 The remaining volume of the share repurchase program as of 31 December 2018 was USD 1,271 million. This was calculated based on the remaining volume of CHF 1,250 million as of 31 December 2018 and the respective foreign currency rate as of this date.

Trading volumes

	For the year ended		
1,000 shares	31.12.18	31.12.17	31.12.16
SIX Swiss Exchange total	3,277,995	3,084,804	3,761,294
SIX Swiss Exchange daily average	13,165	12,290	14,808
New York Stock Exchange total	166,728	146,902	160,887
New York Stock Exchange daily average	664	585	638

Source: Reuters

Listing of UBS Group AG shares

UBS Group AG shares are listed on the SIX Swiss Exchange (SIX). They are also listed on the New York Stock Exchange (NYSE) as global registered shares. As such, they can be traded and transferred across applicable borders, without the need for conversion, with identical shares traded on different stock exchanges in different currencies.

During 2018, the average daily trading volume of UBS Group AG shares was 13.2 million shares on the SIX and 0.7 million shares on the NYSE. The SIX is expected to remain the main venue for determining the movement in our share price because of the high volume traded on this exchange.

During the hours in which both the SIX and the NYSE are simultaneously open for trading (generally 3:30 p.m. to 5:30 p.m. Central European Time), price differences between these exchanges are likely to be arbitraged away by professional market-makers. Accordingly, the share price will typically be similar between the two exchanges when considering the prevailing US dollar / Swiss franc exchange rate. When the SIX is closed for trading, globally traded volumes will typically be lower. However, the specialist firm making a market in UBS Group AG shares on the NYSE is required to facilitate sufficient liquidity and maintain an orderly market in UBS Group AG shares throughout normal NYSE trading hours.

Ticker symbols UBS Group AG

Trading exchange	SIX/NYSE	Bloomberg	Reuters
SIX Swiss Exchange	UBSG	UBSG SW	UBSG.S
New York Stock Exchange	UBS	UBS UN	UBS.N

Security identification codes

ISIN	CH0244767585
Valoren	24 476 758
CUSIP	CINS H42097 10 7

Corporate governance and compensation

Management report

Audited information according to the Swiss law and applicable regulatory requirements and guidance

Disclosures provided are in line with the requirements of article 663c para. 1 and 3 of the Swiss Code of Obligations (supplementary disclosures for companies whose shares are listed on a stock exchange: shareholdings) and the Ordinance against Excessive Compensation in Listed Stock Corporations (tables containing such information are marked as "Audited" throughout this section), as well as other applicable regulations and guidance.

Corporate governance

UBS Group AG is subject to, and compliant with, all relevant Swiss legal and regulatory requirements regarding corporate governance, including the SIX Swiss Exchange's Directive on Information Relating to Corporate Governance, as well as the standards established in the Swiss Code of Best Practice for Corporate Governance, including the appendix on executive compensation.

In addition, as a foreign company with shares listed on the New York Stock Exchange (NYSE), UBS Group AG complies with all relevant corporate governance standards applicable to foreign private issuers.

The Organization Regulations of UBS Group AG, adopted by the Board of Directors (BoD) based on article 716b of the Swiss Code of Obligations and articles 25 and 27 of the Articles of Association of UBS Group AG, constitute our primary corporate governance guidelines.

To the extent practicable, the governance structures of UBS Group AG and UBS AG are aligned. UBS AG complies with all relevant Swiss legal and regulatory corporate governance requirements. As a foreign private issuer with debt securities listed on the NYSE, UBS AG also complies with the relevant NYSE corporate governance standards. The discussion in this section refers to both UBS Group AG and UBS AG, unless specifically noted otherwise or unless the information discussed is relevant only to companies with listed shares and therefore only applicable to UBS Group AG. This is in line with US Securities and Exchange Commission regulations and NYSE listing standards.

→ **Refer to the Articles of Association of UBS Group AG and of UBS AG, and to the Organization Regulations of UBS Group AG at *www.ubs.com/governance* for more information**

→ **The SIX Swiss Exchange's Directive on Information Relating to Corporate Governance is available at *www.six-exchange-regulation.com*, the Swiss Code of Best Practice for Corporate Governance is available at *www.economiesuisse.ch* and the NYSE rules are available at *www.nyse.com***

Differences from corporate governance standards relevant to US-listed companies

According to the NYSE listing standards on corporate governance, foreign private issuers are required to disclose any significant ways in which their corporate governance practices differ from those that have to be followed by domestic companies. These differences are discussed in the following paragraphs.

Responsibility of the Audit Committee with regard to independent auditors

Our Audit Committee is responsible for the compensation, retention and oversight of the independent auditors. It assesses the performance and qualification of the external auditors and submits its proposal for appointment, reappointment or removal of the independent auditors to the full BoD. As required by the Swiss Code of Obligations, the BoD then submits its proposal to the shareholders for their vote at the Annual General Meeting (AGM). Under NYSE standards, the Audit Committee is also responsible for the appointment of the independent auditors.

Discussion of risk assessment and risk management policies by the Risk Committee

In accordance with the respective Organization Regulations of UBS Group AG and UBS AG, the Risk Committee instead of the Audit Committee oversees our risk principles and risk capacity on behalf of the BoD. The Risk Committee is responsible for monitoring our adherence to those risk principles and for monitoring whether business divisions and control units maintain appropriate systems of risk management and control.

Supervision of the internal audit function

The Chairman of the BoD (Chairman) and the Audit Committee share the supervisory responsibility and authority with respect to the internal audit function. Under NYSE standards, only the Audit Committee supervises the internal audit function.

Responsibility of the Compensation Committee for performance evaluations of senior management of UBS Group AG

In line with Swiss law, our Compensation Committee, together with the BoD, proposes for shareholder approval at the AGM the maximum aggregate amount of compensation for the BoD, the maximum aggregate amount of fixed compensation for the Group Executive Board (GEB) and the aggregate amount of variable compensation for the GEB. The shareholders elect the members of the Compensation Committee at the AGM. Under NYSE standards, it is the responsibility of the Compensation Committee to evaluate senior management performance and to determine and approve, as a committee or together with the other independent directors, its compensation.

Proxy statement reports of the Audit Committee and the Compensation Committee

NYSE listing standards would require the aforementioned committees to submit their reports directly to shareholders. However, under Swiss law, all our reports addressed to shareholders, including those from the aforementioned committees, are provided and approved by the BoD, which has ultimate responsibility to the shareholders.

Shareholders' votes on equity compensation plans

While the NYSE standards would require shareholder approval for the establishment of and material revisions to all equity compensation plans, Swiss law authorizes the BoD to approve compensation plans. Shareholder approval is only mandatory if equity-based compensation plans require an increase in capital. No shareholder approval is required if shares for such plans are purchased in the market.

→ **Refer to "Board of Directors" in this section for more information on the Board of Directors' committees**

→ **Refer to "Share capital structure" in this section for more information on UBS Group AG's capital**

Group structure and shareholders

Operational Group structure

As of 31 December 2018, the operational structure of the Group is comprised of the Global Wealth Management, Personal & Corporate Banking, Asset Management and Investment Bank business divisions, as well as Corporate Center with its units Corporate Center – Services (comprising the Group functions Group Chief Operating Officer area, Group Finance, Group Risk Control, Group Legal, Group Compliance, Regulatory & Governance, Communications & Branding and UBS in society), Corporate Center – Group Asset and Liability Management (ALM) and Corporate Center – Non-core and Legacy Portfolio. Effective 1 February 2018, Wealth Management and Wealth Management Americas were combined into a unified business division called Global Wealth Management.

Beginning with our first quarter 2019 report, we will provide results for total Corporate Center only and will not separately report Services, Group ALM and Non-core and Legacy Portfolio.

→ **Refer to "Our businesses" in the "Our strategy, business model and environment" section from page 19 of this report for more information**

→ **Refer to the sections under "Financial and operating performance" from page 63 and to "Note 2 Segment reporting" in the "Consolidated financial statements" section from page 373 of this report for more information**

→ **Refer to the "Our evolution" section from page 12 of this report for more information**

Listed and non-listed companies belonging to the Group

The Group includes a number of consolidated entities, of which only UBS Group AG has its shares listed.

UBS Group AG's registered office is at Bahnhofstrasse 45, CH-8001 Zurich, Switzerland. The shares of UBS Group AG are listed on the SIX Swiss Exchange (ISIN: CH0244767585) and on the NYSE (CUSIP: H42097107).

→ **Refer to "UBS shares" in the "Capital management" section from page 216 of this report for information on UBS Group AG's market capitalization and shares held by Group entities**

→ **Refer to "Note 31 Interests in subsidiaries and other entities" in the "Consolidated financial statements" section from page 481 of this report for more information on the significant subsidiaries of the Group**

Significant shareholders

General rules

Under the Swiss Federal Act on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading of 19 June 2015 (FMIA), anyone directly or indirectly, or acting in concert with third parties, holding shares in a company listed in Switzerland or holding derivative rights related to shares of such a company must notify the company and the SIX Swiss Exchange (SIX) if the holding reaches, falls below or exceeds one of the following thresholds: 3, 5, 10, 15, 20, 25, 33⅓, 50, or 66⅔% of voting rights, regardless of whether or not such rights may be exercised. Nominee companies that cannot autonomously decide how voting rights are exercised are not obligated to notify the company and the SIX if they reach, exceed or fall below the threshold percentages.

Pursuant to the Swiss Code of Obligations, we disclose in the notes to our financial statements the identity of any shareholder with a holding of more than 5% of the total share capital of UBS Group AG.

Shareholders not registered in the UBS share register

According to the FMIA disclosure notifications filed with UBS Group AG and the SIX, as of 31 December 2018, the following entities held more than 3% of the total share capital of UBS Group AG: Dodge & Cox, San Francisco, disclosed a holding of 3.03% of the total share capital of UBS Group AG on 30 November 2018; BlackRock Inc., New York, disclosed a holding of 4.99% on 28 August 2018; and MFS Investment Management, Boston, disclosed a holding of 3.05% on 10 February 2016. The above disclosures have not been subsequently superseded, and no new disclosures of significant shareholdings have been made since 31 December 2018.

In accordance with the FMIA, the aforementioned holdings are calculated in relation to the total share capital of UBS Group AG reflected in its Articles of Association at the time of the respective disclosure notification.

Information on disclosures under the FMIA is available at *www.six-exchange-regulation.com/en/home/publications/significant-shareholders.html*.

Shareholders registered in the UBS share register

The shareholders (acting in their own name or in their capacity as nominees for other investors or beneficial owners) listed in the table below were registered in the UBS share register with 3% or more of the total share capital of UBS Group AG as of 31 December 2018.

Cross-shareholdings

UBS Group AG has no cross-shareholdings where reciprocal ownership would be in excess of 5% of capital or voting rights with any other company.

Audited |

Shareholders registered in the UBS share register with 3% or more of the total share capital

% of share capital	31.12.18	31.12.17	31.12.16
Chase Nominees Ltd., London	12.08	11.16	9.43
DTC (Cede & Co.), New York[1]	7.23	6.64	6.62
Nortrust Nominees Ltd., London	4.14	4.11	3.88

1 DTC (Cede & Co.), New York, "The Depository Trust Company," is a US securities clearing organization.

Share capital structure

Ordinary share capital

At year-end 2018, UBS Group AG had 3,855,634,749 issued shares with a par value of CHF 0.10 each, leading to a share capital of CHF 385,563,474.90.

Under Swiss company law, shareholders must approve in a general meeting of shareholders an ordinary share capital increase or the creation of conditional or authorized share capital. In 2018, our shareholders were not asked to approve an ordinary share capital increase or the creation of conditional or authorized share capital.

Share capital increased during the year by 2,538,146 shares, as shares were issued out of existing conditional capital due to the exercise of employee options.

Issued share capital of UBS Group AG

	Share capital in CHF	Number of shares	Par value in CHF
As of 31 December 2017	**385,309,660**	**3,853,096,603**	**0.10**
Issue of shares out of conditional capital due to employee options exercised in 2018	253,815	2,538,146	0.10
As of 31 December 2018	385,563,475	3,855,634,749	0.10

Distribution of UBS shares

As of 31 December 2018	Shareholders registered		Shares registered	
Number of shares registered	Number	%	Number	% of shares issued
1–100	25,017	10.9	1,403,306	0.0
101–1,000	120,927	52.8	57,443,935	1.5
1,001–10,000	75,145	32.8	216,419,373	5.6
10,001–100,000	7,158	3.1	170,930,404	4.4
100,001–1,000,000	594	0.3	169,267,430	4.4
1,000,001–5,000,000	87	0.0	178,688,459	4.6
5,000,001–38,556,347 (1%)	26	0.0	321,024,783	8.3
1–2%	4	0.0	203,199,804	5.3
2–3%	0	0.0	0	0.0
3–4%	0	0.0	0	0.0
4–5%	1	0.0	159,517,521	4.1
Over 5%	2[1]	0.0	744,583,467	19.3
Total registered	228,961	100.0	2,222,478,482[2]	57.6
Unregistered[3]			1,633,156,267	42.4
Total shares issued			**3,855,634,749**	**100.0**

1 On 31 December 2018, Chase Nominees Ltd., London, entered as a fiduciary / nominee, was registered with 12.08% of all UBS shares issued. However, according to the provisions of UBS Group AG, voting rights of fiduciaries / nominees are limited to a maximum of 5% of all UBS shares issued. The US securities clearing organization DTC (Cede & Co.), New York, was registered with 7.23% of all UBS shares issued and is not subject to this 5% voting limit as a securities clearing organization. 2 Of the total shares registered, 403,358,353 shares did not carry voting rights. 3 Shares not entered in the UBS share register as of 31 December 2018.

Conditional share capital

At year-end 2018, the following conditional share capital was available to UBS Group AG's BoD:

– a maximum of CHF 38,000,000 represented by up to 380,000,000 fully paid registered shares with a nominal value of CHF 0.10 each, to be issued through the voluntary or mandatory exercise of conversion rights and / or warrants granted in connection with the issuance of bonds or similar financial instruments on national or international capital markets. This conditional capital allowance was approved at the Extraordinary General Meeting (EGM) held on 26 November 2014, originally approved at the AGM of UBS AG on 14 April 2010. The BoD has not made use of such allowance.
– a maximum of CHF 12,512,647.60 represented by 125,126,476 fully paid registered shares with a par value of CHF 0.10 each, to be issued upon exercise of employee options issued to employees and members of the management and of the BoD of UBS Group AG and its subsidiaries. This conditional capital allowance was approved by the shareholders at the same EGM in 2014.

→ **Refer to article 4a of the Articles of Association of UBS Group AG for more information on the terms and conditions of the issue of shares out of existing conditional capital. The Articles of Association are available at *www.ubs.com/governance***

Conditional capital of UBS Group AG

As of 31 December 2018	Maximum number of shares to be issued	Year approved by Extraordinary General Meeting	% of shares issued
Employee equity participation plans	125,126,476	2014	3.24
Conversion rights / warrants granted in connection with bonds	380,000,000	2014	9.85
Total	505,126,476		13.10

Authorized share capital

UBS Group AG had no authorized capital available to issue on 31 December 2018.

Changes in capital

In accordance with International Financial Reporting Standards, Group equity attributable to shareholders amounted to USD 52.9 billion as of 31 December 2018 (2017: USD 52.5 billion; and 2016: USD 52.9 billion). UBS Group AG shareholders' equity was represented by 3,855,634,749 issued shares as of 31 December 2018 (2017: 3,853,096,603 shares; and 2016: 3,850,766,389 shares).

→ **Refer to "Statement of changes in equity" in the "Consolidated financial statements" section from page 316 of this report for more information on changes in shareholders' equity over the last three years**

Ownership

Ownership of UBS Group AG shares is widely spread. The tables in this section provide information about the distribution of UBS Group AG shareholders by category and geographic location. This information relates only to shareholders registered in the UBS share register and cannot be assumed to be representative of UBS Group AG's entire investor base or the actual beneficial ownership. Only shareholders registered in the share register as "shareholders with voting rights" are entitled to exercise voting rights.

→ **Refer to "Shareholders' participation rights" in this section for more information**

As of 31 December 2018, 1,819,120,129 UBS Group AG shares were registered in the share register and carried voting rights, 403,358,353 shares were registered in the share register without voting rights, and 1,633,156,267 shares were not registered in the UBS share register. All shares were fully paid up and eligible for dividends. There are no preferential rights for shareholders, and no other classes of shares are issued by UBS Group AG.

Shareholders, legal entities and nominees: type and geographical distribution

	Shareholders registered	
As of 31 December 2018	Number	%
Individual shareholders	223,901	97.8
Legal entities	4,832	2.1
Nominees, fiduciaries	228	0.1
Total registered shares		
Unregistered shares		
Total	228,961	100.0

	Individual shareholders		Legal entities		Nominees		Total	
	Number	%	Number	%	Number	%	Number	%
Americas	5,309	2.3	148	0.1	104	0.0	5,561	2.4
of which: USA	*4,683*	*2.0*	*78*	*0.0*	*98*	*0.0*	*4,859*	*2.1*
Asia Pacific	5,334	2.3	114	0.1	21	0.0	5,469	2.4
Europe, Middle East and Africa	12,586	5.5	271	0.1	65	0.0	12,922	5.6
of which: Germany	*4,123*	*1.8*	*35*	*0.0*	*4*	*0.0*	*4,162*	*1.8*
of which: UK	*4,719*	*2.1*	*7*	*0.0*	*6*	*0.0*	*4,732*	*2.1*
of which: rest of Europe	*3,532*	*1.5*	*226*	*0.1*	*55*	*0.0*	*3,813*	*1.7*
of which: Middle East and Africa	*212*	*0.1*	*3*	*0.0*	*0*	*0.0*	*215*	*0.1*
Switzerland	200,672	87.6	4,299	1.9	38	0.0	205,009	89.5
Total registered shares								
Unregistered shares								
Total	223,901	97.8	4,832	2.1	228	0.1	228,961	100.0

At year-end 2018, UBS owned 166,467,802 UBS Group AG registered shares, which corresponded to 4.32% of the total share capital of UBS Group AG. At the same time, we had acquisition and disposal positions relating to 190,587,619 and 165,817,208 voting rights of UBS Group AG, corresponding to 4.95% and 4.30% of the total voting rights of UBS Group AG, respectively. Of the disposal positions, 3.88% consisted of voting rights on shares deliverable in respect of employee awards. The calculation methodology for the acquisition and disposal positions is based on the Swiss Financial Market Supervisory Authority Ordinance on Financial Market Infrastructure, which sets forth that all future potential share delivery obligations, irrespective of the contingent nature of the delivery, must be taken into account.

Employee share ownership

Employee share ownership is encouraged and enabled in a variety of ways. One example is our Equity Plus Plan. This is a voluntary plan that provides eligible employees with the opportunity to purchase UBS Group AG shares at market value and receive, at no additional cost, one notional UBS Group AG share for every three shares purchased. If the shares purchased are held for three years and the employee remains in employment, the notional shares vest. Another example is the Equity Ownership Plan (EOP). This is a mandatory deferral plan for all employees with total compensation greater than USD / CHF 300,000. Employees other than GEB members receive at least 60% of their deferred performance award under the EOP in notional shares. The plan includes provisions that allow the firm to reduce or fully forfeit the unvested deferred portion of the granted EOP award if an employee commits certain harmful acts, and in most cases trigger forfeiture where employment has been terminated. To encourage our employees to develop and manage the business in a way that delivers sustainable returns, EOP awards granted to GEB members and other senior employees will only vest if both Group and business division performance conditions are met.

As of 31 December 2018, UBS employees held an estimated 6% of UBS shares outstanding (including approximately 4% in unvested / blocked actual and notional shares from our compensation programs). These figures are based on known shareholding information from employee participation plans, personal holdings with UBS and selected individual retirement plans. At the end of 2018, an estimated 34% of all employees held UBS shares through the firm's employee share participation plans.

→ **Refer to the "Compensation" section from page 254 of this report for more information**

Shares and participation certificates

UBS Group AG has a single class of shares, which are registered shares in the form of uncertificated securities (in the sense of the Swiss Code of Obligations) and intermediary-held securities (in the sense of the Swiss Federal Act on Intermediated Securities). Each registered share has a par value of CHF 0.10 and carries one vote subject to the restrictions set out under "Transferability, voting rights and nominee registration" on the following page.

We have no participation certificates outstanding.

	Shares registered	
	Number	%
	455,147,534	11.8
	614,079,127	15.9
	1,153,251,821	29.9
	2,222,478,482	57.6
	1,633,156,267	42.4
	3,855,634,749	100.0

Individual shareholders		Legal entities		Nominees		Total	
Number of shares	%	Number of shares	%	Number of shares	%	Number of shares	%
6,385,407	0.2	74,857,806	1.9	363,352,991	9.4	444,596,204	11.5
4,870,353	*0.1*	*57,225,479*	*1.5*	*363,022,386*	*9.4*	*425,118,218*	*11.0*
24,680,132	0.6	62,031,827	1.6	9,346,083	0.2	96,058,042	2.5
43,878,796	1.1	24,198,354	0.6	754,218,087	19.6	822,295,237	21.3
13,210,617	*0.3*	*782,505*	*0.0*	*18,795,660*	*0.5*	*32,788,782*	*0.9*
21,015,786	*0.5*	*1,600,836*	*0.0*	*704,288,756*	*18.3*	*726,905,378*	*18.9*
9,030,071	*0.2*	*21,615,948*	*0.6*	*31,133,671*	*0.8*	*61,779,690*	*1.6*
622,322	*0.0*	*199,065*	*0.0*	*0*	*0.0*	*821,387*	*0.0*
380,203,199	9.9	452,991,140	11.7	26,334,660	0.7	859,528,999	22.3
455,147,534	11.8	614,079,127	15.9	1,153,251,821	29.9	2,222,478,482	57.6
0		0		0		1,633,156,267	42.4
455,147,534	11.8	614,079,127	15.9	1,153,251,821	29.9	3,855,634,749	100.0

Our shares are listed on the NYSE as global registered shares. As such, they can be traded and transferred across applicable borders, without the need for conversion, with identical shares traded on different stock exchanges in different currencies.

→ **Refer to "UBS shares" in the "Capital management" section from page 216 of this report for more information**

Distributions to shareholders

The decision to pay a dividend and the amount of any dividend depends on a variety of factors, including our profits, cash flow generation and capital ratios.

At the 2019 AGM, UBS's BoD intends to propose to shareholders for approval a dividend of CHF 0.70 per share for the financial year 2018, to be paid out of the capital contribution reserve.

In March 2018, UBS initiated a share repurchase program of up to CHF 2 billion over a three-year period. The UBS shares repurchased under the program will be canceled by means of a capital reduction, to be proposed at future annual general meetings. During 2018, UBS repurchased shares totaling CHF 750 million, exceeding the 2018 target of up to CHF 550 million.

→ **Refer to "UBS shares" in the "Capital management" section from page 216 of this report for more information on the share repurchase program**

Transferability, voting rights and nominee registration

We do not apply any restrictions or limitations on the transferability of shares. Voting rights may be exercised without any restrictions by shareholders entered into the share register if they expressly render a declaration of beneficial ownership according to the provisions of the Articles of Association.

We have special provisions for the registration of fiduciaries and nominees. Fiduciaries and nominees are entered in the share register with voting rights up to a total of 5% of all issued UBS Group AG shares if they agree to disclose, upon our request, beneficial owners holding 0.3% or more of all issued UBS Group AG shares. An exception to the 5% voting limit rule is in place for securities clearing organizations, which applied as of 31 December 2018 to The Depository Trust Company in New York.

→ **Refer to "Shareholders' participation rights" in this section for more information**

Convertible bonds and options

As of 31 December 2018, there were no contingent capital securities or convertible bonds outstanding requiring the issuance of new shares.

→ **Refer to the "Capital management" section from page 194 of this report for more information on our outstanding capital instruments**

As of 31 December 2018, there were 12,527,179 employee options outstanding, including stock appreciation rights. Options and stock appreciation rights equivalent to 3,705,363 shares were in the money and exercisable. Option-based compensation plans are sourced by issuing new shares out of conditional capital. As mentioned above, as of 31 December 2018, 125,126,476 unissued shares in conditional share capital were available for this purpose.

→ **Refer to "Conditional share capital" in this section for more information**

→ **Refer to "Note 30 Employee benefits: variable compensation" in the "Consolidated financial statements" section from page 473 of this report for more information on outstanding options and stock appreciation rights**

Shareholders' participation rights

We are committed to shareholder participation in our decision-making process. During 2018, we continued to enhance the online voting platform to offer our registered shareholders a more convenient log-in and online voting process. Registered shareholders are sent personal invitations to the general meetings of shareholders. Together with the invitation materials, they receive a personal one-time password and a QR code to easily log in to our online voting platform, where they can enter their voting instructions or order an admission card for the general meeting.

Shareholders who choose not to receive the comprehensive invitation materials are informed of the upcoming general meeting by a short letter containing a personal one-time password and a QR code for the online voting as well as a reference to *www.ubs.com/agm*, where all information for the upcoming general meeting is available.

Relations with shareholders

We regularly inform all our shareholders about our activities and performance and other developments.

→ **Refer to "Information policy" in this section for more information**

The Annual General Meeting of shareholders (AGM) offers shareholders the opportunity to raise any questions to the Board of Directors (BoD) and Group Executive Board, as well as to our internal and external auditors.

Voting rights, restrictions and representation

We place no restrictions on share ownership and voting rights. However, pursuant to general principles formulated by the BoD, nominee companies and fiduciaries, who normally represent a large number of individual shareholders and may hold an unlimited number of shares, have voting rights limited to a maximum of 5% of all issued UBS Group AG shares in order to avoid the risk of unknown shareholders with large stakes being entered in the share register. Securities clearing organizations, such as The Depository Trust Company in New York, are not subject to this 5% voting limit.

Shareholders can exercise their voting rights conferred by the shares only if they are registered in our share register with voting rights. To register, shareholders must confirm that they have acquired UBS Group AG shares in their own name and for their own account. Nominee companies and fiduciaries are required to sign an agreement confirming their willingness to disclose, upon our request, individual beneficial owners holding more than 0.3% of all issued UBS Group AG shares.

All shareholders registered with voting rights are entitled to participate in general meetings of shareholders. If they do not wish to attend in person, they may issue instructions to support, reject or abstain for each individual item on the meeting agenda, either by giving instructions to an independent proxy in accordance with article 15 of the Articles of Association (AoA) or by appointing another registered shareholder of their choice to vote on their behalf. Alternatively, registered shareholders may issue their voting instructions to the independent proxy electronically through our online voting platform. Nominee companies normally submit the proxy material to the beneficial owners and forward the collected votes to the independent proxy.

→ **Refer to the articles 14 and 15 of the Articles of Association of UBS Group AG for more information on the issuing of instructions to independent voting right representatives. The Articles of Association are available at *www.ubs.com/governance***

Statutory quorums

Motions, including the election and re-election of BoD members and the election of the auditors, are decided at a general meeting of shareholders by an absolute majority of the votes cast, excluding blank and invalid ballots. For the approval of certain specific issues, the Swiss Code of Obligations requires a positive vote from a two-thirds majority of the votes represented at a general meeting of shareholders, and from the absolute majority of the par value of shares represented at the meeting. Such issues include the creation of shares with privileged voting rights, the introduction of restrictions on the transferability of registered shares, conditional and authorized capital increases, and restrictions or exclusions of shareholders' preemptive rights.

The AoA also require a two-thirds majority of votes represented for approval of any change to their provisions regarding the number of BoD members, any decision to remove one-quarter or more of the BoD members, and any modification to the provision establishing this qualified quorum.

Votes and elections are normally conducted electronically to ascertain the exact number of votes cast. Voting by a show of hands remains possible if a clear majority is predictable. Shareholders representing at least 3% of the votes represented may request that a vote or election be carried out electronically or by written ballot. In order to allow shareholders to clearly express their views on all individual topics, each item on the agenda is put to a vote separately and BoD members are elected on a person-by-person basis.

Convocation of general meetings of shareholders

The AGM must be held within six months of the close of the financial year (31 December) and normally takes place in early May. In 2019, the AGM will take place on 2 May.

Extraordinary General Meetings (EGMs) may be convened whenever the BoD or the auditors consider it necessary. Shareholders individually or jointly representing at least 10% of the share capital may at any time, including during an AGM, ask in writing for an EGM to be convened to address a specific issue they put forward.

A personal invitation including a detailed agenda is made available to every registered shareholder at least 20 days ahead of the scheduled general meeting. The agenda items are also published in the Swiss Official Gazette of Commerce as well as at *www.ubs.com/agm*.

Placing of items on the agenda

Pursuant to our AoA, shareholders individually or jointly representing shares with an aggregate minimum par value of CHF 62,500 may submit proposals for matters to be placed on the agenda for consideration at the next general meeting of shareholders.

At the beginning of February, the invitation to submit such proposals is published in the Swiss Official Gazette of Commerce and at *www.ubs.com/agm*. Requests for items to be placed on the agenda must include the actual motions to be put forward, together with a short explanation. Such requests must be submitted to the BoD 50 days prior to the general meeting of shareholders, including a statement from the depository bank confirming the number of shares held by the requesting shareholder and that these shares are blocked from sale until the end of the general meeting of shareholders. The BoD formulates opinions on the proposals, which are published together with the motions.

Registrations in the share register

Around 230,000 shareholders are directly registered in the UBS share register and some 140,000 US shareholders are registered via nominee companies.

The share register of UBS Group AG is an internal, non-public register subject to statutory confidentiality, secrecy, privacy and data protection regulations, which are imposed on UBS Group AG to protect shareholders registered therein. In general, third parties and shareholders have no inspection rights with regard to data related to other shareholders. Disclosure of such data is permitted only in specific and limited instances. In line with the Swiss Federal Act on Data Protection, the disclosure of personal data as defined thereunder is only allowed with the consent of the registered shareholder and in cases where there is an overriding private or public interest or if explicitly provided for by Swiss law. The law contains specific reporting duties, such as in relation to significant shareholders (refer to the "Significant shareholders" section of this report for more information). Disclosure may also be required or requested by a court of a competent jurisdiction, by any regulatory body that regulates the conduct of UBS Group AG or by other statutory provisions.

The general rules for entry into our Swiss share register with voting rights as described in article 5 of our AoA also apply before general meetings of shareholders. The same rules apply to our US transfer agent that operates the US share register for all UBS Group AG shares in a custodian account in the US. In order to determine the voting rights of each shareholder, our share register generally closes two business days prior to a general meeting of shareholders. Our independent proxy agent processes voting instructions from shareholders with voting rights as long as technically possible, generally also until two business days before a general meeting of shareholders. Such technical closure of our share register only facilitates the determination of the actual voting rights of every shareholder that issued a voting instruction. Irrespective of the technical closure, shares that are registered in our share register are never immobilized and are freely tradable at any time – irrespective of any issued voting instructions.

Board of Directors

The Board of Directors (BoD) of UBS Group AG, under the leadership of the Chairman of the BoD (Chairman), consists of six to 12 members as per our Articles of Association (AoA).

The BoD decides on the strategy of the Group upon recommendation by the Group Chief Executive Officer (Group CEO) and is responsible for the overall direction, supervision and control of the Group and its management, as well as for supervising compliance with applicable laws, rules and regulations. The BoD exercises oversight over UBS Group AG and its subsidiaries and is responsible for establishing a clear Group governance framework to provide effective steering and supervision of the Group, taking into account the material risks to which UBS Group AG and its subsidiaries are exposed. The BoD has ultimate responsibility for the success of the Group and for delivering sustainable shareholder value within a framework of prudent and effective controls. It also approves all financial statements for issue and appoints and removes all Group Executive Board (GEB) members.

The BoD of UBS AG, under the leadership of the Chairman, decides on the strategy of UBS AG upon recommendation by the President of the Executive Board and exercises the ultimate supervision on management. Its ultimate responsibility for the success of UBS AG is exercised subject to the parameters set by the Group.

Members of the Board of Directors

At the AGM on 3 May 2018, Michel Demaré, David Sidwell, Reto Francioni, Ann F. Godbehere, Julie G. Richardson, Isabelle Romy, Robert W. Scully, Beatrice Weder di Mauro and Dieter Wemmer were re-elected as members of the BoD. As a result of his new role as Chairman of UBS Americas LLC, William G. Parrett did not stand for re-election. Jeremy Anderson and Fred Hu were elected for their first term. At the same time, Axel A. Weber was re-elected Chairman of the Board of Directors, and Ann F. Godbehere, Michel Demaré, Julie G. Richardson and Dieter Wemmer were elected as members of the Compensation Committee. Additionally, ADB Altorfer Duss & Beilstein AG was elected as independent proxy agent. Following their election, the BoD appointed Michel Demaré as Vice Chairman and David Sidwell as Senior Independent Director of UBS Group AG.

Article 31 of our AoA limits the number of mandates that members of the BoD may hold outside the UBS Group to four board memberships in listed companies and five additional mandates in non-listed companies. Mandates in companies that are controlled by us or that control us are not subject to this limitation. In addition, members of the BoD may hold no more than 10 mandates at UBS's request and 10 mandates in associations, charitable organizations, foundations, trusts, and employee welfare foundations. On 31 December 2018, no member of the BoD reached the thresholds described in article 31 of our AoA.

The following biographies provide information on the BoD members and the Group Company Secretary. In addition to information on mandates, the biographies include information on memberships or other activities or functions, as required by the SIX Swiss Exchange Corporate Governance Directive.

No member of the BoD carries out operational management tasks within the Group; all members of the BoD are therefore non-executive members.

All members of UBS Group AG's BoD are also members of UBS AG's BoD, and committee membership is the same for both entities. The Senior Independent Director function relates only to UBS Group AG.

In 2018, UBS AG's BoD had three committees: the Audit Committee, the Compensation Committee and the Risk Committee.

Axel A. Weber

German, born 1957

Functions at UBS Group AG
Chairman of the Board of Directors / Chairperson of the Corporate Culture and Responsibility Committee / Chairperson of the Governance and Nominating Committee

Professional history and education
Axel A. Weber was elected to the Board of Directors (BoD) of UBS AG at the 2012 AGM and of UBS Group AG in November 2014. He is Chairman of the BoD of both UBS AG and UBS Group AG. He has chaired the Governance and Nominating Committee since 2012 and became Chairperson of the Corporate Culture and Responsibility Committee in 2013. Mr. Weber was president of the German Bundesbank between 2004 and 2011, during which time he also served as a member of the Governing Council of the European Central Bank, as a member of the Board of Directors of the Bank for International Settlements, as German governor of the International Monetary Fund, and as a member of the G7 and G20 Ministers and Governors. He was a member of the steering committees of the European Systemic Risk Board in 2011 and the Financial Stability Board from 2010 to 2011. From 2002 to 2004, Mr. Weber served as a member of the German Council of Economic Experts. His academic career encompasses professorships in international economics, monetary economics and economic theory at the universities of Cologne, Frankfurt am Main, Bonn and Chicago. Mr. Weber holds a master's degree in economics from the University of Constance and a PhD in economics from the University of Siegen, where he also received his habilitation. He holds honorary doctorates from the universities of Duisburg-Essen and Constance.

Other activities and functions
– Board member of the Swiss Bankers Association
– Trustees Board member of Avenir Suisse
– Advisory Board member of the "Beirat Zukunft Finanzplatz"
– Board member of the Swiss Finance Council
– Chairman of the Board of the Institute of International Finance
– Member of the European Financial Services Round Table
– Member of the European Banking Group
– Member of the International Advisory Panel, Monetary Authority of Singapore
– Member of the Group of Thirty, Washington, DC
– Chairman of the Board of Trustees of DIW Berlin
– Advisory Board member of the Department of Economics, University of Zurich
– Member of the Trilateral Commission

Michel Demaré

Belgian and Swiss, born 1956

Functions at UBS Group AG
Independent Vice Chairman / member of the Audit Committee / member of the Compensation Committee / member of the Governance and Nominating Committee

Professional history and education
Michel Demaré was elected to the BoD of UBS AG at the 2009 AGM and of UBS Group AG in November 2014. In April 2010, he was appointed independent Vice Chairman for the first time. He has been a member of the Audit Committee since 2009 and of the Governance and Nominating Committee since 2010. He became a member of the Compensation Committee in 2013. Mr. Demaré was Chairman of the Board of Syngenta from 2013 to June 2017 and retired as its Vice Chairman in December 2017. He joined ABB in 2005 as Chief Financial Officer (CFO) and as a member of the Group Executive Committee. Mr. Demaré stepped down from his function in ABB in January 2013. Between February and August 2008, he acted as the interim CEO of ABB. From September 2008 to March 2011, he combined his role as CFO with that of President of Global Markets. Mr. Demaré joined ABB from Baxter International Inc., where he was CFO Europe from 2002 to 2005. Prior to this, he spent 18 years at the Dow Chemical Company, holding various treasury and risk management positions in Belgium, France, the US and Switzerland. Between 1997 and 2002, Mr. Demaré was CFO of the Global Polyolefins and Elastomers division. He began his career as an officer in the multinational banking division of Continental Illinois National Bank of Chicago, and was based in Antwerp. Mr. Demaré graduated with an MBA from the Katholieke Universiteit Leuven, Belgium, and holds a degree in applied economics from the Université Catholique de Louvain, Belgium.

Other activities and functions
– Board member of Vodafone Group Plc
– Board member of Louis-Dreyfus Commodities Holdings BV
– Vice Chairman of the Supervisory Board of IMD, Lausanne
– Advisory Board member of the Department of Banking and Finance, University of Zurich

David Sidwell

American (US) and British, born 1953

Functions at UBS Group AG
Senior Independent Director / Chairperson of the Risk Committee / member of the Governance and Nominating Committee

Professional history and education
David Sidwell was elected to the BoD of UBS AG at the 2008 AGM and of UBS Group AG in November 2014. In April 2010, he was appointed Senior Independent Director for the first time. He has chaired the Risk Committee since 2008 and has been a member of the Governance and Nominating Committee since 2011. Mr. Sidwell was Executive Vice President and CFO of Morgan Stanley between 2004 and 2007. Before joining Morgan Stanley, he worked for JPMorgan Chase & Co., where, in his 20 years of service, he held a number of different positions, including controller and, from 2000 to 2004, CFO of the Investment Bank. Prior to this, he was with Price Waterhouse in both London and New York. Mr. Sidwell graduated from Cambridge University and qualified as a chartered accountant with the Institute of Chartered Accountants in England and Wales.

Other activities and functions
– Senior advisor at Oliver Wyman, New York
– Board member of Chubb Limited
– Board member of GAVI Alliance
– Chairman of the Board of Village Care, New York

Jeremy Anderson

British, born 1958

Functions at UBS Group AG
Chairperson of the Audit Committee / member of the Corporate Culture and Responsibility Committee

Professional history and education
Jeremy Anderson was elected to the BoD of UBS AG and UBS Group AG at the 2018 AGM. He has chaired the Audit Committee and has been a member of the Corporate Culture and Responsibility Committee since 2018. He was chairman of Global Financial Services at KPMG International from 2010 to 2017. He has spent over 30 years working with the banking and insurance industry in an advisory capacity, covering a broad range of topics, including strategy, audit and risk management, technology-enabled transformation, mergers and bank restructuring. Jeremy Anderson was the founding sponsor of KPMG's Global Fintech Network in 2014 and is a regular participant at fintech events across Europe, the US and Asia. He joined KPMG International in 2004 and was Head of Financial Services KPMG Europe from 2006 to 2011 as well as Head of Clients and Markets KPMG Europe from 2008 to 2011. From 2004 to 2008 he was in charge of its UK Financial Services Practice. Prior to that, he served as a member of Atos Origin's Group Management Board and as Head of its UK operations after Atos acquired KPMG Consulting UK in 2002. In this capacity he managed Atos' consulting, systems integration and IT outsourcing services in the UK. Mr. Anderson joined KPMG's UK consulting business in 1985 and led the firm as CEO from 2000 to 2002, having previously been a partner in its financial services business. He started his career as a software developer with Triad Computing Systems in 1980. Mr. Anderson graduated with a bachelor's degree in economics from University College London.

Other activities and functions
– Trustee of the UK's Productivity Leadership Group
– Trustee of Kingham Hill Trust
– Trustee of St. Helen's Bishopsgate

Reto Francioni

Swiss, born 1955

Functions at UBS Group AG
Member of the Corporate Culture and Responsibility Committee / member of the Risk Committee

Professional history and education
Reto Francioni was elected to the BoD of UBS AG at the 2013 AGM and of UBS Group AG in November 2014. He has been a member of the Corporate Culture and Responsibility Committee since 2013 and of the Risk Committee since 2015. He was CEO of Deutsche Börse AG from 2005 to 2015. Since 2006, he has been a professor of applied capital markets theory at the University of Basel. From 2002 to 2005, he was Chairman of the Supervisory Board and President of the SWX Group, Zurich, placing him at the heart of digitalization within the industry. Mr. Francioni was co-CEO and Spokesman for the Board of Directors of Consors AG, Nuremberg, from 2000 to 2002. Between 1993 and 2000, he held various management positions at Deutsche Börse AG, including that of Deputy CEO from 1999 to 2000. There he drove a fundamental transformation to shape it as a world leader in technology. From 1992 to 1993, he served in the corporate finance division of Hoffmann-La Roche, Basel. Prior to this, he was on the executive board of Association Tripartite Bourses for several years. From 1985 to 1988, he worked for the former Credit Suisse, holding positions in the equity sales and legal departments. He started his professional career in 1981 in the commerce division of Union Bank of Switzerland. Mr. Francioni completed his studies in law in 1981 and his PhD in 1987 at the University of Zurich.

Other activities and functions
– Board member of Coca-Cola HBC AG (Senior Independent Non-Executive Director)
– Chairman of the Board of Swiss International Air Lines AG
– Board member of Francioni AG
– Board member of MedTech Innovation Partners AG

Ann F. Godbehere

Canadian and British, born 1955

Functions at UBS Group AG
Chairperson of the Compensation Committee / member of the Audit Committee

Professional history and education
Ann F. Godbehere was elected to the BoD of UBS AG at the 2009 AGM and of UBS Group AG in November 2014. She has chaired the Compensation Committee since 2011 and has been a member of the Audit Committee since 2009. Ms. Godbehere was appointed CFO and Executive Director of Northern Rock in February 2008, serving in these roles during the initial phase of the business's public ownership until the end of January 2009. Prior to this role, she served as CFO of Swiss Re Group from 2003 to 2007. Ms. Godbehere was CFO of its Property & Casualty division in Zurich for two years. Previously, she served as CFO of the Life & Health division in London for three years. From 1997 to 1998, she was CEO of Swiss Re Life & Health Canada and Head of IT for Swiss Re in North America. Between 1996 and 1997, she was CFO of Swiss Re Life & Health North America. Ms. Godbehere is a certified general accountant and was made a fellow of the Chartered Professional Accountant Association in 2014 and fellow of the Certified General Accountant Association of Canada in 2003.

Other activities and functions
– Board member of Rio Tinto plc (Senior Independent Director and chairman of the audit committee)
– Board member of Rio Tinto Limited (Senior Independent Director and chairman of the audit committee)
– Board member of Royal Dutch Shell plc

Fred Hu

Chinese, born 1963

Function at UBS Group AG
Member of the Board of Directors

Professional history and education
Fred Hu was elected to the BoD of UBS AG and UBS Group AG at the 2018 AGM. He has been chairman of Primavera Capital Group, a China-based global investment firm, since 2010. Through his numerous investments in leading technology companies over the years, he has obtained profound knowledge in the areas of mobile internet, digitalization and cybersecurity. Prior to founding Primavera, Fred Hu held various senior positions at Goldman Sachs from 1997 to 2010, where he was instrumental in building the firm's franchise in the region. He was partner and chairman of Greater China from 2008 to 2010 and partner and co-head Investment Banking China from 2004 to 2008. Before that, he held the position of Goldman Sachs' chief economist. From 1991 to 1996, he served as an economist at the International Monetary Fund in Washington, DC, and after that was co-director of the National Center for Economic Research and professor at Tsinghua University. He holds a master in engineering science from Tsinghua University, and a master and PhD in economics from Harvard University.

Other activities and functions
- Non-executive Chairman of the Board of Yum China Holdings
- Board member of Hong Kong Exchanges and Clearing Ltd.
- Board member of China Asset Management
- Board member of Minsheng Financial Leasing Co.
- Trustee of the China Medical Board
- Governor of the Chinese International School
- Co-Chairman of the Nature Conservancy Asia Pacific Council
- Director and member of the Executive Committee of China Venture Capital and Private Equity Association Ltd.
- Global Advisory Board member of the Council on Foreign Relations

Julie G. Richardson

American (US), born 1963

Functions at UBS Group AG
Member of the Compensation Committee / Member of the Risk Committee

Professional history and education
Julie G. Richardson was elected to the BoD of UBS AG and UBS Group AG at the 2017 AGM. She has been a member of the Risk Committee since 2017 and a member of the Compensation Committee since 2018. From 2003 to 2012, Ms. Richardson was a Partner and Head of the New York Office of Providence Equity Partners, a global private equity firm specializing in equity investments in media, communications, education and information companies. She acted as a senior advisor to the partnership until 2014. From 1998 to 2003, Ms. Richardson served as Vice Chairman of JPMorgan Chase & Co.'s Investment Banking division and Head of its Global Telecommunications, Media and Technology group. Throughout her career, she has spent significant time with both incumbent and new technology companies, including as a board member of a digital knowledge management company since 2015. After graduating, she started with Merrill Lynch in 1986, where she worked until 1998, in her last position as Managing Director Media and Communications Investment Banking. Ms. Richardson graduated with a bachelor's degree in business administration from the University of Wisconsin-Madison.

Other activities and functions
- Board member of The Hartford Financial Services Group, Inc. (chairman of the audit committee)
- Board member of Yext (chairman of the audit committee)
- Board member of Vereit, Inc. (chairman of the compensation committee)

Isabelle Romy

Swiss, born 1965

Functions at UBS Group AG
Member of the Audit Committee / member of the Governance and Nominating Committee

Professional history and education
Isabelle Romy was elected to the BoD of UBS AG at the 2012 AGM and of UBS Group AG in November 2014. She has been a member of the Audit Committee and of the Governance and Nominating Committee since 2012. Ms. Romy is a partner at Froriep Legal AG, a large Swiss business law firm. From 1995 to 2012, she worked for another major Swiss law firm based in Zurich, where she was a partner from 2003 to 2012. Her legal practice includes litigation and arbitration in cross-border cases. Ms. Romy has been a professor at the University of Fribourg and at the Federal Institute of Technology in Lausanne (EPFL) since 1996. Between 2003 and 2008, she served as a deputy judge at the Swiss Federal Supreme Court. From 1999 to 2006, she was a member of the Ethics Commission at the EPFL. Ms. Romy earned her PhD in law (Dr. iur.) at the University of Lausanne in 1990 and has been a qualified attorney-at-law admitted to the bar since 1991. From 1992 to 1994, she was a visiting scholar at Boalt Hall School of Law, University of California, Berkeley, and completed her professorial thesis at the University of Fribourg in 1996.

Other activities and functions
- Board member of Froriep Legal AG
- Vice Chairman of the Sanction Commission of SIX Swiss Exchange
- Member of the Fundraising Committee of the Swiss National Committee for UNICEF
- Supervisory Board member of the CAS program Financial Regulation of the University of Bern and University of Geneva

Robert W. Scully

American (US), born 1950

Function at UBS Group AG
Member of the Risk Committee

Professional history and education
Robert W. Scully was elected to the BoD of UBS AG and UBS Group AG at the 2016 AGM. He has been a member of the Risk Committee since 2016. Mr. Scully served as a member of the Office of the Chairman of Morgan Stanley from 2007 to 2009 and was its co-President responsible for Asset Management, Discover Credit Cards from 2006 to 2007. Prior to assuming the position of co-President, he was Chairman of Global Capital Markets from 2004 to 2006, Vice Chairman of Investment Banking from 1999 to 2006, and Managing Director from 1996 to 2009. Mr. Scully was Managing Director at Lehman Brothers from 1993 to 1996, having worked for Scully Brothers Foss & Wight from 1989 to 1993 as Managing Director and for Salomon Brothers in Investment Banking and Capital Markets from 1980 to 1989, where he became a Managing Director in 1984. He began his career in the banking industry with Chase Manhattan Bank in 1972 and then worked as an investment banker for Blyth Eastman Dillon & Co. from 1977 to 1980. Mr. Scully graduated in 1972 with a bachelor's degree in psychology from Princeton University and holds an MBA from Harvard University.

Other activities and functions
– Board member of Chubb Limited
– Board member of Zoetis, Inc.
– Board member of KKR & Co. Inc.
– Board member of Teach For All

Beatrice Weder di Mauro

Italian and Swiss, born 1965

Functions at UBS Group AG
Member of the Audit Committee / member of the Corporate Culture and Responsibility Committee

Professional history and education
Beatrice Weder di Mauro was elected to the BoD of UBS AG at the 2012 AGM and of UBS Group AG in November 2014. She has been a member of the Audit Committee since 2012 and became a member of the Corporate Culture and Responsibility Committee in 2017. She was a member of the Risk Committee from 2013 to 2017. Since July 2018, Ms. Weder di Mauro has been President of the Center for Economic Policy Research, a network of more than 1,000 academic economists based in Europe. She is Research Professor and Distinguished Fellow at the Emerging Markets Institute at INSEAD in Singapore. From 2001 to 2018, she held the chair of international macroeconomics at the Johannes Gutenberg University of Mainz and was a member of the German Council of Economic Experts from 2004 to 2012. She held visiting positions at the International Monetary Fund (IMF) in Washington, DC, at the National Bureau of Economic Research in Cambridge, MA, and at the United Nations University in Tokyo. Prior to this, she worked as an economist at the IMF and the World Bank in Washington, DC. She received a PhD and a habilitation in economics from the University of Basel. Since 2005, Ms. Weder di Mauro has served as an independent director on the boards of globally leading companies in development finance, pharmaceuticals, technology and insurance.

Other activities and functions
– Supervisory Board member of Robert Bosch GmbH
– Board member of Bombardier Inc.
– Member of the ETH Zurich Foundation Board of Trustees

Dieter Wemmer

Swiss and German, born 1957

Functions at UBS Group AG
Member of the Compensation Committee / Member of the Risk Committee

Professional history and education
Dieter Wemmer was elected to the BoD of UBS AG and UBS Group AG at the 2016 AGM. He has been a member of the Risk Committee since 2016 and a member of the Compensation Committee since 2018. Mr. Wemmer was Chief Financial Officer (CFO) of Allianz SE from 2013 to 2017. He joined Allianz SE in 2012 as a member of the Board of Management, responsible for the insurance business in France, Benelux, Italy, Greece and Turkey and for the Center of Competence "Global Property & Casualty." He was CFO of Zurich Insurance Group (Zurich) from 2007 to 2011. From 2010 to 2011, he was Zurich's Regional Chairman of Europe. Prior to this, Mr. Wemmer was CEO of the Europe General Insurance business and member of Zurich's Group Executive Committee from 2004 to 2007. He held various other management positions in the Zurich Group, such as Chief Operating Officer of the Europe General Insurance business from 2003 to 2004, Head of Mergers and Acquisitions from 1999 to 2003 and Head of Financial Controlling from 1997 to 1999. He began his career in the insurance industry within the Zurich Group in 1986 in Cologne, after graduating from the University of Cologne with a master's degree and acquiring his doctorate in mathematics in 1985.

Other activities and functions
– Board member of Ørsted A/S
– Member of the Berlin Center of Corporate Governance
– Senior advisor, Texas Pacific Group

Markus Baumann

Swiss, born 1963

Function at UBS Group AG
Group Company Secretary

Professional history and education
Markus Baumann was appointed Group Company Secretary of UBS Group AG and Company Secretary of UBS AG by the BoD as of January 2017. He has been with UBS for 40 years and has held a broad range of leadership roles across the Group in Switzerland, the US and Japan, including Chief of Staff to the Chairman of the BoD since 2015 and Chief Operating Officer of Group Internal Audit from 2006 to 2015. Before this, he worked as Chief Operating Officer EMEA for UBS Asset Management. Earlier in his career, Mr. Baumann worked in Japan for four years as Corporate Planning Officer and assistant to the CEO. He joined UBS in 1979 as a banking apprentice, covering the full range of universal banking activities. Mr. Baumann holds an MBA from INSEAD Fontainebleau and a Swiss Federal Diploma as a Business Analyst.

Elections and terms of office

Shareholders elect each member of the BoD individually, as well as the Chairman and the members of the Compensation Committee, every year based on proposals from the BoD.

As set out in the Organization Regulations, BoD members are normally expected to serve for a minimum of three years. No BoD member may serve for more than 10 consecutive terms of office. In exceptional circumstances, the BoD may extend this limit.

→ **Refer to "Skills, expertise and training of the Board of Directors" in this section for more information**

Organizational principles and structure

Following each AGM, the BoD meets to appoint one or more Vice Chairmen, a Senior Independent Director, the BoD committee members (other than the Compensation Committee members, who are elected by the shareholders) and the respective committee Chairpersons. At the same meeting, the BoD appoints a Group Company Secretary, who acts as secretary to the BoD and its committees.

According to the Articles of Association and the Organization Regulations, the BoD meets as often as business requires, but it must meet at least six times a year. During 2018, a total of 24 BoD meetings and calls were held, 16 of which were attended by GEB members. Average participation in BoD meetings and calls was 99%. In addition to the BoD meetings attended by GEB members, the Group CEO attended some of the meetings of the BoD without GEB participation. The average duration of the meetings and calls was 170 minutes. In 2018, the frequency and length of the combined meetings were the same for UBS Group AG and UBS AG. Additionally, five ad hoc calls were held, four of which were without GEB members.

At every BoD meeting, each committee chairperson provides the BoD with an update on current activities of his or her committee as well as important committee issues.

In response to the growing importance of legal entity governance, standalone meetings of the UBS AG BoD were held. In 2018, three UBS AG meetings were held with members of the Executive Board in attendance. Standalone meetings will be held on a regular basis going forward to discuss and agree on legal entity governance and other topics related to UBS AG.

Performance assessment

At least once a year, the BoD reviews its own performance as well as the performance of each of its committees. This review contains an assessment of the BoD's effectiveness overall under the auspices of the Governance and Nominating Committee and includes an assessment of each of the BoD committees. The assessment evaluates the following dimensions, covering both formal and material aspects of BoD and committees: meeting structure, frequency and duration; composition; information timeliness, volume and quality; priorities; fulfillment of duties, including succession planning; and dynamics. The committees review their responsibilities and authorities against the Organization Regulations. In addition, for a number of the committees a systematic comparison to best-practice standards is undertaken. The last self-assessment, which was concluded in May 2018, determined that the BoD and its committees were functioning effectively and efficiently. The results of the self-assessment also served as a key source for the definition of the Board's priorities for 2018 / 2019, including adjustments to the BoD agenda. A particular focus was thereby put on the work with management on strategic priorities, the transformation of the Group structure, the culture within the Group and the regulatory and control environment. The BoD also continued to prioritize succession planning, and supported and monitored the talent development measures across the Group. At least every three years, the BoD assessments include an appraisal by an external expert. The next external appraisal will cover the BoD period for 2018 / 2019 and will be concluded by May 2019. The results will be incorporated in the Annual Report 2019.

The committees listed on the following pages assist the BoD in the performance of its responsibilities. These committees and their charters are described in the Organization Regulations, published at *www.ubs.com/governance*. The committees meet as often as their business requires, but at least four times a year each for the Audit Committee, the Risk Committee and the Compensation Committee, and twice a year each for the Corporate Culture and Responsibility Committee and the Governance and Nominating Committee. Topics of common interest or affecting more than one committee are discussed at joint committee meetings. The Audit Committee and Risk Committee hold at least four joint meetings a year.

The Compensation Committee and Risk Committee periodically hold joint meetings. During 2018, a total of nine joint committee meetings were held for UBS Group AG (eight joint committee meetings were held for UBS AG).

Board of Directors

Members in 2018	Meeting attendance without GEB[3]		Meeting and call attendance with GEB[4]		Key responsibilities include:
Axel A. Weber, Chairman	8/8	100%	16/16	100%	The BoD has ultimate responsibility for the success of the Group and for delivering sustainable shareholder value within a framework of prudent and effective controls. It decides on the Group's strategic aims and the necessary financial and human resources upon recommendation of the Group CEO and sets the Group's values and standards to ensure that its obligations to its shareholders and other stakeholders are met.
Michel Demaré	8/8	100%	16/16	100%	Refer to the Organization Regulations of UBS Group AG at *www.ubs.com/governance* for more information
David Sidwell	8/8	100%	16/16	100%	
Jeremy Anderson[1]	6/6	100%	11/11	100%	
Reto Francioni	8/8	100%	16/16	100%	
Ann F. Godbehere	8/8	100%	16/16	100%	
Fred Hu[1]	5/6	83%	10/11	91%	
William G. Parrett[2]	2/2	100%	5/5	100%	
Julie G. Richardson	8/8	100%	16/16	100%	
Isabelle Romy	8/8	100%	16/16	100%	
Robert W. Scully	8/8	100%	16/16	100%	
Beatrice Weder di Mauro	8/8	100%	16/16	100%	
Dieter Wemmer	8/8	100%	16/16	100%	

1 Jeremy Anderson and Fred Hu were elected to the BoD at the 2018 AGM; indicated are attended and total meetings after their election. 2 William G. Parrett did not stand for re-election at the 2018 AGM; indicated are his attended and total meetings up to the AGM. 3 Additionally, four ad hoc calls took place in 2018. 4 Additionally, one ad hoc call took place in 2018.

Audit Committee

The Audit Committee consisted of five BoD members throughout 2018, all of whom were determined by the BoD to be fully independent. As a group, members of the Audit Committee must have the necessary qualifications and skills to perform all of their duties and together must possess financial literacy and experience in banking and risk management.

The Audit Committee itself does not perform audits but monitors the work of the external auditors, Ernst & Young Ltd, who in turn are responsible for auditing UBS Group AG's and UBS AG's consolidated and standalone annual financial statements and for reviewing the quarterly financial statements.

Together with the external auditors and Group Internal Audit, the Audit Committee in particular reviews the annual financial statements of UBS Group AG and UBS AG as well as the consolidated annual and quarterly financial statements and the consolidated annual report of UBS Group AG and UBS AG, as proposed by management, in order to recommend approval to the BoD or propose any adjustments the Audit Committee considers appropriate.

Periodically, and at least annually, the Audit Committee assesses the qualifications, expertise, effectiveness, independence and performance of the external auditors and their lead audit partner, in order to support the BoD in reaching a decision in relation to the appointment or dismissal of the external auditors and to the rotation of the lead audit partner. The BoD then submits these proposals to the shareholders for approval at the AGM.

During 2018, the Audit Committee held eight committee meetings and nine calls with a participation rate of 100%. On average the duration of each of the meetings and calls was approximately 130 minutes. In 2018, for both UBS Group AG and UBS AG, the frequency and length of meetings were the same. All meetings and calls of the Audit Committee were attended by the Group Chief Financial Officer, the Group Controller and Chief Accounting Officer and some of the meetings were attended by the Group CEO. In 2018, the Chairperson and the committee met on a regular basis with core supervisory authorities.

All Audit Committee members have accounting or related financial management expertise and, in compliance with the rules established pursuant to the US Sarbanes-Oxley Act of 2002, at least one member qualifies as a financial expert. The New York Stock Exchange (NYSE) listing standards on corporate governance and Rule 10A-3 under the US Securities Exchange Act set more stringent independence requirements for members of audit committees than for the other members of the BoD. Throughout 2018, all members of the Audit Committee, in addition to satisfying our independence criteria, satisfied these requirements, in that they did not receive, directly or indirectly, any consulting, advisory or compensatory fees from any member of the Group other than in their capacity as a BoD member, did not hold, directly or indirectly, UBS Group AG shares in excess of 5% of the outstanding capital, and (except as noted below) did not serve on the audit committees of more than two other public companies. The NYSE listing standards on corporate governance allow for an exemption for audit committee members to serve on more than three audit committees of public companies, provided that all BoD members determine that such simultaneous service does not impair the member's ability to effectively serve on each committee and to fulfill his or her obligations. Considering the credentials of William G. Parrett, the BoD granted him such an exemption.

Audit Committee

Members in 2018	Meeting and call attendance		Key responsibilities include:
Jeremy Anderson (Chairperson)[1]	9/9	100%	The function of the Audit Committee is to serve as an independent and objective body with oversight of: (i) UBS Group AG's and the Group's accounting policies, financial reporting and disclosure controls and procedures; (ii) the quality, adequacy and scope of external audit; (iii) UBS Group AG's and the Group's compliance with financial reporting requirements; (iv) the executives' approach to internal controls with respect to the production and integrity of the financial statements and disclosure of the financial performance; and (v) the performance of Group Internal Audit in conjunction with the Chairman. The executives are responsible for the preparation, presentation and integrity of the financial statements. External auditors are responsible for auditing UBS Group AG's and the Group's annual financial statements and for reviewing the quarterly financial statements. Refer to the Organization Regulations of UBS Group AG at *www.ubs.com/governance* for more information
William G. Parrett (Chairperson)[2]	8/8	100%	
Michel Demaré	17/17	100%	
Ann F. Godbehere	17/17	100%	
Isabelle Romy	17/17	100%	
Beatrice Weder di Mauro	17/17	100%	

1 Following his election at the 2018 AGM, Jeremy Anderson became Audit Committee Chairperson; indicated are attended and total meetings after his election. 2 William G. Parrett did not stand for re-election at the 2018 AGM; indicated are his attended and total meetings up to the AGM.

Compensation Committee

The Compensation Committee consisted of four independent BoD members throughout 2018 as indicated in the table below. In addition to the key responsibilities indicated in the same table, the Compensation Committee reviews the compensation disclosures included in this report.

During 2018, the Compensation Committee held seven meetings and two calls with a participation rate of 100%. On average the duration of each of the meetings and calls was approximately 100 minutes. The meetings were held in the presence of the Chairman, the Group CEO and generally external advisors. In 2018, the Chairperson met on a regular basis with core supervisory authorities.

→ **Refer to "Board of Directors governance and compensation" in the "Compensation" section from page 284 of this report for more information on the Compensation Committee's decision-making procedures**

Corporate Culture and Responsibility Committee

Throughout 2018, the Corporate Culture and Responsibility Committee consisted of the Chairperson and three independent BoD members as listed in the table below. The Group CEO and the Head UBS in society are permanent guests of the Corporate Culture and Responsibility Committee, while senior regional representatives (chairmen or Presidents) attended two of the meetings as guests. During 2018, six meetings were held with an average participation rate of 96%. On average the duration of each of the meetings was approximately 100 minutes.

Compensation Committee

Members in 2018	Meeting and call attendance		Key responsibilities include:
Ann F. Godbehere (Chairperson)	9/9	100%	The Compensation Committee is responsible for: (i) supporting the BoD in its duties to set guidelines on compensation and benefits, (ii) approving the total compensation for the Chairman and the non-independent BoD members, (iii) establishing, together with the Chairman, financial and non-financial performance targets for the Group CEO and reviewing, upon the recommendation from the Group CEO, financial and non-financial performance targets for the other GEB members, (iv) evaluating, in consultation with the Chairman, the performance of the Group CEO in meeting agreed targets, as well as informing the BoD of the individual performance assessments of the GEB members, (v) proposing, together with the Chairman, total individual compensation for the independent BoD members and Group CEO for approval by the BoD and (vi) proposing to the BoD for approval, upon recommendation from the Group CEO, the total individual compensation for GEB members. Refer to the Organization Regulations of UBS Group AG at *www.ubs.com/governance* for more information
Michel Demaré	9/9	100%	
Reto Francioni[1]	2/2	100%	
William G. Parrett[1]	2/2	100%	
Julie G. Richardson[2]	7/7	100%	
Dieter Wemmer[2]	7/7	100%	

1 Reto Francioni and William G. Parrett were members of this committee until the 2018 AGM; indicated are attended and total meetings up to the AGM. 2 Julie G. Richardson and Dieter Wemmer were elected to this committee at the 2018 AGM; indicated are attended and total meetings after their election.

Corporate Culture and Responsibility Committee

Members in 2018	Meeting attendance		Key responsibilities include:
Axel A. Weber (Chairperson)	6/6	100%	The Corporate Culture and Responsibility Committee supports the BoD in its duties to safeguard and advance the Group's reputation for responsible and sustainable conduct. Its function is forward-looking in that it monitors and reviews societal trends and transformational developments and assesses their potential relevance for the Group. In undertaking this assessment, it reviews stakeholder concerns and expectations pertaining to the societal performance of UBS and to the development of its corporate culture. The Corporate Culture and Responsibility Committee's function also encompasses the monitoring of the current state and implementation of the programs and initiatives within the Group pertaining to corporate culture and corporate responsibility. Refer to the Organization Regulations of UBS Group AG at *www.ubs.com/governance* for more information
Jeremy Anderson[1]	4/4	100%	
Reto Francioni	6/6	100%	
William G. Parrett[2]	1/2	50%	
Beatrice Weder di Mauro	6/6	100%	

1 Following the 2018 AGM, Jeremy Anderson became a member of this committee; indicated are attended and total meetings after his election. 2 William G. Parrett did not stand for re-election at the 2018 AGM; indicated are his attended and total meetings up to the AGM.

Governance and Nominating Committee

In 2018, the Governance and Nominating Committee consisted of the Chairperson and three independent members as listed in the table below. During 2018, seven meetings and one call were held with a participation rate of 100%. On average the duration of each of the meetings and the call was approximately 60 minutes. All meetings of the Governance and Nominating Committee were attended by the Group CEO.

Risk Committee

In 2018, the Risk Committee comprised five independent BoD members as listed in the table below. During 2018, the Risk Committee held nine committee meetings and three calls with a participation rate of 100%. On average the duration of each of the meetings and calls was approximately 225 minutes. In 2018, the frequency and length of the meetings were the same for both UBS Group AG and UBS AG. Usually, the Group CEO, the Group CFO, the Group Chief Risk Officer and the Group General Counsel attended the meetings and calls. In 2018, the Chairperson and the committee met on a regular basis with core supervisory authorities.

Governance and Nominating Committee

Members in 2018	Meeting and call attendance	
Axel A. Weber (Chairperson)	8/8	100%
Michel Demaré	8/8	100%
Isabelle Romy	8/8	100%
David Sidwell	8/8	100%

Key responsibilities include:

The function of the Governance and Nominating Committee is to support the BoD in fulfilling its duty to establish best practices in corporate governance across the Group, to conduct a BoD assessment (self- or external assessment), to establish and maintain a process for appointing new BoD members and GEB members (in the latter case, upon proposal of the Group CEO) and to manage the succession planning of all GEB members.

Refer to the Organization Regulations of UBS Group AG at *www.ubs.com/governance* for more information

Risk Committee

Members in 2018	Meeting and call attendance	
David Sidwell (Chairperson)	12/12	100%
Reto Francioni	12/12	100%
Julie G. Richardson	12/12	100%
Robert W. Scully	12/12	100%
Dieter Wemmer	12/12	100%

Key responsibilities include:

The function of the Risk Committee is to oversee and support the BoD in fulfilling its duty to supervise and set an appropriate risk management and control framework in the areas of:
(i) risk management and control, including credit, market, country, legal, compliance, operational and conduct risks;
(ii) treasury and capital management, including funding, liquidity and equity attribution; and
(iii) balance sheet management.
The Risk Committee considers the potential effects of the aforementioned risks on the Group's reputation. For these purposes, the Risk Committee will receive all relevant information from the GEB and has the authority to meet with regulators / third parties in consultation with the Group CEO.

Refer to the Organization Regulations of UBS Group AG at *www.ubs.com/governance* for more information

Roles and responsibilities of the Chairman of the Board of Directors

Axel A. Weber serves as a full-time Chairman of the BoD, in line with his employment contract.

The Chairman coordinates tasks within the BoD, calls BoD meetings and sets their agendas. He presides over all general meetings of shareholders and works with the committee chairpersons to coordinate the work of all BoD committees. Together with the Group CEO, the Chairman is responsible for effective communication with shareholders and other stakeholders, including government officials, regulators and public organizations. This is in addition to establishing and maintaining a close working relationship with the Group CEO and other GEB members, and providing advice and support when appropriate, including continuing to support the firm's cultural change as a key priority on the basis of our Pillars, Principles and Behaviors.

→ **Refer to "Employees" in the "How we create value for our stakeholders" section from page 37 and to the contents page of this report for more information on our Pillars, Principles and Behaviors**

In 2018, the Chairman met on a regular basis with core supervisory authorities in all major regions where UBS is active. Meetings with important supervisory authorities in other regions were scheduled on an ad hoc or needs-driven basis.

Roles and responsibilities of the Vice Chairmen and the Senior Independent Director

The BoD appoints one or more Vice Chairmen and a Senior Independent Director. If the BoD appoints more than one Vice Chairman, one of them must be independent. Both the Vice Chairman and the Senior Independent Director support the Chairman with his responsibilities and authorities and provide him with advice. In conjunction with the Chairman and the Governance and Nominating Committee, they facilitate good Group-wide corporate governance, as well as balanced leadership and control within the Group, the Board and the committees. Michel Demaré has been appointed as Vice Chairman, and David Sidwell has been appointed as Senior Independent Director. The Vice Chairman is required to lead and has led meetings of the BoD in the temporary absence of the Chairman. Together with the Governance and Nominating Committee, he is tasked with the ongoing monitoring and the annual evaluation of the Chairman. Furthermore, he represents UBS on behalf of the Chairman in meetings with internal or external stakeholders. The Senior Independent Director enables and supports communication and the flow of information among the independent BoD members. At least twice a year, he organizes and leads a meeting of the independent BoD members without the participation of the Chairman. In 2018, two independent BoD meetings were held for UBS Group AG and UBS AG with an average participation rate of 95% and an average duration of approximately 180 minutes. The Senior Independent Director also relays to the Chairman any issues or concerns raised by the independent BoD members and acts as a point of contact for shareholders and stakeholders seeking discussions with an independent BoD member.

Important business connections of independent members of the Board of Directors

As a global financial services provider and a major Swiss bank, we enter into business relationships with many large companies, including some in which our BoD members assume management or independent board responsibilities. The Governance and Nominating Committee determines in each instance whether the nature of the Group's business relationship with such a company might compromise our BoD members' capacity to express independent judgment.

Our Organization Regulations require three-quarters of the UBS Group AG BoD members and one-third at UBS AG to be independent. For this purpose, independence is determined in accordance with the FINMA Circular 2017 / 1 "Corporate governance – banks" and the NYSE rules.

In 2018, our BoD met the standards of the Organization Regulations for the percentage of directors that are considered independent under the criteria described above. Since our Chairman is employed full time by UBS Group AG, he is not considered independent. No other BoD member has a significant business connection to UBS or any of its subsidiaries.

All relationships and transactions with UBS Group AG's independent BoD members are conducted in the ordinary course of business and are on the same terms as those prevailing at the time for comparable transactions with non-affiliated persons. All relationships and transactions with BoD members' associated companies are conducted at arm's length.

→ **Refer to "Note 35 Related parties" in the "Consolidated financial statements" section on page 492 of this report for more information**

Checks and balances: Board of Directors and Group Executive Board

We operate under a strict dual board structure, as mandated by Swiss banking law. The separation of responsibilities between the BoD and the GEB is clearly defined in the Organization Regulations. The BoD decides on the strategy of the Group upon recommendations by the Group CEO and exercises ultimate supervision over management, whereas the GEB, headed by the Group CEO, has executive management responsibility. The functions of Chairman of the BoD and Group CEO are assigned to two different people, leading to a separation of power. This structure establishes checks and balances and preserves the institutional independence of the BoD from the day-to-day management of the Group, for which responsibility is delegated to the GEB under the leadership of the Group CEO. No member of one board may simultaneously be a member of the other.

Supervision and control of the GEB remains with the BoD. The authorities and responsibilities of the two bodies are governed by the Articles of Association and the Organization Regulations.

Skills, expertise and training of the Board of Directors

The BoD is composed of members with a broad spectrum of skills, educational backgrounds, experience and expertise from a range of sectors that reflect the nature and scope of the firm's business. In accordance with the Swiss Code of Best Practice for Corporate Governance, we seek appropriate professional backgrounds and experience as well as diversity among the members of the BoD, including gender diversity. With a view to recruiting needs, the Governance and Nominating Committee uses a skills / experience matrix as a tool to identify any gaps in the competencies considered most relevant to the BoD, taking into consideration the firm's business exposure, risk profile, strategy and geographic reach.

We asked our BoD members to rate their four strongest competencies out of the following 12 categories:
– banking (wealth management, asset management, personal and corporate banking)
– investment banking, capital markets
– insurance
– finance, audit, accounting
– risk management
– human resources management, including compensation
– legal, compliance
– technology, cybersecurity
– regulatory authority, central bank
– corporate responsibility and sustainability
– experience as chief executive officer or chairman
– executive board leadership experience (e.g., as chief financial officer, chief risk officer or chief operating officer)

The Governance and Nominating Committee reviews these categories and ratings annually to confirm that the BoD continues to possess the most relevant experience and competencies to perform BoD duties.

For 2018, competencies in all 12 categories were represented in our BoD. Particularly strong levels of experience and expertise existed in these areas:
– financial services
– finance, audit, accounting
– risk management

Furthermore, nine of the 12 BoD members have held or currently hold chairman, CEO or other executive board-level leadership positions.

Moreover, education remained an important priority for our BoD members. In addition to a comprehensive induction program for new BoD members, continuous training and topical deep dives are part of the BoD agenda.

→ **Refer to "Risk governance" in the "Risk management and control" section from page 123 of this report for information on our risk governance framework**

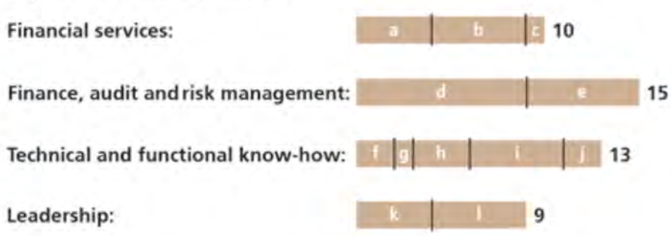
Terms of office **Geographic diversity**[1] **Gender**

3 < 3 years
3 3–6 years
3 7–9 years
3 > 9 years

42% Switzerland
25% Europe
25% USA
8% Asia

67% male
33% female

Experience and competencies[2]



a) banking (personal and corporate, wealth and asset management) – **b)** investment banking, capital markets – **c)** insurance – **d)** finance, audit, accounting – **e)** risk management – **f)** HR management – **g)** legal, compliance – **h)** technology, cybersecurity – **i)** regulatory authority, central bank – **j)** corporate responsibility and sustainability – **k)** CEO / chairman – **l)** executive board leadership (e.g., CFO, CRO or COO)

1 In the case of two nationalities, the domicile applies. 2 The bars represent the main strengths of the BoD, up to a maximum of four competencies per member.

Succession planning

Succession planning is one of the key responsibilities of both the BoD and the GEB. Across all divisions and regions, an inclusive talent development and succession planning process is in place that is intended to foster the personal development and Group-wide mobility of our employees. Succession plans for all leadership positions, up to and including all positions on the GEB, are managed under the lead of the Group CEO. The BoD reviews and approves the succession plans of the GEB and the management layer below.

For the BoD, the Chairman leads a systematic succession planning process as illustrated in the chart below.

Board of Directors' succession planning process

Our strategy and the business environment constitute the main drivers in our succession planning process for new BoD members as they define the key competencies required on the BoD. Taking diversity and tenure of the existing BoD composition into account, the Governance and Nominating Committee defines the recruiting profile for the search. Both external and internal sources contribute to identifying suitable candidates. The Chairman and the members of the Governance and Nominating Committee meet with potential candidates and, with the support of the full BoD, nominations are submitted to the AGM for approval. New BoD members follow an in-depth onboarding process that is designed to enable them to integrate efficiently and become effective in their new role. As a result of this succession planning process, the composition of the BoD includes a broad spectrum of skills, educational backgrounds, experience and expertise, in line with the demanding requirements of a leading global financial services firm.

Information and control instruments vis-à-vis the Group Executive Board

The BoD is kept informed of the activities of the GEB in various ways, including regular meetings between the Chairman and the Group CEO. The Group CEO and other GEB members also update the BoD on all significant issues at BoD meetings. Furthermore, the BoD receives comprehensive reports on a monthly basis, covering financial, capital, funding, liquidity, regulatory, compliance and legal developments, as well as performance against plan and forecasts for the remainder of the year. For important developments, BoD members are also updated by the GEB in between meetings. In addition, the Chairman receives the material and minutes of the GEB meetings.

At BoD meetings, BoD members may request from other BoD or GEB members any information about matters concerning the Group that they require to fulfill their duties. Outside of meetings, BoD members may request information from other BoD and GEB members. Such requests must be routed through the Group Company Secretary and addressed to the Chairman.

The BoD is supported in discharging its governance responsibilities by Group Internal Audit (GIA), which assesses the reliability of financial and operational information and the effectiveness of processes for compliance with legal, regulatory and statutory requirements.

The Head GIA reports directly to the Chairman. In addition, GIA has a functional reporting line to the Audit Committee in line with its responsibilities as set forth in our Organization Regulations. The Audit Committee annually assesses and approves the appropriateness of GIA's audit plan and objectives for the year and monitors GIA's discharge of these objectives.

The committee is also in regular contact with the Head GIA. GIA issues quarterly reports that provide: a broad overview of significant audit results and key issues; control themes and trends based on individual audit results; continuous risk assessment; and assurance results. The reports are provided to the Chairman of the BoD, members of the Audit and the Risk Committees, the GEB and other stakeholders. Furthermore, GIA issues an annual activity report providing an assessment of its activities, processes, audit plan and resourcing requirements and other important developments affecting GIA. The activity report is provided to the Chairman of the BoD and to the Audit Committee, and is an element for their assessment of GIA's effectiveness.

→ **Refer to "Group Internal Audit" in this section for more information**

→ **Refer to "Internal risk reporting" in the "Risk management and control" section on page 129 of this report for information on reporting to the BoD**

Group Executive Board

The Board of Directors (BoD) delegates the management of the business to the Group Executive Board (GEB).

Responsibilities, authorities and organizational principles of the Group Executive Board

Under the leadership of the Group CEO, the GEB has executive management responsibility for the steering of the Group and its business. It assumes overall responsibility for developing the Group and business division strategies and the implementation of approved strategies. The GEB constitutes itself as the risk council of the Group. In this function, the GEB has overall responsibility for establishing and supervising the implementation of risk management and control principles, as well as for managing the risk profile of the Group as a whole, as determined by the BoD and the Risk Committee. In 2018, the GEB held 16 meetings for UBS Group AG and for UBS AG, while a further two standalone meetings were held for UBS AG. Additionally, two off-site meetings and four strategy workshops took place.

→ **Refer to the Organization Regulations of UBS Group AG at *www.ubs.com/governance* for more information on the authorities of the Group Executive Board**

Responsibilities and authorities of the Group Asset and Liability Management Committee

The Group Asset and Liability Management Committee (Group ALCO), established by the GEB, is responsible for supporting the GEB in its responsibility to promote the usage of the Group's assets and liabilities in line with the Group's strategy, regulatory commitments and the interests of shareholders and other stakeholders. Group ALCO proposes the framework for capital management, capital allocation, funding and liquidity risk and proposes limits and targets for the Group to the BoD for approval. It oversees the balance sheet management of the Group, its business divisions and Corporate Center. The Organization Regulations additionally specify which powers of the GEB are delegated to the Group ALCO. In 2018, the Group ALCO held 10 meetings for UBS Group AG and UBS AG.

Management contracts

We have not entered into management contracts with any companies or natural persons that do not belong to the Group.

Members of the Group Executive Board

On 22 January 2018, we announced the creation of a unified Global Wealth Management division. Martin Blessing, President Wealth Management, and Tom Naratil, President UBS Americas and Wealth Management Americas, were appointed co-Presidents of Global Wealth Management as of 1 February 2018. On 25 September 2018, we announced that Piero Novelli and Robert Karofsky had been appointed co-Presidents Investment Bank, both joining the GEB. Andrea Orcel, former President Investment Bank, stepped down from the GEB. These changes were made effective on 1 October 2018. On 25 October 2018, we announced that Markus Ronner would be joining the GEB as Group Chief Compliance and Governance Officer, effective 1 November 2018. Furthermore, we announced the decision of Kathryn Shih to retire after 32 years at UBS. Edmund Koh took over as President UBS Asia Pacific, joining the GEB of UBS Group AG and UBS AG as of 1 January 2019.

The biographies on the following pages provide information about the GEB members currently in office and those in office on 31 December 2018. In addition to information on mandates, the biographies include memberships and other activities or functions, as required by the SIX Swiss Exchange Corporate Governance Directive.

In line with Swiss law, article 36 of UBS Group AG's Articles of Association limits the number of mandates that members of the GEB may hold outside the UBS Group to one board membership in a listed company and five additional mandates in non-listed companies. Mandates in companies that are controlled by UBS or that control UBS are not subject to this limitation. In addition, GEB members may not hold more than 10 mandates at a time at the request of the company and eight mandates in associations, charitable organizations, foundations, trusts and employee welfare foundations. On 31 December 2018, no member of the GEB reached the aforementioned thresholds.

At UBS AG, management of the business is also delegated, and the Executive Board, under the leadership of its President, has executive management responsibility for UBS AG and its business. All members of the GEB are also members of UBS AG's Executive Board, with the exception of Axel Lehmann, as President UBS Switzerland AG. Similar to the Group ALCO, UBS AG's Asset and Liability Management Committee is responsible for promoting the usage of UBS AG's financial resources in line with UBS AG's and the Group's strategy and regulatory requirements.

At present no specific diversity policy is required or applied with respect to the composition of the GEB and UBS AG's Executive Board.

Sergio P. Ermotti

Swiss, born 1960

Function at UBS Group AG
Group Chief Executive Officer

Professional history and education
Sergio P. Ermotti has been Group Chief Executive Officer of UBS Group AG since November 2014, having held the same position at UBS AG since November 2011 and on an interim basis between September and November 2011. Mr. Ermotti became a member of the GEB in April 2011 and was Chairman and CEO of UBS Group Europe, Middle East and Africa from April to November 2011. From 2007 to 2010, he was Group Deputy Chief Executive Officer at UniCredit, Milan, and was responsible for the strategic business areas of Corporate and Investment Banking, and Private Banking. He joined UniCredit in 2005 as Head of Markets & Investment Banking Division. His career began at Merrill Lynch in 1987, where he held various positions within equity derivatives and capital markets until 2003. In his last two years there, he served as co-Head of Global Equity Markets and as a member of the Executive Management Committee for Global Markets & Investment Banking. Mr. Ermotti is a Swiss-certified banking expert and is a graduate of the Advanced Management Programme at Oxford University.

Other activities and functions
– Board member of UBS Switzerland AG
– Chairman of the UBS Optimus Foundation Board
– Chairman of the Fondazione Ermotti, Lugano
– Chairman and President of the Board of the Swiss-American Chamber of Commerce
– Board member of the Global Apprenticeship Network
– Member of the Institut International d'Etudes Bancaires
– Member of the Saïd Business School Global Leadership Council, University of Oxford

Martin Blessing

German, born 1963

Function at UBS Group AG
Co-President Global Wealth Management

Professional history and education
Martin Blessing was appointed co-President Global Wealth Management of UBS Group AG and UBS AG as of February 2018. Prior to this, he was President Wealth Management effective January 2018. He held the positions of President Personal & Corporate Banking of UBS Group AG and President UBS Switzerland as well as President of the Executive Board of UBS Switzerland AG from September 2016 to December 2017. He became a member of the GEB in September 2016. Before joining UBS, he worked for 15 years for Commerzbank AG, from 2008 to April 2016 as Chief Executive Officer. Prior to that, he held various senior management positions; from 2004 to 2008, he was Head of Corporate Banking and from 2006 onward also responsible for IT & Operations. From 2001 to 2004, he was Head of Private Clients. Before joining Commerzbank, from 2000 to 2001 he was Chief Executive Officer of Advance Bank, a subsidiary of Dresdner Bank AG. From 1997 to 2000, he acted as Dresdner Bank's joint Head Private Clients. From 1989 to 1996, he worked for McKinsey & Company, the last two years as Partner. Martin Blessing holds an MBA from the University of Chicago and in 1987 graduated from the University of St. Gallen with a degree in business administration.

Other activities and functions
– Executive Board member of Baden-Baden Entrepreneur Talks

Christian Bluhm

German, born 1969

Function at UBS Group AG
Group Chief Risk Officer

Professional history and education
Christian Bluhm became a member of the GEB and was appointed Group Chief Risk Officer of UBS Group AG and UBS AG in January 2016. He joined UBS from FMS Wertmanagement, where he had been Chief Risk & Financial Officer since 2010 and Spokesman of the Executive Board from 2012 to 2015. From 2004 to 2009, he worked for Credit Suisse, where he was Managing Director responsible for Credit Risk Management in Switzerland and Private Banking worldwide. Mr. Bluhm was Head of Credit Portfolio Management until 2008 and then Head of Credit Risk Management Analytics & Instruments after the financial crisis in 2008. From 2001 to 2004, he worked for Hypovereinsbank in Munich in Group Credit Portfolio Management, heading a team that specialized in Structured Finance Analytics. Before starting his banking career with Deutsche Bank in Credit Risk Management in 1999, he worked as a postdoctoral fellow at Cornell University in Ithaca and as a scientific assistant at the University of Greifswald. Mr. Bluhm holds a degree in mathematics and informatics from the University of Erlangen-Nuremberg and received his PhD in mathematics in 1996 from the same university.

Other activities and functions
– Board member of UBS Switzerland AG
– Chairman of the Foundation Board – International Financial Risk Institute

Markus U. Diethelm

Swiss, born 1957

Function at UBS Group AG
Group General Counsel

Professional history and education
Markus U. Diethelm has been Group General Counsel of UBS Group AG since November 2014, having held the same position at UBS AG since September 2008, when he became a member of the GEB. He was Executive Board member of UBS Business Solutions AG from 2015 to 2016. From 1998 to 2008, he served as Group Chief Legal Officer at Swiss Re, and he was appointed to the company's Group Executive Board in 2007. Prior to this, he was with Los Angeles-based law firm Gibson, Dunn & Crutcher and focused on corporate matters, securities transactions, litigation and regulatory investigations while working out of the firm's Brussels and Paris offices. From 1989 to 1992, he practiced at Shearman & Sterling in New York, specializing in mergers and acquisitions. In 1988, he worked at Paul, Weiss, Rifkind, Wharton & Garrison in New York. After starting his career in 1983 with Bär & Karrer, he served as a law clerk at the District Court of Uster in Switzerland from 1984 to 1985. Mr. Diethelm holds a law degree from the University of Zurich and a master's degree and a PhD from Stanford Law School. Mr. Diethelm is a qualified attorney-at-law admitted to the bar in Zurich, Geneva and in New York State.

Other activities and functions
- Chairman of the Swiss-American Chamber of Commerce's legal committee
- Chairman of the Swiss Advisory Council of the American Swiss Foundation
- Member of the Foundation Council of the UBS International Center of Economics in Society
- Member of the Professional Ethics Commission of the Association of Swiss Corporate Lawyers
- Member of the Supervisory Board of the Fonds de Dotation LUMA / Arles

Kirt Gardner

American (US), born 1959

Function at UBS Group AG
Group Chief Financial Officer

Professional history and education
Kirt Gardner became a member of the GEB and was appointed Group Chief Financial Officer of UBS Group AG and UBS AG in January 2016. He was CFO Wealth Management from 2013 to 2015. Prior to this, he held a number of leadership positions at Citigroup, including CFO and Head of Strategy within Global Transaction Services from 2010 to 2013, Head of Strategy, Planning and Risk Strategy for the Corporate and Institutional Division from 2006 to 2010 and Head of Global Strategy and Cost Management for the Consumer Bank from 2004 to 2006. Prior to this, he held the position of Global Head of Financial Services Strategy for BearingPoint, for which he worked in Asia and New York for four years. From 1994 to 2000, he was Managing Director with Barents Group, working in the US, Asia, Latin America and Europe. Mr. Gardner holds a bachelor's degree in economics from Williams College, a master's degree from the University of Pennsylvania and an MBA in finance from Wharton School.

Other activities and functions
- Board member of UBS Business Solutions AG

Robert Karofsky

American (US), born 1967

Function at UBS Group AG
Co-President Investment Bank

Professional history and education
Robert Karofsky is co-President Investment Bank of UBS Group AG and UBS AG and became a member of the GEB in October 2018. He joined UBS in 2014 as Global Head Equities and has been President UBS Securities LLC since 2015. From 2011 to 2014, he was Global Head of Equity Trading at AllianceBernstein. He began his career at Morgan Stanley in 1994 and joined Deutsche Bank as Head of North American Equities in 2005, later becoming co-Head of Global Equities from 2008 to 2010. Mr. Karofsky holds a bachelor's in economics from Hobart and William Smith Colleges and an MBA in finance and statistics from the University of Chicago's Booth School of Business.

Other activities and functions
- Board member of UBS Securities LLC
- Trustee of the UBS Americas Inc. Political Action Committee

Sabine Keller-Busse

Swiss and German, born 1965

Function at UBS Group AG
Group Chief Operating Officer

Professional history and education
Sabine Keller-Busse was appointed Group Chief Operating Officer of UBS Group AG and UBS AG as well as President of the Executive Board of UBS Business Solutions AG in January 2018. Ms. Keller-Busse was Group Head Human Resources from August 2014 to December 2017. She became a member of the GEB in January 2016. Having joined UBS in 2010, she served as Chief Operating Officer UBS Switzerland until 2014. Prior to this, she led Credit Suisse's Private Clients Region Zurich division for two years. From 1995 to 2008, Ms. Keller-Busse worked for McKinsey & Company, where she had been partner since 2001. Ms. Keller-Busse holds a master's degree in business administration from the University of St. Gallen and received a PhD in business administration from the same university.

Other activities and functions
- Board member of UBS Business Solutions AG
- Vice-Chairman of the Board of Directors of SIX Group (chairman of the nomination & compensation committee)
- Foundation Board member of the UBS Pension Fund
- Foundation Board member of the University Hospital Zurich

New GEB member
Edmund Koh

Singaporean, born 1960

Function at UBS Group AG
President UBS Asia Pacific as of 1 January 2019

Professional history and education
Edmund Koh became a member of the GEB and was appointed President UBS Asia Pacific of UBS Group AG and UBS AG in January 2019. He was Head Wealth Management Asia Pacific from 2016 to 2018 as well as Country Head Singapore from 2012 to 2018. Mr. Koh has more than 30 years' experience in senior roles in financial services. He joined UBS in 2012 as Head Wealth Management South East Asia and Asia Pacific Hub and Country Head Singapore from Taiwan-based Ta Chong Bank, where he served as President and Director from 2008 to 2011. From 2001 to 2008, Mr. Koh was Managing Director and Regional Head Consumer Banking of DBS Bank in Singapore. In 2001, he became CEO of Alverdine Pte Ltd and two years earlier he held the same position for Prudential Assurance, both companies based in Singapore. Mr. Koh holds a bachelor of science degree in psychology from the University of Toronto.

Other activities and functions
- Member of the Wealth Management Institute at Nanyang Technological University, Singapore
- Member of the Ministry of Finance's Committee on the Future Economy Sub-Committees
- Board member of Next50 Limited
- Trustee of the Cultural Matching Fund
- Board member of Medico Suites (S) Pte Ltd
- Board member of Medico Republic (S) Pte Ltd

Ulrich Körner

German and Swiss, born 1962

Functions at UBS Group AG
President Asset Management and President UBS Europe, Middle East and Africa

Professional history and education
Ulrich Körner has been President Asset Management of UBS Group AG since November 2014, having held the same position at UBS AG since January 2014. He became a member of the GEB in April 2009 and was Group Chief Operating Officer from 2009 to 2013. In addition, he was appointed President UBS Europe, Middle East and Africa in December 2011. In 1998, Mr. Körner joined Credit Suisse. He served as a member of the Credit Suisse Group Executive Board from 2003 to 2008, holding various management positions, including CFO and Chief Operating Officer. From 2006 to 2008, he was responsible for the entire Swiss client business as CEO Credit Suisse Switzerland. Mr. Körner received a PhD in business administration from the University of St. Gallen and served for several years as an auditor at Price Waterhouse and as a management consultant at McKinsey & Company.

Other activities and functions
- Member of the Supervisory Board of UBS Europe SE
- Chairman of the Foundation Board of the UBS Pension Fund
- Member of the UBS Optimus Foundation Board
- Vice President of the Board of Lyceum Alpinum Zuoz
- Member of the Financial Service Chapter Board of the Swiss-American Chamber of Commerce
- Advisory Board member of the Department of Banking and Finance at the University of Zurich
- Member of the business advisory council of the Laureus Foundation Switzerland

Axel P. Lehmann

Swiss, born 1959

Functions at UBS Group AG
President Personal & Corporate Banking and President UBS Switzerland

Professional history and education
Axel P. Lehmann was appointed President Personal & Corporate Banking of UBS Group AG and President UBS Switzerland as of January 2018, in addition to taking over as President of the Executive Board of UBS Switzerland AG. He became a member of the GEB and was appointed Group Chief Operating Officer of UBS Group AG and UBS AG in January 2016. He was a member of the BoD of UBS AG from 2009 to 2015 and of UBS Group AG from 2014 to 2015 and was a member of both the Risk Committee and the Governance and Nominating Committee. Mr. Lehmann became a member of Zurich Insurance Group's (Zurich) Group Executive Committee in 2002, holding various management positions, including CEO for the European and North America businesses. From 2008 to 2015, he was Chief Risk Officer with additional responsibilities for Group IT, Regional Chairman for Europe, Middle East and Africa as well as Chairman for Farmers Group Inc. In 2001, he was appointed CEO for Northern, Central and Eastern Europe and Zurich Group Germany, having served as a member of the company's Group Management Board since 2000 with responsibility for group-wide business development functions. In 1996, he joined Zurich as a member of the Executive Committee Switzerland, and previously, he was Head of corporate planning and controlling at SwissLife, Vice President of the Institute of Insurance Economics and a visiting professor at Bocconi University in Milan. Mr. Lehmann holds a PhD and a master's degree in business administration and economics from the University of St. Gallen. He is also a graduate of the Advanced Management Program of the Wharton School.

Other activities and functions
- Co-Chair of the Global Future Council on Financial and Monetary Systems of WEF
- Adjunct professor and Chairman of the Board of the Institute of Insurance Economics at the University of St. Gallen
- Member of the HSG Advisory Board of the University of St. Gallen
- Vice Chairman of the Swiss Finance Institute Foundation Board
- Member of the IMD Foundation Board, Lausanne
- Member of the Swiss-American Chamber of Commerce Chapter Doing Business in USA

Tom Naratil

American (US), born 1961

Functions at UBS Group AG
Co-President Global Wealth Management and President UBS Americas

Professional history and education
Tom Naratil became co-President of Global Wealth Management of UBS Group AG and UBS AG in February 2018. In January 2018, he became CEO of UBS Americas Holding LLC. He was appointed President UBS Americas of UBS Group AG and UBS AG in January 2016 and served as President Wealth Management Americas from 2016 to 2018. He became a member of the GEB in June 2011 and was Group CFO of UBS AG from 2011 to 2015. He held the same position for UBS Group AG from 2014 to 2015. In addition to the role of Group CFO, he was Group Chief Operating Officer from 2014 to 2015. He was President of the Executive Board of UBS Business Solutions AG from 2015 to March 2016. He served as CFO and Chief Risk Officer of Wealth Management Americas from 2009 until his appointment as Group CFO in 2011. Before 2009, he held various senior management positions within UBS, including heading the Auction Rate Securities Solutions Group during the financial crisis in 2008. He was named Global Head of Marketing, Segment & Client Development in 2007, Global Head of Market Strategy & Development in 2005, and Director of Banking and Transactional Solutions, Wealth Management USA, in 2002. During this time, he was a member of the Group Managing Board. He joined Paine Webber Incorporated in 1983 and after the merger with UBS became Director of the Investment Products Group. Mr. Naratil holds an MBA in economics from New York University and a bachelor of arts in history from Yale University.

Other activities and functions
- Board member of UBS Americas Holding LLC
- Board member of the American Swiss Foundation
- Member of the Board of Consultors for the College of Nursing at Villanova University

Piero Novelli

Italian, born 1965

Function at UBS Group AG
Co-President Investment Bank

Professional history and education
Piero Novelli is co-President Investment Bank of UBS Group AG and UBS AG and became a member of the GEB in October 2018. He was appointed co-Executive Chairman Global Investment Banking, Corporate Client Solutions, in 2017, and the year before became sole Global Head Advisory Services including Global Mergers and Acquisitions (M&A). Mr. Novelli rejoined UBS in 2013 as Chairman Global M&A as well as Group Managing Director. From 2011 to 2012, Mr. Novelli was Global co-Head of M&A at Nomura, having worked as Global Head M&A at UBS between 2004 and 2009. Before that he worked for Merrill Lynch and held the position of Head of European M&A and Head of European Industrials. Mr. Novelli holds a master's degree in management from the MIT Sloan School of Management and a master's degree in mechanical engineering from Università degli Studi di Roma.

Markus Ronner

Swiss, born 1965

Function at UBS Group AG
Group Chief Compliance and Governance Officer

Professional history and education
Markus Ronner is Group Chief Compliance and Governance Officer of UBS Group AG and UBS AG and became a member of the GEB in November 2018. In this role, he is responsible at Group level for compliance and operational risk control, governmental and regulatory affairs as well as investigations and governance matters. He became Head Group Regulatory and Governance in 2012. During his 37 years with UBS, Markus Ronner has held various positions across the bank, including: Group-wide program manager "too big to fail" (2011–2013); Chief Operating Officer (COO) Wealth Management & Swiss Bank (2010–2011); Head Products and Services of Wealth Management & Swiss Bank (2009–2010); COO Asset Management (2007–2009); and Head Group Internal Audit (2001–2007). Mr. Ronner joined the firm as an apprentice in 1981 and holds a Swiss Banking Diploma.

Member of the GEB until 31 December 2018

Kathryn Shih

British, born 1958

Function at UBS Group AG
President UBS Asia Pacific until 31 December 2018

Professional history and education
Kathryn Shih was a member of the GEB and President UBS Asia Pacific of UBS Group AG and UBS AG from January 2016 to December 2018. She was Head Wealth Management Asia Pacific from 2002 to 2015, and CEO of UBS Hong Kong from 2003 to 2008. Prior to this, she held various leadership positions in Wealth Management Asia Pacific. She was with the firm for over 30 years, having joined Swiss Bank Corporation in 1987 as a client advisor and then served as Head Private Banking from 1994 to 1998. In the 1980s, Ms. Shih worked for Citibank in the Consumer Services Group and as an executive trainee with PCI Capital Asia Ltd. She was conferred as a Certified Private Wealth Professional by the Private Wealth Management Association, Hong Kong, in 2015 and as a Certified Financial Planner from the Institute of Financial Planners, Hong Kong, in 2001. She completed the Advanced Executive Program at Northwestern University in 1999. Ms. Shih holds a bachelor of arts degree from Indiana University in the US and a master's degree in business management from the Asian Institute of Management in the Philippines.

Other activities and functions
– Board member of Kenford International Ltd.
– Board member of Shih Co Charitable Foundation Ltd.
– Member of the Hong Kong Trade Development Council (Financial Services Advisory Committee)

Change of control and defense measures

Our Articles of Association do not provide any measures for delaying, deferring or preventing a change of control.

Duty to make an offer

According to the Swiss Financial Market Infrastructure Act, an investor who has acquired more than 33⅓% of all voting rights of a company listed in Switzerland (directly, indirectly or in concert with third parties), whether they are exercisable or not, is required to submit a takeover offer for all listed shares outstanding. We have not elected to change or opt out of this rule.

Clauses on change of control

Neither the employment agreement with the Chairman of the BoD nor any employment contracts with the GEB members or employees holding key functions within the company (Group Managing Directors) contain change of control clauses.

All employment contracts with GEB members stipulate a notice period of six months. During the notice period, GEB members are entitled to their salaries and the continuation of existing employment benefits and may be eligible to be considered for a discretionary performance award based on their contribution during the time worked.

In case of a change of control, we may, at our discretion, accelerate the vesting of and / or relax applicable forfeiture provisions of employees' awards, and defer lapse date of options or stock appreciation rights.

→ **Refer to the "Compensation" section of this report from page 254 for more information**

Auditors

Audit is an integral part of corporate governance. While safeguarding their independence, the external auditors closely coordinate their work with Group Internal Audit. The Audit Committee and, ultimately, the Board of Directors (BoD) supervise the effectiveness of audit work.

→ **Refer to "Board of Directors" in this section for more information on the Audit Committee**

External independent auditors

At the Annual General Meeting (AGM) in 2018, Ernst & Young Ltd (EY) was re-elected as auditors for the Group for a one-year term of office. EY assumes virtually all auditing functions according to laws, regulatory requests and the Articles of Association. Since 2015, Marie-Laure Delarue has been the EY lead partner in charge of the Group financial audit and her incumbency is limited to five years. Since 2016, Ira S. Fitlin has been the co-signing partner for the financial statement audit, with an incumbency limit of seven years. Patrick Schwaller has been the Lead Auditor to the Swiss Financial Market Supervisory Authority (FINMA) since 2015, with an incumbency limited to six years because of prior audit service to the Group in another role. Marc Ryser has been the co-signing partner for the FINMA audit since 2012. He will be succeeded in 2019 by Daniel Martin, with an incumbency limit of seven years.

During 2018, the Audit Committee held eight meetings and one call with the external auditors. The Audit Committee assesses the performance, effectiveness and independence of the external auditors on an annual basis. The assessment is based on interviews with senior management as well as survey feedback from stakeholders across the Group. Assessment criteria include quality of service delivery, quality and competence of the audit team, value added as part of the audit, insightfulness and the overall relationship with EY. Based on its own analysis and the assessment results, the Audit Committee concluded that EY's audit has been effective.

Special auditor for capital increase

At the AGM on 3 May 2018, BDO AG was reappointed as special auditors for a three-year term of office. The special auditors provide audit opinions in connection with potential capital increases independently from the auditors.

Fees paid to external independent auditors

The fees (including expenses) paid to EY are set forth in the table below. In addition, EY received USD 30.3 million in 2018 (USD 29.4 million in 2017) for services performed on behalf of our investment funds, many of which have independent fund boards or trustees.

Audit work includes all services necessary to perform the audit for the Group in accordance with applicable laws and generally accepted auditing standards, as well as other assurance services that conventionally only the auditor can provide. These include statutory and regulatory audits, attest services and the review of documents to be filed with regulatory bodies. The additional services classified as audit in 2018 included several engagements for which EY was mandated at the request of FINMA.

Fees paid to external independent auditors

UBS Group AG and its subsidiaries (including UBS AG) paid the following fees (including expenses) to its external independent auditors.

USD thousand	31.12.18	31.12.17
Audit		
Global audit fees	54,716	53,557
Additional services classified as audit (services required by law or statute, including work of a non-recurring nature mandated by regulators)	16,595	13,217
Total audit[1]	71,310	66,774
Non-audit		
Audit-related fees	8,711	12,272
of which: assurance and attest services	*5,390*	*6,496*
of which: control and performance reports	*3,261*	*5,132*
of which: consultation concerning financial accounting and reporting standards	*60*	*645*
Tax fees	1,212	1,572
All other fees	536	1,943
Total non-audit[1]	10,459	15,788

1 Total audit and non-audit fees amounted to USD 81,770 thousand for UBS Group AG consolidated as of 31 December 2018 (31 December 2017: USD 82,562 thousand), of which USD 56,493 thousand related to UBS AG consolidated (31 December 2017: USD 62,137 thousand).

Audit-related work comprises assurance and related services that are traditionally performed by the auditor, such as attest services related to financial reporting, internal control reviews, performance standard reviews and consultation concerning financial accounting and reporting standards.

Tax work involves services performed by professional staff in EY's tax division and includes tax compliance and tax consultation with respect to our own affairs.

"Other" services are permitted services, which include technical IT security control reviews and assessments.

Preapproval procedures

To ensure EY's independence, all services provided by EY have to be preapproved by the Audit Committee. A preapproval may be granted either for a specific mandate or in the form of a blanket preapproval authorizing a limited and well-defined type and amount of services.

The Audit Committee has delegated preapproval authority to its Chairperson, and the Group Chief Financial Officer and Group Controller and Chief Accounting Officer submit all proposals for services by EY to the Chairperson of the Audit Committee for approval, unless there is a blanket preapproval in place. At each quarterly meeting, the Audit Committee is informed of the approvals granted by its Chairperson and of services authorized under blanket preapprovals.

Group Internal Audit

Group Internal Audit (GIA) performs the internal auditing function for the Group, and in 2018 operated with an approved average headcount of 450 full-time equivalent employees. It is an independent and objective function that supports the Group in achieving its strategic, operational, financial and compliance objectives, and the BoD in discharging its governance responsibilities.

GIA independently, objectively and systematically assesses:

– the effectiveness of processes to define strategy and risk appetite as well as the overall adherence to the approved strategy;
– the effectiveness of governance processes;
– the effectiveness of risk management, including whether risks are appropriately identified and managed;
– the effectiveness of internal controls, specifically whether they are commensurate with the risks taken;
– the soundness of the risk and control culture;
– the effectiveness and sustainability of remediation activities, originating from any source;
– the reliability and integrity of financial and operational information (i.e., whether activities are properly, accurately and completely recorded, and the quality of underlying data and models); and
– the effectiveness of processes to comply with legal, regulatory and statutory requirements (such as the provisions of the Articles of Association), as well as with internal policies (including the Organization Regulations) and contracts, i.e., assessing whether such requirements are met, and the adequacy of processes to sustainably meet them.

Audit reports that include significant issues are provided to the Group CEO, relevant GEB members and other responsible management. The Chairman, Audit Committee and Risk Committee of the BoD are also regularly informed of such issues.

In addition, GIA assures whether issues with moderate to significant effect have been successfully remediated. This responsibility applies to issues identified by all sources: business management (first line of defense), control functions (second line of defense), GIA (third line of defense), external auditors and regulators. GIA also cooperates closely with risk control functions and internal and external legal advisors on investigations into major control issues.

To maximize GIA's independence from management, the Head GIA reports to the Chairman of the BoD and to the Audit Committee, which assesses annually whether GIA has sufficient resources to perform its function, as well as its independence and performance. In the Audit Committee's assessment, GIA is sufficiently resourced to fulfill its mandate and complete its auditing objectives. GIA's role, position, responsibilities and accountability are set out in our Organization Regulations and the Charter for Group Internal Audit, published at *www.ubs.com/governance*. The latter also applies to UBS AG's internal audit function. GIA has unrestricted access to all accounts, books, records, systems, premises and personnel, and must be provided with all information and data that it needs to fulfill its auditing duties. The Audit Committee may order special audits to be conducted, and other BoD members, committees or the Group CEO may request such audits in consultation with the Audit Committee.

GIA enhances the efficiency of its work through coordination and close cooperation with the external auditors.

Information policy

We provide regular information to our shareholders and to the financial community.

Financial reports for UBS Group AG are expected to be published as follows

First quarter 2019	25 April 2019
Second quarter 2019	23 July 2019
Third quarter 2019	22 October 2019

The Annual General Meeting of shareholders of UBS Group AG will take place as follows

2019	2 May 2019
2020	29 April 2020

→ **Refer to the corporate calendar at *www.ubs.com/investors* for future financial report publication and other key dates, including UBS AG's financial report publication dates**

We meet with institutional investors worldwide throughout the year and regularly hold results presentations, attend and present at investor conferences and, from time to time, host investor days. When appropriate, investor meetings are hosted by senior management and are attended by members of our Investor Relations team. We use various technologies, such as webcasting, audio links and cross-location videoconferencing, to widen our audience and maintain contact with shareholders globally.

We make our publications available to all shareholders simultaneously to provide them with equal access to our financial information.

Shareholders can download all our financial publications at *www.ubs.com/investors*. Shareholders may opt to receive a printed copy of our annual report or our annual review, which reflects on specific initiatives and achievements of the Group and provides an overview of the Group's activities during the year as well as key financial information.

→ **Refer to *www.ubs.com/investors* for a complete set of published reporting documents and a selection of senior management industry conference presentations**

→ **Refer to the "Information sources" section on page 762 of this report for more information**

→ **Refer to "Corporate information" and "Contacts" in the introductory part of this report for more information**

Financial disclosure principles

We fully support transparency and consistent and informative disclosure. We aim to communicate our strategy and results in a manner that allows stakeholders to gain a good understanding of how our Group works, what our growth prospects are and the risks our businesses and our strategy entail. We assess feedback from analysts and investors on a regular basis and, where appropriate, reflect this in our disclosures. To continue achieving these goals, we apply the following principles in our financial reporting and disclosure:

- transparency that enhances the understanding of economic drivers and builds trust and credibility
- consistency within each reporting period and between reporting periods
- simplicity that allows readers to gain a good understanding of the performance of our businesses
- relevance by focusing not only on what is required by regulation or statute but also on what is relevant to our stakeholders
- best practice that leads to improved standards

Consistent with our financial reporting and disclosure principles, we continue to benchmark disclosures in our financial reports against recommendations issued by the Financial Stability Board's Enhanced Disclosure Task Force in 2012. We regard the improvement of our disclosures as an ongoing commitment.

Financial reporting policies

We report our Group's results at the end of every quarter, including a breakdown of results by business division and disclosures or key developments relating to risk management and control, capital, liquidity and funding management. Each quarter, we publish quarterly financial reports for UBS Group AG on the same day as the earnings releases.

UBS Group AG's and UBS AG's consolidated financial statements are prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board.

→ **Refer to "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section from page 323 of this report for more information on the basis of accounting**

We are committed to maintaining the transparency of our reported results and to allowing analysts and investors to make meaningful comparisons with prior periods. If there is a major reorganization of our business divisions or if changes to accounting standards or interpretations lead to a material change in the Group's reported results, our results are restated for previous periods as required by applicable accounting standards. These restatements show how our results would have been reported on the new basis and provide clear explanations of all relevant changes.

US disclosure requirements

As a foreign private issuer, we must file reports and other information, including certain financial reports, with the US Securities and Exchange Commission (SEC) under the US federal securities laws. We file an annual report on Form 20-F and furnish our quarterly financial reports and other material information under cover of Form 6-K to the SEC. These reports are available at *www.ubs.com/investors* and on the SEC's website at *www.sec.gov*.

An evaluation was carried out under the supervision of management, including the Group CEO, the Group CFO and the Group Controller and Chief Accounting Officer, on the effectiveness of our disclosure controls and procedures (as defined in Rule 13a–15e) under the US Securities Exchange Act of 1934. Based on that evaluation, the Group CEO and Group CFO concluded that our disclosure controls and procedures were effective as of 31 December 2018. No significant changes have been made to our internal controls or to other factors that could significantly affect these controls subsequent to the date of their evaluation.

→ **Refer to the "Consolidated financial statements" section from page 305 of this report for more information**

Compensation

Dear shareholders,

The Board of Directors and I wish to thank you for your support once again at last year's Annual General Meeting and for sharing your views on our compensation practices over the past year.

Throughout 2018, the BoD Compensation Committee continued to oversee the compensation activities and ensure that reward reflects performance, prudent risk-taking and supports alignment with our shareholders and other stakeholders. I am pleased to present our Compensation Report for 2018, which provides further information about our compensation philosophy and approach.

Shareholder engagement

In 2018, we continued our engagement with shareholders and other stakeholders to listen to their perspectives about our compensation philosophy and framework. We have considered this valuable feedback in the regular review of our compensation framework and disclosure approach. We concluded that our current framework, which has remained broadly unchanged since 2012, continues to be best suited for our compensation philosophy and aligns with the interests of our investors, clients and employees.

While the feedback was overall positive, it also highlighted opportunities to further increase our transparency and to provide more clarity on certain aspects of our compensation philosophy and framework.

Consequently, we have enhanced our Compensation Report by introducing, among others, the following sections:
- a new "at a glance" section with key financial and compensation figures providing a clearer perspective on pay alignment with performance
- a new "shareholder engagement" section outlining frequent questions from stakeholders and our responses
- a new disclosure of the realized vs. awarded pay for the Group Chief Executive Officer (CEO) demonstrating our rigorous deferral approach
- a more transparent description of the judgment exercised by the Compensation Committee regarding compensation-related aspects such as performance award pool adjustments
- a revised structure and sequence of the Compensation Report enhancing readability and transparency

2018 performance

In 2018 we delivered strong financial results in overall challenging market conditions, demonstrating the soundness of our strategic choices and the strength of our diversified franchise.

Pre-tax growth was strong, resulting in an increase of 16% in net profit attributable to shareholders to USD 4.5 billion (CHF 4.4 billion), when excluding the effect of the US tax law change in the fourth quarter of 2017. We maintained a strong capital position with a CET1 capital ratio of 12.9% and a CET1 leverage ratio of 3.8%, and also met our 2020 capital requirements one year earlier than plan.

Our focus on sustainable performance, balancing cost and capital efficiency supported increased capital returns to investors. Our capital efficiency is reflected in an adjusted[1] return on tangible equity excluding DTAs at 12.9%, and return on CET1 capital at 13.1%.

In 2018, we bought back CHF 750 million of UBS shares, exceeding our target by CHF 200 million. The BoD intends to propose a dividend of CHF 0.70 per share for the financial year 2018, an increase of 8% compared with 2017.

While UBS continues to be one of the few European banks with a share price trading around or above tangible book value per share, we are as disappointed as our shareholders about the absolute share price performance. We believe the share price movement in 2018 does not reflect our overall financial performance and the value of our franchise.

At our Investor Update in October, we presented our strategy for cost and capital efficient growth, along with updated financial targets for the Group and business divisions. We are confident that we can continue to deliver profitable growth via cost discipline and leveraging technology to drive higher returns and create long-term value for our shareholders.

2018 performance award pool and expenses

The Compensation Committee considered the following primary drivers for pay decisions:
- Overall results for the Group and business division
- Quality of results (including developments on and provisions for litigation, regulatory and similar matters)
- Performance relative to peers
- Affordability
- Competitiveness in pay position

We continue to strongly differentiate individual compensation through our pay for performance approach. Pay decisions reflect performance differences by business and geography, as well as consideration for critical roles that drive and support both current and future sustainable performance.

Based on these considerations, the performance award pool for the Group is down about 1% at USD 3.1 billion / CHF 3.0 billion (compared with USD 3.2 billion / CHF 3.1 billion in the prior year).

The modest decrease of the performance award pool, while reflecting the strong performance of the firm in challenging market conditions, also demonstrates our disciplined approach in managing compensation over business cycles without compromising our competitive pay position.

After careful consideration the Committee has maintained the base salaries for the Group Executive Board (GEB) including the Group CEO at current levels. These salary levels have not been changed since 2011.

1 Refer to "Group performance" in the "Financial and operating performance" section of this report for more information on adjusted results.

The GEB performance award pool, including the Group CEO, was CHF 73.3 million (for reference USD 74.8 million), a reduction of 1%. As a percentage of the adjusted Group profit before tax, the GEB performance award pool was 1.2%, well below the cap of 2.5%. Reflecting the long-term nature of our deferral program, the Group CEO's realized pay was higher for 2018 than for 2017 due to the first vesting of the Deferred Contingent Capital Plan (awarded in 2012) and vesting of deferred shares under the Equity Ownership Plan (awarded in 2014 and earlier).

2018 compensation philosophy and framework

Our compensation philosophy aligns the interests of our investors, clients and employees. The consistency of our approach (largely unchanged since 2012) continues to reinforce our culture of sustainable performance, accountability and appropriate risk-taking. In addition, it provides clarity in compensation discussions with our employees as well as with our shareholders.

Variable compensation is earned over the performance year and is subject to mandatory deferral for many employees. This deferral approach creates a strong direct alignment of interests between employees and stakeholders.

To incentivize sustainable performance without inappropriate or excessive risk-taking, the Compensation Committee sets performance thresholds for deferred awards at levels to demonstrate the long-term quality of the past year's performance is sustainable.

If the minimum performance thresholds are not achieved, employees are subject to partial or full forfeiture. This approach is intended to discourage short-term profit making at the expense of longer-term performance.

We believe UBS has one of the most rigorous deferral regimes in the industry with a deferral period of up to five years, or longer for certain regulated employees. Our deferred share awards are without upside leverage and are directly aligned with share price returns.

Culture and behaviors

At UBS, we believe that the right strategy and a strong culture drive strong performance. The three keys to success – our Pillars, Principles and Behaviors – embody the foundation of our strategy and culture. They define what we stand for both as a firm and individually. Six years ago we redefined our three keys and we can now say that they are well embedded across UBS. They are at the core of our bank – for all of us, every day. In a fundamental way, they represent our philosophy and the culture of the organization.

The recognition of behaviors and culture is an important element of our framework. To reinforce the behaviors framework established by the BoD and the GEB, we reward not only what results were achieved, but also how they were achieved. We reward doing the right thing; collaborating across the bank and speaking up to identify opportunities and risks. We penalize instances of behavior that do not reflect our values.

Gender-related initiatives

UBS remains committed to hiring, retaining and promoting more women at all levels across the firm. The Compensation Committee systematically reviews any gender pay gap for equivalent roles across the workforce. Our policies and practices are impartial and equal, and we are committed to ensuring that all employees are paid fairly.

In 2018, we continued to develop career support, Human Resources processes and technology solutions to help better attract, develop and retain women at all stages of their careers.

Overall, while we are making progress towards our aspiration of increasing the ratio of women in management roles to one third, progress takes time and we must continue our focus on seeing more women progress into senior roles.

Ann F. Godbehere
Chair of the Compensation Committee of the Board of Directors

Compensation Committee membership

In 2018 Bill Parrett and Reto Francioni stood down from the Committee. I want to thank them both for their valuable input and perspectives that they provided to the Committee over the years. Also in 2018 we welcomed Julie Richardson and Dieter Wemmer to the Committee.

Annual General Meeting 2019

At the 2019 Annual General Meeting (AGM) on 2 May, we will seek your support on the following compensation-related items:

- the maximum aggregate amount of compensation for the BoD for the period from 2019 AGM to 2020 AGM
- the maximum aggregate amount of fixed compensation for the GEB for 2020
- the aggregate amount of variable compensation for the GEB for 2018
- shareholder endorsement in an advisory vote for the Compensation Report

Finally, this will be my last report as the Committee chair. I advised the board in February 2019 that, after 10 years' service, I will retire at the 2019 AGM. It has been my privilege to serve in the capacity of chair of this Committee and I want to take this opportunity to thank our shareholders for their valued input and support and to recognize the tremendous support I have had from management over the years. I wish my successor and the other Committee members every success in the future.

Ann F. Godbehere
Chair of the Compensation Committee of the Board of Directors

Performance and compensation at a glance

Financial achievements and strategic highlights

The following highlights the main financial achievements for the performance year 2018:

– delivered strong 2018 financial results in overall challenging market conditions
– Group profit before tax increased by 12% and net profit attributable to shareholders increased by 16%[1]
– maintained a strong capital position and met the 2020 capital requirements one year early
– achieved strong return on CET1 capital of 13.1%[2]
– repurchased CHF 750 million of UBS shares, exceeding the 2018 target of up to CHF 550 million

2018		
USD 6,063 million Adjusted Group profit before tax		
Profitability		Capital
12.9% Adjusted Group RoTE excl. DTAs[3]	USD 4,516 million Net profit attributable to shareholders	12.9% CET1 capital ratio
79.5% Adjusted Group cost / income ratio	USD 5,991 million Group profit before tax	3.8% CET1 leverage ratio

1 Excluding the USD 2,939 million net write-down of deferred tax assets (DTAs) following the enactment of the US Tax Cuts and Jobs Act (TCJA) in the fourth quarter of 2017. 2 Net profit / loss attributable to shareholders divided by average CET1 capital. 3 Calculated as adjusted net profit / loss attributable to shareholders excluding amortization and impairment of goodwill and intangible assets and deferred tax expense / benefit, such as the net write-down due to the TCJA enacted in the fourth quarter of 2017, divided by average tangible equity attributable to shareholders excluding any DTAs that do not qualify as CET1 capital.

Performance award year-on-year development

– Group performance award pool decreased by 1% compared to previous year
– Group CEO performance award of CHF 11.3 million, of which CHF 2 million in cash, bringing his total compensation to CHF 13.8 million (excluding benefits and contributions to retirement benefit plans), a decrease of 1% compared with 2017
– Group Executive Board (GEB) performance award pool, including the Group CEO, of CHF 73.3 million, a decrease of 1%

Compensation decision-making approach

To support sustainable shareholder value creation, our performance award decisions are based on business performance (including absolute achievement as well as relative achievement compared with prior year, established performance targets and our peers). When adjusting (positively or negatively) the performance award pool, the Compensation Committee considers the following dimensions:

Pay for performance

Our compensation philosophy is to align the interests of investors and clients with those of our employees, thereby linking pay to longer-term sustainable performance.

Sustainable shareholder value	Strong overall performance with net profit attributable to shareholders of USD 4.5 billion, an increase of 16%[1]
	Increased capital returns to investors with proposed dividend per share up 8% and a buyback of CHF 750 million of UBS shares, exceeding our target by CHF 200 million
	Managed operating expenses while investing for future growth
	Overall employee pay levels are aligned to pay competitively for comparable performance, while considering our capital position (including dividends and share buybacks)
Pay delivery mechanisms	Compensation structure is aligned with strategic priorities and focused on sustainability of results
	A significant portion of variable compensation is delivered through a mandatory deferral over a period of five years
	Awarded pay is aligned with adjusted pre-tax profit and capital returns to shareholders over multiple years
	Realized pay cannot exceed the award granted (other than for market movements and return of the instruments)
Consistent approach and strong governance	Compensation framework is largely unchanged since 2012
	Compensation framework approved by shareholders since 2014 (annual advisory vote at AGM)
	GEB compensation is governed by a rigorous process under Compensation Committee and BoD oversight
	Aggregate amounts of GEB compensation are subject to shareholder approval (annual binding say-on-pay vote at AGM)

1 Excluding the USD 2,939 million net write-down of DTAs following the enactment of the TCJA in the fourth quarter of 2017.

Specific additional pay for performance safeguards are in place for GEB members:

GEB compensation pay for performance safeguards	
Cap on individual performance awards (performance award for the Group CEO is capped at five times his fixed compensation and for the other GEB members at seven times)	Cap on total GEB performance award pool (2.5% of adjusted profit before tax)
Cap on individual cash performance award of USD / CHF 2 million	Share ownership requirements
At least 80% of awards are at risk of forfeiture	Six-month notice period in employment contracts
Long-term deferral and no leverage in compensation plans	No hedging strategies allowed

Shareholder engagement and say on pay

UBS is committed to an ongoing dialog on developments and trends in compensation and corporate governance matters. Through regular interaction with shareholders and other external stakeholders, we garner their perspectives, questions and concerns regarding our compensation philosophy and framework. This feedback is important to us when we review our compensation framework, including related disclosures, to confirm that it aligns with the interests of our investors as well as those of our employees. We have summarized frequent questions we received from different stakeholders and our responses below.

How does the Compensation Committee use its discretion to determine the performance award pool?
We enhanced the Compensation Report to better explain how the Compensation Committee applies judgment when determining the firm's overall performance award pool. The performance award pool funding begins with a direct link to risk-adjusted profit as described later in this report. The Compensation Committee then applies discretionary adjustments that reflect a range of factors such as capital returns to investors, risk profile, strategic initiatives, affordability, market position and trends. Consequently, the decision balances consideration of financial performance with a range of qualitative factors including discretion to consider the quality of earnings. With regards to developments on and provisions for litigation, regulatory and similar matters, it is important to distinguish between legacy matters and financial and operating performance for the year. To enable future growth through disciplined execution of our strategy and creation of sustainable shareholder value, it is essential that pay decisions are not driven by the potential impact of legacy matters, which may take several years to be resolved. At the same time, we are mindful of the potential costs of such matters, the prudent management of them and the effect on our share price.

How is the performance of the GEB members measured?
We assess the Group Executive Board (GEB) members' including the Group CEO's performance against a number of financial targets and goals related to our Pillars, Principles, and Behaviors. The financial measures and goals reflect our strategic performance targets, which are disclosed in our Annual Report 2018. To provide further context, we enhanced the performance assessment disclosure for the Group CEO and included details on the weighting of the financial targets as well as three years of actual results.

How are share price developments reflected in pay decisions?
Compensation is awarded based on the assessment of performance achievement while also considering risk profile, capital returns to shareholders, strategic initiatives, affordability and the competitiveness of our pay levels and approach as described in the "at a glance" section. We do not consider absolute share price performance, either positive or negative, directly in our pay decisions as it is not a direct measure of performance. Nevertheless, we do consider relative total shareholder returns in our decision-making process. Additionally, we consider other factors that evaluate the quality of the share price, such as that UBS continues to be one of the few European banks with a share price trading around or above tangible book value per share.

Our mandatory share-based deferral program creates direct alignment with shareholder returns and therefore many employees are directly impacted by the share price. While we are disappointed with our share price performance, we believe the share price movement in 2018 does not reflect the significant progress made during the year, nor the absolute financial performance. We expect that ultimately the value of our franchise and the quality of our earnings will be positively reflected in our share price.

How does UBS set minimum performance thresholds for their deferred awards?
To incentivize sustainable performance and avoid inappropriate or excessive risk-taking, the Compensation Committee sets for selected populations of employees minimum performance thresholds at levels that demonstrate that the long-term quality of the past year's performance is sustainable. Our approach reflects a level of performance that is ambitious and at the same time sustainable in terms of longer-term performance.

Each year, the Compensation Committee reviews thresholds relative to historical performance, our financial plan and our ambitions, and establishes vesting with minimum performance thresholds for our Equity Ownership Plan (EOP) awards. If the minimum performance thresholds are not achieved over a multi-year period, an employee's award is subject to partial or even full forfeiture.

At the time of the award, several performance conditions relating to the respective performance year guide the level of granted variable compensation components. We believe that employees should not have to earn their variable compensation twice through the achievement of future performance targets beyond the minimum threshold level as this may encourage excessive risk-taking. Our approach is intended to discourage short-term profit making at the expense of longer-term performance.

Why does UBS use a deferral instead of a long-term incentive (LTI) plan?

The Compensation Committee regularly reviews our framework to confirm it remains competitive and aligned with stakeholders' interests. In our 2018 review, we concluded that our approach with a deferred annual performance award subject to time-based vesting and minimum performance thresholds for a selected population is best suited for our compensation philosophy. We believe our deferral approach is simple and transparent compared with alternatives such as separate annual incentives and LTI awards.

In our review of alternative approaches, including where individuals would receive additional payouts based on achievement of stretch targets, we concluded these approaches are neither simple nor transparent. They are often accompanied by additional leverage where multiples of the awards are delivered for achieving these targets and are granted to employees at a discounted value. They may also encourage excessive risk-taking and are often only available to a small population of employees.

Our compensation framework has no upward leverage, such as multiplier factors, and consequently does not encourage excessive risk-taking but supports sustainable performance and responsible risk-taking. The same instruments are granted to all eligible employees, although stricter performance conditions are applied to our more senior employees. This approach has allowed us to attract, retain and incentivize a talented workforce.

How does UBS set the maximum aggregate amount of fixed compensation for the GEB members?

We set the maximum aggregate amount of fixed compensation or budget to support the total fixed pay for each individual GEB member. Each GEB member receives a fixed base salary, which is reviewed annually by the Compensation Committee. The Group CEO's annual base salary for 2018 was CHF 2.5 million and has remained unchanged since his appointment in 2011. The other GEB members received a base salary of CHF 1.5 million (or local currency equivalent), also unchanged since 2011. Relative to our competitors for equivalent roles, we believe this level is appropriate. A few GEB members are considered Material Risk Takers (MRTs) for UK / European entities or Senior Management Functions (SMFs) and receive role-based allowances in addition to their base salary as part of their fixed compensation. The budget also includes benefits in line with local practices for other employees. Finally, as the budget is a maximum spend, we include a reserve to consider potential future changes in GEB composition or role changes, and potential additional role-based allowances.

Say-on-pay votes at the AGM

In line with the Swiss Ordinance against Excessive Compensation in Listed Stock Corporations, we seek binding shareholder approval for the aggregate compensation for the GEB and for the BoD. The BoD believes that prospective approval for the fixed remuneration for the BoD and the GEB provides the firm and its governing bodies with the certainty necessary to operate effectively. Furthermore, retrospective approval for the GEB's variable compensation awards aligns total compensation for the GEB to performance and contribution, and to developments in the marketplace and across peers.

The combination of the binding votes on compensation and the advisory vote on the compensation framework reflects our commitment to our shareholders having their say on pay.

→ **Refer to "Provisions of the Articles of Association related to compensation" in the "Supplemental information" section of this report for more information**

Approved compensation

For the performance year 2018, at the 2017 AGM, shareholders approved a maximum aggregate fixed compensation amount of CHF 31,500,000 for the members of the GEB, including base salaries and role-based allowances, estimated standard contribution to retirement benefit plans, other benefits and a buffer. The aggregate fixed compensation paid in 2018 to the GEB members did not exceed the approved amount for 2018.

→ **Refer to "2018 total compensation for the GEB members" in the "Compensation for the Group CEO and the other GEB members" section of this report**

Say on pay – compensation-related votes at the 2018 AGM

2018 AGM say-on-pay voting schemes	2018 AGM actual shareholder votes	Vote "for"
Binding vote on GEB variable compensation	Shareholders approved CHF 74,150,000 for the financial year 2017[1, 2, 3]	82.6%
Binding vote on GEB fixed compensation	Shareholders approved CHF 31,500,000 for the financial year 2019[3]	84.8%
Binding vote on BoD remuneration	Shareholders approved CHF 14,500,000 for the period from the 2018 AGM to the 2019 AGM[1, 2, 4]	86.1%
Advisory vote on compensation report	Shareholders approved the UBS Group AG Compensation Report 2017 in an advisory vote	81.4%

1 Local currencies are translated into Swiss francs at the exchange rates stated in "Note 34 Currency translation rates" in the "Consolidated financial statements" section of our Annual Report 2017. 2 Excludes the portion related to the legally required employer's social security contributions. 3 Thirteen GEB members were in office on 31 December 2018 including two new GEB members appointed on 1 October 2018 and one on 1 November 2018; two GEB members stepped down on 31 December 2017 and 30 September 2018, respectively; and twelve GEB members were in office on 31 December 2017. 4 Twelve BoD members were in office on 31 December 2018.

Compensation-related proposals for 2019

At the 2019 AGM, we will ask our shareholders to vote on the variable compensation for the GEB for 2018, the fixed compensation for the GEB for 2020 and the compensation for the BoD from the 2019 AGM to the 2020 AGM. In addition, we will also ask our shareholders for an advisory vote on our Compensation Report, which describes our compensation framework, governance and policy. Both the advisory vote on our compensation policy and the binding votes on compensation reflect our commitment to transparent say on pay for our shareholders. The table below outlines our compensation proposals and includes supporting rationales that we intend to submit to the 2019 AGM for binding votes (in line with the Swiss Ordinance against Excessive Compensation in Listed Stock Corporations and our Articles of Association).

Compensation-related proposals for binding votes at the 2019 AGM

Item	Proposal	Rationale
GEB variable compensation	The Board of Directors proposes an aggregate amount of variable compensation of CHF 73,300,000 for the members of the GEB for the financial year 2018.	The proposed amount reflects a decrease of 1% compared with the prior year. This modest decrease is in line with the decrease in the overall performance award pool of the firm and demonstrates our disciplined approach in managing GEB compensation over business cycles without compromising our competitive pay position. The proposed amount further reflects the GEB members' achievements in delivering sustainable performance, maintaining a strong capital position and increasing payouts to shareholders in a year with challenging market conditions.
GEB fixed compensation	The Board of Directors proposes a maximum aggregate amount of fixed compensation of CHF 33,000,000 for the members of the GEB for the financial year 2020.	The proposal to increase the budget by CHF 1,500,000 reflects the expanded GEB following the new appointments in 2018. The base salaries for the Group CEO and other GEB members have remained at the same level since 2011. The requested increase amount is aligned with the base salary for one GEB member, resulting in a reduction of the reserve amount while maintaining flexibility in light of evolving EU regulation, Brexit and competitive considerations for a potential role-based allowance.
BoD compensation	The Board of Directors proposes a maximum aggregate amount of compensation of CHF 14,500,000 for the members of the Board of Directors for the period from the 2019 AGM to the 2020 AGM.	The proposed amount is unchanged compared to the previous 2018 / 19 period, reflecting the stable number of BoD members. The amount includes the Chairman's compensation, which has remained unchanged since 2015, as well as fees paid to the independent BoD members. The fixed base fees are unchanged from the 2018 / 19 period and have been broadly flat since 1998.

Compensation philosophy and framework

Our compensation philosophy

Total Reward Principles

Our compensation philosophy is to align the interests of our investors with those of our clients and employees, building on our three keys to success – our Pillars, Principles and Behaviors. Our Total Reward Principles establish a framework that balances sustainable performance and prudent risk-taking with a focus on conduct and sound risk management practices.

Our compensation structure is aligned with our strategic priorities. It aligns the interests of our stakeholders with those of our employees and encourages our employees to focus on our clients, create sustainable value and achieve the highest standards of performance. Moreover, we reward behaviors that help build and protect the firm's reputation – specifically integrity, collaboration and challenge. We strive for excellence and sustainable performance in everything we do. Compensation for each employee is based on individual, team, business division and Group performance, within the context of the markets in which we operate.

Total Reward Principles

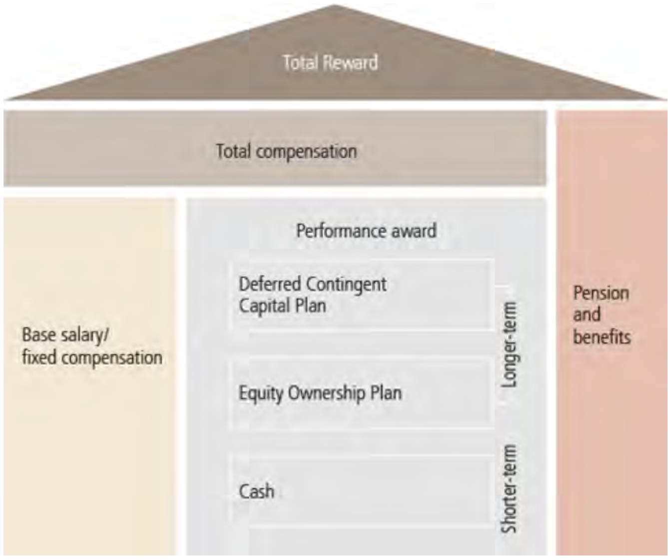
Our Total Reward Principles apply to all employees globally. They may vary in certain locations according to local legal requirements and regulations. The table below provides a summary of our Total Reward Principles.

Attract and retain a diverse, talented workforce	We provide employees with pay that is appropriately balanced between fixed and variable elements, competitive in the market and paid out over an appropriate period
Foster effective individual performance management and communication	Thorough evaluation of individual performance and adherence to our Behaviors, combined with effective communication, ensures there is a direct connection between achievement of business objectives and compensation across the firm
Align reward with sustainable performance	We embrace a culture of integration and collaboration within the firm. Our approach to compensation fosters engagement among employees and serves to align their long-term interests with those of clients and stakeholders
Support appropriate and controlled risk-taking	Compensation is structured such that employees behave in a manner consistent with the firm's risk framework and tolerance, thereby protecting our capital and reputation, and enhancing the quality of our financial results, in line with what our stakeholders expect from us

Our Total Reward approach

At UBS, we apply a holistic approach to compensation. Our Total Reward approach consists of fixed compensation (base salary and role-based allowances, if applicable), performance awards (cash performance award and, for employees with total compensation exceeding USD / CHF 300,000, Equity Ownership Plan and Deferred Contingent Capital Plan awards), pension contribution and benefits. Performance awards, where applicable, are determined based on a number of factors, including Group, business division, team and individual performance, and awarded in line with applicable local employment conditions and at the discretion of the firm.

Our Total Reward is structured to support sustainable results. A substantial portion of our performance award is deferred and vests over a period of five years, or longer for certain regulated employees. This deferral approach supports alignment of employee and investor interests, our capital base and the creation of sustainable shareholder value.



Illustrative overview

Performance award

The performance award process consists of pool funding determination, allocation and delivery and, if applicable, deferral to align reward with sustainable performance as outlined in the chart below. This process also includes additional specific pay for performance safeguards for our Group Executive Board (GEB) members.

Performance award		
Pool funding determination	**Allocation**	**Delivery and deferral**
Performance award pool is determined by considering risk-adjusted and sustainable performance, including:	**Performance awards are allocated to employees based on Group, business division, team and individual performance recognizing what was achieved and how it was achieved, including:**	**Performance awards are delivered through a deferral to align employee interests with investor interests:**
– Overall performance including quality of earnings and capital strength – Returns to investors – Risk profile and adjustments – Progress on strategic initiatives – Affordability – Market competitiveness / position	– Client focus – Financial results and capital management – Risk management – People and talent development – Pillars, Principles and Behaviors	– Substantial amounts of performance awards are deferred – At least 50% deferred for Key Risk Takers – Long-term deferral of up to five years, or longer for certain regulated employees – Shareholder- and debt holder-aligned vehicles – No leverage in compensation plans
Additional GEB pay-for-performance safeguards:		
– Cap on individual performance awards and total GEB performance award pool	– Allocations based on a performance assessment considering financial targets and goals that includes Group / business division and / or region performance including our Pillars, Principles and Behaviors – Performance assessment includes evaluation by a control function	– At least 80% of awards are at risk of forfeiture – Cap on cash performance award – Share ownership requirements – Six-month notice period in employment contracts – No hedging strategies allowed – Binding votes on aggregate GEB compensation – Advisory vote on the Compensation Report

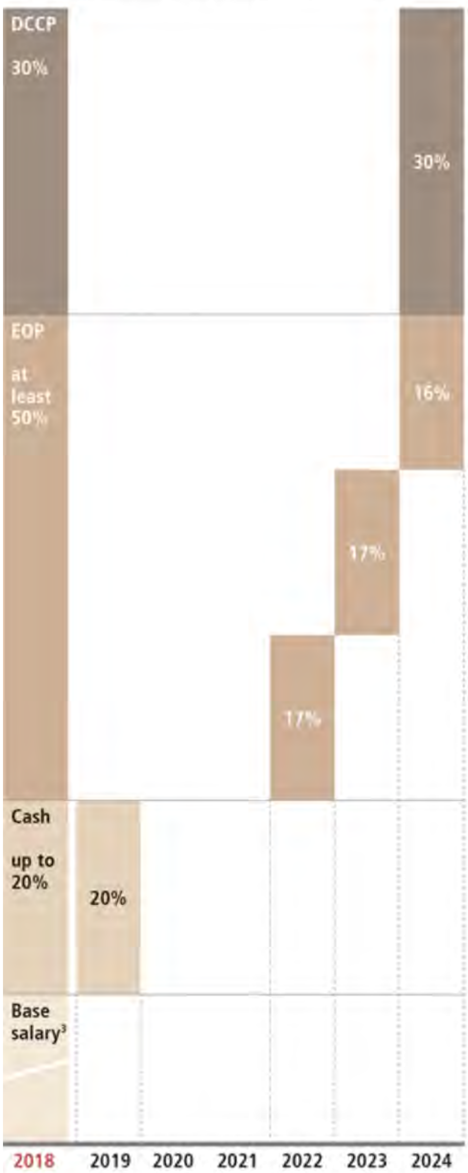
Compensation framework for GEB members

The graph below illustrates the compensation elements, pay mix and pay for performance safeguards for GEB members.

2018 compensation framework for GEB members (illustrative example)

Up to 20% of the annual performance award is paid in the form of cash and at least 80% will be deferred over a period of five years[1], with at least 50% granted under the EOP and the remaining 30% under the DCCP.

Payout of performance award[1]



Key features

DCCP

Notional additional tier 1 (AT1) capital instruments

30% of the performance award is granted under the Deferred Contingent Capital Plan (DCCP). The award vests after five years, subject to write-down if a trigger or viability event occurs. The award is subject to 20% forfeiture for each financial year if UBS does not achieve an adjusted Group profit before tax

Notional interest payments will be made annually, where regulation permits, subject to review and confirmation by the firm

The award is subject to continued employment and harmful acts provisions

EOP

Notional shares

At least 50% of the performance award is granted under the Equity Ownership Plan (EOP). The award vests in equal installments after years 3, 4 and 5, subject to both Group and business division performance. Up to 100% of the installment due to vest may be forfeited

Dividend equivalents, where regulation permits, are subject to the same terms as the underlying EOP award

The award is subject to continued employment and harmful acts provisions

Cash

Up to 20% of the performance award is paid out in cash[2], subject to a cash cap of USD / CHF 2 million. Any amount above the cash cap is granted under the EOP

Pay for performance and safeguards

Our compensation framework is designed to pay for performance. A performance award is based on the individual's performance assessment against a number of financial targets and goals related to Pillars, Principles and Behaviors measures

At least 80% of the performance award is at risk of forfeiture

Compensation plan forfeiture provisions enable the firm to reduce the unvested deferred portion if the compensation plans' relevant performance conditions are not met

Our compensation framework contains a number of features supporting appropriate risk management with safeguards to discourage inappropriate risk-taking:
- potential realized pay cannot exceed the award granted (other than for market movements and returns); no upward leverage, such as multiplier factors. The final deferred payout can be forfeited up to 100% in cases where performance conditions are not met or harmful acts provisions apply
- a mix of shorter-term and longer-term performance awards with a focus on deferral
- a cap on the total GEB performance award pool of 2.5% of adjusted Group profit before tax
- individual caps on the proportion of fixed to variable pay for the Group CEO and other GEB members
- six-month notice period included in the employment contracts
- an evaluation of each GEB member's risk control effectiveness and adherence to risk-related policies and guidelines as part of their individual qualitative assessment
- provisions that enable the firm to trigger forfeiture of some, or all, of the unvested deferred performance award if an employee commits certain harmful acts or if the employment is terminated for cause

Share retention	1,000,000 UBS shares for the Group CEO 500,000 UBS shares for other GEB members	GEB members are required to hold a certain number of UBS shares as long as they are in office This holding has to be built up within a maximum of five years from the date of their appointment to the GEB

1 Senior Management Functions have extended deferral periods, with the deferred performance awards vesting in equal installments annually between years 3 and 7. Material Risk Takers (MRTs) have an additional 12-month blocking period on their awards post vest. 2 UK MRTs receive 50% in the form of blocked shares. 3 May include role-based allowances in line with market practice in response to regulatory requirements.

GEB share ownership requirements

To align GEB members' interests with those of our shareholders and to demonstrate commitment to the firm, we require the Group CEO and the other GEB members to hold a substantial number of UBS shares. GEB members must build up their minimum shareholding within five years from their appointment and retain it throughout their tenure. The total number of UBS shares held by a GEB member consists of any vested or unvested shares and any privately held shares. GEB members may not sell any UBS shares before they reach the minimum ownership thresholds mentioned below. At the end of 2018, GEB members met their share ownership requirements, except for those appointed during 2016 and 2018, who need to build up and meet the required share ownership level by 2021 and 2023, respectively.

Other employees have no binding share ownership requirements. However, employees that are subject to mandatory deferral for their performance award, receive a significant portion of pay in shares. In addition, through our employee share purchase program, employees below the rank of Managing Director may voluntarily defer a portion of their salary and / or performance award for the purchase of UBS shares. Further, many of our employees choose to retain shares after they are vested and free of restrictions.

Share ownership requirements

Group CEO	min. 1,000,000 shares	Must be built up within five years from their appointment and retained throughout their tenure.
Other GEB members	min. 500,000 shares	

Caps on the GEB performance award pool

The size of the GEB performance award pool may not exceed 2.5% of the adjusted Group profit before tax. This limits the overall GEB compensation based on the firm's profitability.

For 2018, the Group's adjusted profit before tax was USD 6.1 billion and the total GEB performance award pool was USD 74.8 million. The performance award pool as a percentage of adjusted Group profit before tax was 1.2%, which is well below the cap of 2.5%.

In line with the individual compensation caps on the proportion of fixed pay to variable pay for all GEB members (introduced in 2013), the Group CEO's performance award is capped at five times his fixed compensation. Performance awards of other GEB members are capped at seven times their fixed compensation (or two times for GEB members who are also Material Risk Takers (MRTs)). For 2018, performance awards for GEB members and the Group CEO were, on average, 3.2 times their fixed compensation (excluding benefits and contributions to retirement benefit plans).

GEB employment contracts

The employment contracts of the GEB members do not include severance terms, sometimes referred to as golden parachutes, or supplementary pension plan contributions. All employment contracts for GEB members are subject to a notice period of six months. A GEB member leaving the firm before the end of a performance year may be considered for a performance award during that performance year in line with the approach described in this report. Such awards are subject to approval of the BoD, which may decide not to grant any awards.

→ **Refer to the "Compensation for the Group CEO and the other GEB members" section of this report for more information on performance assessment**

Benchmarking for the Group CEO and other GEB members

When recommending performance awards for the Group CEO and the other GEB members, the Compensation Committee reviews the respective total compensation for each role against a financial industry peer group selected for the comparability of their size, business mix, geographic presence and the extent to which they compete with us for talent. The Compensation Committee also considers our peers' strategies, practices, pay levels and regulatory environment, and may periodically reference other firms' pay levels or pay practices, including both financial and non-financial sector peers. The total compensation for a GEB member's specific role considers the compensation paid by our peers for a comparable role and performance. The Compensation Committee periodically reviews and approves the peer group for executive compensation.

The table below presents the composition of our peer group for 2018, which has been reviewed and approved by the Compensation Committee for the performance year 2018:

Bank of America	Goldman Sachs
Barclays	HSBC
BlackRock	JPMorgan Chase
BNP Paribas	Julius Baer
Citigroup	Morgan Stanley
Credit Suisse	Standard Chartered
Deutsche Bank	State Street

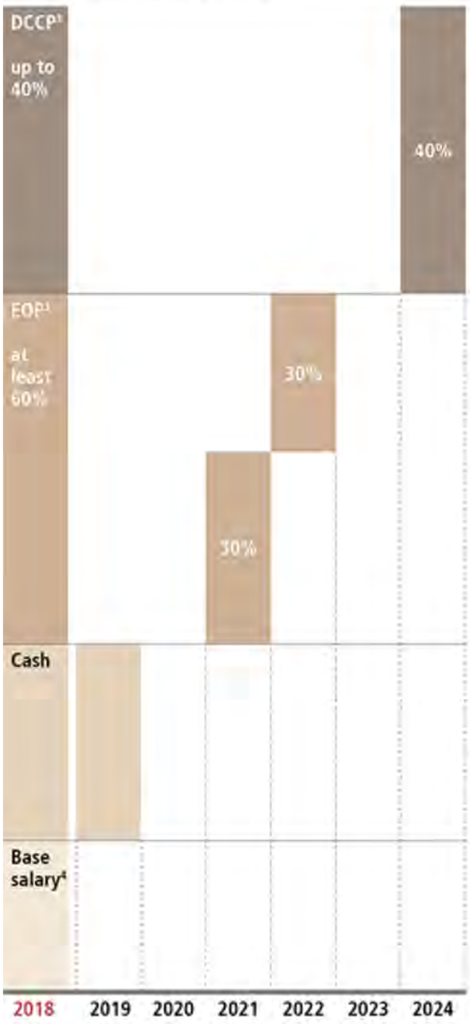
Compensation framework for employees other than GEB members

The graph below provides an overview of the compensation elements, pay mix and specific pay for performance safeguards for our employees other than GEB members, except where otherwise noted in this section.

2018 compensation framework for employees other than GEB members (illustrative example)

A mandatory deferral framework applies to employees that receive performance awards with total compensation in excess of USD / CHF 300,000. A significant portion of the performance award is deferred over a period of five years, with at least 60% of the deferred performance award granted under the EOP and up to 40% under the DCCP[1, 2].

Payout of performance award[1,2]



Element	Key features	Pay for performance and safeguards
DCCP[3] up to 40%	Notional additional tier 1 (AT1) instruments Not more than 40% of the deferred performance award is granted under the DCCP. The award vests in year 5, subject to forfeiture if a capital ratio trigger or viability event occurs Notional interest payments will be made annually, where regulation permits, subject to review and confirmation by the firm The award is subject to continued employment and harmful acts provisions	Our compensation framework is designed to pay for performance. A performance award is based on the individual's performance assessment against a number of financial targets and goals related to Pillars, Principles and Behaviors At least 60% of the deferred performance award is at risk of forfeiture Compensation plan forfeiture provisions enable the firm to reduce the unvested deferred portion if the compensation plans' relevant performance conditions are not met
EOP[3] at least 60%	Notional shares[5] At least 60% of the deferred performance award is granted under the Equity Ownership Plan (EOP). The award vests in equal installments after the years 2 and 3, subject to continued employment and harmful acts provsions Awards granted to GMDs, KRTs (including Highly Paid Employees) and SMFs are also subject to forteiture if Group and respective business division performance conditions over the performance period are not met[6] Dividend equivalents, where regulation permits, are subject to the same terms as the underlying EOP award	Our compensation framework contains a number of features supporting appropriate risk management with safeguards to discourage inappropriate risk-taking: – potential realized pay cannot exceed the award granted (other than for market movements and returns); no upward leverage, such as multiplier factors. The final deferred payout can be forfeited up to 100% in cases where performance conditions are not met or harmful acts provisions apply – a mix of shorter-term and longer-term performance awards with a focus on deferral – provisions that enable the firm to trigger forfeiture of some, or all, of the unvested deferred performance award if an employee commits certain harmful acts, or if the employment is terminated for cause
Cash	Mandatory deferral framework applies to employees with total compensation in excess of USD / CHF 300,000 Cash incentive is graduated, based on the relevant deferral mix. Higher performance awards result in a higher deferral rate. Any amount above the cash cap is granted under the EOP	
Base salary[4]		

1 Asset Management employees in investment areas receive at least 75% of their deferred performance awards in notional funds under the EOP and up to 25% under the DCCP; Asset Management employees in non-investment areas receive at least 50% of their deferred performance awards in notional funds plus at least 25% in notional UBS shares under the EOP, and up to 25% under the DCCP. 2 Certain regulated employees, such as UK SMFs or MRTs, are subject to additional requirements (e.g., more stringent deferral requirements, additional blocking periods). 3 Graduated, based on updated 2018/19 deferral mix. 4 May include role-based allowances in line with market practice in response to regulatory requirements. 5 Notional funds for Asset Management employees. 6 Includes Asset Management employees who are Group Managing Directors (GMDs) or Key Risk Takers (KRTs) including Highly Paid Employees.

Benchmarking for employees other than GEB members

We generally consider market practice in our pay decisions and framework. Our market review reflects a number of factors, including the comparability of the business division, location, scope and the diversity of our businesses. For certain businesses or roles, we may take into account practices at other major international banks, other large Swiss private banks, private equity firms, hedge funds and non-financial firms. Furthermore, we also benchmark employee compensation internally for comparable roles within and across business divisions and locations.

Employee share purchase program

The Equity Plus Plan is our employee share purchase program. It allows employees below the rank of Managing Director to voluntarily defer up to 30% of their base salary and / or up to 35% of their performance award (up to USD / CHF 20,000 annually) for the purchase of UBS shares. Eligible employees may buy UBS shares at market price and receive one additional share for every three shares purchased through the program. The additional shares vest after a maximum of three years, provided the employee remains employed with the firm and has retained the purchased shares throughout the holding period.

→ **Refer to "Note 30 Employee benefits: variable compensation" in the "Consolidated financial statements" section of this report for more information**

Compensation for US financial advisors in Global Wealth Management

In line with market practice for US wealth management businesses, the compensation for US financial advisors in Global Wealth Management is comprised of production payout and deferred compensation awards. Production payout, paid monthly, is primarily based on compensable revenue. Financial advisors may also qualify for deferred compensation awards, which generally vest over a six-year period. The awards are based on strategic performance measures, including production, length of service with the firm and net new business. Production payout rates and deferred compensation awards may be reduced for, among other things, errors, negligence or carelessness, or a failure to comply with the firm's rules, standards, practices and policies or applicable laws and regulations.

Compensation elements

Overall, we look across all elements of pay when making our decisions on total compensation. We regularly review our principles and compensation framework to remain competitive and aligned with stakeholders. For 2018, we made no material changes to our overall framework. We will continue to review our approach to salaries and performance awards in light of market developments, affordability, our performance and our commitment to deliver sustainable returns to our shareholders. Our policies and practices are impartial and equal, and we are committed to ensuring that all employees are paid fairly.

Base salary and role-based allowance

Employees' fixed compensation (e.g., base salary) reflects their level of skill, role and experience, as well as local market practice. Base salaries are usually paid monthly or fortnightly in line with local market practice. We offer our employees competitive base salaries that reflect the location, function and role. Salary increases generally consider promotions, skill set, performance and overall responsibility.

Each GEB member receives a fixed base salary, which is reviewed annually by the Compensation Committee. The Group CEO's annual base salary for 2018 was CHF 2.5 million and has remained unchanged since his appointment in 2011. The other GEB members received a base salary of CHF 1.5 million (or local currency equivalent), also unchanged since 2011.

In addition to a base salary and as part of fixed compensation, some employees may receive a role-based allowance. This allowance represents a shift in the compensation mix between fixed and variable compensation and not an increase in total compensation. It reflects the market value of a specific role and is fixed, non-forfeitable compensation. Unlike salary, a role-based allowance is paid only as long as the employee is in a specific role. Similar to previous years, 2018 role-based allowances consisted of a cash portion and, where applicable, a blocked UBS share award.

A few GEB members are considered Material Risk Takers (MRTs) for UK / European entities due to their impact on those entities, regardless of personal domicile. In addition to base salary, role-based allowances are part of their fixed compensation.

At the Annual General Meeting, shareholders are asked to approve the maximum aggregate amount of fixed compensation for the members of the GEB for the following financial year. The amount requested includes a reserve to consider potential future changes in GEB composition or role changes, and potential additional role-based allowances.

→ **Refer to the "Supplemental information" section of this report for more information on MRTs and Senior Management Functions (SMFs)**

→ **Refer to the "Shareholder engagement and say on pay" section of this report for more information on the shareholders' vote on the GEB compensation**

Pensions and benefits

For all employees, we offer certain benefits such as health insurance and retirement benefits. These benefits vary depending on the employee's location and are intended to be competitive in each of the markets in which we operate. Pension contributions and pension plans also vary across locations and countries in accordance with local requirements and market practice. However, pension plan rules in any one location are generally the same for all employees, including management.

For GEB members, pension contributions and benefits are in line with local practices for other employees. No enhanced or supplementary pension contributions exist for the GEB.

Performance award

Most of our employees are eligible for an annual performance award. The level of the award, where applicable, generally depends on the firm's overall performance, the employee's business division, team and individual performance, and behavior, reflecting their overall contribution to the firm's results.

In addition to the firm's Pillars and Principles, Behaviors related to integrity, collaboration and challenge are part of the performance management approach. Therefore, when assessing performance, we take into account not only what was achieved, but also how those results were achieved.

Our deferred compensation plans

To reinforce our culture, risk management approach and emphasis on sustainable performance, we deliver part of our annual variable compensation through a deferral. We believe our approach with a single incentive decision and a deferral is simple and transparent, and is best suited to implementing our compensation philosophy and delivering sustainable performance. This aligns our employees' and stakeholders' interests and appropriately links compensation to longer-term sustainable performance. Deferred compensation is delivered through two plans: (i) the Equity Ownership Plan (EOP), which primarily aligns employee interest with those of our shareholders, and (ii) the Deferred Contingent Capital Plan (DCCP), which aligns employee interest with the interests of debt holders.

The potential realized pay cannot exceed the award granted other than for market movements and returns of the instruments. Therefore, our compensation plans have no upward leverage, such as multiplier factors, and consequently do not encourage excessive risk-taking. We believe our deferral regime has one of the longest vesting periods in the industry. The average deferral period is 4.4 years for GEB members and 3.5 years for employees below GEB level.

To further promote sustainable performance, our deferred compensation components include malus conditions. These enable the firm to forfeit unvested deferred awards under certain circumstances, including performance and harmful acts.

Additionally, deferred awards granted to our most senior employees and to Highly Paid Employees (employees with a total compensation exceeding USD / CHF 2.5 million) are subject to performance conditions. Under the EOP and DCCP, employees who are not Material Risk Takers (MRTs) may receive annual dividend equivalents / notional interest payments. From performance year 2017, European Banking Authority guidelines no longer permit MRTs to receive dividend or interest payments on instruments awarded as deferred variable remuneration. Where dividend payments are not permitted, the grant price of the EOP award is adjusted for the expected dividend yield over the vesting period to reflect the fair value of the non-dividend bearing award. Similarly, where interest payments are not permitted, the DCCP award reflects the fair value of the granted non-interest bearing award.

For employees other than GEB members, a portion of performance awards above a total compensation of USD / CHF 300,000 is deferred in UBS notional shares and / or UBS notional instruments over a period of five years, or longer for certain regulated employees. Of the deferred annual performance award, at least 60% is deferred in UBS notional shares under the EOP and up to 40% in notional capital instruments under the DCCP. Asset Management employees in investment areas continue to receive at least 75% of their deferred performance awards in notional funds under the EOP and up to 25% under the DCCP. From performance year 2018, Asset Management employees in non-investment areas will receive at least 50% of their deferral in notional funds plus at least 25% in notional UBS shares under the EOP, and up to 25% under the DCCP. This aligns Asset Management employee compensation more closely with industry standards and also aligns the non-investment areas to Group performance.

The deferred amount increases at higher marginal rates in line with the value of the performance award. The portion of the performance award paid out in cash is capped at USD / CHF 2 million (or the equivalent in other currencies). Amounts in excess of the cash cap are deferred in notional shares under the EOP. The effective deferral rate therefore depends on the amount of the performance award and the amount of total compensation.

For each GEB member, at least 80% of the performance award is deferred, while a maximum of 20% can be paid out in cash, which is capped to defer a higher portion and thus further aligns GEB members' and shareholders' interests. For the performance year 2018, a minimum of 50% of the overall performance award is granted under the EOP, which vests in three equal installments in years 3 to 5, provided that performance conditions are met. The remaining 30% of the overall performance award is granted under the DCCP. For the GEB member whose role was considered in 2018 a UK Senior Management Function (SMF), additional provisions applied that are described under "UK Senior Managers and Certification Regime" in the "Supplemental information" section of this report.

→ **Refer to the "Performance conditions for EOP awards granted in 2019" section of this report for more information on performance conditions**

→ **Refer to "Note 30 Employee benefits: variable compensation" in the "Consolidated financial statements" section of this report for more information**

→ **Refer to the "Supplemental information" section of this report for more information on MRTs and SMFs**

→ **Refer to "Vesting of outstanding awards granted in prior years subject to performance conditions" in the "Supplemental information" section of this report for more information**

Equity Ownership Plan

The Equity Ownership Plan (EOP) is a mandatory deferral plan for all employees with total compensation greater than USD / CHF 300,000. For the performance year 2018, we granted EOP awards to 4,130 employees.

The plan includes provisions that allow the firm to reduce or fully forfeit the unvested deferred portion of the granted EOP award if an employee commits certain harmful acts, and in most cases trigger forfeiture where employment has been terminated.

For GEB members, Group Managing Directors (GMDs), Key Risk Takers (KRTs) (including Highly Paid Employees) and Senior Management Functions (SMFs), the EOP awards granted will only vest if both Group and business division performance conditions are met. For all awards granted for the performance years 2017 (awarded in early 2018) and prior, the Group performance condition was based on the average adjusted return on tangible equity (RoTE) excluding deferred tax assets (DTAs) over the performance period. Starting with the EOP awards granted in 2019 for the performance year 2018, the Group performance condition is based on the average reported return on CET1 capital (RoCET1), consistent with our revised performance targets and ambitions, which became effective at the beginning of 2019. Business division performance is measured on the basis of their average adjusted return on attributed equity (RoAE). For Corporate Center employees, it is measured on the basis of the average operating businesses' adjusted RoAE. The Group and business division thresholds for Performance EOP awards granted in 2019 reflect the changes announced at our 2018 Investor Update and demonstrate our commitment to sustainable performance. At the same time, it reflects moving from an adjusted to a reported Group performance measure, as well as pushing out additional costs from Corporate Center and increasing attributed equity for business divisions. On a like-for-like basis the thresholds established for 2019 are comparable to prior year thresholds.

The primary measure to determine vesting of EOP awards is the average adjusted Group RoTE excluding DTAs and from 2019 onwards the average reported Group RoCET1.

If the Group performance measure is equal to or above the performance threshold of 8%, the EOP award will vest in full, provided that the relevant business division performance condition has also been met. If the Group performance measure is 0% or negative, the installment will be fully forfeited regardless of any business division's individual performance. If the Group performance measure is between 0% and 8%, the award will vest on a linear basis at 0–100%, again provided that the relevant business division performance condition is met.

The secondary measure to determine vesting of EOP awards is business division adjusted RoAE. If the business division adjusted RoAE performance threshold (refer to the table on the next page) is met, the EOP award will vest in accordance with the achievement of the Group performance. However, if the business division adjusted RoAE is 0% or below, the respective awards of employees in this business division are subject to complete forfeiture. If the business division adjusted RoAE is between 0% and the business division threshold, these awards are subject to forfeiture of up to 40%. The Compensation Committee determines whether the performance conditions have been met.

One of our key objectives is to deliver sustainable performance, and therefore we link the EOP award vesting with minimum performance thresholds over a multi-year time horizon. Unlike many of our competitors, who set maximum targets for their LTI plans, our deferred awards have no upward leverage. Consequently our awards are aligned with sustainable results and do not encourage excessive risk-taking. This approach promotes sustainable performance by establishing a minimum level of performance, below which awards are subject to full or partial forfeiture.

→ **Refer to "Vesting of outstanding awards granted in prior years subject to performance conditions" in the "Supplemental information" section of this report for more information**

Performance conditions for EOP awards granted in 2019

At the time of the Equity Ownership Plan (EOP) award, several performance conditions relating to the respective performance year guide the level of granted variable compensation components. In addition, the Compensation Committee sets for selected populations of employees minimum future performance thresholds at levels to demonstrate that the long-term quality of the past year's performance is sustainable.

Each year the Compensation Committee reviews thresholds relative to historical performance, our financial plan and our ambitions and establishes vesting with minimum performance thresholds for our EOP awards. If the minimum performance thresholds are not achieved over a multi-year period, an employee's award is subject to partial or full forfeiture.

Once set, the performance thresholds remain in place for all EOP performance vesting installments for that particular award year. For GEB members, the award vests in equal installments after years 3, 4 and 5. For GMDs and KRTs, including Highly Paid Employees, the award vests in equal installments after years 2 and 3.

	Vesting after	Applicable performance period
GEB / SMF[1]	3 years (installment 1)	2019, 2020 and 2021
	4 years (installment 2)	2020, 2021 and 2022
	5 years (installment 3)	2021, 2022 and 2023
GMDs, Key Risk Takers (including Highly Paid Employees)	2 years (installment 1)	2019 and 2020
	3 years (installment 2)	2019, 2020 and 2021

1 Senior Management Functions have extended deferral periods, with the deferred performance awards vesting in equal installments between years 3 and 7 (including DCCP).

Average reported Group RoCET1 performance threshold

Average reported Group RoCET1	≥8%

Business division adjusted RoAE performance thresholds

Global Wealth Management	≥19%
Personal & Corporate Banking	≥12%
Asset Management	≥20%
Investment Bank	≥8%
Corporate Center[1]	≥12%

1 For Corporate Center employees, average operating businesses adjusted RoAE performance threshold.

Illustrative example for EOP performance conditions

The final amount of any award vesting under the EOP can vary; firstly, according to the level of achievement of the average reported RoCET1 relative to threshold, and secondly, subject to business division adjusted RoAE performance thresholds being satisfied, as applicable. In the event that average reported RoCET1 is below the minimum performance threshold requirement, and additionally, if the business division adjusted RoAE is 0% or below, the respective awards of employees in this business division are subject to full forfeiture. If the business division adjusted RoAE is between 0% and the business division performance threshold, these awards are subject to forfeiture of up to 40%. The table below illustrates full-vest, partial vest and full-forfeiture scenarios.

		Group Performance (RoCET1)		
		≤ 0%	Between 0% and threshold	≥ threshold
Divisional Performance (RoAE)	≤ 0%	Full forfeiture	Full forfeiture	Full forfeiture
	Between 0% and threshold	Full forfeiture	Partial vest	Partial vest
	≥ threshold	Full forfeiture	Partial vest	Full vest

Deferred Contingent Capital Plan

The Deferred Contingent Capital Plan (DCCP) is a mandatory deferral plan for all employees with total compensation greater than USD / CHF 300,000. For the performance year 2018, we granted DCCP awards to 4,093 employees.

Employees are awarded notional additional tier 1 (AT1) capital instruments, which at the discretion of the firm can be settled as either a cash payment or a perpetual, marketable AT1 capital instrument. Prior to granting, employees can elect to have their DCCP awards denominated in either Swiss francs or US dollars.

DCCP awards vest in full after five years and up to seven years for SMFs, unless there is a trigger event. Awards are forfeited if a viability event occurs, that is, if FINMA notifies the firm in writing that the DCCP awards must be written down to prevent an insolvency, bankruptcy or failure of UBS, or if the firm receives a commitment of extraordinary support from the public sector that is necessary to prevent such an event. Additionally, they are written down if the Group's common equity tier 1 (CET1) capital ratio falls below 10% for GEB members and below 7% for all other employees.

As an additional performance condition, GEB members forfeit 20% of their award for each loss-making year during the vesting period. This means that 100% of the award is subject to risk of forfeiture. Like the EOP, the DCCP also has provisions that allow the firm to apply malus conditions on some, or all, of the unvested deferred portion of a granted award if an employee commits certain harmful acts, or in most cases trigger forfeiture where employment has been terminated.

Under the DCCP, employees who are not MRTs may receive discretionary annual notional interest payments. The notional interest rate for grants in 2019 was 3.40% for awards denominated in Swiss francs and 6.85% for awards denominated in US dollars. These interest rates are based on the current market rates for similar AT1 capital instruments. Notional interest will be paid out annually, subject to review and confirmation by the Compensation Committee.

Over the last five years, USD 2.0 billion of DCCP was issued, contributing to the Group's total loss-absorbing capacity (TLAC). Therefore, DCCP awards not only support competitive pay, but also provide a loss absorption buffer that protects the firm's capital position. The following table illustrates the impact of the DCCP on our AT1 and tier 2 capital as well as on our TLAC ratio.

→ **Refer to the "Supplemental information" section of this report for more information on performance award- and personnel-related expenses**

→ **Refer to the "Supplemental information" section of this report for more information on longer vesting and clawback periods for MRTs and SMFs**

Impact of the Deferred Contingent Capital Plan on our loss-absorbing capacity[1]

USD million, except where indicated	31.12.18	31.12.17	31.12.16
Deferred Contingent Capital Plan (DCCP)	2,005	2,160	2,231
of which: high-trigger loss-absorbing additional tier 1 capital	*2,005*	*1,714*	*1,356*
of which: high-trigger loss-absorbing tier 2 capital[2]	*0*	*447*	*875*
DCCP contribution to the total loss-absorbing capacity ratio (%)	0.8	0.9	1.0

1 Refer to "Bondholder information" at www.ubs.com/investors for more information on the capital instruments of UBS Group AG and of UBS AG both on a consolidated and a standalone basis. 2 Relates to DCCP awards granted for the performance years 2012 and 2013 - based on Swiss SRB framework including transitional arrangements (phase-in) as of 31 December 2017 and 31 December 2016; based on the former Swiss SRB framework for 31 December 2015. As of 31 December 2018, both of these DCCP awards no longer meet the grandfathering treatment under Swiss TBTF capital requirements.

Other variable compensation components

To support hiring and retention, particularly at senior levels, we may offer certain other compensation components. These include:

- Replacement payments to compensate employees for deferred awards forfeited as a result of joining the firm. Such payments are industry practice and are often necessary to attract senior candidates, who generally have a significant portion of their awards deferred at their current employer, where continued employment is required to avoid forfeiture.
- Retention payments made to key employees to induce them to stay, particularly during critical periods for the firm such as a sale or wind-down of business.
- On a limited basis, guarantees may be required to attract individuals with certain skills and experience. These awards are fixed incentives subject to our standard deferral rules and are limited to the first full year of employment.
- Award grants to employees hired late in the year to replace performance awards that they would have earned at their previous employers, but have foregone by joining the firm. These awards are generally structured with the same level of deferral as for employees at a similar level at UBS.
- In exceptional cases, candidates may be offered a sign-on award to increase the chances of them accepting our offer.

These other variable compensation components are subject to a comprehensive governance process. Authorization and responsibility may go up to the Compensation Committee, depending on the amount or type of such payments.

Employees who are made redundant may receive severance payments. Our severance terms comply with the applicable local laws (legally obligated severance). In certain locations, we may provide severance packages that are negotiated with our local social partners and may go beyond the applicable minimum legal requirements (standard severance). Such payments are governed by location-specific severance policies. In addition, we may make severance payments that exceed legally obligated or standard severance payments (supplemental severance) where we believe that they are aligned with market practice and appropriate under the circumstances. No severance payments are made to members of the GEB.

Sign-on payments, replacement payments, guarantees and severance payments

	Total 2018	*of which: expenses recognized in 2018*[5]	*of which: expenses to be recognized in 2019 and later*	Total 2017	Number of beneficiaries	
USD million, except where indicated					2018	2017
Total sign-on payments[1]	30	*20*	*11*	34	178	149
of which: Key Risk Takers[2]	*7*	*4*	*4*	*25*	*6*	*15*
Total replacement payments[3]	72	*7*	*65*	96	299	278
of which: Key Risk Takers[2]	*19*	*2*	*16*	*52*	*11*	*27*
Total guarantees[3]	48	*26*	*22*	37	54	39
of which: Key Risk Takers[2]	*12*	*5*	*7*	*20*	*5*	*9*
Total severance payments[1,4]	165	*165*	*0*	222	1,524	2,205
of which: Key Risk Takers	*4*	*4*	*0*	*2*	*18*	*6*

1 GEB members are not eligible for sign-on or severance payments. 2 Expenses for Key Risk Takers are full-year amounts for individuals in office on 31 December 2018. Key Risk Takers include employees with a total compensation exceeding USD / CHF 2.5 million (Highly Paid Employees). 3 No GEB member received replacement payments or guarantees for 2018 or 2017. 4 Severance payments include legally obligated and standard severance. 5 Expenses before post-vesting transfer restrictions.

2018 performance and compensation funding

Our performance in 2018

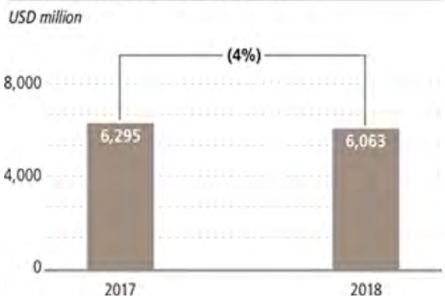
We delivered strong 2018 financial results in overall challenging market conditions, reflecting the strength of our business model. Profit before tax increased by 12% to USD 6.0 billion, mainly reflecting higher operating income and a reduction in operating expenses. Adjusted[1] profit before tax decreased by 4% to USD 6.1 billion due to higher adjusted operating expenses, partly offset by an increase in adjusted operating income. For further details on our Group and business division performance refer to the "Financial and operating performance" section of this report.

Net profit attributable to shareholders increased by 16% to USD 4.5 billion (excluding the effect of the US tax law change in the fourth quarter of 2017). Adjusted[1] return on tangible equity excluding deferred tax assets (DTAs) was 12.9%. Reported return on common equity tier 1 (CET1) capital was 13.1%, which compares well with our peers.

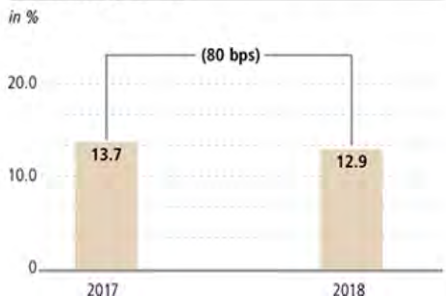
Our capital position remained strong with a CET1 capital ratio at 12.9% and a CET1 leverage ratio of 3.8%, both in line with our capital guidance of around 13% and 3.7%, respectively. We increased our total loss-absorbing capacity by USD 3.4 billion to USD 83.7 billion.

For the financial year 2018, the Board of Directors intends to propose a dividend of CHF 0.70 per share, an increase of 8% on the prior year. During 2018, we repurchased CHF 750 million of shares, exceeding the 2018 target of up to CHF 550 million.

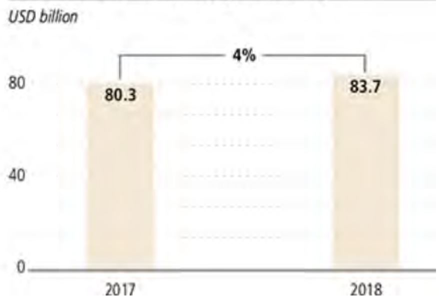
Adjusted profit before tax



Adjusted return on tangible equity excluding DTAs[3]



Total loss-absorbing capacity



1 Refer to "Group performance" in the "Financial and operating performance" section of this report for more information on adjusted results. 2 The adjusted return on tangible equity excluding DTAs is calculated as the adjusted net profit / loss attributable to shareholders excluding amortization and impairment of goodwill and intangible assets and deferred tax expense / benefit, such as the net write-down due to the TCJA enacted in the fourth quarter of 2017, divided by average tangible equity attributable to shareholders excluding any DTAs that do not qualify as CET1 capital.

Performance award pool funding

Our performance award pool funding framework is based on business performance, which is measured across multiple dimensions as outlined below.

We assess Group and business division performance, including achievement against a set of performance targets, and we also consider performance relative to industry peers, general market competitiveness and progress against our strategic objectives, including capital growth as well as risk-weighted assets and cost efficiency. We look at the firm's risk profile and culture, the extent to which operational risks and audit issues have been identified and resolved, and the success of risk reduction initiatives.

Our compensation philosophy focuses on balancing performance with prudent risk-taking and retaining talented employees. To achieve this, as performance increases, we reduce our overall performance award funding percentage. In years of strong performance, this prevents excessive compensation, resulting in an increased proportion of profit before performance award being available for distribution to shareholders or growing the Group's capital. In years where performance declines, the performance award pool will generally decrease; however, funding rates may increase.

The performance award pool funding process starts with the accrual of a percentage of each business division's risk-adjusted profit before performance award. In determining the final pool, we also consider progress against our strategic objectives, quality of earnings, affordability, returns to investors and market competitiveness. Business division performance is adjusted for items that do not represent underlying performance (for example, gains or losses on the sale of a property or a business).

Corporate Center funding is linked to overall Group performance and reflects headcount, workforce location and demographics. For each functional area, quantitative and qualitative assessments evaluate service quality, risk management and financial achievements. To help evaluate service quality, business divisions provide input into the evaluation and assessment of Corporate Center areas; however, control functions are evaluated independently of the divisions they oversee, supervise or monitor. Ultimately, our pay decisions reflect the overall and individual performance as well as the competitive market for talent in these areas, to ensure an efficient and effective Corporate Center.

Before making its final recommendation to the BoD, the Compensation Committee can apply positive or negative discretion to the performance award pool, including recommending a zero award. When adjusting the pool, the Compensation Committee considers various factors such as relative performance, market environment, shareholder returns, the effect of changes in financial accounting standards, litigation and regulatory costs as well as competitive pressure. The Compensation Committee decision balances consideration of financial performance with a range of qualitative factors and takes account of the quality of earnings including developments on and provisions for litigation, regulatory and similar matters. In that regard, it is important to distinguish between legacy matters and financial and operating performance for the year. To enable future growth through disciplined execution of our strategy and creation of sustainable shareholder value, it is essential that pay decisions are not driven by the potential impact of legacy matters which may take several years to be resolved. At the same time, we are mindful of the potential costs of such matters, the prudent management of them and the effect on our share price.

As described above, reflecting the aforementioned considerations, over the past six years, the Compensation Committee applied discretionary adjustments to the performance award pool of between -6% and +2%, resulting in a downward adjustment in all but one year.

An illustrative overview with more details on the process is presented in the chart on the next page.

→ **Refer to "Group performance" in the "Financial and operating performance" section of this report for more information on adjusted results**

Performance award pool funding process – illustrative overview

1	**Adjusted business division financial performance**	The starting point for the funding process is the adjusted business division financial performance, which excludes items that are not reflective of the underlying business performance
2	**Risk-adjusted business division performance award pool**	Predetermined business division-specific funding rates are applied to risk-adjusted performance, incorporating market, credit and operational (including conduct) risk
3	**Business division measures**	Each division is assessed based on specific measures (e.g., net new money growth rate, return on attributed equity)
	Qualitative, risk and regulatory assessment	Qualitative assessment (e.g., quality of earnings), assessment of regulatory compliance and risk assessment (such as legal, compliance, reputational and operational risk) support alignment to our Total Reward Principles
	Relative performance vs peers	Performance is also assessed relative to our peers
	Market position and trends	Market intelligence based on external advisors helps assess the competitiveness of our pay levels and compensation structure. It also provides a prospective view of market trends in terms of absolute compensation levels, compensation framework and industry practice
4	**Recommended performance award pools**	The business division performance award pool determination process, based on quantitative and qualitative assessments, results in a recommendation from the Group CEO (after consultation with the business division Presidents) to the Compensation Committee for consideration
5	**Final performance award pool**	The Compensation Committee considers the recommendation in the context of our overall performance, capital strength, risk profile, affordability, capital returns to investors, progress on strategic initiatives, market competitiveness / position, as well as business and geographic trends. The committee verifies it is in line with our strategy embodied in our Total Reward Principles to create sustainable shareholder value and may alter the recommendations of the Group CEO (upward or downward, including recommending a zero award) before making its final recommendation to the BoD

Compensation for the Group CEO and the other GEB members

Performance assessment

Annual performance awards for the Group CEO and the other Group Executive Board (GEB) members are based on the GEB compensation determination process as illustrated below and, in aggregate, subject to shareholder approval at the AGM.

We assess the GEB members' performance against a number of financial targets and goals related to Pillars, Principles, and Behaviors. The financial measures for the Group CEO are based on overall Group performance. For the other GEB members, they are based on both Group performance and the performance of the relevant business division and / or region; for those who lead Group functions, they are assessed on the performance of the Group and the function they oversee.

The weighting between Group, business division, regional and functional measures varies depending on a GEB member's role. A significant weight is given to Group measures for all GEB members. The achievements relative to goals related to Pillars and Principles are additional factors for assessing the overall quality and sustainability of the financial results. The financial measures including Pillars and Principles account for 65% of the assessment, while Behaviors account for 35%.

The "Overview of the performance assessment measures" table in this section outlines the measures on which the performance assessment is based.

Overview of the GEB compensation determination process

The compensation for the Group CEO and the other GEB members is governed by a rigorous process under Compensation Committee and BoD oversight. The illustration below shows how compensation for all GEB members is determined.

The Compensation Committee is involved at all stages of the performance and total compensation decision-making process for the Group CEO and the other GEB members, for review and approval by the BoD

	Objective setting	Performance assessment	Compensation decisions
Decision-making process	The financial targets are based on Group, business division, regional and / or functional performance, depending on the role of the GEB member Financial targets and goals for Pillars and Principles are based on the strategic plan Financial measures including consideration of Pillars and Principles account for 65% while Behaviors account for 35%	The financial targets are assessed based on actual results vs plan and year-on-year performance Achievements relative to goals related to Pillars and Principles are additional factors for assessing the quality and sustainability of financial results Behaviors assess how the executive achieved the financial results	When determining actual pay levels, the Compensation Committee factors in: – performance and affordability – performance assessment – relative performance vs peers – compensation market value and trends – other parameters deemed relevant Final compensation decisions for GEB members consider the Group CEO's recommendation (the Group CEO makes no recommendation on his own awards)
Role of the BoD and Compensation Committee	The Compensation Committee: – together with the BoD Chairman establishes the objectives for the Group CEO – together with the Group CEO reviews objectives for the other GEB members	The Compensation Committee: – together with the BoD Chairman evaluates the performance of the Group CEO and determines the overall assessment – together with the Group CEO reviews the performance assessment for the other GEB members	The Compensation Committee proposes to the BoD: – together with the BoD Chairman the total individual compensation for the Group CEO – together with the Group CEO the total individual compensation for the other GEB members The final decision on the aggregate amount is subject to shareholder approval

The performance assessment is the starting point for determining a GEB member's annual performance award. This approach is not mechanical, as the Compensation Committee can exercise its judgment with respect to the performance achieved relative to the prior year, the strategic plan and competitors, and considers the Group CEO's recommendation. The Compensation Committee's recommendations are then reviewed and subject to the approval of the BoD. The Compensation Committee, and then the full BoD, follows a similar process in setting the compensation for the Group CEO, except that the recommendation is from the Chairman of the BoD.

Overview of the performance assessment measures

The table below presents the measures for the 2018 performance assessment of the Group CEO and GEB members.

Performance measures		
Group measures		A range of financial measures including adjusted Group profit before tax, adjusted Group cost / income ratio, adjusted Group return on tangible equity excluding DTAs, CET1 ratios
Business division, regional and / or functional measures (if applicable)[1]		Business division and / or regional measures vary but may include: net new money growth rate, adjusted divisional / regional profit before tax, adjusted cost / income ratio, net new business volume growth rate, net interest margin, adjusted RoAE, Basel III RWA and LRD expectations Specific functional measures for Corporate Center GEB members
Pillars	Capital strength	Establishes and maintains capital. Generates efficiencies and deploys our capital more efficiently and effectively
	Efficiency and effectiveness	Contributes to the development and execution of our strategy and success across all business lines, functions and regions. Considers market conditions, relative performance and other factors
	Risk management	Reinforces risk management through an effective control framework. Captures the degree to which risks are self-identified and focuses on the individual's success to comply with all the various regulatory frameworks. Helps shape the firm's relationship with regulators through ongoing dialog
Principles	Client focus	Increases client satisfaction and maintains high levels of satisfaction over the long term. This includes promoting collaboration across business divisions and fostering the delivery of the whole firm to our clients
	Excellence	Human Capital Management – develops successors for the most senior positions, facilitates talent mobility within the firm and promotes a diverse and inclusive workforce Product and Service Quality – strives for excellence in the products and services we offer to our clients
	Sustainable performance	Brand and Reputation – protects the Group's reputation and reinforces full compliance with our standards and principles Culture and Growth – takes a personal role in making Principles and Behaviors front and center of the business requirements, including a focus on sustainable growth. Furthermore, this measure evaluates the individual's ability to reinforce a culture of accountability and responsibility, demonstrating our commitment to be a responsible corporate citizen and reinforcing our collective behaviors

Behaviors	
Integrity	Is responsible and accountable for what they say and do; cares about clients, investors, and colleagues; acts as a role model
Collaboration	Places the interests of clients and the firm before their own and those of their business; works across the firm; respects and values diverse perspectives
Challenge	Encourages self and others to constructively challenge the status quo; learns from mistakes and experiences

1 Both regional and functional measures may include qualitative measures.

2018 compensation for the Group Chief Executive Officer

The performance award for the Group CEO, Sergio P. Ermotti, is based on the achievement of financial targets plus goal achievements relative to Pillars, Principles, and Behaviors, as described earlier in this section. These targets were set to reflect the strategic priorities determined by the Chairman and the BoD, including risk-adjusted profitability, cost / income ratio, capital position and adjusted return on tangible equity, as well as a range of measures to assess the quality and sustainability of the performance. Financial measures, including consideration of Pillars and Principles, account for 65% of Mr. Ermotti's performance assessment, while the remaining 35% is based on behavioral measures. The table on the following page summarizes the metrics used to assess Mr. Ermotti's performance as Group CEO for 2018.

The BoD recognized Mr. Ermotti's continued focus on managing the Group for the long term and delivering sustainable performance. In a year with challenging market conditions, he led the improvement in the firm's overall performance while maintaining its strong capital position, enabling the BoD to increase payouts to shareholders. Net profit attributable to shareholders increased 16% year-on-year to USD 4.5 billion, excluding the USD 2.9 billion net write-down in the fourth quarter of 2017 of deferred tax assets (DTAs) following the enactment of the US Tax Cuts and Jobs Act. Group profit before tax increased by 12% to USD 6.0 billion while adjusted[1] profit before tax decreased by 4% to USD 6.1 billion. In addition, despite market headwinds and legacy issues leading to higher provisions for litigation, regulatory and similar matters, our overall financial results for the year were near plan.

Under Mr. Ermotti's stewardship, UBS's profitability remained strong, with adjusted[1] return on tangible equity excluding DTAs at 12.9%, and reported return on CET1 capital at 13.1%. The CET1 capital ratio of 12.9% and CET1 leverage ratio of 3.8% were both in line with our capital guidance and UBS met 2020 capital requirements one year early. The Group's total loss-absorbing capacity was further strengthened by USD 3.4 billion to USD 83.7 billion. During 2018, UBS repurchased CHF 750 million of shares, exceeding the 2018 target of up to CHF 550 million.

The BoD also acknowledged Mr. Ermotti's achievements in 2018 as exceeding expectations related to our Pillars, Principles and Behaviors. He continued to lead cost- and capital-efficient execution, successfully sharpened the Group's clear strategy, and spearheaded initiatives to deliver future growth. At the same time, Mr. Ermotti maintained a clear tone from the top in setting and demanding high standards in risk management and risk remediation.

Mr. Ermotti successfully focused the organization on growth with the development of innovative solutions and digital offerings for clients across all businesses. He further extended his significant personal engagement with clients and promoted client centricity in the firm's decision-making.

In 2018, Mr. Ermotti reshaped the GEB. Reflecting his strong attention to talent development, succession planning and internal mobility to support continuity across the organization, all four new leadership appointments to the GEB were internal candidates. He also remained committed to further improve diversity at senior levels.

The BoD recognized Mr. Ermotti at the forefront of the firm's culture and behavior program. He personally championed the behavior principles across the organization and consistently emphasized the significance of these topics to employees and in public forums. Further he continued to display a strong commitment to culture as a strategic differentiator with continuous improvement through constructive challenge and delivering the whole bank to clients through effective cross-divisional collaboration.

In determining the annual compensation for the Group CEO, the BoD assessment balances consideration of financial performance with a range of qualitative factors and takes into account the quality of earnings including developments on and provisions for litigation, regulatory and similar matters, while distinguishing between legacy matters and financial and operating performance for the year. Recognizing Mr. Ermotti's achievements in 2018, the BoD approved the proposal by the Compensation Committee to grant him a performance award of CHF 11.3 million, resulting in a total compensation for the year of CHF 13.8 million (excluding benefits and contributions to his retirement benefit plan). The performance award is subject to shareholder approval as part of the aggregate GEB 2018 variable compensation and will be delivered 18% (CHF 2 million) in cash and the remaining 82% (CHF 9.3 million) subject to deferral and forfeiture provisions, as well as meeting performance threshold conditions over five years.

→ **Refer to the "Compensation philosophy and framework" section of this report for more information**

1 Refer to "Group performance" in the "Financial and operating performance" section of this report for more information on adjusted results.

Performance assessment for the Group CEO

The chart below illustrates the 2018 assessment of the Group CEO's performance. When assessing the financial performance, the Compensation Committee considers additional factors to judge the quality and sustainability of the financial results. These additional factors are based on the Group CEO's achievement of goals related to Pillars and Principles, including relative performance, market conditions, client satisfaction and talent management. For additional details on the assessment, refer to the description on the previous page.

Weighting	Performance Measures	2016 results	2017 results	2018 results	Weighting	2018 Assessment Vs Plan (100%)
65%	**Adjusted Group profit before tax**	USD 5,439 million	USD 6,295 million	USD 6,063 million	40%	
	Adjusted Cost/income ratio	80.8%	78.2%	79.5%	20%	
	Adjusted Group return on tangible equity excluding DTAs[1]	11.3%	13.7%	12.9%	20%	
	Capital management CET1 capital ratio CET1 leverage ratio Post-stress CET1 ratio	13.8% 3.5% Achieved	13.8% 3.7% Achieved	12.9% 3.8% Achieved	20%	
	Pillars and Principles	**Achievements** Overall performance exceeded expectations, given: Mr. Ermotti's continued focus on managing the Group for the long-term and delivering sustainable performance. In a year with challenging market conditions, he led the improvement in the firm's overall performance while maintaining its strong capital position, enabling the BoD to increase payouts to shareholders. Further, Mr. Ermotti continued to lead cost and capital efficient execution, successfully sharpened the Group's clear strategy, and spearheaded initiatives to deliver future growth. He also extended further his significant personal engagement with clients and promoted client centricity across the firm. Mr. Ermotti set and demanded high standards in risk management and risk remediation. In 2018 he reshaped his GEB, reflecting his strong attention to talent development, succession planning, and internal mobility; and he remained committed to further improve diversity at senior levels.				
35%	**Behaviors** Integrity Collaboration Challenge	Overall performance exceeded expectations, given clear tone from top and: Mr. Ermotti remained at the forefront of the firm's culture and behavior program. He personally championed the behavior principles across the organization and consistently emphasized the significance of these topics to employees and in public forums. Mr. Ermotti continued to display a strong commitment to culture as a strategic differentiator with continuous improvement through constructive challenge, and delivering the whole bank to clients through effective cross divisional collaboration. The BoD further acknowledged Mr. Ermotti as a role model in considering the views of clients, investors and colleagues alike, and in treating others with respect. In addition, he continued to communicate in a clear and highly consistent manner, maintained an excellent track record of delivering on his commitments, and took decisive yet considerate actions that are consistently in the best interest of the firm.				

1 Calculated as adjusted net profit / loss attributable to shareholders excluding amortization and impairment of goodwill and intangible assets and deferred tax expense / benefit, such as the net write-down due to the US Tax Cuts and Jobs Act enacted in the fourth quarter of 2017, divided by average tangible equity attributable to shareholders excluding any DTAs that do not qualify as CET1 capital.

2018 total compensation for the GEB members

The GEB performance awards are subject to approval by the BoD based on the assessment of financial targets as well as goals related to Pillars, Principles and Behaviors and, in aggregate, subject to shareholder approval. The aggregate 2018 performance award pool for the GEB was CHF 73.3 million (for reference USD 74.8 million), a decrease of 1% compared with the prior year. This decrease is in line with the decrease in the overall performance award pool of the firm. Group profit before tax increased by 12% to USD 6.0 billion while adjusted profit before tax decreased by 4% to USD 6.1 billion.

The Compensation Committee has confirmed that performance conditions for all GEB members' awards due to vest in March 2019 have been satisfied, and thus the awards will vest in full.

At the 2019 AGM, shareholders will vote on the aggregate 2018 total variable compensation for the GEB in Swiss francs. Therefore, the tables below provide the awarded compensation for the Group CEO and the GEB members in Swiss francs, and for reference, the total amounts in US dollars for comparability with financial performance. The individual variable performance awards for each GEB member will only be confirmed upon shareholder approval at the AGM.

→ **Refer to the Provisions of the Articles of Association related to compensation in the "Supplemental Information" section of this report for more information**

Audited |

Total compensation for GEB members[1]

Group CEO, Sergio P. Ermotti (highest paid)

CHF										USD (for reference)[2]		
For the year	Base salary	Contribution to retirement benefit plans[3]	Benefits[4]	Total fixed compensation	Cash[5]	Performance award under EOP[6]	Performance award under DCCP[7]	Total variable compensation	Total fixed and variable compensation[8]	Total fixed compensation	Total variable compensation	Total fixed and variable compensation[8]
2018	2,500,000	261,181	62,813	2,823,994	2,000,000	5,910,000	3,390,000	11,300,000	14,123,994	2,882,971	11,535,991	14,418,962
2017	2,500,000	261,181	41,261	2,802,442	2,000,000	5,980,000	3,420,000	11,400,000	14,202,442			

Aggregate of all GEB members[9,10,11]

CHF										USD (for reference)[2]		
For the year	Base salary[12]	Contribution to retirement benefit plans[3]	Benefits[4]	Total fixed compensation	Cash[5]	Performance award under EOP[6]	Performance award under DCCP[7]	Total variable compensation	Total fixed and variable compensation[8]	Total fixed compensation	Total variable compensation	Total fixed and variable compensation[8]
2018	22,948,016	2,540,085	2,042,509	27,530,610	14,269,889	37,040,111	21,990,000	73,300,000	100,830,610	28,105,565	74,830,812	102,936,377
2017	21,459,305	2,439,414	1,842,848	25,741,566	14,550,000	37,355,000	22,245,000	74,150,000	99,891,566			

1 Local currencies have been translated into Swiss francs at the relevant year-end closing exchange rates, or at the performance award currency exchange rate. 2 Swiss franc amounts have been translated into US dollars for reference at the 2018 performance award currency exchange rate of CHF / USD 1.02. 3 Includes the portion related to the employer's contribution to the statutory pension scheme. 4 All benefits are valued at market price. 5 For GEB members who are also MRTs or SMFs, the cash portion includes blocked shares. 6 For EOP awards for the performance year 2018, the number of shares has been determined by dividing the amount by CHF 12.622 or USD 12.610, the average closing price of UBS shares over the last ten trading days leading up to and including the grant date. For EOP awards for the performance year 2017, the number of shares was determined by dividing the amount by CHF 17.999 or USD 19.234, the average closing price of UBS shares over the last ten trading days in February 2018. Starting with performance year 2017, GEB members who are also MRTs are no longer permitted to receive dividend payments on EOP awards. Accordingly, the number of shares for these GEB members was determined by dividing the amount by the share price used for other EOP awards, adjusted for the expected dividend yield over the vesting period, which represents the fair value of the non-dividend bearing awards. 7 The amounts reflect the amount of the notional additional tier 1 (AT1) capital instrument excluding future notional interest. For DCCP awards for the performance year 2018, the notional interest rate is set at 6.85% for awards denominated in US dollars and 3.40% for awards denominated in Swiss francs. For DCCP awards for the performance year 2017, the notional interest rate is set at 5.85% for awards denominated in US dollars and 2.30% for awards denominated in Swiss francs. Starting with performance year 2017, GEB members who are also MRTs are no longer permitted to receive interest payments on DCCP awards. Accordingly, the amounts reflect the fair value of the granted non-interest bearing awards. 8 Excludes the portion related to the legally required employer's social security contributions for 2018 and 2017, which are estimated at grant at CHF 5,175,418 and CHF 5,181,559, respectively, of which CHF 886,455 and CHF 893,257, respectively, for the highest-paid GEB member. The legally required employees' social security contributions are included in the amounts shown in the table above, as appropriate. 9 Thirteen GEB members were in office on 31 December 2018 including two new GEB members appointed on 1 October 2018 and one on 1 November 2018; two GEB members stepped down on 31 December 2017 and 30 September 2018 respectively; and 12 GEB members were in office on 31 December 2017. 10 2018 includes compensation for six months paid under the employment contract during the notice period to one GEB member who stepped down on 31 December 2017, as well as compensation for one GEB member who stepped down on 30 September 2018 for nine months in office as a GEB member plus for three months paid under the employment contract during the notice period. No payments during notice period were made in 2017. 11 2018 includes compensation for two newly appointed GEB members for three months in office as GEB members, and for one newly appointed GEB member for two months in office as a GEB member. 12 Includes role-based allowances in line with market practice in response to regulatory requirements.

Total realized compensation for Sergio P. Ermotti

To further illustrate the effect of our lengthy deferral approach in place since 2012, we disclose the annual realized compensation of Sergio P. Ermotti, including a multi-year comparison with his total awarded compensation.

The realized compensation reflects the total amount paid out in the year. It includes the base salary, cash performance award payments, and all deferred performance awards vested in the year. As such, realized pay is the natural culmination of awards granted and approved by shareholders in previous years. Since our compensation plans have no upward leverage, such as multiplier factors, the potential realized pay cannot exceed the award granted (other than for market movements and returns).

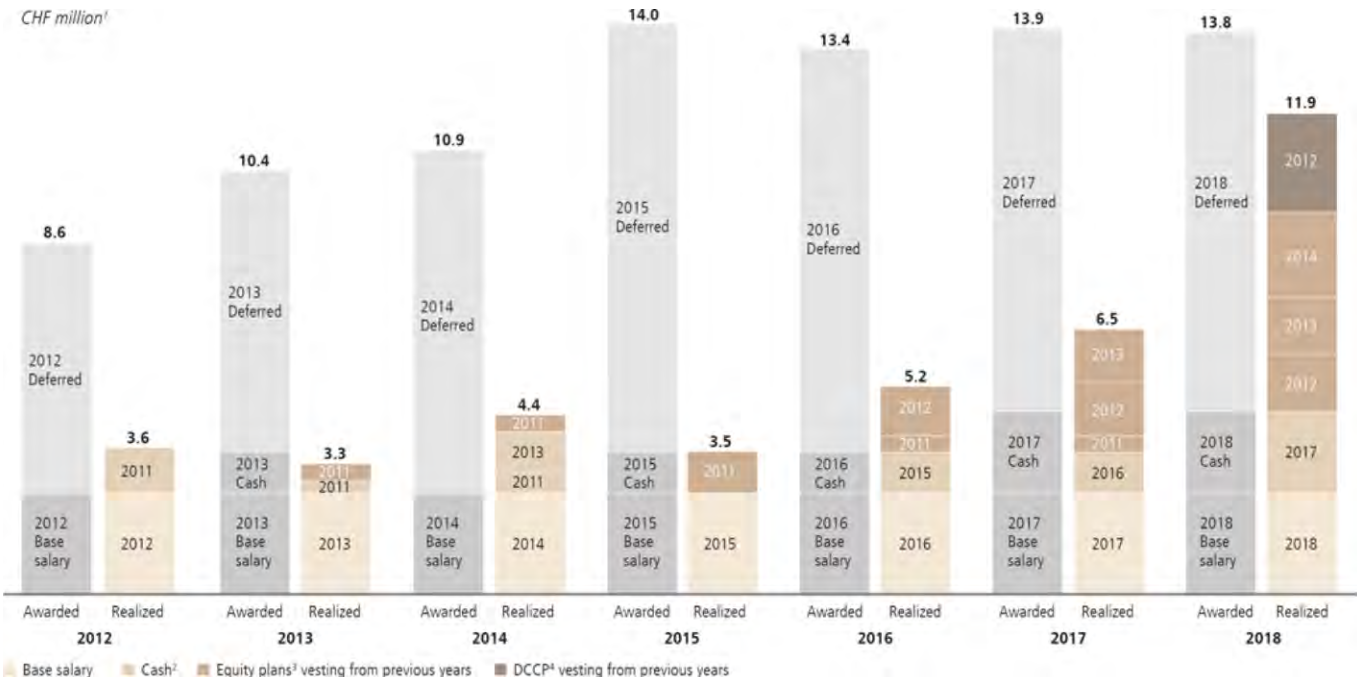
The table below provides information on the total awarded and realized compensation paid out to Sergio P. Ermotti since his appointment (excluding 2011 salary earned).

Total realized compensation vs awarded compensation for Sergio P. Ermotti[1]

CHF						Realized	Awarded
For the year	Base salary	Cash award[2]	Deferred cash award[3,4]	Performance award under equity plans[4,5]	Performance award under DCCP[4]	Total realized fixed and variable compensation[6]	Total awarded fixed and variable compensation[6]
2018	2,500,000	2,000,000	0	4,986,563	2,440,000	11,926,563	13,800,000
2017	2,500,000	1,000,000	0	2,951,043	0	6,451,043	13,900,000
2016	2,500,000	1,000,000	0	1,667,128	0	5,167,128	13,400,000
2015	2,500,000	0	0	1,018,440	0	3,518,440	14,000,000
2014	2,500,000	1,000,000	373,441	537,217	0	4,410,658	10,900,000
2013	2,500,000	0	349,622	423,623	0	3,273,245	10,400,000
2012	2,500,000	553,200[3]	553,200	0	0	3,606,400	8,600,000

1 Appointed on 24 September 2011 as Group CEO ad interim and confirmed on 15 November 2011. 2 Paid out based on previous performance year. For 2012 this includes Cash Balance Plan installments (discontinued in 2012). 3 Cash Balance Plan installments. For 2012, due to applicable UK FSA regulations, deferred cash includes blocked shares. 4 Excludes dividend / interest payments. 5 Includes all installments paid out under the EOP, Senior Executive Equity Ownership Plan (SEEOP, discontinued in 2012) and Performance Equity Plan (PEP, discontinued in 2012). 6 Excludes contributions to retirement benefit plans and benefits. Includes social security contributions paid by Sergio P. Ermotti but excludes the portion related to the legally required social security contributions paid by UBS.

The chart below further illustrates the effect of our deferral approach over time. The bars for realized pay show which components (base salary, cash, equity plans, DCCP) deliver the realized compensation and in which year the respective component had been awarded. The bars for awarded compensation show the split between fixed compensation (base salary) and variable compensation (cash component and deferred awards) and highlight that a significant portion of the variable compensation is deferred.



1 Excludes contributions to retirement benefit plans and benefits. Includes social security contributions paid by Sergio P. Ermotti but excludes the portion related to the legally required social security contributions paid by UBS. 2 Paid out based on previous performance year. 2012, 2013 and 2014 include Cash Balance Plan installments. 3 Includes all installments paid out under respective EOP, SEEOP and PEP plans, excludes dividend payments. 4 The first DCCP installment was paid out in March 2018 (awarded in March 2012), excludes interest payments.

Board of Directors governance and compensation

Our compensation governance

Board of Directors and Compensation Committee

The Board of Directors (BoD) is ultimately responsible for approving the compensation strategy proposed by the Compensation Committee, which determines compensation-related matters in line with the principles set forth in the Articles of Association.

As determined in the Articles of Association and the firm's Organization Regulations, the Compensation Committee supports the BoD in its duties to set guidelines on compensation and benefits, to approve certain compensation and to scrutinize executive compensation. It is responsible for the governance and oversight of our compensation process and practices, including considering the alignment between pay and performance and that our compensation system does not encourage inappropriate risk-taking. Our Compensation Committee consists of four independent BoD members, who are elected annually by shareholders at the Annual General Meeting (AGM).

Among other responsibilities, the Compensation Committee, on behalf of the BoD:
- reviews our Total Reward Principles;
- reviews and approves the design of the compensation framework;
- reviews performance award funding throughout the year and proposes the final performance award pool to the BoD for approval;
- together with the Group CEO, reviews performance targets and performance assessments and proposes base salaries and annual performance awards for the other Group Executive Board (GEB) members to the BoD, which approves the total compensation of each GEB member;
- together with the Chairman of the BoD, establishes performance targets, evaluates performance and proposes the compensation for the Group CEO to the BoD;
- approves the total compensation for the Chairman of the BoD;
- together with the Chairman, proposes the total individual compensation for independent BoD members for approval by the BoD;
- together with the BoD, proposes the maximum aggregate amounts of compensation for the BoD and for the GEB, to be submitted for approval by shareholders at the AGM;
- approves remuneration / fee frameworks for external supervisory board members of Significant Group Entities and periodically reviews remuneration / fee frameworks for external supervisory board members of Significant Regional Entities; and
- reviews the compensation report and approves any material public disclosures on compensation matters.

The Compensation Committee meets at least four times a year. In 2018, the Compensation Committee held seven meetings and two conference calls. All meetings were fully attended. The Chairman of the BoD and the Group CEO attended all meetings and calls. The Chairman of the BoD and the Group CEO were not present during discussions related to their own compensation or performance evaluations. The Chair of the Compensation Committee may also invite other executives to join the meeting in an advisory capacity. No individual whose compensation is reviewed is allowed to attend meetings during which specific decisions are made about that same individual's compensation. Such decisions are subject to approval of the Compensation Committee and the BoD.

After the meetings, the Chair of the Compensation Committee reports to the BoD on the activities of the Compensation Committee and the matters discussed. In addition, where necessary, the Chairperson submits proposals for approval by the full BoD. The minutes of Compensation Committee meetings are sent to all members of the BoD.

On 31 December 2018, the Compensation Committee members were Ann F. Godbehere, who chairs the committee, Michel Demaré, Julie G. Richardson and Dieter Wemmer.

External advisors

The Compensation Committee may retain external advisors to support it in fulfilling its duties. In 2018, HCM International Ltd. provided independent advice on compensation matters. HCM International Ltd. holds no other mandates with UBS. The compensation consulting firm Willis Towers Watson provided the Compensation Committee with data on market trends and pay levels, including in relation to GEB and BoD compensation. Various subsidiaries of Willis Towers Watson provide similar data to Human Resources in relation to compensation for employees below the BoD and GEB level. Willis Towers Watson holds no other compensation-related mandates with UBS.

The Risk Committee's role in compensation

The Risk Committee, a committee of the BoD, works closely with the Compensation Committee to reinforce that our approach to compensation reflects proper risk management and control. The Risk Committee supervises and sets appropriate risk management and risk control principles and receives regular briefings on how risk is factored into the compensation process. It also monitors Group Risk Control's involvement in compensation and reviews risk-related aspects of the compensation process.

→ **Refer to *www.ubs.com/governance* for more information**

Compensation Committee 2018 / 2019 key activities and timeline

This table provides an overview of the Compensation Committee's key activities from the 2018 AGM to the 2019 AGM.

	June	July	Sept	Oct	Nov	Dec[1]	Jan	Feb
Strategy, policy and governance								
Total Reward Principles			●					
Three-year strategic plan on variable compensation						●	●	
Compensation disclosure and stakeholder communication matters	●	●	●	●		●	●	●
AGM reward-related items	●							●
Compensation Committee governance						●		●
Annual compensation review								
Accruals and full-year forecast of the performance award pool funding		●		●	●	●	●	
Performance targets and performance assessment of the Group CEO and GEB members						●	●	●
Group CEO and GEB members' salaries and individual performance awards				●		●	●	
Update on market practice, trends and peer group matters	●				●			
Pay for performance, including governance on certain higher-paid employees, and non-standard compensation arrangements	●	●	●			●	●	●
Board of Directors remuneration						●	●	●
Compensation framework								
Compensation framework and deferred compensation matters	●	●	●	●		●	●	●
Risk and regulatory								
Risk management in the compensation approach and joint meeting with BoD Risk Committee				●		●		
Regulatory activities impacting employees and engagement with regulators	●	●		●		●		●

1 The Compensation Committee held two meetings in December 2018.

Compensation governance

The table below provides an overview of compensation governance by specific role.

Recipients	Compensation recommendations proposed by	Approved by
Chairman of the BoD	Chairperson of the Compensation Committee	Compensation Committee[1]
Independent BoD members (remuneration system and fees)	Compensation Committee and Chairman of the BoD	BoD[1]
Group CEO	Compensation Committee and Chairman of the BoD	BoD[1]
Other GEB members	Compensation Committee and Group CEO	BoD[1]
Key Risk Takers (KRTs) / (senior) employees	Respective GEB member together with functional management team	Individual compensation for KRTs and senior employees: Group CEO Performance award pool for all employees: BoD

1 Aggregate compensation for the GEB and aggregate remuneration for the BoD are subject to shareholder approval.

2018 compensation for the Board of Directors

Chairman of the BoD

Under the leadership of the Chairman, Axel A. Weber, the BoD determines, among other things, the strategy for the Group based on recommendations by the Group CEO, exercises ultimate supervision over management and appoints all GEB members.

The Chairman presides over all general meetings of shareholders and the BoD, and works with the committee chairpersons to coordinate the work of all BoD committees. Together with the Group CEO, the Chairman is responsible for effective communication with shareholders and other stakeholders, including government officials, regulators and public organizations. This is in addition to establishing and maintaining a close working relationship with the Group CEO and other GEB members, and providing advice and support when appropriate, as well as continuing to strengthen and promote our culture through the three keys to success – our Pillars, Principles and Behaviors.

The Chairman's total compensation is contractually fixed at CHF 5.7 million, excluding benefits and pension fund contributions. His total compensation for 2018, which has remained unchanged since 2015, consisted of a cash payment of CHF 3.5 million and a share component of CHF 2.2 million delivered in 174,298 UBS shares at CHF 12.622 per share. The shares are blocked from distribution for four years. Accordingly, his total reward, including benefits and pension fund contributions for his service as Chairman for the full year 2018, was CHF 6,033,422.

→ **Refer to "Board of Directors" in the "Corporate governance" section of this report for more information on the responsibilities of the Chairman**

The share component aligns the Chairman's pay with the Group's long-term performance. The Chairman's employment agreement does not provide for severance terms or supplementary contributions to pension plans. Benefits for the Chairman are in line with local practices for UBS employees. The Compensation Committee approves the Chairman's compensation annually, taking into consideration fee or compensation levels for comparable roles outside the firm.

Independent BoD members

All BoD members except the Chairman are deemed independent directors and receive a fixed base fee of CHF 325,000 per annum. In addition to the base fee, independent BoD members receive committee fees for their services on the firm's various board committees. The Senior Independent Director and the Vice Chairman of the BoD each receive an additional fee of CHF 250,000. Independent BoD members must use a minimum of 50% of their fees to purchase UBS shares, which are blocked for four years. They may elect to use up to 100% of their fees to purchase blocked UBS shares. In all cases, the number of shares that independent BoD members are entitled to purchase is calculated at a discount of 15% below the average closing price of the 10 trading days leading up to and including the grant date. Independent BoD members do not receive performance awards, severance payments or benefits. The chart on the following page provides details and additional information on the remuneration framework for independent BoD members.

Base fees, committee fees and any other payments to be received by independent BoD members are subject to an annual review based on a proposal submitted by the Chairman of the BoD to the Compensation Committee, which in turn submits a recommendation to the BoD for approval. The BoD proposes at each AGM for shareholder approval the aggregate amount of BoD remuneration in Swiss francs, including compensation of the Chairman, which applies until the subsequent AGM. Therefore, the tables on the next page provide the compensation for the Chairman and the independent BoD members in Swiss francs, and for reference the total amounts in US dollars.

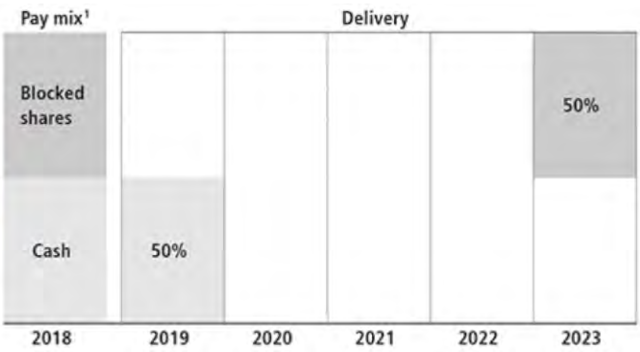
The "Remuneration details and additional information for independent BoD members" table shows the remuneration for each independent BoD member for the period from the 2018 AGM to the 2019 AGM. The fixed base fees are unchanged from the 2017 / 2018 period and have been broadly flat since 1998.

2018 / 2019 remuneration framework for independent BoD members

CHF, except where indicated

Base fees as well as fees for committee chair or membership and / or specific roles are paid per annum. At least 50% of the total amounts must be used to purchase UBS shares, which are blocked for four years.

Fixed base fee		325,000
Senior Independent Director		250,000
Vice Chairman		250,000
	Chair	Member
Audit Committee	300,000	200,000
Compensation Committee	300,000	100,000
Governance and Nominating Committee		100,000
Corporate Culture and Responsibility Committee		50,000
Risk Committee	400,000	200,000



1 Independent BoD members can elect to use 100% of their remuneration to purchase blocked UBS shares. UBS blocked shares are granted with a price discount of 15% and are blocked for four years.

Audited |

Total payments to BoD members

CHF, except where indicated	For the year	Total[1]	USD (for reference) Total[1,2]
Aggregate of all BoD members	2018	13,458,422	13,739,490
	2017	13,133,565	

1 Includes social security contributions paid by the BoD members but excludes the portion related to the legally required social security contributions paid by UBS, which for 2018 is estimated at grant at CHF 831,746 and for 2017 at CHF 664,074. 2 Swiss franc amounts have been translated into US dollars for reference at the 2018 performance award currency exchange rate of CHF / USD 1.02.

Audited |

Compensation details and additional information for non-independent BoD members

CHF, except where indicated

Name, function[1]	For the year	Base salary	Annual share award[2]	Benefits[3]	Contributions to retirement benefit plans[4]	Total[5]	USD (for reference) Total[5,6]
Axel A. Weber, Chairman	2018	3,500,000	2,200,000	72,241	261,181	6,033,422	6,159,425
	2017	3,500,000	2,200,000	72,384	261,181	6,033,565	

1 Axel A. Weber was the only non-independent member in office on 31 December 2018 and on 31 December 2017, respectively. 2 These shares are blocked for four years. 3 Benefits are all valued at market price. 4 Includes the portion related to UBS's contribution to the statutory pension scheme. 5 Excludes the portion related to the legally required social security contributions paid by UBS, which for 2018 is estimated at grant at CHF 369,966 and for 2017 at CHF 367,999. The legally required social security contributions paid by the non-independent BoD members are included in the amounts shown in this table, as appropriate. 6 Swiss franc amounts have been translated into US dollars for reference at the 2018 performance award currency exchange rate of CHF / USD 1.02.

Audited |

Remuneration details and additional information for independent BoD members

CHF, except where indicated

Name, function[1]	Audit Committee	Compensation Committee	Corporate Culture and Responsibility Committee	Governance and Nominating Committee	Risk Committee	For the period AGM to AGM	Base fee	Committee fee(s)	Additional payments[2]	Total[3]	Share percentage[4]	Number of shares[5,6]
Michel Demaré, Vice Chairman	M	M		M		2018/2019	325,000	400,000	250,000	975,000	100	86,010
	M	M		M		**2017/2018**	325,000	400,000	250,000	**975,000**	50	31,864
David Sidwell, Senior Independent Director				M	C	2018/2019	325,000	500,000	250,000	1,075,000	50	50,097
				M	C	**2017/2018**	325,000	500,000	250,000	**1,075,000**	50	35,133
Jeremy Anderson, member	C		M			2018/2019	325,000	350,000		675,000	50	31,456
						2017/2018	–	–		**–**	–	–
Reto Francioni, member			M		M	2018/2019	325,000	250,000		575,000	50	26,796
		M	M		M	**2017/2018**	325,000	350,000		**675,000**	50	22,060
Ann F. Godbehere, member	M	C				2018/2019	325,000	500,000		825,000	50	38,447
	M	C				**2017/2018**	325,000	500,000		**825,000**	50	26,962
Fred Hu, member						2018/2019	325,000	–		325,000	50	15,145
						2017/2018	–	–		**–**	–	–
William G. Parrett, former member						2018/2019	–	–		–	–	–
	C	M	M			**2017/2018**	325,000	450,000		**775,000**	50	25,328
Julie G. Richardson, member		M			M	2018/2019	325,000	300,000		625,000	50	29,126
					M	**2017/2018**	325,000	200,000		**525,000**	50	17,157
Isabelle Romy, member	M			M		2018/2019	325,000	300,000		625,000	50	29,126
	M			M		**2017/2018**	325,000	300,000		**625,000**	50	20,426
Robert W. Scully, member					M	2018/2019	325,000	200,000		525,000	50	24,466
					M	**2017/2018**	325,000	200,000		**525,000**	50	17,157
Beatrice Weder di Mauro, member	M		M			2018/2019	325,000	250,000		575,000	50	26,796
	M		M			**2017/2018**	325,000	250,000		**575,000**	50	18,792
Dieter Wemmer, member		M			M	2018/2019	325,000	300,000		625,000	50	29,126
					M	**2017/2018**	325,000	200,000		**525,000**	50	17,157
Total 2018/2019										7,425,000		
Total 2018/2019 in USD (for reference)[7]										7,580,065		
Total 2017/2018										**7,100,000**		

Legend: C = Chairperson of the respective Committee, M = Member of the respective Committee

1 Eleven independent BoD members were in office on 31 December 2018. At the 2018 AGM, Jeremy Anderson and Fred Hu were newly elected and William G. Parrett did not stand for re-election. Ten independent BoD members were in office on 31 December 2017. 2 These payments are associated with the Vice Chairman or the Senior Independent Director function. 3 Excludes UBS's portion related to the legally required social security contributions, which for the period from the 2018 AGM to the 2019 AGM is estimated at grant at CHF 461,780 and which for the period from the 2017 AGM to the 2018 AGM was estimated at grant at CHF 296,075. The legally required social security contributions paid by the independent BoD members are included in the amounts shown in this table, as appropriate. 4 Fees are paid 50% in cash and 50% in blocked UBS shares. However, independent BoD members may elect to have 100% of their remuneration paid in blocked UBS shares. 5 For 2018, UBS shares, valued at CHF 12.622 (average closing price of UBS shares over the last 10 trading days leading up to and including the grant date), were granted with a price discount of 15%. These shares are blocked for four years. For 2017, UBS shares, valued at CHF 17.999 (average closing price of UBS shares at the SIX Swiss Exchange over the last 10 trading days of February 2018), were granted with a price discount of 15%. These shares are blocked for four years. 6 Number of shares is reduced in case of the 100% election to deduct legally required contributions. All remuneration payments are, where applicable, subject to social security contributions and / or withholding tax. 7 Swiss franc amounts have been translated into US dollars for reference at the 2018 performance award currency exchange rate of CHF / USD 1.02.

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Supplemental information

Fixed and variable compensation for GEB members

Fixed and variable compensation for GEB members[1, 2, 3]

	Total for 2018		Not deferred		Deferred[4]		Total for 2017
CHF million, except where indicated	Amount	%	Amount	%	Amount	%	Amount
Total compensation							
Amount[5]	96	100	37	39	59	61	96
Number of beneficiaries	15						12
Fixed compensation[5, 6]	23	24	23	100	0	0	21
Cash-based	21	22	21		0		20
Equity-based	2	2	2		0		2
Variable compensation	73	76	14	19	59	81	74
Cash[7]	14	15	14		0		15
Equity Ownership Plan (EOP)[8]	37	39	0		37		37
Deferred Contingent Capital Plan (DCCP)[8]	22	23	0		22		22

1 The figures relate to all GEB members in office during 2018. Thirteen GEB members were in office on 31 December 2018 including two new GEB members appointed on 1 October 2018 and one on 1 November 2018; two GEB members stepped down on 31 December 2017 and 30 September 2018 respectively; and twelve GEB members were in office on 31 December 2017. 2 2018 includes compensation for six months paid under the employment contract during the notice period to one GEB member who stepped down on 31 December 2017, as well as compensation for one GEB member who stepped down on 30 September 2018 for nine months in office as a GEB member plus for three months paid under the employment contract during the notice period. No payments during notice period were made in 2017. 3 2018 includes compensation for two newly appointed GEB members for three months in office as GEB members, and for one newly appointed GEB member for two months in office as a GEB member. 4 Based on the specific plan vesting and reflecting the total award value at grant, which may differ from the accounting expenses. 5 Excludes benefits and employer's contribution to retirement benefit plans. Includes social security contributions paid by GEB members but excludes the portion related to the legally required social security contributions paid by UBS. 6 Includes base salary and role-based allowances, rounded to the nearest million. 7 Includes allocation of vested but blocked shares, in line with the remuneration section of the UK Prudential Regulation Authority Rulebook. 8 For the GEB members who are also MRTs, the awards starting with performance year 2017 are no longer permitted to include dividend and interest payments. Accordingly, the amounts reflect for the EOP the fair value of the non-dividend-bearing awards and for the DCCP the fair value of the granted non-interest-bearing awards.

Regulated staff

Key Risk Takers

Key Risk Takers (KRTs) are defined as those employees who, by the nature of their roles, have been determined to materially set, commit or control significant amounts of the firm's resources and / or exert significant influence over its risk profile. This includes employees who work in front-office roles, logistics and control functions. Identifying KRTs globally is part of our risk control framework and an important element in ensuring we incentivize only appropriate risk-taking. For 2018, in addition to all GEB members, 675 employees were classified as KRTs throughout the UBS Group globally, including all GMDs and all employees with a total compensation exceeding USD / CHF 2.5 million (Highly Paid Employees) who may not have been identified as KRTs during the performance year.

In line with regulatory requirements, the performance of employees identified as KRTs during the performance year is evaluated by the control functions. In addition, KRTs' performance awards are subject to a mandatory deferral rate of at least 50%, regardless of whether the deferral threshold has been met. A KRT's deferred compensation award will only vest if the relevant Group and / or business division performance conditions are met. Consistent with all other employees, the deferred portion of KRTs' compensation is also subject to forfeiture or reduction if the KRT commits harmful acts.

Fixed and variable compensation for Key Risk Takers[1]

	Total for 2018		Not deferred		Deferred[2]		Total for 2017
USD million, except where indicated	Amount	%	Amount	%	Amount	%	Amount
Total compensation							
Amount[3]	1,250	100	758	61	492	39	1,327
Number of beneficiaries	675						707
Fixed compensation[3,4]	417	33	417	100	0	0	435
Cash-based	395	32	395		0		408
Equity-based	22	2	22		0		28
Variable compensation	833	67	341	41	492	59	891
Cash[5]	341	27	341		0		372
Equity Ownership Plan (EOP)[6]	305	24	0		305		320
Deferred Contingent Capital Plan (DCCP)[6]	186	15	0		186		200

1 Includes employees with a total compensation exceeding USD / CHF 2.5 million (Highly Paid Employees), excluding GEB members who were in office during the performance year 2018, except the three new GEB members appointed during 2018, who are included for their compensation received for their roles as KRTs prior to their GEB member appointments. 2 Based on the specific plan vesting and reflecting the total value at grant, which may differ from the accounting expenses. 3 Excludes benefits and employer's contribution to retirement benefits plan. Includes social security contributions paid by KRTs but excludes the portion related to the legally required social security contributions paid by UBS. 4 Includes base salary and role-based allowances. 5 Includes allocation of vested but blocked shares, in line with the remuneration section of the UK Prudential Regulation Authority Rulebook. 6 Starting with performance year 2017, KRTs who are also MRTs are no longer permitted to receive dividend and interest payments. Accordingly, the amounts reflect for the EOP the fair value of the non-dividend-bearing awards and for the DCCP the fair value of the granted non-interest-bearing awards.

Material Risk Takers

For relevant EU-regulated entities we identify individuals who are deemed to be Material Risk Takers (MRTs) based on local regulatory requirements, the respective EU Commission Delegated Regulation and the EU Capital Requirements Directive of 2013 (CRD IV). This group consists of senior management, risk takers, selected staff in control or support functions and certain employees whose total compensation is above a specified threshold. For 2018, UBS identified 754 MRTs across its EU entities.

Variable compensation awarded to MRTs is subject to specific requirements from local regulators such as a maximum variable to fixed compensation ratio which is set at 100% unless approved to be increased to 200% by the shareholders of the respective legal entity. UBS has obtained approval as appropriate through relevant shareholders' votes to increase the variable to fixed pay ratio to 200%. Other applicable regulatory requirements for this population include a minimum deferral rate of 40% to 60% on performance awards and the delivery of at least 50% of any upfront performance award in UBS shares that vest immediately but are blocked for 12 months.

Any notional shares granted to MRTs under the EOP and notional DCCP awards for their performance in 2018 are subject to a six- or 12-month blocking period post vesting and do not pay out dividends or interest during the deferral period.

Since 2015, performance awards granted to UK MRTs have been subject to clawback provisions for a period of up to seven years from the date of grant. In line with the EBA guidelines, clawback has also been introduced in other EU jurisdictions as applicable. Under these provisions, the firm may claim repayment of both the immediate and the vested deferred element of any performance award if an individual is found to have contributed substantially to significant financial losses for the Group or corporate structure in scope, a material downward restatement of disclosed results, or engaged in misconduct and / or failed to take expected actions that contributed to significant reputational harm.

UK Senior Managers and Certification Regime

The Senior Managers and Certification Regime (SMCR) of the UK Prudential Regulation Authority and Financial Conduct Authority requires that individuals with specified responsibilities, performing certain significant functions and / or those in certain other identified categories be designated as Senior Management Functions (SMFs).

SMFs are subject to specific compensation requirements, including longer deferral as well as longer blocking and clawback periods. The deferral period for SMFs is seven years, with the deferred performance awards vesting in equal annual installments between years three and seven. Additionally, these awards are subject to a 12-month blocking period post vesting. The clawback policy for SMFs permits clawback for up to 10 years from the date of performance award grants (applicable if an individual is subject to an investigation at the end of the initial seven-year clawback period). All SMFs are also identified as MRTs and as such subject to the same prohibitions on dividend and interest payments.

Control functions and Group Internal Audit

Our control functions must be independent in order to monitor risk effectively. Therefore, their compensation is determined separately from the revenue producers that they oversee, supervise or monitor. Their performance award pool is based not on the performance of these businesses, but on the performance of the Group as a whole. In addition, we consider other factors, such as how effectively the function has performed, and our market position. Decisions on individual compensation for the senior managers of the control functions are made by the function heads and approved by the Group CEO. Decisions on individual compensation for the members of Group Internal Audit (GIA) are made by the Head GIA and approved by the Chairman of the BoD. Upon proposal by the Chairman, total compensation for the Head GIA is approved by the Compensation Committee in consultation with the Audit Committee.

2018 performance award pool and expenses

Performance awards granted for the 2018 performance year

The "Variable compensation" table below shows the amount of variable compensation awarded to employees for the performance year 2018, together with the number of beneficiaries for each type of award granted.

In the case of deferred awards, the final amount paid to an employee depends on performance conditions and consideration of relevant forfeiture provisions. The deferred share award amount is based on the market value of these awards on the date of grant.

Variable compensation[1]

	Expenses recognized in the IFRS income statement		Expenses deferred to future periods[4]		Adjustments[4]		Total		Number of beneficiaries	
USD million, except where indicated	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Non-deferred cash	2,089	2,088	0	0	0	0	2,089	2,088	51,809	45,664
Deferred compensation awards	373	399	585	594	71	73	1,029	1,067	3,967	4,922
of which: Equity Ownership Plan	*217*	*239*	*325*	*329*	*71[5]*	*73[5]*	*613*	*642*	*3,768*	*4,483*
of which: Deferred Contingent Capital Plan	*131*	*135*	*238*	*238*	*0*	*0*	*369*	*373*	*3,934*	*4,891*
of which: Asset Management EOP	*25*	*25*	*22*	*27*	*0*	*0*	*47*	*52*	*284*	*439*
Total variable compensation – performance award pool	2,461	2,487	585	594	71	73	3,118	3,154	51,819	45,671
Variable compensation – other[2]	162	151	180	196	(96)[6]	(80)[6]	246	268		
Financial advisor (FA) variable compensation[3]	3,266	3,080	484	525	0	0	3,750	3,605	6,850	6,822
Total variable compensation including FA variable compensation	5,889	5,718	1,250	1,316	(25)	(6)	7,114	7,027		

1 Expenses under "Variable compensation – other" and "Financial advisor variable compensation" are not part of UBS's performance award pool. 2 Comprised of replacement payments, forfeiture credits, severance payments, retention plan payments and interest expense and remeasurements related to the Deferred Contingent Capital Plan. 3 Financial advisor compensation consists of formulaic compensation based directly on compensable revenues generated by financial advisors and supplemental compensation calculated based on financial advisor productivity, firm tenure, new assets and other variables. It also includes expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. 4 Estimate. The actual amount to be expensed in future periods may vary, e.g., due to forfeitures. 5 Represents estimated post-vesting transfer restriction and forfeiture discounts. 6 Included in expenses deferred to future periods is an amount of USD 96 million (2017: USD 80 million) in interest expense and remeasurements related to the Deferred Contingent Capital Plan. As the amount recognized as performance award represents the present value of the award at the date it is granted to the employee, this amount is adjusted out in the analysis.

2018 performance award pool and expenses

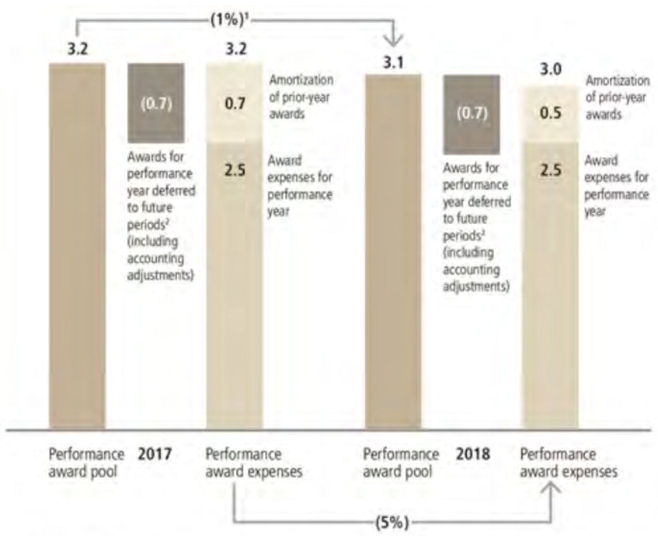
The performance award pool, which includes performance-based variable awards for 2018, was USD 3.1 billion, reflecting a decrease of 1% compared with 2017. Consistent with prior years, the movements in deferred tax assets (DTA), whether positive or negative, do not affect the funding of the performance award pool as DTAs do not reflect the underlying business performance and are not within management's control.

Performance award expenses for 2018 decreased by 5% to USD 3.0 billion. This decrease reflects the change in the performance award pool for 2018 as well as lower expenses related to the amortization of awards from prior years. The "Performance award pool and expenses" chart on this page compares the performance award pool with performance award expenses.

→ **Refer to the "2018 performance and compensation funding" section of this report for more information**

Performance award pool and expenses

USD billion



1 Excluding employer-paid taxes and social security. 2 Estimate. The actual amount to be expensed in future periods may vary, e.g., due to forfeitures.

Amortization of deferred compensation

Performance award expenses include all immediate expenses related to 2018 compensation awards as well as expenses deferred to 2018 related to awards made in prior years. The chart "Amortization of deferred compensation" shows the amount at the end of 2018 of awards to be amortized in subsequent years. This was USD 1.2 billion as of 31 December 2018 and USD 1.3 billion as of 31 December 2017.

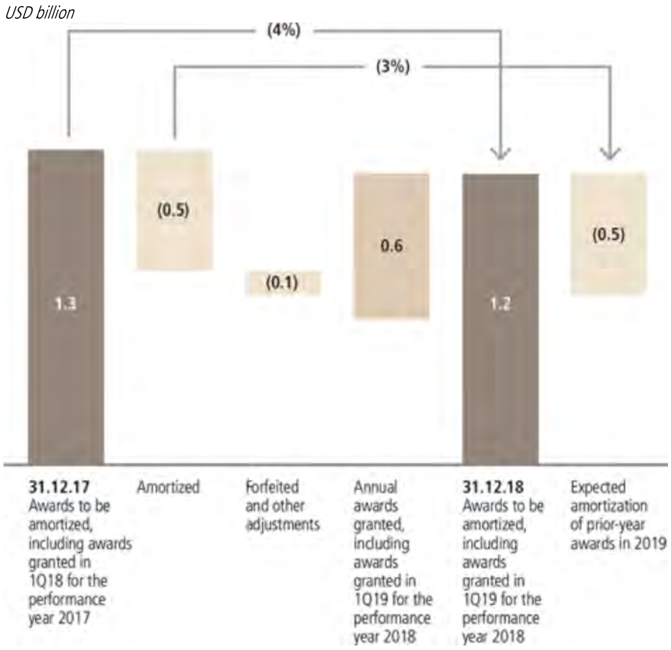
→ **Refer to "Note 30 Employee benefits: variable compensation" in the "Consolidated financial statements" section of this report for more information**

GEB and KRTs deferred compensation

The "GEB and KRTs deferred compensation" table on the next page shows the current economic value of unvested outstanding deferred variable compensation awards subject to ex-post adjustments. For share-based plans, the economic value is determined based on the closing share price on 28 December 2018. For notional funds, it is determined using the latest available market price for the underlying funds at year-end 2018, and for deferred cash plans, it is determined based on the outstanding amount of cash owed to award recipients.

The "GEB and KRTs ex-post explicit and implicit adjustments to deferred compensation in 2018" table on the next page shows the value of actual ex-post explicit and implicit adjustments to outstanding deferred compensation in the financial year 2018. Ex-post adjustments occur after an award has been granted. Ex-post explicit adjustments occur when we adjust compensation by forfeiting deferred awards. Ex-post implicit adjustments are unrelated to any action taken by the firm and occur as a result of share price movements that affect the value of an award. The total value of ex-post explicit adjustments made to UBS shares in 2018, based on the approximately 6.2 million shares forfeited during 2018, is a reduction of USD 76.8 million. The size of implicit adjustments is mainly due to a decrease in the share price. The share price as of year-end means that many of the options previously granted remain out of the money. Hence, the majority of outstanding option awards had no intrinsic value at the end of 2018.

Amortization of deferred compensation



GEB and KRTs deferred compensation[1,2]

USD million, except where indicated	Relating to awards for 2018[3]	Relating to awards for prior years[4]	Total	*of which: exposed to ex-post explicit and / or implicit adjustments*	Total deferred compensation year-end 2017[5]	Total amount of deferred compensation paid out in 2018[6]
GEB						
Deferred Contingent Capital Plan[7]	22	96	119	*100%*	104	13
Equity Ownership Plan (including notional funds, if applicable)[7]	38	107	145	*100%*	181	29
Discontinued deferred compensation plans[8]	0	0	0	*100%*	0	0
KRTs						
Deferred Contingent Capital Plan	186	865	1,051	*100%*	1,148	113
Equity Ownership Plan (including notional funds) [7]	305	674	979	*100%*	1,535	429
Discontinued deferred compensation plans[7]	0	0	0	*100%*	0	0
Total GEB and KRTs	551	1,742	2,294		2,967	584

1 Based on the specific plan vesting and reflecting the economic value of the outstanding awards, which may differ from the accounting expenses. Year-to-year reconciliations would also need to consider the impacts of additional items including off-cycle awards, FX movements, population changes, and dividend equivalent reinvestments. 2 Refer to "Note 30 Employee benefits: variable compensation" in the "Consolidated financial statements" section of this report for more information. 3 Where applicable, amounts are translated into USD at the performance award currency exchange rate. For GEB members who were appointed to the GEB during 2018, awards have been pro-rated between KRT and GEB entries accordingly. 4 Takes into account the ex-post implicit adjustments, given the share price movements since grant. For GEB members who were appointed to the GEB part way through 2018, awards have been fully reflected in the GEB entries. Where applicable, amounts are translated from award currency into USD using FX rates as at 31 December 2018. 5 Values from the 2017 Compensation Report in CHF have been translated to USD using the 31 December 2017 FX rate. 6 Valued at distribution price and FX rate for all awards distributed in 2018. For GEB members who were appointed to the GEB during 2018, value of the awards paid out according to their role at the time of distribution. 7 Starting with performance year 2017, GEB members and KRTs who are also MRTs are no longer permitted to receive dividend and interest payments. Accordingly, the amounts reflect for the EOP the fair value of the non-dividend-bearing awards and for the DCCP the fair value of the granted non-interest-bearing awards. 8 Senior Executive Equity Ownership Plan (SEEOP) and Incentive Performance Plan (IPP).

GEB and KRTs ex-post explicit and implicit adjustments to deferred compensation in 2018

	Ex-post explicit adjustments[1]		Ex-post implicit adjustments to unvested awards[2]	
USD million	31.12.18	31.12.17	31.12.18	31.12.17
GEB				
Deferred Contingent Capital Plan	0	0	0	0
Equity Ownership Plan (including notional funds, if applicable)	0	0	(28)	26
Discontinued deferred compensation plans	0	0	0	0
KRTs				
Deferred Contingent Capital Plan	(17)	(7)	0	0
Equity Ownership Plan (including notional funds)	(13)	(6)	(166)	214
Discontinued deferred compensation plans	0	0	0	0
Total GEB and KRTs	(30)	(13)	(194)	240

1 Ex-post explicit adjustments are calculated as units forfeited during the year, valued at the share price on 31 December 2018 (USD 12.38) for 2018. The 2017 data is valued using the share price on 31 December 2017 (CHF 17.94) and translated to USD using the 31 December 2017 FX rate. For the notional funds awarded to Asset Management employees under the EOP, this represents the forfeiture credits recognized in 2018 and 2017. For the DCCP, the fair value at grant of the forfeited awards during the year is reflected. For GEB members who were appointed to the GEB during 2018, awards have been fully reflected in the GEB entries. 2 Ex-post implicit adjustments for UBS shares are calculated based on the difference between the weighted average grant date fair value and the share price at year-end. The amount for notional funds is calculated using the mark-to-market change during 2018 and 2017. For GEB members who were appointed to the GEB during 2018, awards have been fully reflected in the GEB entries. Values from 2017 Compensation Report in CHF have been converted to USD using the 31 December 2017 FX rate.

Total personnel expenses for 2018

As of 31 December 2018, there were 66,888 employees (on a full-time equivalent basis), an increase of 9% compared with the prior year. This increase largely reflects our insourcing activities, which are part of our integrated workforce strategy, where roles previously performed by external staff have been brought back inside UBS in permanent employee positions. The "Personnel expenses" table below shows our total personnel expenses for 2018. It includes salaries, pension contributions and other personnel costs, social security contributions and variable compensation. Variable compensation includes cash performance awards paid in 2019 for the 2018 performance year, the amortization of unvested deferred awards granted in previous years and the cost of deferred awards granted to employees who are eligible for retirement in the context of the compensation framework at the date of grant.

The performance award pool reflects the value of performance awards granted relating to the 2018 performance year, including awards that are paid out immediately and those that are deferred. To determine our variable compensation expenses, the following adjustments are required in order to reconcile the performance award pool to the expenses recognized in the Group's financial statements prepared in accordance with International Financial Reporting Standards (IFRS):

- reduction for the future amortization (including accounting adjustments) of unvested deferred awards granted in 2019 for the performance year 2018
- addition for the 2018 amortization of unvested deferred awards granted in prior years

As a large part of compensation consists of deferred awards, the amortization of unvested deferred awards granted in prior years forms a significant part of the IFRS expenses in both 2017 and 2018.

→ **Refer to "Note 6 Personnel expenses" and "Note 30 Employee benefits: variable compensation" in the "Consolidated financial statements" section of this report for more information**

Personnel expenses

	Expenses recognized in the IFRS income statement				
USD million	Related to the performance year 2018	Related to prior performance years	Total expenses recognized in 2018	Total expenses recognized in 2017	Total expenses recognized in 2016
Salaries[1]	6,448	0	6,448	6,154	6,305
Non-deferred cash	2,089	(32)	2,057	2,062	1,799
Deferred compensation awards	373	565	938	1,088	1,215
of which: Equity Ownership Plan	*217*	*309*	*526*	*583*	*708*
of which: Deferred Contingent Capital Plan	*131*	*226*	*357*	*444*	*435*
of which: Asset Management EOP	*25*	*28*	*53*	*57*	*66*
of which: Other performance awards	*0*	*2*	*2*	*4*	*6*
Total variable compensation – performance awards[2]	2,461	534	2,995	3,151	3,013
of which: guarantees for new hires	*26*	*17*	*43*	*36*	*30*
Replacement payments[3]	7	64	72	72	87
Forfeiture credits	0	(136)	(136)	(107)	(74)
Severance payments[4]	123	0	123	113	220
Retention plan and other payments	33	33	66	63	76
Deferred Contingent Capital Plan: interest expense	0	119	119	111	115
Total variable compensation – other[2]	162	80	243	252	425
Contractors	489	0	489	460	426
Social security	788	3	791	814	755
Pension and other post-employment benefit plans[5]	457	0	457	723	678
Financial advisor variable compensation[2,6]	3,266	789	4,054	4,064	3,740
Other personnel expenses	628	26	654	581	570
Total personnel expenses[7]	14,700	1,432	16,132	16,199	15,913

1 Includes role-based allowances. 2 Refer to "Note 30 Employee benefits: variable compensation" in the "Consolidated financial statements" section of this report for more information. 3 Payments made to compensate employees for deferred awards forfeited as a result of joining UBS. Includes the expenses recognized in the financial year (mainly the amortization of the award). 4 Includes legally obligated and standard severance payments. 5 Refer to "Note 29 Pension and other post-employment benefit plans" in the "Consolidated financial statements" section of this report for more information. 6 Consists of formulaic compensation based directly on compensable revenues generated by financial advisors and supplemental compensation calculated based on financial advisor productivity, firm tenure, new assets and other variables. It also includes expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. 7 Includes net restructuring expenses of USD 286 million, USD 545 million and USD 763 million for the years ended 31 December 2018, 31 December 2017 and 31 December 2016, respectively. Refer to "Note 32 Changes in organization and acquisitions and disposals of subsidiaries and businesses" in the "Consolidated financial statements" section of this report for more information.

Vesting of outstanding awards granted in prior years subject to performance conditions

The tables below show the extent to which the performance conditions for awards granted in prior years have been met and the percentage of the awards that vest in 2019.

Equity Ownership Plan (EOP) 2013 / 2014, EOP 2014 / 2015, EOP 2015 / 2016 and EOP 2016 / 2017		
Performance conditions	Performance achieved	% of installment vesting
Adjusted return on tangible equity[1] and divisional return on attributed equity	The Group and divisional performance conditions have been satisfied. For the EOP 2013 / 2014, the third and final installment for the Group Executive Board (GEB) members vests in full. For the EOP 2014 / 2015, the second installment for the GEB members and the second installment for all other employees covered under the plan vest in full. For the EOP 2015 / 2016, the first installment for the GEB members and the second installment for all other employees covered under the plan vest in full. For the EOP 2016 / 2017, the first installment for all other employees covered under the plan vests in full	100%

1 The assessment for vesting purposes excludes the effect of deferred tax assets (DTAs). Furthermore, DTAs, when positive, have never had an impact on the performance award vesting.

Deferred Contingent Capital Plan (DCCP) 2013 / 2014		
Performance conditions	Performance achieved	% of installment vesting
Common equity tier 1 (CET1) capital ratio, viability event and additionally for GEB, Group adjusted profit before tax	The performance conditions have been satisfied. The DCCP 2013 / 2014 vests in full	100%

Discontinued deferred compensation plans

The table below lists discontinued compensation plans that had outstanding balances as of 31 December 2018. The firm has not granted any options and SARs since 2009. The strike price for stock options awarded under prior compensation plans has not been reset.

→ **Refer to “Note 30 Employee benefits: variable compensation” in the “Consolidated financial statements” section of the Annual Report 2018 for more information**

Plan	Years granted	Eligible employees	Instrument	Performance conditions	Vesting period and other conditions	Status as of March 2019
Key Employee Stock Appreciation Rights Plan (KESAP) and Key Employee Stock Option Plan (KESOP)	2002–2009	Selected employees (approximately 17,000 employees between 2002 and 2009)	Share-settled stock appreciation rights (SARs) or stock options	None	Vests in full three years after grant, subject to continued employment, non-solicitation of clients and employees and non-disclosure of proprietary information	Expired (some options / SARs remain exercisable)

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Share and option ownership / entitlements of GEB members[1]

Name, function	on 31 December	Number of unvested shares / at risk[2]	Number of vested shares	Total number of shares	Potentially conferred voting rights in %	Number of options[3]	Potentially conferred voting rights in %[4]
Sergio P. Ermotti, Group Chief Executive Officer	2018	1,715,430	1,757,766	3,473,196	0.191	0	0.000
	2017	1,632,464	460,377	2,092,841	0.121	0	0.000
Martin Blessing, Co-President Global Wealth Management	2018	256,356	0	256,356	0.014	0	0.000
	2017	65,761	0	65,761	0.004	0	0.000
Christian Bluhm, Group Chief Risk Officer	2018	259,745	0	259,745	0.014	0	0.000
	2017	131,520	0	131,520	0.008	0	0.000
Markus U. Diethelm, Group General Counsel	2018	614,222	317,516	931,738	0.051	0	0.000
	2017	589,659	194,000	783,659	0.045	0	0.000
Kirt Gardner, Group Chief Financial Officer	2018	343,120	107,472	450,592	0.025	0	0.000
	2017	264,718	61,652	326,370	0.019	0	0.000
Robert Karofsky, Co-President Investment Bank	2018	500,902	254,119	755,021	0.042	0	0.000
	2017	–	–	–	–	–	–
Sabine Keller-Busse, Group Chief Operating Officer	2018	259,762	263,362	523,124	0.029	0	0.000
	2017	244,676	176,602	421,278	0.024	0	0.000
Ulrich Körner, President Asset Management and President UBS EMEA	2018	910,951	95,597	1,006,548	0.055	0	0.000
	2017	881,979	95,597	977,576	0.057	0	0.000
Axel P. Lehmann, President Personal & Corporate Banking and President UBS Switzerland	2018	307,090	277,978	585,068	0.032	0	0.000
	2017	156,180	277,978	434,158	0.025	0	0.000
Tom Naratil, Co-President Global Wealth Management and President UBS Americas	2018	1,132,938	484,075	1,617,013	0.089	0	0.000
	2017	1,047,311	422,298	1,469,609	0.085	281,640	0.016
Piero Novelli, Co-President Investment Bank	2018	471,049	256,367	727,416	0.040	0	0.000
	2017	–	–	–	–	–	–
Andrea Orcel, former President Investment Bank	2018	–	–	–	–	–	–
	2017	1,328,113	251,439	1,579,552	0.091	0	0.000
Markus Ronner, Group Chief Compliance and Governance Officer	2018	161,152	173	161,325	0.009	0	0.000
	2017	–	–	–	–	–	–
Kathryn Shih, President UBS Asia Pacific	2018	503,772	150,000	653,772	0.036	0	0.000
	2017	581,546	0	581,546	0.034	74,599	0.004
Total	2018	7,436,489	3,964,425	11,400,914	0.627	0	0.000
	2017	6,923,927	1,939,943	8,863,870	0.513	356,239	0.021

1 Includes all vested and unvested shares and options of GEB members, including those held by related parties. 2 Includes shares granted under variable compensation plans with forfeiture provisions. The actual number of shares vesting in the future will be calculated under the terms of the plans. Refer to "Compensation philosophy and framework" section of this report for more information on the plans. 3 Refer to "Note 30 Employee benefits: variable compensation" in the "Consolidated financial statements" section of this report for more information. 4 No conversion rights outstanding.

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Total of all vested and unvested shares of GEB members[1,2]

	Total	*of which: vested*	*of which: vesting*				
			2019	*2020*	*2021*	*2022*	*2023*
Shares on 31 December 2018	11,400,914	*3,964,425*	*1,889,712*	*1,826,864*	*1,858,391*	*1,266,430*	*595,092*
			2018	*2019*	*2020*	*2021*	*2022*
Shares on 31 December 2017[3]	9,840,946	*1,941,018*	*1,796,694*	*1,825,372*	*1,992,458*	*1,465,516*	*819,888*

1 Includes shares held by related parties. 2 Includes shares granted under variable compensation plans with forfeiture provisions. The actual number of shares vesting in the future will be calculated under the terms of the plans. Refer to the "Compensation philosophy and framework" section of this report for more information. 3 Includes all vested and unvested shares of Jürg Zeltner who stepped down from the GEB on 31 December 2017.

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Number of shares of BoD members[1]

Name, function	on 31 December	Number of shares held	Voting rights in %
Axel A. Weber, Chairman	2018	764,329	0.042
	2017	642,100	0.037
Michel Demaré, Vice Chairman	2018	322,558	0.018
	2017	290,694	0.017
David Sidwell, Senior Independent Director	2018	189,805	0.010
	2017	154,672	0.009
Jeremy Anderson, member[2]	2018	0	0.000
	2017	–	–
Reto Francioni, member	2018	98,832	0.005
	2017	76,772	0.004
Ann F. Godbehere, member	2018	259,225	0.014
	2017	232,263	0.013
Fred Hu, member[2]	2018	0	0.000
	2017	–	–
William G. Parrett, former member[2]	2018	–	–
	2017	106,916	0.006
Julie G. Richardson, member	2018	17,157	0.001
	2017	0	0.000
Isabelle Romy, member	2018	114,802	0.006
	2017	94,376	0.005
Robert W. Scully, member	2018	47,074	0.003
	2017	29,917	0.002
Beatrice Weder di Mauro, member	2018	145,601	0.008
	2017	126,809	0.007
Dieter Wemmer, member	2018	31,159	0.002
	2017	14,002	0.001
Total	2018	1,990,542	0.109
	2017	1,768,521	0.102

1 Includes blocked and unblocked shares held by BoD members, including those held by related parties. No options were granted in 2018 and 2017. 2 At the 2018 AGM, Jeremy Anderson and Fred Hu were newly elected and William G. Parrett did not stand for re-election.

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Total of all blocked and unblocked shares of BoD members[1]

	Total	*of which: unblocked*	*of which: blocked until*			
			2019	*2020*	*2021*	*2022*
Shares on 31 December 2018	1,990,542	*636,397*	*323,051*	*335,587*	*366,570*	*328,937*
			2018	*2019*	*2020*	*2021*
Shares on 31 December 2017	1,768,521	*294,924*	*366,821*	*347,106*	*364,161*	*395,509*

1 Includes shares held by related parties.

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Audited |

Vested and unvested options of GEB members[1]

on 31 December	Total number of options[2]	Number of options[3]	Year of grant	Vesting date	Expiry date	Strike price
Tom Naratil, Co-President Global Wealth Management and President UBS Americas[4]						
2018	0					
2017	**281,640**	181,640	2008	1.3.2011	28.2.2018	CHF 35.66
		100,000	2009	1.3.2012	27.2.2019	CHF 11.35
Kathryn Shih, President UBS Asia Pacific						
2018	0					
2017	74,599	74,599	2008	1.3.2011	28.2.2018	CHF 35.66

1 Includes all options held by GEB members, including those held by related parties. 2 No conversion rights outstanding. 3 Refer to "Note 30 Employee benefits: variable compensation" in the "Consolidated financial statements" section of this report for more information. 4 Tom Naratil exercised his remaining 100,000 options on 28 November 2018.

Audited |

Loans granted to GEB members[1]

In line with article 38 of the Articles of Association of UBS Group AG, Group Executive Board (GEB) members may be granted loans. Such loans are made in the ordinary course of business on substantially the same terms as those granted to other employees, including interest rates and collateral, and neither involve more than the normal risk of collectability nor contain any other unfavorable features for the firm. The total amount of such loans must not exceed CHF 20 million per GEB member.

CHF, except where indicated[2]			*USD (for reference)*
Name, function	on 31 December	Loans[3]	Loans[3]
Ulrich Körner, President Asset Management and President UBS EMEA (highest loan in 2018)	2018	8,240,000	8,380,492
Ulrich Körner, President Asset Management and President UBS EMEA (highest loan in 2017)	2017	8,240,000	
Aggregate of all GEB members[4]	2018	33,204,000	33,770,128
	2017	37,442,914	

1 No loans have been granted to related parties of the GEB members at conditions not customary in the market. 2 Swiss franc and US dollar amounts disclosed represent local currency amounts translated at the relevant year-end closing exchange rate. 3 All loans granted are secured loans. 4 Excludes unused uncommitted credit facilities of CHF 2,949,690 in 2018 that had been granted to one GEB member, and of CHF 4,952,596 in 2017 that had been granted to two GEB members.

Audited |

Loans granted to BoD members[1]

In line with article 33 of the Articles of Association of UBS Group AG, loans to independent Board of Directors (BoD) members are made in the ordinary course of business at general market conditions. The Chairman as a non-independent member may be granted loans in the ordinary course of business on substantially the same terms as those granted to employees, including interest rates and collateral, neither involving more than the normal risk of collectability nor containing any other unfavorable features for the firm. The total amount of such loans must not exceed CHF 20 million per BoD member.

CHF, except where indicated[2]			*USD (for reference)*
	on 31 December	Loans[3,4,5]	Loans[3,4,5]
Aggregate of all BoD members	2018	600,000	610,230
	2017	3,524,370	

1 No loans have been granted to related parties of the BoD members at conditions not customary in the market. 2 Swiss franc and US dollar amounts disclosed represent local currency amounts translated at the relevant year-end closing exchange rate. 3 All loans granted are secured loans. 4 CHF 600,000 for Reto Francioni in 2018 and CHF 600,000 for Reto Francioni and CHF 2,924,370 for William G. Parrett in 2017. 5 Excludes an unused uncommitted credit facility of CHF 243,698 that had been granted to one BoD member in 2017.

Audited |

Compensation paid to former BoD and GEB members[1]

CHF, except where indicated[2]					*USD (for reference)*
	For the year	Compensation	Benefits	Total	Total
Former BoD members	2018	0	0	0	0
	2017	0	0	0	
Aggregate of all former GEB members[3]	2018	0	45,556	45,556	46,333
	2017	336,789	44,636	381,425	
Aggregate of all former BoD and GEB members	2018	0	45,556	45,556	46,333
	2017	336,789	44,636	381,425	

1 Compensation or remuneration that is related to the former members' activity on the BoD or GEB or that is not at market conditions. 2 Swiss franc and US dollar amounts disclosed represent local currency amounts translated at the relevant year-end closing exchange rate. 3 Includes a payment in 2018 to one former GEB member and payments in 2017 to two former GEB members.

Provisions of the Articles of Association related to compensation

Under the say-on-pay provisions in Switzerland, shareholders of Swiss-listed companies have significant influence over board and management compensation. At UBS, this is achieved by means of an annual binding say-on-pay vote in accordance with the following Articles of Association provisions related to compensation:

Say on pay: In line with article 43 of the Articles of Association of UBS Group AG, the General Meeting shall approve the proposals of the Board of Directors in relation to:
a) the maximum aggregate amount of compensation of the Board of Directors for the period until the next Annual General Meeting;
b) the maximum aggregate amount of fixed compensation of the Group Executive Board for the following financial year; and
c) the aggregate amount of variable compensation of the Group Executive Board for the preceding financial year.

The Board of Directors may submit for approval by the General Meeting deviating or additional proposals relating to the same or different periods. In the event the General Meeting does not approve a proposal of the Board of Directors, the Board of Directors shall determine, taking into account all relevant factors, the respective (maximum) aggregate amount or (maximum) partial amounts and submit the amount(s) so determined for approval by the General Meeting. The Corporation or companies controlled by it may pay or grant compensation prior to approval by the General Meeting, subject to subsequent approval.

Principles of compensation: In line with articles 45 and 46 of the Articles of Association of UBS Group AG, compensation of the members of the Board of Directors shall comprise a base remuneration and may comprise other compensation elements and benefits. Compensation of the members of the Board of Directors is intended to recognize the responsibility and governance nature of their role, to attract and retain qualified individuals and to ensure alignment with shareholders' interest.

Compensation of the members of the Group Executive Board shall comprise fixed and variable compensation elements. Fixed compensation shall comprise the base salary and may comprise other compensation elements and benefits. Variable compensation elements shall be governed by financial and non-financial performance measures that take into account the performance of the Corporation and / or parts thereof, targets in relation to the market, other companies or comparable benchmarks, short- and long-term strategic objectives and / or individual targets. The Board of Directors or, where delegated to it, the Compensation Committee determines the respective performance measures, the overall and individual performance targets, and their achievements. The Board of Directors or, where delegated to it, the Compensation Committee aims to ensure alignment with sustainable performance and appropriate risk-taking through adequate deferrals, forfeiture conditions, caps on compensation, harmful acts provisions and similar means with regard to parts of or all of the compensation. Parts of variable compensation shall be subject to a multi-year vesting period.

Additional amount for GEB members appointed after the vote on the aggregate amount of compensation by the AGM: In line with article 46 of the Articles of Association of UBS Group AG, if the maximum aggregate amount of compensation already approved by the General Meeting is not sufficient to also cover the compensation of a person who becomes a member of or is being promoted within the Group Executive Board after the General Meeting has approved the compensation, the Corporation or companies controlled by it shall be authorized to pay or grant each such Group Executive Board member a supplementary amount during the compensation period(s) already approved. The aggregate pool for such supplementary amounts per compensation period shall not exceed 40% of the average of total annual compensation paid or granted to the Group Executive Board during the previous three years.

→ **Refer to *www.ubs.com/governance* for more information**

Building a better working world

Ernst & Young Ltd
Aeschengraben 9
P.O. Box
CH-4002 Basel

Phone +41 58 286 86 86
Fax +41 58 286 86 00
www.ey.com/ch

To the General Meeting of
UBS Group AG, Zurich

Basel, 14 March 2019

Report of the statutory auditor on the compensation report

We have audited the compensation report dated 14 March 2019 of UBS Group AG for the year ended 31 December 2018. The audit was limited to the information according to articles 14 – 16 of the Ordinance against Excessive Compensation in Stock Exchange Listed Companies (Ordinance) contained in the following tables labeled "audited" of the compensation report: *Total compensation for GEB members, Total payments to BoD members, Compensation details and additional information for non-independent BoD members, Remuneration details and additional information for independent BoD members, Loans granted to GEB members, Loans granted to BoD members* and *Compensation paid to former BoD and GEB members.*

Board of Directors' responsibility
The Board of Directors is responsible for the preparation and overall fair presentation of the compensation report in accordance with Swiss law and the Ordinance. The Board of Directors is also responsible for designing the compensation system and defining individual compensation packages.

Auditor's responsibility
Our responsibility is to express an opinion on the compensation report. We conducted our audit in accordance with Swiss Auditing Standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the compensation report complies with Swiss law and articles 14 – 16 of the Ordinance.

An audit involves performing procedures to obtain audit evidence on the disclosures made in the compensation report with regard to compensation, loans and credits in accordance with articles 14 – 16 of the Ordinance. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatements in the compensation report, whether due to fraud or error. This audit also includes evaluating the reasonableness of the methods applied to value components of compensation, as well as assessing the overall presentation of the compensation report.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Opinion
In our opinion, the compensation report for the year ended 31 December 2018 of UBS Group AG complies with Swiss law and articles 14 – 16 of the Ordinance.

Ernst & Young Ltd

Marie-Laure Delarue
Licensed audit expert
(Auditor in charge)

Bruno Patusi
Licensed audit expert

Consolidated financial statements

Changes to functional and presentation currencies

Effective from 1 October 2018, the functional currency of UBS Group AG and UBS AG's Head Office in Switzerland changed from Swiss francs to US dollars and that of UBS AG's London Branch from British pounds to US dollars, in compliance with the requirements of International Accounting Standard (IAS) 21, *The Effects of Changes in Foreign Exchange Rates*. The presentation currency of UBS Group AG's consolidated financial statements has changed from Swiss francs to US dollars to align with the functional currency changes of significant Group entities. Prior periods have been restated for this change in presentation currency.

→ **Refer to "Note 1b Changes in accounting policies, comparability and other adjustments, excluding the effects of adoption of IFRS 9 Financial Instruments" in the "Consolidated financial statements" section of this report for more information**

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Management's report on internal control over financial reporting

Management's responsibility for internal control over financial reporting

The Board of Directors and management of UBS Group AG (UBS) are responsible for establishing and maintaining adequate internal control over financial reporting. UBS's internal control over financial reporting is designed to provide reasonable assurance regarding the preparation and fair presentation of published financial statements in accordance with IFRS as issued by the IASB.

UBS's internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect transactions and dispositions of assets;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation and fair presentation of financial statements, and that receipts and expenditures of the company are being made only in accordance with authorizations of UBS management; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management's assessment of internal control over financial reporting as of 31 December 2018

UBS management has assessed the effectiveness of UBS's internal control over financial reporting as of 31 December 2018 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control – Integrated Framework (2013 Framework). Based on this assessment, management believes that, as of 31 December 2018, UBS's internal control over financial reporting was effective.

The effectiveness of UBS's internal control over financial reporting as of 31 December 2018 has been audited by Ernst & Young Ltd, UBS's independent registered public accounting firm, as stated in their report appearing on page 310, which expresses an unqualified opinion on the effectiveness of UBS's internal control over financial reporting as of 31 December 2018.

Ernst & Young Ltd
Aeschengraben 9
P.O. Box
CH-4002 Basel

Phone +41 58 286 86 86
Fax +41 58 286 86 00
www.ey.com/ch

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of UBS Group AG

Opinion on Internal Control over Financial Reporting
We have audited UBS Group AG and subsidiaries' internal control over financial reporting as of 31 December 2018, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (the COSO criteria). In our opinion, UBS Group AG and subsidiaries maintained, in all material respects, effective internal control over financial reporting as of 31 December 2018, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated balance sheets of UBS Group AG and subsidiaries as of 31 December 2018, 31 December 2017 and 1 January 2017, the related consolidated income statements, statements of comprehensive income, changes in equity and cash flows for each of the three years in the period ended 31 December 2018, and the related notes and our report dated 14 March 2019 expresses an unqualified opinion thereon.

Basis for Opinion
UBS Group AG's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on UBS Group AG's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting
A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Ernst & Young Ltd

Ernst & Young Ltd

Basel, 14 March 2019

EY
Building a better working world

Ernst & Young Ltd
Aeschengraben 9
P.O. Box
CH-4002 Basel

Phone +41 58 286 86 86
Fax +41 58 286 86 00
www.ey.com/ch

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of UBS Group AG

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of UBS Group AG and subsidiaries ("the Company") as of 31 December 2018, 31 December 2017 and 1 January 2017, the related consolidated income statements, statements of comprehensive income, changes in equity and cash flows, for each of the three years in the period ended 31 December 2018, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the consolidated financial position of UBS Group AG and subsidiaries as of 31 December 2018, 31 December 2017 and 1 January 2017, and the consolidated results of their operations and their cash flows for each of the three years in the period ended 31 December 2018, in conformity with International Financial Reporting Standards, as issued by the International Accounting Standards Board.

Adoption of IFRS 9 *Financial Instruments*

As discussed in Note 1 to the consolidated financial statements, the Company changed its method of accounting for the classification, measurement and impairment of financial instruments in 2018 due to the adoption of IFRS 9 *Financial Instruments*.

Changes to functional and presentation currencies

As discussed in Note 1 to the consolidated financial statements, the functional currencies of UBS Group AG and UBS AG's Head office in Switzerland changed from Swiss francs to U.S. dollars and UBS AG's London Branch changed from British pounds to U.S. dollars in compliance with the requirements of IAS 21 *The Effects of Changes in Foreign Exchange Rates*. The Company elected to change the presentation currency of UBS Group AG's consolidated financial statements from Swiss francs to U.S. dollars to align with these functional currency changes.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), UBS Group AG and subsidiaries' internal control over financial reporting as of 31 December 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated 14 March 2019, expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's Board of Directors. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Ernst & Young Ltd

Ernst & Young Ltd

We have served as the Company's auditor since 1998.

Basel, 14 March 2019

UBS Group AG consolidated financial statements

Primary financial statements

Audited |

Income statement

		For the year ended		
USD million	Note	31.12.18	31.12.17	31.12.16
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	3	10,100	10,422	10,379
Interest expense from financial instruments measured at amortized cost	3	(6,391)	(5,404)	(4,976)
Interest income from financial instruments measured at fair value through profit or loss	3	6,968	4,056	3,579
Interest expense from financial instruments measured at fair value through profit or loss	3	(4,653)	(2,418)	(2,495)
Net interest income	3	6,025	6,656	6,487
Other net income from fair value changes on financial instruments	3	5,984	5,065	5,023
Credit loss (expense) / recovery	23	(118)	(131)	(38)
Fee and commission income	4	19,598	19,362	18,374
Fee and commission expense	4	(1,703)	(1,840)	(1,781)
Net fee and commission income	4	17,895	17,522	16,593
Other income	5	427	511	663
Total operating income		30,213	29,622	28,729
Personnel expenses	6	16,132	16,199	15,913
General and administrative expenses	7	6,797	6,949	7,517
Depreciation and impairment of property, equipment and software	15	1,228	1,053	997
Amortization and impairment of intangible assets	16	65	71	93
Total operating expenses		24,222	24,272	24,519
Operating profit / (loss) before tax		5,991	5,351	4,209
Tax expense / (benefit)	8	1,468	4,305	777
Net profit / (loss)		4,522	1,046	3,432
Net profit / (loss) attributable to non-controlling interests		7	77	84
Net profit / (loss) attributable to shareholders		4,516	969	3,348

Earnings per share (USD)

Basic	9	1.21	0.26	0.90
Diluted	9	1.18	0.25	0.88

Statement of comprehensive income

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Comprehensive income attributable to shareholders			
Net profit / (loss)	4,516	969	3,348
Other comprehensive income that may be reclassified to the income statement			
Foreign currency translation			
Foreign currency translation movements related to net assets of foreign operations, before tax	(725)	1,595	(888)
Effective portion of changes in fair value of hedging instruments designated as net investment hedges, before tax	181	(55)	356
Foreign currency translation differences on foreign operations reclassified to the income statement	3	32	77
Effective portion of changes in fair value of hedging instruments designated as net investment hedges reclassified to the income statement	2	(6)	(5)
Income tax relating to foreign currency translations, including the effect of net investment hedges	(2)	(2)	2
Subtotal foreign currency translation, net of tax	(541)	1,564	(458)
Financial assets measured at fair value through other comprehensive income			
Net unrealized gains / (losses), before tax	(56)	96	261
Impairment charges reclassified to the income statement from equity	0	15	5
Realized gains reclassified to the income statement from equity	0	(209)	(376)
Realized losses reclassified to the income statement from equity	0	14	26
Income tax relating to net unrealized gains / (losses)	12	(6)	26
Subtotal financial assets measured at fair value through other comprehensive income, net of tax	(45)	(91)	(58)
Cash flow hedges of interest rate risk			
Effective portion of changes in fair value of derivative instruments designated as cash flow hedges, before tax	(42)	45	234
Net (gains) / losses reclassified to the income statement from equity	(294)	(843)	(1,094)
Income tax relating to cash flow hedges	67	163	176
Subtotal cash flow hedges, net of tax	(269)	(635)	(684)
Total other comprehensive income that may be reclassified to the income statement, net of tax	(855)	838	(1,200)
Other comprehensive income that will not be reclassified to the income statement			
Defined benefit plans			
Gains / (losses) on defined benefit plans, before tax	(220)	286	(880)
Income tax relating to defined benefit plans	276	11	51
Subtotal defined benefit plans, net of tax	56	296	(829)
Own credit on financial liabilities designated at fair value			
Gains / (losses) from own credit on financial liabilities designated at fair value, before tax	517	(315)	(134)
Income tax relating to own credit on financial liabilities designated at fair value	(8)	(2)	4
Subtotal own credit on financial liabilities designated at fair value, net of tax	509	(317)	(130)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	565	(20)	(959)
Total other comprehensive income	(290)	818	(2,159)
Total comprehensive income attributable to shareholders	4,225	1,787	1,189

Table continues on the next page.

Statement of comprehensive income (continued)

Table continued from previous page.

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Comprehensive income attributable to non-controlling interests			
Net profit / (loss)	7	77	84
Other comprehensive income that will not be reclassified to the income statement			
Foreign currency translation movements, before tax	(1)	250	(22)
Income tax relating to foreign currency translation movements	0	0	0
Subtotal foreign currency translation, net of tax	(1)	250	(22)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	(1)	250	(22)
Total comprehensive income attributable to non-controlling interests	5	326	62
Total comprehensive income			
Net profit / (loss)	4,522	1,046	3,432
Other comprehensive income	(292)	1,068	(2,181)
of which: other comprehensive income that may be reclassified to the income statement	*(855)*	*838*	*(1,200)*
of which: other comprehensive income that will not be reclassified to the income statement	*563*	*229*	*(981)*
Total comprehensive income	4,231	2,113	1,251

Balance sheet

USD million	Note	31.12.18	31.12.17	1.1.17
Assets				
Cash and balances at central banks		108,370	90,045	105,883
Loans and advances to banks	10	16,868	14,094	12,926
Receivables from securities financing transactions	10, 25	95,349	91,951	79,936
Cash collateral receivables on derivative instruments	10, 25	23,602	24,040	26,198
Loans and advances to customers	10	320,352	326,746	300,010
Other financial assets measured at amortized cost	10, 17a	22,563	37,815	27,115
Total financial assets measured at amortized cost		587,104	584,691	552,068
Financial assets at fair value held for trading	12, 24	104,370	129,407	90,416
of which: assets pledged as collateral that may be sold or repledged by counterparties		*32,121*	*36,277*	29,731
Derivative financial instruments	11, 24, 25	126,210	121,285	155,642
Brokerage receivables	24	16,840		
Financial assets at fair value not held for trading	13, 24	82,690	60,457	64,210
Total financial assets measured at fair value through profit or loss		330,110	311,148	310,269
Financial assets measured at fair value through other comprehensive income	14, 24	6,667	8,889	15,402
Investments in associates	31b	1,099	1,045	947
Property, equipment and software	15	9,348	9,057	8,186
Goodwill and intangible assets	16	6,647	6,563	6,442
Deferred tax assets	8	10,105	10,056	13,158
Other non-financial assets	17b	7,410	7,830	12,434
Total assets		958,489	939,279	918,906
Liabilities				
Amounts due to banks	18	10,962	7,728	10,459
Payables from securities financing transactions	25	10,296	17,485	9,266
Cash collateral payables on derivative instruments	25	28,906	31,029	34,852
Customer deposits	18	419,838	419,577	416,267
Debt issued measured at amortized cost	20	132,271	143,160	101,837
Other financial liabilities measured at amortized cost	22a	6,885	37,276	37,729
Total financial liabilities measured at amortized cost		609,158	656,255	610,410
Financial liabilities at fair value held for trading	12, 24	28,943	31,251	22,425
Derivative financial instruments	11, 24, 25	125,723	119,137	151,121
Brokerage payables designated at fair value	24	38,420		
Debt issued designated at fair value	19, 24	57,031	50,782	49,057
Other financial liabilities designated at fair value	22b, 24	33,594	16,643	14,122
Total financial liabilities measured at fair value through profit or loss		283,711	217,813	236,725
Provisions	21a	3,494	3,214	4,101
Other non-financial liabilities	22c	9,022	9,443	14,083
Total liabilities		905,386	886,725	865,320
Equity				
Share capital		338	338	338
Share premium		20,843	23,598	25,958
Treasury shares		(2,631)	(2,210)	(2,362)
Retained earnings		30,448	25,932	25,029
Other comprehensive income recognized directly in equity, net of tax		3,930	4,838	3,953
Equity attributable to shareholders		52,928	52,495	52,916
Equity attributable to non-controlling interests		176	59	670
Total equity		53,103	52,554	53,586
Total liabilities and equity		958,489	939,279	918,906

Statement of changes in equity

USD million	Share capital	Share premium	Treasury shares	Retained earnings
Balance as of 1 January 2016	**338**	**28,966**	**(1,806)**	**22,672**
Issuance of share capital				
Acquisition of treasury shares			(1,444)[3]	
Delivery of treasury shares under share-based compensation plans		(716)	840	
Other disposal of treasury shares		(2)	49[3]	
Premium on shares issued and warrants exercised		5		
Share-based compensation expensed in the income statement		872		
Tax (expense) / benefit		29		
Dividends		(3,241)[2]		
Preferred notes				
Translation effects recognized directly in retained earnings				13
New consolidations / (deconsolidations) and other increases / (decreases)		45		(45)
Total comprehensive income for the year				2,389
of which: net profit / (loss)				*3,348*
of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax				
of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans				*(829)*
of which: OCI that will not be reclassified to the income statement, net of tax – own credit				*(130)*
of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation				
Balance as of 31 December 2016	**338**	**25,958**	**(2,362)**	**25,029**
Issuance of share capital				
Acquisition of treasury shares			(908)[3]	
Delivery of treasury shares under share-based compensation plans		(879)	994	
Other disposal of treasury shares		1	66[3]	
Premium on shares issued and warrants exercised		19		
Share-based compensation expensed in the income statement		735		
Tax (expense) / benefit		21		
Dividends		(2,259)[2]		
Preferred notes				
Translation effects recognized directly in retained earnings				(46)
New consolidations / (deconsolidations) and other increases / (decreases)		1		
Total comprehensive income for the year				949
of which: net profit / (loss)				*969*
of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax				
of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans				*296*
of which: OCI that will not be reclassified to the income statement, net of tax – own credit				*(317)*
of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation				
Balance as of 31 December 2017	**338**	**23,598**	**(2,210)**	**25,932**

Other comprehensive income recognized directly in equity, net of tax[1]	*of which: foreign currency translation*	*of which: financial assets at fair value through other comprehensive income*	*of which: cash flow hedges*	Total equity attributable to shareholders	Non-controlling interests	Total equity
5,166	***3,360***	***171***	***1,635***	**55,336**	**1,992**	**57,328**
				0		0
				(1,444)		(1,444)
				124		124
				47		47
				5		5
				872		872
				29		29
				(3,241)	(85)	(3,326)
				0	(1,299)	(1,299)
(13)		*(17)*	*4*	0		0
				0	0	0
(1,200)	*(458)*	*(58)*	*(684)*	1,189	62	1,251
				3,348	*84*	*3,432*
(1,200)	*(458)*	*(58)*	*(684)*	*(1,200)*		*(1,200)*
				(829)		*(829)*
				(130)		*(130)*
				0	*(22)*	*(22)*
3,953	***2,901***	***96***	***955***	**52,916**	**670**	**53,586**
				0		0
				(908)		(908)
				115		115
				67		67
				19		19
				735		735
				21		21
				(2,259)	(77)	(2,337)
				0	(878)	(878)
46		*7*	*39*	0		0
				1	17	18
838	*1,564*	*(91)*	*(635)*	1,787	326	2,113
				969	*77*	*1,046*
838	*1,564*	*(91)*	*(635)*	*838*		*838*
				296		*296*
				(317)		*(317)*
				0	*250*	*250*
4,838	***4,466***	***13***	***360***	**52,495**	**59**	**52,554**

Statement of changes in equity (continued)

USD million	Share capital	Share premium	Treasury shares	Retained earnings
Balance as of 31 December 2017	**338**	**23,598**	**(2,210)**	**25,932**
Effect of adoption of IFRS 9				(518)
Effect of adoption of IFRS 15				(25)
Balance as of 1 January 2018 after the adoption of IFRS 9 and IFRS 15	**338**	**23,598**	**(2,210)**	**25,389**
Issuance of share capital	0			
Acquisition of treasury shares			(1,608)[3]	
Delivery of treasury shares under share-based compensation plans		(1,009)	1,137	
Other disposal of treasury shares			50[3]	
Premium on shares issued and warrants exercised		22		
Share-based compensation expensed in the income statement		676		
Tax (expense) / benefit		4		
Dividends		(2,440)[2]		
Preferred notes				
Translation effects recognized directly in retained earnings				(21)
New consolidations / (deconsolidations) and other increases / (decreases)		(7)		
Total comprehensive income for the year				5,080
of which: net profit / (loss)				*4,516*
of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax				
of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans				*56*
of which: OCI that will not be reclassified to the income statement, net of tax – own credit				*509*
of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation				
Balance as of 31 December 2018	338	20,843	(2,631)	30,448

1 Excludes defined benefit plans and own credit that are recorded directly in Retained earnings. 2 Reflects the payment of an ordinary cash dividend of CHF 0.65 (2017: CHF 0.60 ordinary cash dividend; 2016: CHF 0.60 ordinary cash dividend and CHF 0.25 special cash dividend) per dividend-bearing share out of the capital contribution reserve. 3 Includes treasury shares acquired and disposed of by the Investment Bank in its capacity as a market-maker in UBS shares and related derivatives and to hedge certain issued structured debt instruments. These acquisitions and disposals are reported based on the sum of the net monthly movements.

Other comprehensive income recognized directly in equity, net of tax[1]	*of which: foreign currency translation*	*of which: financial assets at fair value through other comprehensive income*	*of which: cash flow hedges*	Total equity attributable to shareholders	Non-controlling interests	Total equity
4,838	***4,466***	***13***	***360***	**52,495**	**59**	**52,554**
(74)		*(74)*		(591)		(591)
				(25)		(25)
4,764	***4,466***	***(61)***	***360***	**51,879**	**59**	**51,938**
				0		0
				(1,608)		(1,608)
				128		128
				50		50
				22		22
				676		676
				4		4
				(2,440)	(10)	(2,450)
				0		0
21		*3*	*18*	0		0
				(7)	122	115
(855)	*(541)*	*(45)*	*(269)*	4,225	5	4,231
				4,516	*7*	*4,522*
(855)	*(541)*	*(45)*	*(269)*	*(855)*		*(855)*
				56		*56*
				509		*509*
				0	*(1)*	*(1)*
3,930	*3,924*	*(103)*	*109*	52,928	176	53,103

UBS Group AG shares issued and treasury shares held

Number of shares	2018	2017
Shares issued		
Balance at the beginning of the year	3,853,096,603	3,850,766,389
Issuance of shares	2,538,146	2,330,214
Balance at the end of the year	**3,855,634,749**	**3,853,096,603**
Treasury shares		
Balance at the beginning of the year	132,301,550	138,441,772
Acquisitions	103,979,927	54,828,640
Disposals	(69,813,675)	(60,968,862)
Balance at the end of the year	**166,467,802**	**132,301,550**

Conditional share capital

As of 31 December 2018, 125,126,476 additional UBS Group AG shares could have been issued to fund UBS's employee share option programs.

Additional conditional capital up to a maximum number of 380,000,000 UBS Group AG shares was available as of 31 December 2018 for conversion rights and warrants granted in connection with the issuance of bonds or similar financial instruments.

Share repurchase program

As announced in January 2018, UBS has an active share repurchase program to buy back up to CHF 2 billion of its own shares over the three-year period starting from March 2018. Under this program, UBS purchased 48 million shares totaling USD 762 million in 2018.

Statement of cash flows[1]

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Cash flow from / (used in) operating activities			
Net profit / (loss)	4,522	1,046	3,432
Non-cash items included in net profit and other adjustments:			
Depreciation and impairment of property, equipment and software	1,228	1,053	997
Amortization and impairment of intangible assets	65	71	93
Credit loss expense / (recovery)	118	131	38
Share of net profits of associates / joint ventures and impairment of associates	(528)	(69)	(109)
Deferred tax expense / (benefit)	425	3,414	(43)
Net loss / (gain) from investing activities	(46)	(198)	(1,223)
Net loss / (gain) from financing activities	(4,828)	2,109	9,967
Other net adjustments	(1,179)	(855)	(296)
Net change in operating assets and liabilities:			
Loans and advances to banks / amounts due to banks	3,504	(3,234)	(1,286)
Securities financing transactions	(11,230)	(111)	945
Cash collateral on derivative instruments	(1,447)	(2,454)	(4,182)
Loans and advances to customers	(5,213)	(14,471)	3,662
Customer deposits	9,138	(12,962)	33,493
Financial assets and liabilities at FV held for trading and derivative financial instruments	11,107	(23,544)	8,525
Brokerage receivables and payables	11,432		
Financial assets at fair value not held for trading, other financial assets and liabilities	11,115	(1,978)	(77,228)
Provisions, other non-financial assets and liabilities	1,682	996	5,570
Income taxes paid, net of refunds	(951)	(1,044)	(645)
Net cash flow from / (used in) operating activities	28,913	(52,099)	(18,292)
Cash flow from / (used in) investing activities			
Purchase of subsidiaries, associates and intangible assets	(287)	(106)	(27)
Disposal of subsidiaries, associates and intangible assets[2]	137	339	94
Purchase of property, equipment and software	(1,688)	(1,627)	(1,800)
Disposal of property, equipment and software	114	47	182
Purchase of financial assets measured at fair value through other comprehensive income	(1,999)	(8,626)	(7,022)
Disposal and redemption of financial assets measured at fair value through other comprehensive income	1,361	15,250	54,433
Net (purchase) / redemption of debt securities measured at amortized cost	(3,770)		
Net (purchase) / redemption of financial assets held to maturity		(91)	(9,224)
Net cash flow from / (used in) investing activities	(6,132)	5,186	36,637

Table continues on the next page.

Statement of cash flows (continued)[1]

Table continued from previous page.

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Cash flow from / (used in) financing activities			
Net short-term debt issued / (repaid)	(12,245)	24,500	5,474
Net movements in treasury shares and own equity derivative activity	(1,431)	(730)	(1,259)
Distributions paid on UBS shares	(2,440)	(2,259)	(3,241)
Issuance of long-term debt, including debt issued designated at fair value	60,682	51,450	33,703
Repayment of long-term debt, including debt issued designated at fair value	(44,344)	(45,187)	(33,902)
Net changes in non-controlling interests and preferred notes	(31)	(787)	(1,387)
Net cash flow from / (used in) financing activities	190	26,988	(612)
Total cash flow			
Cash and cash equivalents at the beginning of the year	104,834	119,014	102,879
Net cash flow from / (used in) operating, investing and financing activities	22,971	(19,925)	17,733
Effects of exchange rate differences on cash and cash equivalents	(1,726)	5,745	(1,598)
Cash and cash equivalents at the end of the year[3]	126,079	104,834	119,014
of which: cash and balances at central banks	*108,268*	*89,968*	*105,832*
of which: loans and advances to banks	*15,678*	*12,773*	*11,749*
of which: money market paper[4]	*2,133*	*2,093*	*1,433*
Additional information			
Net cash flow from / (used in) operating activities includes:			
Interest received in cash	7,705	7,735	8,002
Interest paid in cash	4,553	3,917	3,565
Dividends on equity investments, investment funds and associates received in cash[5]	2,322	1,828	1,618

1 Upon adoption of IFRS 9 on 1 January 2018, cash flows from certain financial assets previously classified as available-for-sale assets have been reclassified from investing to operating activities as the assets are accounted for at fair value through profit or loss effective 1 January 2018. Refer to Note 1c for more information. 2 Includes dividends received from associates. 3 USD 5,245 million, USD 2,497 million and USD 2,615 million of cash and cash equivalents (mainly reflected in Loans and advances to banks) were restricted as of 31 December 2018, 31 December 2017 and 31 December 2016, respectively. Refer to Note 26 for more information. 4 Money market paper is included in the balance sheet under Financial assets at fair value held for trading (31 December 2018: USD 366 million; 31 December 2017: USD 135 million; 31 December 2016: USD 74 million), Financial assets measured at fair value through other comprehensive income (31 December 2018: USD 8 million; 31 December 2017: USD 17 million; 31 December 2016: USD 416 million), Financial assets at fair value not held for trading and Other financial assets measured at amortized cost (31 December 2018: USD 1,760 million; 31 December 2017: USD 1,941 million; 31 December 2016: USD 942 million). 5 Includes dividends received from associates (2018: USD 42 million; 2017: USD 53 million; 2016: USD 50 million) reported within Cash flow from / (used in) investing activities.

Changes in liabilities arising from financing activities

USD million	Debt issued measured at amortized cost	*of which: short-term*	*of which: long-term*	Debt issued designated at fair value	Over-the-counter (OTC) debt instruments[2]	Total
Balance as of 1 January 2017	101,837	*25,720*	*76,117*	49,057	4,581	155,476
Cash flows	36,811	*24,500*	*12,311*	(5,625)	(422)	30,765
Non-cash changes	4,512	*2,050*	*2,462*	7,350	268	12,130
of which: foreign currency translation	*4,925*	*2,050*	*2,875*	*3,085*	*173*	*8,183*
of which: fair value changes	*0*			*4,265*	*95*	*4,360*
of which: other	*(413)*	*0*	*(413)[1]*	*0*	*0*	*(413)*
Balance as of 31 December 2017	143,160	*52,270*	*90,890*	50,782	4,428	198,371
Cash flows	(7,402)	*(12,245)*	*4,843*	13,332	(1,838)	4,092
Non-cash changes	(3,488)	*(1,000)*	*(2,487)*	(7,083)	(140)	(10,711)
of which: foreign currency translation	*(3,155)*	*(1,000)*	*(2,155)*	*309*	*(59)*	*(2,905)*
of which: fair value changes	*0*		*0*	*(7,392)*	*(82)*	*(7,475)*
of which: other	*(332)*	*0*	*(332)[1]*	*0*	*0*	*(332)*
Balance as of 31 December 2018	132,271	*39,025*	*93,246*	57,031	2,450	191,752

1 Includes the effect of fair value hedges on long-term debt issued. Refer to Note 1a item j and Note 20 for more information. 2 Included in balance sheet line Other financial liabilities designated at fair value.

Notes to the UBS Group AG consolidated financial statements

Note 1 Summary of significant accounting policies

The following table provides an overview of information included in this Note.

Accounting policies applicable prior to 1 January 2018

The accounting policies described in Note 1a have been applied consistently in all years presented unless otherwise stated in Note 1b. In addition, effective from 1 January 2018, the Group applies IFRS 9, *Financial Instruments*, which substantially changes the accounting for financial assets, and IFRS 15, *Revenue from Contracts with Customers,* which affects the Group's revenue recognition, measurement and presentation.

Within Note 1a, policies for prior periods that differ from those applied to the financial year ended 31 December 2018 are identified with a **Comparative policy** I signpost. A triangle symbol – ▲ – indicates the end of these comparative policy sections.

Note 1 Summary of significant accounting policies (continued)

a) Significant accounting policies

This Note describes the significant accounting policies applied in the preparation of the consolidated financial statements (the "Financial Statements") of UBS Group AG and its subsidiaries ("UBS" or the "Group"). On 14 March 2019, the Financial Statements were authorized for issue by the Board of Directors.

Basis of accounting

The Financial Statements have been prepared in accordance with International Financial Reporting Standards (IFRS), as issued by the International Accounting Standards Board (IASB), and are presented in US dollars (USD), which is also the functional currency of UBS Group AG, UBS AG's Head Office, UBS AG's London Branch and UBS's US-based operations.

Disclosures provided in the "Risk, treasury and capital management" section of this report that are marked as audited form an integral part of the Financial Statements. These disclosures relate to requirements under IFRS 7, *Financial Instruments: Disclosures,* and IAS 1, *Presentation of Financial Statements,* and are not repeated in this section.

The accounting policies described in this Note have been applied consistently in all years presented unless otherwise stated in Note 1b. In addition, effective from 1 January 2018, the Group applies IFRS 9, *Financial Instruments*, which substantially changes the accounting for financial assets, and IFRS 15, *Revenue from Contracts with Customers,* which affects the Group's revenue recognition, measurement and presentation. Within this note, policies for prior periods that differ from those applied to the financial year ended 31 December 2018 are identified as "Comparative policy."

Critical accounting estimates and judgments

Preparation of these Financial Statements under IFRS requires management to apply judgment and make estimates and assumptions that affect reported amounts of assets, liabilities, income and expenses and disclosure of contingent assets and liabilities, and may involve significant uncertainty at the time they are made. Such estimates and assumptions are based on the best available information. UBS regularly reassesses the estimates and assumptions, which encompass historical experience, expectations of the future and other pertinent factors, to determine their continuing relevance based on current conditions, updating them as necessary. Changes in those estimates and assumptions may have a significant effect on the Financial Statements. Further, actual results may differ significantly from UBS's estimates, which could result in significant losses to the Group, beyond what was anticipated or provided for.

The following areas contain estimation uncertainty or require critical judgment and have a significant effect on the amounts recognized in the Financial Statements:
- fair value of financial instruments (refer to item 3f in this Note and to Note 24)
- allowances and provisions for expected credit losses (refer to item 3g in this Note and to Note 23)
- assessment of the business model and certain contractual features when classifying financial instruments (refer to item 3b in this Note)
- pension and other post-employment benefit plans (refer to item 7 in this Note and to Note 29)
- income taxes (refer to item 8 in this Note and to Note 8)
- goodwill (refer to item 11 in this Note and to Note 16)
- provisions and contingent liabilities (refer to item 12 in this Note and to Note 21)
- consolidation of structured entities (refer to item 1 in this Note and to Note 31)
- determination of the functional currency and assessing the earliest date from which it is practical to perform a restatement following a change in presentational currency (refer to item 13 in this Note and to Note 1b).

1) Consolidation

a. Consolidation principles

The Financial Statements comprise the financial statements of the parent company (UBS Group AG) and its subsidiaries, presented as a single economic entity, whereby intercompany transactions and balances have been eliminated. UBS consolidates all entities that it controls, including controlled structured entities (SEs), which is the case when it has (i) power over the relevant activities of the entity; (ii) exposure to an entity's variable returns; and (iii) the ability to use its power to affect its own returns.

Where an entity is governed by voting rights, control is generally indicated by a direct shareholding of more than one-half of the voting rights.

Note 1 Summary of significant accounting policies (continued)

In other cases, the assessment of control is more complex and requires greater use of judgment. Where UBS has an interest in an entity that exposes it to variability, UBS considers whether it has power over the relevant activities of the entity that allows it to affect the variability of its returns. Consideration is given to all facts and circumstances to determine whether the Group has power over another entity; that is, the current ability to direct the relevant activities of an entity when decisions about those activities need to be made. Factors such as the purpose and design of the entity, rights held through contractual arrangements (such as call rights, put rights or liquidation rights) as well as potential decision-making rights are all considered in this assessment. Where the Group has power over the relevant activities, a further assessment is made to determine whether, through that power, it has the ability to affect its own returns by assessing whether power is held in a principal or agent capacity. Consideration is given to: (i) the scope of decision-making authority; (ii) rights held by other parties, including removal or other participating rights; and (iii) exposure to variability, including remuneration, relative to total variability of the entity as well as whether that exposure is different from that of other investors. If, after review of these factors, UBS concludes that it can exercise its power to affect its own returns, the entity is consolidated.

Subsidiaries, including SEs, are consolidated from the date when control is obtained and are deconsolidated from the date when control ceases. Control, or the lack thereof, is reassessed if facts and circumstances indicate that there is a change to one or more of the elements required to establish that control is present.

→ **Refer to Note 31 for more information**

b. Structured entities

UBS sponsors the formation of SEs and interacts with non-sponsored SEs for a variety of reasons, including allowing clients to obtain or be exposed to particular risk profiles, to provide funding or to sell or purchase credit risk. An SE is an entity that has been designed so that voting or similar rights are not the dominant factor in deciding who controls the entity. Such entities generally have a narrow and well-defined objective and include those historically referred to as special-purpose entities, as well as some investment funds. UBS assesses whether an entity is an SE by considering the nature of the activities of the entity as well as the substance of voting or similar rights afforded to other parties, including investors and independent boards or directors. UBS considers rights such as the ability to liquidate the entity or remove the decision maker to be similar to voting rights when the holder has the substantive ability to exercise such rights without cause. In the absence of such rights or in cases where the existence of such rights cannot be fully established, the entity is considered to be an SE.

The classes of SEs with which UBS is involved include:

- *Securitization structured entities* are established to issue securities to investors that are backed by assets held by the SE and whereby (i) significant credit risk associated with the securitized exposures has been transferred to third parties and (ii) there is more than one risk position or tranche issued by the securitization vehicle in line with the Basel III securitization definition. All securitization entities are classified as SEs.
- *Client investment structured entities* are established predominantly for clients to invest in specific assets or risk exposures through purchasing notes issued by the SE, predominantly on a fixed-term basis. The SE may source assets via a transfer from UBS or through an external market transaction. In some cases, UBS may enter into derivatives with the SE to either align the cash flows of the entity with the investor's intended investment objective or to introduce other desired risk exposures. In certain cases, UBS may have interests in a third-party-sponsored SE to hedge specific risks or participate in asset-backed financing.
- *Investment fund structured entities* have a collective investment objective, are managed by an investment manager and are either passively managed, so that any decision making does not have a substantive effect on variability, or are actively managed, and investors or their governing bodies do not have substantive voting or similar rights. UBS creates and sponsors a large number of funds in which it may have an interest through the receipt of variable management fees and / or a direct investment. In addition, UBS has interests in a number of funds created and sponsored by third parties, including exchange-traded funds and hedge funds, to hedge issued structured products.

When UBS does not consolidate an SE, but has an interest in an SE or has sponsored an SE, disclosures are provided on the nature of these interests and sponsorship activities.

Critical accounting estimates and judgments

Each individual entity is assessed for consolidation in line with the aforementioned consolidation principles. The assessment of control can be complex and requires the use of significant judgment. As the nature and extent of UBS's involvement are unique to each entity, there is no uniform consolidation outcome by entity. Certain entities within a class may be consolidated while others may not. When carrying out the consolidation assessment, judgment is exercised considering all the relevant facts and circumstances, including the nature and activities of the investee, as well as the substance of voting and similar rights.

→ **Refer to Note 31 for more information**

Note 1 Summary of significant accounting policies (continued)

2) Segment reporting

Prior to the first quarter of 2018, UBS's businesses were organized globally into five business divisions: Wealth Management, Wealth Management Americas, Personal & Corporate Banking, Asset Management and the Investment Bank, all of which were supported by Corporate Center. The five business divisions qualified as reportable segments for the purpose of segment reporting and, together with Corporate Center, reflected the management structure of the Group. Corporate Center – Non-core and Legacy Portfolio was managed and reported as a separate reportable unit within Corporate Center. Financial information about the five business divisions and Corporate Center (with its units: Services, Group Asset and Liability Management (Group ALM), Non-core and Legacy Portfolio) was presented separately in internal management reports to the Group Executive Board, which is considered the "chief operating decision maker" pursuant to IFRS 8, *Operating Segments*.

Effective from the first quarter of 2018, UBS combined its Wealth Management and Wealth Management Americas business divisions into a single Global Wealth Management business division. Global Wealth Management is managed on an integrated basis, with a single set of performance targets and an integrated operating plan and management structure. Consistent with this, the operating results of Global Wealth Management are presented and assessed on an integrated basis in internal management reports to the Group Executive Board. Consequently, from 2018, Global Wealth Management qualifies as an operating and reportable segment for the purposes of segment reporting and is presented in these Financial Statements alongside Personal & Corporate Banking, Asset Management, the Investment Bank and Corporate Center (with its units Services, Group ALM and Non-core and Legacy Portfolio). Following the change in the composition of UBS's operating segments and corresponding reportable segments, previously reported segment information has been restated. This change has no material effect on the former segments, including recognized goodwill.

→ **Refer to item 11 in this Note and Note 16 for more information**

UBS's internal accounting policies, which include management accounting policies and service level agreements, determine the revenues and expenses directly attributable to each reportable segment. Transactions between the reportable segments are carried out at internally agreed rates and are reflected in the operating results of the reportable segments. Revenue-sharing agreements are used to allocate external client revenues to reportable segments where several reportable segments are involved in the value creation chain. Commissions are credited to the reportable segments based on the corresponding client relationship. Total intersegment revenues for the Group are immaterial, as the majority of the revenues are allocated across the segments by means of revenue-sharing agreements. Interest income earned from managing UBS's consolidated equity is allocated to the reportable segments based on average attributed equity and currency composition. Assets and liabilities of the reportable segments are funded through and invested with Corporate Center – Group ALM, and the net interest margin is reflected in the results of each reportable segment.

Segment assets are based on a third-party view and do not include intercompany balances. This view is in line with internal reporting to the Group Executive Board. Certain assets managed centrally by Corporate Center – Services and Corporate Center – Group ALM may be allocated to other segments on a basis different to that on which the corresponding costs or revenues are allocated. For example, certain assets that are reported in Corporate Center – Services or Corporate Center – Group ALM may be retained on the balance sheet of these components of Corporate Center, notwithstanding that the costs or revenues associated with these assets may be entirely or partly allocated to the operating segments. Similarly, certain assets are reported in the business divisions, whereas the corresponding costs or revenues are entirely or partly allocated to Corporate Center – Services and Corporate Center – Group ALM.

Non-current assets disclosed for segment reporting purposes represent assets that are expected to be recovered more than 12 months after the reporting date, excluding financial instruments, deferred tax assets and post-employment benefits.

→ **Refer to Notes 1b and 2 for more information**

3) Financial instruments

a. Recognition

UBS recognizes financial instruments when it becomes a party to the contractual provisions of the instrument. UBS applies settlement date accounting to all regular way purchases and sales of financial instruments.

In transactions in which UBS acts as a transferee, to the extent that the transfer of a financial asset does not qualify for derecognition by the transferor, UBS does not recognize the transferred instrument as its asset.

UBS also acts in a fiduciary capacity, which results in the holding or placing of assets on behalf of individuals, trusts, retirement benefit plans and other institutions. Unless the recognition criteria are satisfied, these assets are not recognized on UBS's balance sheet. Consequently, the related income is excluded from these Financial Statements.

Client cash balances associated with derivatives clearing and execution services are not recognized on the balance sheet if, through contractual agreement, regulation or practice, the Group neither obtains benefits from nor controls the client cash balances.

b. Classification, measurement and presentation

All financial instruments are initially measured at fair value. In the case of financial instruments subsequently measured at amortized cost or fair value through other comprehensive income (FVOCI), the initial fair value is adjusted for directly attributable transaction costs.

Policy applicable from 1 January 2018[1]

On initial recognition, financial assets are classified as measured at amortized cost, FVOCI, or fair value through profit or loss (FVTPL).

A debt instrument is measured at amortized cost if it meets the following conditions:

– it is held within a business model that has an objective to hold financial assets to collect contractual cash flows; and
– the contractual terms of the financial asset result in cash flows that are solely payments of principal and interest (SPPI) on the principal amount outstanding.

A debt instrument is measured at FVOCI if it meets both of the following conditions:

– it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
– the contractual terms of the financial asset result in cash flows that are SPPI on the principal amount outstanding.

All other financial assets are measured at FVTPL and consist of held for trading assets, assets mandatorily measured on a fair value basis and derivatives, except to the extent that they are designated in a hedging relationship, in which case the IAS 39 hedge accounting requirements continue to apply.

Business model assessment

UBS determines the nature of the business model, for example if the objective is to hold the financial asset and collect the contractual cash flows, by considering the way in which the financial assets are managed to achieve a particular business objective as determined by management.

Financial assets that are held for trading or managed on a fair value basis are measured at FVTPL insofar as the associated business model is neither to hold the financial assets to collect contractual cash flows nor to hold to collect contractual cash flows and sell.

The Group originates loans to hold to maturity and to sell or sub-participate to other parties, resulting in a transfer of substantially all the risks and rewards, and derecognition of the loan or portions of it. The Group considers the activities of lending to hold and lending to sell or sub-participate as two separate business models, with financial assets within the former considered to be within a business model that has an objective to hold the assets to collect contractual cash flows, and those within the latter included in a trading portfolio. In certain cases, it may not be possible on origination to identify whether loans or portions of loans will be sold or sub-participated and certain loans may be managed on a fair value basis through, for instance, using credit derivatives. These financial assets are mandatorily measured at FVTPL.

Critical accounting estimates and judgments

UBS exercises judgment in determining the appropriate level at which to assess its business models. In general, the assessment is performed at the product level, e.g., retail and commercial mortgages. In other cases, the assessment is carried out at a more granular level, e.g., loan portfolios by region, and, if required, further disaggregation is performed by business strategy. A detailed assessment is carried out considering how the financial assets are evaluated and reported to UBS's key management, the risks that affect the performance of the business and the way that management is compensated. In addition, UBS exercises judgment in determining the effect of sales of financial instruments on the business model assessment. In particular, an assessment is made on whether and the extent to which sales are consistent with the objective of the business model.

Contractual cash flow characteristics

In assessing whether the contractual cash flows are SPPI, the Group considers whether the contractual terms of the financial asset contain a term that could change the timing or amount of contractual cash flows arising over the life of the instrument, which could affect whether the instrument is considered to meet the SPPI criterion.

For example, the Group holds portfolios of private mortgage contracts and corporate loans in Personal & Corporate Banking that commonly contain clauses that provide for two-way compensation if prepayment occurs. The amount of compensation paid by or to UBS reflects the effect of changes in market interest rates. The Group has determined that the inclusion of the change in market interest rates in the compensation amount is reasonable for the early termination of the contract, and therefore results in contractual cash flows that are SPPI.

Critical accounting estimates and judgments

UBS applies judgment when considering whether certain contractual features, such as interest rate reset frequency or non-recourse features, significantly affect future cash flows and whether compensation paid or received on early termination of lending arrangements results in cash flows that are not SPPI. A thorough analysis of all relevant facts and circumstances is assessed before concluding whether contractual cash flows of the financial instrument are consistent with payments representing principal and interest.

After initial recognition, UBS classifies, measures and presents its financial assets and liabilities in accordance with IFRS 9, as described in the table on the following pages.

1 The accounting policy in this section applies from 1 January 2018, the effective date of IFRS 9. For the details of transition effects refer to Note 1c.

Note 1 Summary of significant accounting policies (continued)

Classification, measurement and presentation of financial instruments from 1 January 2018

<table>
<tr><th colspan="2">Financial assets classification</th><th>Significant items included</th><th>Measurement and presentation</th></tr>
<tr><td colspan="2">Measured at amortized cost</td><td>A debt financial asset is measured at amortized cost if:
– it is held in a business model that has an objective to hold assets to collect contractual cash flows; and
– the contractual terms give rise to cash flows that are SPPI.

This classification includes:
– cash and balances at central banks
– loans and advances to banks
– cash collateral receivables on securities borrowed
– receivables on reverse repurchase agreements
– cash collateral receivables on derivative instruments
– residential and commercial mortgages
– corporate loans
– secured loans, including Lombard loans, and unsecured loans
– loans to financial advisors
– debt securities held as high-quality liquid assets (HQLA)
– fee and lease receivables.</td><td>Measured at amortized cost using the effective interest rate (EIR) method less allowances for expected credit losses (ECL) (refer to items 3c and 3g in this Note for more information).

The following items are recognized in the income statement:
– interest income, which is accounted for in accordance with item 3c in this Note
– ECL and reversals
– foreign exchange translation gains and losses.

Upfront fees and direct costs relating to loan origination, refinancing or restructuring as well as to loan commitments – when it is probable that UBS will enter into a specific lending relationship – are deferred and amortized over the life of the loan using the EIR method.

When the financial asset at amortized cost is derecognized, the gain or loss is recognized in the income statement.

Amounts arising from exchange-traded derivatives (ETD) and certain over-the-counter (OTC) derivatives cleared through central clearing counterparties that are either considered to be daily settled or in substance net settled on a daily basis (refer to items 3d and 3i in this Note) are presented within Cash collateral receivables on derivative instruments.</td></tr>
<tr><td>Measured at FVOCI</td><td>Debt instruments measured at FVOCI</td><td>A debt financial asset is measured at FVOCI if:
– it is held in a business model whose objective is achieved by both holding assets to collect contractual cash flows and selling the assets; and
– the contractual terms give rise to cash flows that are SPPI.

This classification primarily includes debt securities and certain asset-backed securities held as HQLA for which the contractual cash flows meet the SPPI criterion.</td><td>Measured at fair value with unrealized gains and losses reported in Other comprehensive income, net of applicable income taxes, until such investments are derecognized (when sold, collected or otherwise disposed). Upon derecognition, any accumulated balances in Other comprehensive income are reclassified to the income statement and reported within Other income.

The following items are recognized in the income statement:
– interest income, which is accounted for in accordance with item 3c in this Note
– ECL and reversals
– foreign exchange translation gains and losses.

The amounts recognized in the income statement are determined on the same basis as for financial assets measured at amortized cost.</td></tr>
</table>

Classification, measurement and presentation of financial instruments from 1 January 2018 (continued)

<table>
<tr><th colspan="2">Financial assets classification</th><th>Significant items included</th><th>Measurement and presentation</th></tr>
<tr><td rowspan="2">Measured at FVTPL</td><td>Held for trading</td><td>Financial assets held for trading include:
– all derivatives with a positive replacement value, except those that are designated and effective hedging instruments; and
– other financial assets acquired principally for the purpose of selling or repurchasing in the near term, or that are part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit taking. Included in this category are debt instruments (including those in the form of securities, money market paper and traded corporate and bank loans) and equity instruments.</td><td rowspan="2">Measured at fair value with changes recognized in profit or loss.

Changes in fair value, initial transaction costs and gains and losses realized on disposal or redemption are recognized in Other net income from fair value changes on financial instruments, except interest and dividend income on instruments other than derivatives (refer to item 3c in this Note for more information), interest on derivatives designated as hedging instruments in certain types of hedge accounting relationships and forward points on certain short- and long-duration foreign exchange contracts, which are reported in Net interest income.

Derivative assets (including derivatives that are designated and effective hedging instruments) are generally presented as Derivative financial instruments, except those exchange-traded and OTC-cleared derivatives that are considered to be settled on a daily basis or in substance net settled on a daily basis, which are presented within Cash collateral receivables on derivative instruments.

The presentation of fair value changes on derivatives that are designated and effective as hedging instruments depends on the type of hedge relationship (refer to item 3j in this Note for more information).

Financial assets held for trading (other than derivatives) are presented as Financial assets at fair value held for trading.

Other financial assets mandatorily measured at fair value through profit or loss are presented as Financial assets at fair value not held for trading, except for brokerage receivables, which are presented as a separate line item on the Group's balance sheet.</td></tr>
<tr><td>Mandatorily measured at FVTPL – Other</td><td>A financial asset is mandatorily measured at FVTPL if:
– it is not held in a business model whose objective is to hold assets to collect contractual cash flows or to hold them to collect contractual cash flows and sell; and / or
– the contractual terms give rise to cash flows that are not SPPI; and / or
– it is not held for trading.

The following financial assets are mandatorily measured at FVTPL:
– certain structured loans, certain commercial loans, receivables under reverse repurchase and cash collateral on securities borrowing agreements that are managed on a fair value basis;
– loans managed on a fair value basis and hedged with credit derivatives;
– certain debt securities held as HQLA and managed on a fair value basis;
– certain investment fund holdings and assets held to hedge delivery obligations related to cash-settled employee compensation plans. These assets represent holdings in investment funds, whereby the contractual cash flows do not meet the SPPI criterion because the entry and exit price is based on the fair value of the fund's assets;
– brokerage receivables, for which contractual cash flows do not meet the SPPI criterion because the aggregate balance is accounted for as a single unit of account, with interest being calculated on the individual components;
– auction rate securities, for which contractual cash flows do not meet the SPPI criterion because interest may be reset at rates that contain leverage;
– equity instruments; and
– assets held under unit-linked investment contracts.</td></tr>
</table>

Note 1 Summary of significant accounting policies (continued)

Classification, measurement and presentation of financial instruments from 1 January 2018 (continued)

<table>
<tr><th colspan="2">Financial liabilities classification</th><th>Significant items included</th><th>Measurement and presentation</th></tr>
<tr><td colspan="2">Measured at amortized cost</td><td>This classification includes:
– demand and time deposits;
– retail savings / deposits;
– amounts payable under repurchase agreements;
– cash collateral on securities lent;
– non-structured fixed-rate bonds;
– subordinated debt;
– certificates of deposit and covered bonds; and
– cash collateral payables on derivative instruments.</td><td>Measured at amortized cost using the EIR method.

Upfront fees and direct costs relating to the issuance or origination of the liability are deferred and amortized over the life of the liability using the EIR method.

When the financial liability at amortized cost is derecognized, the gain or loss is recognized in the income statement.

Amortized cost liabilities are presented on the balance sheet primarily as Amounts due to banks, Customer deposits, Payables from securities financing transactions and Debt issued measured at amortized cost.

Amounts arising from ETD and certain OTC derivatives cleared through central clearing counterparties that are either considered to be daily settled or in substance net settled on a daily basis (refer to items 3d and 3i in this Note for more information) are presented within Cash collateral payables on derivative instruments.</td></tr>
<tr><td rowspan="2">Measured at fair value through profit or loss</td><td>Held for trading</td><td>Financial liabilities held for trading include:
– all derivatives with a negative replacement value (including certain loan commitments), except those that are designated and effective hedging instruments; and
– obligations to deliver financial instruments, such as debt and equity instruments, that UBS has sold to third parties, but does not own (short positions).</td><td rowspan="2">Measurement of financial liabilities classified at FVTPL follows the same principles as for financial assets classified at FVTPL, except that the amount of change in the fair value of the financial liability that is attributable to changes in UBS's own credit risk is presented in OCI.

Financial liabilities measured at FVTPL are presented as Financial liabilities at fair value held for trading and Other financial liabilities designated at fair value, respectively, except for brokerage payables and debt issued, which are presented separately on the Group's balance sheet.

Derivative liabilities (including derivatives that are designated and effective hedging instruments) are generally presented as Derivative financial instruments, except those exchange-traded and OTC-cleared derivatives that are considered to be settled on a daily basis or in substance net settled on a daily basis, which are presented within Cash collateral payables on derivative instruments.

Bifurcated embedded derivatives are measured at fair value, but are presented on the same balance sheet line as the host contract measured at amortized cost.

Derivatives that are designated and effective as hedging instruments are also measured at fair value. The presentation of fair value changes differs depending on the type of hedge relationship (refer to item 3j in this Note for more information).</td></tr>
<tr><td>Designated at FVTPL</td><td>UBS designates at FVTPL the following financial liabilities:
– issued hybrid debt instruments that primarily include equity-linked, credit-linked and rates-linked bonds or notes
– issued debt instruments managed on a fair value basis
– certain payables under repurchase agreements and cash collateral on securities lending agreements that are managed in conjunction with associated reverse repurchase agreements and cash collateral on securities borrowed (from 1 January 2018)
– amounts due under unit-linked investment contracts whose cash flows are linked to financial assets measured at FVTPL and eliminate an accounting mismatch (from 1 January 2018)
– brokerage payables, which arise in conjunction with brokerage receivables and are measured at FVTPL to achieve measurement consistency (from 1 January 2018).</td></tr>
</table>

Note 1 Summary of significant accounting policies (continued)

Comparative policy | *Policy applicable prior to 1 January 2018*
Prior to 1 January 2018, on initial recognition, UBS classified, measured and presented its financial assets and liabilities in accordance with IAS 39, *Financial Instruments: Recognition and Measurement*. Classification, measurement and presentation requirements in respect of financial liabilities have been substantially retained by IFRS 9 and are detailed in the table "Classification, measurement and presentation of financial instruments from 1 January 2018." The following table sets out details of classification, measurement and presentation of financial assets prior to 1 January 2018.

Classification, measurement and presentation of financial assets prior to 1 January 2018

<table>
<tr><th>Financial assets classification</th><th>Significant items included</th><th>Measurement and presentation[1]</th></tr>
<tr><td>Held for trading</td><td>Financial assets held for trading include:
– all derivatives with a positive replacement value, except those that are designated and effective hedging instruments; and
– any other financial asset acquired principally for the purpose of selling or repurchasing in the near term, or part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit taking. Included in this category are debt instruments (including those in the form of securities, money market paper and traded corporate and bank loans), equity instruments, and assets held under unit-linked investment contracts.</td><td rowspan="2">Measured at fair value with changes recognized in profit or loss.

Changes in fair value, initial transaction costs and gains and losses realized on disposal or redemption are recognized in Other net income from fair value changes on financial instruments, except interest and dividend income on instruments other than derivatives (refer to item 3c in this Note), interest on derivatives designated as hedging instruments in certain types of hedge accounting relationships and forward points on certain short duration foreign exchange contracts, which are reported in Net interest income.

Derivative assets are generally presented as Derivative financial instruments.

Bifurcated embedded derivatives are measured at fair value, but presented on the same balance sheet line as the host contract measured at amortized cost.

The presentation of fair value changes on derivatives that are designated and effective hedging instruments differs depending on the type of hedge relationship (refer to item 3j in this Note for more information).

Financial assets held for trading (other than derivatives) are presented as Financial assets at fair value held for trading.

Financial assets designated at fair value through profit or loss are presented as Financial assets at fair value not held for trading</td></tr>
<tr><td>Designated at fair value through profit or loss</td><td>A financial asset may be designated at fair value through profit or loss only upon initial recognition and this designation is irrevocable.

The fair value option can be applied only if one of the following criteria is met:
– the financial instrument is a hybrid instrument that includes a substantive embedded derivative;
– the financial instrument is part of a portfolio that is risk managed on a fair value basis and reported to senior management on that basis; or
– the application of the fair value option eliminates or significantly reduces an accounting mismatch that would otherwise arise.

UBS designated at fair value through profit or loss the following financial assets:
– certain structured loans, reverse repurchase and securities borrowing agreements that are managed on a fair value basis;
– loans that are hedged predominantly with credit derivatives. These instruments are designated at fair value to eliminate an accounting mismatch;
– certain debt securities held as high-quality liquid assets (HQLA) and managed by Corporate Center – Group ALM on a fair value basis; and
– assets held to hedge delivery obligations related to cash-settled employee compensation plans. These assets are designated at fair value in order to eliminate an accounting mismatch that would otherwise arise as a result of the liability being measured on a fair value basis.</td></tr>
</table>

1 Presentation categories in this table reflect retrospective amendments to UBS Group balance sheet presentation carried out upon transition to IFRS 9 to facilitate comparability. For a detailed description of line items presented in UBS's financial statements on or before the year ended 31 December 2017, refer to item 4 within Note 1c.

Note 1 Summary of significant accounting policies (continued)

Classification, measurement and presentation of financial assets prior to 1 January 2018 (continued)

Financial assets classification	Significant items included	Measurement and presentation
Loans and receivables (amortized cost)	Non-derivative financial assets with fixed or determinable payments that are not quoted in an active market and are not assets for which the Group may not recover substantially all of its initial net investment for reasons other than credit deterioration. This classification includes: – cash and balances with central banks – cash collateral receivables on derivative instruments – residential and commercial mortgages – secured loans, including reverse repurchase agreements, receivables under stock borrowing and Lombard loans, and unsecured loans – certain securities held within Corporate Center – Non-core and Legacy Portfolio – trade and lease receivables.	Measured at amortized cost using the effective interest rate method less allowances for credit losses (refer to items 3c and 3g in this Note). Upfront fees and direct costs relating to loan origination, refinancing or restructuring as well as to loan commitments are deferred and amortized over the life of the loan using the effective interest rate method. Loans and receivables are presented on the balance sheet primarily as *Cash and balances with central banks, Loans and advances to banks, Loans and advances to customers*, *Receivables from securities financing transactions* and *Cash collateral receivables on derivative instruments.* Amounts arising from exchange-traded derivatives (ETD) and certain over-the-counter (OTC) derivatives cleared through central clearing counterparties that are either considered to be daily settled or qualify for netting (refer to items 3d and 3i in this Note) are presented within *Cash collateral receivables on derivative instruments.*
Available for sale	Financial assets classified as available for sale are non-derivative financial assets that are not classified as held for trading, designated at fair value through profit or loss, or loans and receivables. This classification mainly includes debt securities held as HQLA and managed by Corporate Center – Group ALM, certain asset-backed securities managed by Corporate Center – Group ALM, investment fund holdings and strategic and commercial equity investments.	Measured at fair value with unrealized gains and losses reported in *Other comprehensive income*, net of applicable income taxes, until such investments are sold, collected or otherwise disposed of, or until any such investment is determined to be impaired (refer to item 3g in this Note). Upon disposal, any accumulated balances in *Other comprehensive income* are reclassified to the income statement and reported within *Other income.* Interest and dividend income are recognized in the income statement in accordance with item 3c in this Note. Refer to item 13 in this Note for information on the treatment of foreign exchange translation gains and losses.
Held to maturity	Non-derivative financial assets with fixed or determinable payments and fixed maturities for which UBS has the positive intention and ability to hold to maturity. This classification mainly includes debt securities held as HQLA and managed by Corporate Center – Group ALM.	Measured at amortized cost using the effective interest rate method less allowances for credit losses (refer to items 3c and 3g in this Note).

c. Interest income and expense

Interest income and expense are recognized in the income statement applying the effective interest rate (EIR) method. When calculating the EIR for financial instruments (other than credit-impaired financial instruments), UBS estimates future cash flows considering all contractual terms of the instrument, but not expected credit losses.

In determining interest income and expense, the EIR is applied to the gross carrying amount of the financial asset (unless the asset is credit-impaired) or the amortized cost of a financial liability (prior to 1 January 2018: amortized cost of a financial asset or financial liability). However, when a financial asset becomes credit-impaired after initial recognition, interest income is determined by applying the EIR to the amortized cost of the instrument, which represents the gross carrying amount adjusted for any credit loss allowance. Furthermore, for financial assets that were credit-impaired on initial recognition, interest is determined by applying a credit-adjusted EIR to the amortized cost of the instrument.

Upfront fees, including loan commitment fees where a loan is expected to be issued, and direct costs are included within the initial measurement of a financial instrument measured at amortized cost or FVOCI (prior to 1 January 2018: financial asset classified as available for sale). Such fees and costs are therefore recognized over the expected life of the instrument as part of its EIR.

Fees related to loan commitments where no loan is expected to be issued, as well as loan syndication fees where UBS does not retain a portion of the syndicated loan or where UBS does retain a portion of the syndicated loan at the same effective yield for comparable risk as other participants, are included in *Net fee and commission income*.

→ **Please refer to item 4 in this Note for more information**

Presentation of interest in the income statement

Effective from 1 January 2018, interest income or expense on financial instruments measured at amortized cost and financial assets measured at FVOCI (prior to 1 January 2018: financial assets classified as available for sale) are presented separately within *Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income* and *Interest expense from financial instruments measured at amortized cost*.

UBS also presents interest income and expense on financial instruments (excluding derivatives) measured at FVTPL including forward points on certain short- and long-duration foreign exchange contracts and dividends separately in *Interest income (or expense) from financial instruments measured at fair value through profit or loss*. Furthermore, interest income and expense on derivatives designated as hedging instruments in effective hedge relationships are presented consistently with the interest income and expense of the respective hedged item.

Interest income on financial assets, excluding derivatives, is included in *Interest income* when positive and in *Interest expense* when negative, because negative interest income arising on a financial asset does not meet the definition of revenue. Similarly, interest expense on financial liabilities, excluding derivatives, is included in *Interest expense*, except when interest rates are negative, in which case it is included in *Interest income*.

→ **Refer to item 3j in this Note and Note 3 for more information**

d. Derecognition

Financial assets

UBS derecognizes a financial asset, or a portion of a financial asset, from its balance sheet where the contractual rights to cash flows from the asset have expired, or have been transferred, usually by sale, thus exposing the purchaser to either substantially all the risks and rewards of the asset or a significant part of the risks and rewards combined with a practical ability to sell or pledge the asset.

A financial asset is considered to have been transferred when UBS (i) transfers the contractual rights to receive the cash flows of the financial asset or (ii) retains the contractual rights to receive the cash flows of that asset, but assumes a contractual obligation to pay the cash flows to one or more entities.

Where financial assets have been pledged as collateral or in similar arrangements, they are considered to have been transferred if the counterparty has received the contractual right to the cash flows of the pledged assets, as may be evidenced, for example, by the counterparty's right to sell or repledge the assets. Where the counterparty to the pledged financial assets has not received the contractual right to the cash flows, UBS does not consider this to be a transfer for the purposes of derecognition.

Note 1 Summary of significant accounting policies (continued)

In transactions where substantially all of the risks and rewards of ownership of a financial asset are neither retained nor transferred, UBS derecognizes the financial asset if control over the asset is surrendered, and the rights and obligations retained following the transfer are recognized separately as assets and liabilities, respectively. In transfers where control over the financial asset is retained, UBS continues to recognize the asset to the extent of its continuing involvement, determined by the extent to which it is exposed to changes in the value of the transferred asset following the transfer.

Certain over-the-counter (OTC) derivative contracts and most exchange-traded futures and options contracts cleared through central clearing counterparties are considered to be settled on a daily basis through the daily margining process, as the payment or receipt of the variation margin represents legal or economic settlement of a derivative contract, which results in derecognition of the associated positive and negative replacement values.

→ **Refer to Note 25 for more information**

Financial liabilities

UBS derecognizes a financial liability from its balance sheet when it is extinguished; i.e., when the obligation specified in the contract is discharged, canceled or expires. When an existing financial liability is exchanged for a new one from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification results in derecognition of the original liability and the recognition of a new liability with any difference in the respective carrying amounts being recognized in the income statement.

e. Securities borrowing / lending and repurchase / reverse repurchase transactions

Securities borrowing / lending and repurchase / reverse repurchase transactions are generally entered into on a collateralized basis. In such transactions, UBS typically borrows or lends equity and debt securities in exchange for securities or cash collateral.

These transactions are treated as collateralized financing transactions where the securities transferred / received are not derecognized or recognized on the balance sheet. Securities transferred / received with the right to resell or repledge are disclosed separately.

In reverse repurchase and securities borrowing agreements, the cash delivered is derecognized and a corresponding receivable, including accrued interest, is recorded in the balance sheet line *Receivables from securities financing transactions* (prior to 1 January 2018: *Reverse repurchase agreements* and *Cash collateral on securities borrowed),* representing UBS's right to receive the cash. Similarly, in repurchase and securities lending agreements, the cash received is recognized and a corresponding obligation, including accrued interest, is recorded in *Payables from securities financing transactions* (prior to 1 January 2018: *Repurchase agreements* and *Cash collateral on securities lent*). Additionally, the sale of securities that is settled by delivering securities received in reverse repurchase or securities borrowing transactions triggers the recognition of a trading liability.

Repurchase and reverse repurchase transactions with the same counterparty, maturity, currency and central securities depository are generally presented net, subject to meeting the netting requirements described in item 3i of this Note.

→ **Refer to Notes 26 and 25 for more information**

f. Fair value of financial instruments

UBS accounts for a significant portion of its assets and liabilities at fair value. Fair value is the price on the measurement date that would be received for the sale of an asset or paid to transfer a liability in an orderly transaction between market participants in the principal market, or in the most advantageous market in the absence of a principal market.

All financial instruments measured at fair value are categorized into one of three fair value hierarchy levels. Level 1 financial instruments are those for which fair values can be derived from quoted prices in active markets. Level 2 financial instruments are those for which fair values must be derived using valuation techniques for which all significant inputs are, or are based on, observable market data. Level 3 financial instruments are those for which fair values can only be derived on the basis of valuation techniques for which significant inputs are not based on observable market data.

Critical accounting estimates and judgments

The use of valuation techniques, modeling assumptions and estimates of unobservable market inputs require significant judgment and could affect the amount of gain or loss recorded for a particular position. Valuation techniques that rely more heavily on unobservable inputs require a higher level of judgment to calculate a fair value than those entirely based on observable inputs.

Valuation techniques, including models, that are used to determine fair values are periodically reviewed and validated by qualified personnel, independent of those who created them. Models are calibrated to ensure that outputs reflect observable market data, to the extent possible. Also, UBS prioritizes the use of observable inputs, when available, over unobservable inputs. Judgment is required in selecting appropriate models as well as inputs for which observable data is less readily or not available.

UBS's governance framework over fair value measurement is described in Note 24b.

The level of subjectivity and the degree of management judgment involved in the development of estimates and the selection of assumptions are more significant for instruments valued using specialized and sophisticated models and where some or all of the parameter inputs are less observable (Level 3 instruments) and may require adjustment to reflect factors that market participants would consider in estimating fair value, such as close-out costs, credit exposure, model-driven valuation uncertainty, funding costs and benefits, trading restrictions and other factors, which are presented in Note 24d. The Group provides a sensitivity analysis of the estimated effects arising from changing significant unobservable inputs in Level 3 financial instruments to reasonably possible alternative assumptions within Note 24g.

→ **Refer to Note 24 for more information**

g. Allowances and provisions for expected credit losses

Policy applicable from 1 January 2018[1]

Expected credit losses (ECL) are recognized for financial assets measured at amortized cost, financial assets measured at FVOCI, fee and lease receivables, financial guarantees and loan commitments. ECL are also recognized on the undrawn portion of revolving revocable credit lines, which include UBS's credit card limits and master credit facilities, which are customary in the Swiss market for corporate and commercial clients. UBS refers to both as "other credit lines," with clients allowed to draw down on-demand balances (with the Swiss master credit facilities also allowing for term products) and which can be terminated by UBS at any time. Though these other credit lines are revocable, UBS is exposed to credit risk because the client has the ability to draw down funds before UBS can take credit risk mitigation actions.

Recognition of expected credit losses

ECL represent the difference between contractual cash flows and those UBS expects to receive, discounted at the EIR. For loan commitments and other credit facilities in scope of ECL, expected cash shortfalls are determined by considering expected future drawdowns.

ECL are recognized on the following basis:

– Maximum 12-month ECL are recognized from initial recognition, reflecting the portion of lifetime cash shortfalls that would result if a default occurs in the 12 months after the reporting date, weighted by the risk of a default occurring. Instruments in this category are referred to as instruments in stage 1. For instruments with a remaining maturity of less than 12 months, ECL are determined for this shorter period.
– Lifetime ECL are recognized if a significant increase in credit risk (SICR) is detected subsequent to the instrument's initial recognition, reflecting lifetime cash shortfalls that would result from all possible default events over the expected life of a financial instrument, weighted by the risk of a default occurring. Instruments in this category are referred to as instruments in stage 2. Where an SICR is no longer observed, the instrument will move back to stage 1.
– Lifetime ECL are always recognized for credit-impaired financial instruments, referred to as instruments in stage 3. The IFRS 9 determination of whether an instrument is credit-impaired is based on the occurrence of one or more loss events, with lifetime ECL generally derived by estimating expected cash flows based on a chosen recovery strategy. Credit-impaired exposures may include positions for which no loss has occurred or no allowance has been recognized, for example, because they are expected to be fully recoverable through the collateral held.
– Changes in lifetime ECL since initial recognition are also recognized for assets that are purchased or originated credit-impaired (POCI). POCI financial assets are initially recognized at fair value, with interest income subsequently being recognized based on a credit-adjusted EIR. POCI financial instruments include those that are newly recognized following a substantial restructuring and remain a separate category until derecognition.

UBS does not apply the low-credit-risk practical expedient that allows a lifetime ECL for lease or fee receivables to be recognized irrespective of whether a significant increase in credit risk has occurred. Instead, UBS has incorporated lease and fee receivables into the standard ECL calculation.

[1] The accounting policy in this section applies from 1 January 2018, the effective date of IFRS 9. For the details of transition effects refer to Note 1c.

Note 1 Summary of significant accounting policies (continued)

A write-off is made when all or part of a financial asset is deemed uncollectible or forgiven. Write-offs reduce the principal amount of a claim and are charged against previously established allowances for credit losses. Recoveries, in part or in full, of amounts previously written off are generally credited to *Credit loss (expense) / recovery*. Write-offs and partial write-offs represent derecognition / partial derecognition events.

ECL are recognized in profit or loss with a corresponding ECL allowance reported as a decrease in the carrying value of financial assets measured at amortized cost on the balance sheet. For financial assets measured at fair value through OCI, the carrying value is not reduced, but an accumulated amount is recognized in OCI. For off-balance sheet financial instruments and other credit lines, provisions for ECL are reported in *Provisions*. ECL are recognized within the income statement in *Credit loss (expense) / recovery.*

Default and credit impairment

UBS applies a single definition of default for classifying assets and determining the probability of default of its obligors for risk modeling purposes. The definition of default is based on quantitative and qualitative criteria. A counterparty is classified as defaulted at the latest when material payments of interest, principal or fees are overdue for more than 90 days, or more than 180 days for certain exposures in relation to loans to private and commercial clients in Personal & Corporate Banking, and to private clients of Global Wealth Management Region Switzerland. UBS does not consider the general 90-day presumption for default recognition appropriate for these latter portfolios based on an analysis of the cure rates, which demonstrated that strict application of the 90-day criterion would not accurately reflect the inherent credit risk. Counterparties are also classified as defaulted when bankruptcy, insolvency proceedings or enforced liquidation have commenced; obligations have been restructured on preferential terms (forbearance); or there is other evidence that payment obligations will not be fully met without recourse to collateral. The latter may be the case even if, to date, all contractual payments have been made when due. If a counterparty is defaulted, generally all claims against the counterparty are treated as defaulted.

An instrument is classified as credit-impaired if the counterparty is defaulted, and / or the instrument is identified as POCI. An instrument is POCI if it has been purchased with a material discount to its carrying amount following a risk event of the issuer or originated with a defaulted counterparty. Once a financial asset is classified as defaulted / credit-impaired (except when it is POCI), it is reported as a stage 3 instrument and remains as such unless all past due amounts have been rectified, additional payments have been made on time, the position is not classified as credit-restructured, and there is general evidence of credit recovery. A three-month probation period is applied before a transfer back to stages 1 or 2 can be triggered. However, most instruments remain in stage 3 for a longer period.

Measurement of expected credit losses

IFRS 9 ECL reflect an unbiased, probability-weighted estimate based on either loss expectations resulting from default events over a maximum 12-month period from the reporting date or over the remaining life of a financial instrument. The method used to calculate individual probability-weighted unbiased ECL is based on a combination of the following principal factors: probability of default (PD), loss given default (LGD) and exposure at default (EAD). Parameters are generally determined on an individual financial asset level. Based on the materiality of the portfolio, for credit card exposures and personal account overdrafts in Switzerland, and certain loans to financial advisors of Global Wealth Management Region Americas, a portfolio approach is applied that derives an average PD and LGD for the entire portfolio. PDs and LGDs used in the ECL calculation are point in time (PIT)-based for key portfolios and consider both current conditions and expected cyclical changes. For each instrument or group of instruments, parameter time series are generated consisting of the instruments' PD, LGD and EAD profiles considering the respective period of exposure to credit risk. For material portfolios, PD and LGD are determined for four different scenarios, whereas EAD projections are treated as scenario independent.

For the purpose of determining the ECL-relevant parameters, UBS leverages its Pillar 1 internal ratings-based (IRB) models that are also used in determining expected loss (EL) and risk-weighted assets under the Basel III framework and Pillar 2 stress loss models. Adjustments have been made to these models and new IFRS 9-related models have been developed that consider the complexity, structure and risk profile of relevant portfolios and take account of the fact that PDs and LGDs used in the ECL calculation are PIT-based, as opposed to the corresponding Basel III through-the-cycle (TTC) parameters. All models that are relevant for measuring expected credit losses have been subject to the existing model validation and oversight processes with the Group Model Governance Board as the highest approval authority. The assignment of internal counterparty rating grades and the determination of default probabilities for the purposes of Basel III are not affected by the IFRS 9 ECL calculation.

Probability of default (PD): The PD represents the likelihood of a default over a specified time period. A 12-month PD represents the likelihood of default determined for the next 12 months and a lifetime PD represents the probability of default over the remaining lifetime of the instrument. The lifetime PD calculation is based on a series of 12-month PIT PDs that are derived from TTC PDs and scenario forecasts. This modeling is region-, industry- and client segment-specific and considers both scenario-systematic and client-idiosyncratic information. To derive the cumulative lifetime PD per scenario, the series of 12-month PIT PDs are transformed into marginal PIT PDs, taking any assumed default events from previous periods into account.

Loss given default (LGD): The LGD represents an estimate of the loss at the time of a potential default occurring during the life of a financial instrument. The determination of the LGD takes into account expected future cash flows from collateral and other credit enhancements, or expected payouts from bankruptcy proceedings for unsecured claims and, where applicable, time to realization of collateral and the seniority of claims. The LGD is commonly expressed as a percentage of the EAD.

Exposure at default (EAD): The EAD represents an estimate of the exposure to credit risk at the time of a potential default occurring during the life of a financial instrument. It represents the cash flows outstanding at the time of default, considering expected repayments, interest payments and accruals, discounted at the EIR. Future drawdowns on facilities are considered through a credit conversion factor (CCF) that is reflective of historical drawdown and default patterns and the characteristics of the respective portfolios. IFRS 9-specific CCFs have been modeled to capture client segment- and product-specific patterns after removing Basel III standard-specific elements, i.e., conservatism and focus on a 12-month period prior to default.

Estimation of expected credit losses

Number of scenarios and estimation of scenario weights

The determination of the probability-weighted ECL requires evaluating a range of diverse and relevant future economic conditions, especially with a view to modeling the non-linear effect of assumptions about macroeconomic factors on the estimate.

To accommodate this requirement, UBS uses four different economic scenarios in the ECL calculation: an upside, a baseline, a mild downside and a severe downside scenario. Each scenario is represented by a specific scenario narrative, which is relevant considering the exposure of key portfolios to economic risks, and for which a set of consistent macroeconomic variables is determined. Those variables range from above-trend economic growth to severe recession. The baseline scenario is aligned to the economic and market assumptions used for UBS business planning purposes. An econometric model is used to provide an input into the scenario weight assessment process giving a first indication of the probability that the GDP forecast used for each scenario would materialize, if historically observed deviations of GDP growth from trend growth were representative. As such historical analyses of GDP development do not include an assessment of the underlying economic or political causes, management positions the model output into the context of current conditions and future expectations and applies material judgment in determining the final scenario weights. The determined weights constitute the probabilities that the respective set of macroeconomic conditions will occur and not that the chosen particular narratives with the related macroeconomic variables will materialize.

Macroeconomic and other factors

The range of macroeconomic, market and other factors that is modeled as part of the scenario determination is wide, and historical information is used to support the identification of the key factors. As the forecast horizon increases, the availability of information decreases and judgment increases. For cycle-sensitive PD and LGD determination purposes, UBS projects the relevant economic factors for a period of three years before reverting, over a specified period, to a cycle-neutral PD and LGD for longer-term projections.

Factors relevant for the ECL calculation vary by type of exposure and are determined during the credit cycle index model development process in close alignment with expert judgment. Certain variables may only be relevant for specific types of exposures, such as house price indices for mortgage loans, while other variables have key relevance in the ECL calculation for all exposures. Regional and client segment characteristics are generally taken into account, with specific focus on Switzerland and the US considering UBS's key ECL-relevant portfolios.

For UBS, the following forward-looking macroeconomic variables represent the most relevant factors in the ECL calculation:

– GDP growth rates, given their significant effect on borrowers' performance;
– house price indices, given their significant effect on mortgage collateral valuations;
– unemployment rates, given their significant effect on private clients' ability to meet contractual obligations;
– interest rates, given their significant effect on the counterparties' abilities to service their debt;
– consumer price indices, given their overall relevance for companies' performance, private clients' purchasing power and economic stability; and
– equity indices, given that they are an important factor in our corporate rating tools.

The forward-looking macroeconomic assumptions used in the ECL calculation are developed by UBS economists, risk methodology personnel and credit risk officers. Assumptions and scenarios are validated and approved through a Scenario Committee and an Operating Committee, which also aim to ensure a consistent use of forward-looking information throughout UBS, including in the business planning process. ECL inputs are tested and reassessed for appropriateness at least each quarter and appropriate adjustments are made when needed.

Scenario generation, review process and governance

All aspects of the scenario selection, including the specific narratives, their weight for the ECL estimation, and the key macroeconomic and other factors, are subject to a formal governance and approval process.

Note 1 Summary of significant accounting policies (continued)

A team of economists, who are part of Group Risk Control, provide the basic analysis taking into account information obtained through established risk identification and assessment processes, which involve a broad range of experts, in particular, risk specialists and other in-house economists. Material risks with a high likelihood of materializing are then factored into the scenario selection process. Once narratives have been developed, key macroeconomic factors that are consistent with the severity of the case and interdependencies are determined.

The scenarios, their weight and the key macroeconomic and other factors are subject to a critical assessment by members of the Scenario Committee, where senior credit officers from the divisions and representatives from Group Risk Control are represented. Important aspects for the review are the extent to which the selected scenarios reflect the vulnerabilities of the relevant portfolios; whether their transformation into PIT PD and LGD values is in line with credit risk officers' expectations; and whether there may be pockets of exposures, where particular credit risk concerns may not be capable of being addressed systematically and require an expert-based overlay for stage allocation and ECL allowance. This also ensures a consistent use of forward-looking information throughout UBS and an alignment with the business planning process.

The Operating Committee is jointly chaired by the Group Controller and Chief Accounting Officer, and the Risk Chief Operating Officer and Group Chief Risk Model Officer, and is comprised of the divisional Chief Risk Officers and divisional Chief Financial Officers as well as senior Corporate Center Risk and Finance representatives. They review the proposals submitted by the Scenario Committee and approve the final selection of scenarios and factors and any expert-based overlays as they may be required to cover temporary issues, either related to specific risk elements in a portfolio, or due to identified technical deficiencies pending remediation (model updates, data quality, etc.).

The Group Model Governance Board as the highest authority under UBS's model governance framework ratifies the decisions by the Operating Committee.

ECL measurement period

The period for which lifetime ECL are determined is based on the maximum contractual period that UBS is exposed to credit risk, taking into account contractual extension, termination and prepayment options. For irrevocable loan commitments and financial guarantee contracts, the measurement period represents the maximum contractual period for which UBS has an obligation to extend credit.

Additionally, some financial instruments include both an on-demand loan and a revocable undrawn commitment, where the contractual cancelation right does not limit UBS's exposure to credit risk to the contractual notice period as the client has the ability to draw down funds before UBS can take risk-mitigating actions. In such cases, UBS is required to estimate the period over which it is exposed to credit risk. This applies to UBS's credit card limits, which do not have a defined contractual maturity date, are callable on demand and where the drawn and undrawn components are managed as one unit. The exposure arising from UBS's credit card limits is not significant and is managed at a portfolio level, with credit actions triggered when balances are past due. An ECL measurement period of seven years is applied for credit card limits, capped at 12 months for stage 1 balances, as a proxy for the period that UBS is exposed to credit risk.

Customary master credit agreements in the Swiss corporate market also include on-demand loans and revocable undrawn commitments. For smaller commercial facilities, a risk-based monitoring (RbM) approach is in place that highlights negative trends as risk events, at an individual facility level, based on a combination of continuously updated risk indicators. The risk events trigger additional credit reviews by a risk officer, allowing for informed credit decisions to be taken. Larger corporate facilities are not subject to RbM, but are reviewed at least annually through a formal credit review. UBS has assessed these credit risk management practices and considers both the RbM approach and formal credit review as substantive credit reviews resulting in a re-origination of the facility. Following this, a 12-month measurement period from the reporting date is used for both types of facilities as an appropriate proxy of the period over which UBS is exposed to credit risk, with 12 months also used as a look-back period for assessing SICR, always from the respective reporting date.

Significant increase in credit risk

Financial instruments subject to ECL are monitored on an ongoing basis. To determine whether the recognition of a maximum 12-month ECL continues to be appropriate, it is assessed whether an SICR has occurred since initial recognition of the financial instrument. The assessment criteria include both quantitative and qualitative factors. UBS does not make use of the expedient that no particular SICR test is required for instruments that have low credit risk at reporting date.

Primarily, UBS assesses changes in an instrument's risk of default on a quantitative basis by comparing the annualized forward-looking and scenario-weighted lifetime PD of an instrument determined at two different dates:

– at the reporting date; and
– at inception of the instrument.

In both cases, the respective PDs are determined for the residual lifetime of the instrument, i.e., the period between the reporting date and maturity. If, based on UBS's quantitative modeling, an increase exceeds a set threshold, an SICR is deemed to have occurred and the instrument is transferred to stage 2 with lifetime ECL being recognized.

The threshold applied varies depending on the original credit quality of the borrower. For instruments with lower default probabilities at inception due to good credit quality of the counterparty, the SICR threshold is set at a higher level than for instruments with higher default probabilities at inception. This implies that for instruments with initially lower default probabilities, a relatively higher deterioration in credit quality is needed to trigger an SICR than for those instruments with originally higher PDs. The SICR assessment based on PD changes is made at an individual financial asset level. A high-level overview of the SICR trigger, which is a multiple of the annualized remaining lifetime PIT PD expressed in rating downgrades that entail the same multiple of PD values, together with the corresponding ratings at origination of an instrument, is provided in the "SICR thresholds" table below. This simplified view is aligned to internal ratings as disclosed in "Internal UBS rating scale and mapping of external ratings" presented in "Credit risk" in the "Risk management and control" section of this report. The actual SICR thresholds applied are defined on a more granular level interpolating between the values shown in the table below.

SICR thresholds

Internal rating at origination of the instrument	Rating downgrades / SICR trigger
0–3	3
4–8	2
9–13	1

→ **Refer to the "Risk management and control" section of this report for more details on the bank's internal grading system**

Irrespective of the SICR assessment based on default probabilities, credit risk is generally deemed to have significantly increased for an instrument if the contractual payments are more than 30 days past due. For certain less material portfolios, specifically the Swiss credit card portfolio and the recruitment and retention loans to financial advisors of Global Wealth Management Region Americas, the 30-day past due criterion is used as the primary indicator of an SICR. Where instruments are transferred to stage 2 due to the 30-day past due criterion, a minimum period of six months is applied before a transfer back to stage 1 can be triggered. For instruments in Personal & Corporate Banking that are between 90 and 180 days past due but have not been reclassified to stage 3, a one-year period is applied before a transfer back to stage 1 can be triggered.

Additionally, based on individual counterparty-specific indicators, external market indicators of credit risk or general economic conditions, counterparties may be moved to a watch list, which is used as a secondary qualitative indicator for an SICR and hence for a transfer to stage 2. Exception management is further applied, allowing for individual and collective adjustments on exposures sharing the same credit risk characteristics to take account of specific situations that are not otherwise fully reflected. Instruments for which an SICR since initial recognition is determined based on criteria other than changed default probabilities or watch list items remain in stage 2 for at least six months post resolution of the stage 2 trigger event.

The overall SICR determination process does not apply to Lombard loans, securities financing transactions and certain other asset-based lending transactions, because of the risk management practices adopted, including daily monitoring processes with strict remargining requirements. If margin calls are not satisfied, a position is closed out and classified as a stage 3 position.

Credit risk officers are responsible for ensuring that the stage allocation of instruments is in line with the requirements of the standard. Identification of an SICR for accounting purposes is in some aspects different from internal credit risk management processes for loans with increased credit risk, mainly because ECL accounting requirements are instrument-specific, such that a borrower can have multiple exposures allocated to different stages, and that maturing loans in stage 2 will migrate to stage 1 upon renewal irrespective of the actual credit risk at that time. Under a risk-based approach, a holistic counterparty credit assessment and the absolute level of risk at any given date will determine what risk mitigating actions may be warranted.

→ **Refer to the "Risk management and control" section of this report for more information**

Note 1 Summary of significant accounting policies (continued)

Critical accounting estimates and judgments

The calculation of ECL requires management to apply significant judgment and make estimates and assumptions that involve significant uncertainty at the time they are made. Changes to these estimates and assumptions can result in significant changes to the timing and amount of ECL to be recognized.

Determination of a significant increase in credit risk
IFRS 9 does not include a definition of what constitutes an SICR. UBS's assessment of whether an SICR has occurred since initial recognition is based on reasonable and supportable forward-looking information, both qualitative and quantitative, and includes significant management judgment. More stringent criteria could significantly increase the number of instruments migrating to stage 2. An IFRS 9 Operating Committee has been established to review and challenge the SICR approach and any potential changes and determinations made in the quarter.

Scenarios, scenario weights and macroeconomic factors
ECL reflect an unbiased and probability-weighted amount, which UBS determines by evaluating a range of possible outcomes. Management selects forward-looking scenarios and judges the suitability of respective weights to be applied. Each of the scenarios is based on management's assumptions around future economic conditions in the form of macroeconomic, market and other factors. Changes in the scenarios and weights, the corresponding set of macroeconomic variables and the assumptions made around those variables for the forecast horizon would have a significant effect on the ECL. An IFRS 9 Scenario Committee, in addition to the Operating Committee, has been established to derive, review and challenge the selection and weights.

ECL measurement period
Lifetime ECL are generally determined based upon the contractual maturity of the transaction, which significantly affects ECL. The ECL calculation is therefore sensitive to any extension of contractual maturities triggered by business decisions, consumer behaviors and an increased number of stage 2 positions. In addition, for credit card limits and Swiss callable master credit facilities, judgment is required as UBS must determine the period over which it is exposed to credit risk. A seven-year period has been applied for credit card limits, capped at 12 months for stage 1 positions, and a 12-month period has been applied for master credit facilities.

Modeling and management adjustments
A number of complex models have been developed or modified to calculate ECL, with additional management adjustments required. Internal counterparty rating changes, new or revised models and changes to data may significantly affect ECL. The models are governed by UBS's model validation controls, which aim to ensure independent verification, and are approved by the Group Model Governance Board (GMGB). The management adjustments are approved by the IFRS 9 Operating Committee and endorsed by the GMGB.

The Group provides a sensitivity analysis of the effect of scenario selection, scenario weights and SICR trigger points on ECL measurement within Note 23g.

Comparative policy | *Policy applicable prior to 1 January 2018*
A claim is impaired and an allowance or provision for credit losses is recognized when objective evidence demonstrates that a loss event has occurred after the initial recognition and that the loss event has an effect on the future cash flows that can be reliably estimated (incurred loss approach). UBS considers a claim to be impaired if it will be unable to collect all amounts due on it based on the original contractual terms as a result of credit deterioration of the issuer or counterparty. A claim can be a loan or receivable carried at amortized cost, or a commitment, such as a letter of credit, a guarantee or a similar instrument.

An allowance for credit losses is reported as a decrease in the carrying value of a financial asset. For an off-balance sheet item, such as a commitment, a provision for credit loss is reported in *Provisions*. Changes to allowances and provisions for credit losses are recognized in *Credit loss (expense) / recovery*.

Critical accounting estimates and judgments

Allowances and provisions for credit losses are evaluated at both a counterparty-specific level and collectively. Judgment is used in making assumptions about the timing and amount of impairment losses.

Counterparty-specific allowances and provisions

Loans are evaluated individually for impairment if objective evidence indicates that a loan may be impaired. Individual credit exposures are evaluated on the basis of the borrower's overall financial condition, resources and payment record, the prospects of support from contractual guarantors and, where applicable, the realizable value of any collateral. The impairment loss for a loan is the excess of the carrying value of the financial asset over the estimated recoverable amount. The estimated recoverable amount is the present value, calculated using the loan's original effective interest rate, of expected future cash flows, including amounts that may result from restructuring or the liquidation of collateral. If a loan has a variable interest rate, the discount rate for calculating the recoverable amount is the current effective interest rate. Upon impairment, interest income is accrued by applying the original effective interest rate to the impaired carrying value of the loan.

All impaired loans are reviewed and analyzed at least annually. Any subsequent changes to the amounts and timing of the expected future cash flows compared with prior estimates result in a change in the allowance for credit losses and are charged or credited to *Credit loss (expense) / recovery*. An allowance for impairment is reversed only when the credit quality has improved to such an extent that there is reasonable assurance of timely collection of principal and interest in accordance with the original contractual terms of the instrument, or the equivalent value thereof. A write-off is made when all or part of a financial asset is deemed uncollectible or forgiven. Write-offs reduce the principal amount of a claim and are charged against previously established allowances for credit losses. Recoveries, in part or in full, of amounts previously written off are credited to *Credit loss (expense) / recovery*.

Collective allowances and provisions

Collective allowances and provisions are calculated for portfolios with similar credit risk characteristics, taking into account historical loss experience and current conditions. The methodology and assumptions used are reviewed regularly to reduce any differences between estimated and actual loss experience. For all of its portfolios, UBS also assesses whether there have been any unforeseen developments that might result in impairments that are not immediately observable at a counterparty level. To determine whether an event-driven collective allowance for credit losses is required, UBS considers global economic drivers to assess the most vulnerable countries and industries. As the allowance cannot be allocated to individual loans, the loans are not considered to be impaired and interest is accrued on each loan according to its contractual terms. If objective evidence becomes available that indicates that an individual financial asset is impaired, it is removed from the group of financial assets assessed for impairment on a collective basis and is assessed separately as counterparty-specific.

Impairment of financial assets classified as available for sale

At each balance sheet date, UBS assesses whether indicators of impairment are present. Available-for-sale debt instruments are impaired when there is objective evidence, using the same criteria described on the previous page, that, as a result of one or more events that occurred after the initial recognition of the asset, the estimated future cash flows have decreased.

Objective evidence that there has been an impairment of an available-for-sale equity instrument is a significant or prolonged decline in the fair value of the asset. UBS uses a rebuttable presumption that such instruments are impaired where there has been a decline in fair value of more than 20% below its original cost or fair value has been below original cost for more than six months.

To the extent a financial asset classified as available for sale is determined to be impaired, the related cumulative net unrealized loss previously recognized in *Other comprehensive income* is reclassified to the income statement within *Other income*. For equity instruments, any further loss is recognized directly in the income statement, whereas for debt instruments, any further loss is recognized in the income statement only if there is additional objective evidence of impairment. After the recognition of an impairment on a financial asset classified as available for sale, increases in the fair value of equity instruments are reported in *Other comprehensive income*. For debt instruments, such increases in the fair value, up to amortized cost in the transaction currency, are recognized in *Other income,* provided that the fair value increase is related to an event occurring after the impairment loss was recorded. Increases in excess of that amount are reported in *Other comprehensive income*. ▲

h. Restructured and modified financial assets

When payment default is expected or where default has already occurred, UBS may grant concessions to borrowers in financial difficulties that it would otherwise not consider in the normal course of its business, such as preferential interest rates, extension of maturity, modifying the schedule of repayments, debt / equity swap, subordination, etc. When a concession or forbearance measure is granted, each case is considered individually and the exposure is generally classified as being in default. Forbearance classification will remain until the loan is collected or written off, non-preferential conditions are granted that supersede the preferential conditions or until the counterparty has recovered and the preferential conditions no longer exceed our risk appetite.

Contractual adjustments when there is no evidence of imminent payment default, or where changes to terms and conditions are within UBS's usual risk appetite, are not considered to be in forbearance. Modifications represent contractual amendments that result in an alteration of future contractual cash flows and that can occur within UBS's normal risk appetite or as part of a credit restructuring where a counterparty is in financial difficulties.

A restructuring or modification of a financial asset could lead to a substantial change in the terms and conditions, resulting in the original financial asset being derecognized and a new financial asset being recognized. Where the modification does not result in a derecognition, any difference between the modified contractual cash flows discounted at the original EIR and the existing gross carrying value of a financial asset is recognized in profit or loss as a modification gain or loss. Further, the subsequent SICR assessment is made by comparing the risk of default at the reporting date based on the modified contractual terms of the financial asset with the risk of default at initial recognition based on the original, unmodified contractual terms of the financial asset.

Note 1 Summary of significant accounting policies (continued)

i. Netting

UBS nets financial assets and liabilities on its balance sheet if (i) it has the unconditional and legally enforceable right to set off the recognized amounts, both in the normal course of business and in the event of default, bankruptcy or insolvency of UBS and all of the counterparties, and (ii) intends either to settle on a net basis or to realize the asset and settle the liability simultaneously. Netted positions include, for example, certain derivatives and repurchase and reverse repurchase transactions with various counterparties, exchanges and clearing houses.

In assessing whether UBS intends to either settle on a net basis, or to realize the asset and settle the liability simultaneously, emphasis is placed on the effectiveness of operational settlement mechanics in eliminating substantially all credit and liquidity exposure between the counterparties. This condition precludes offsetting on the balance sheet for substantial amounts of UBS's financial assets and liabilities, even though they may be subject to enforceable netting arrangements. For OTC derivative contracts, balance sheet offsetting is generally only permitted in circumstances in which a market settlement mechanism exists via an exchange or central clearing counterparty that effectively accomplishes net settlement through a daily exchange of collateral via a cash margining process. For repurchase arrangements and securities financing transactions, balance sheet offsetting may be permitted only to the extent that the settlement mechanism eliminates, or results in insignificant, credit and liquidity risk, and processes the receivables and payables in a single settlement process or cycle.

→ **Refer to Note 25 for more information**

j. Hedge accounting

The Group uses derivative and non-derivative instruments to manage exposures to interest rate and foreign currency risks, including exposures arising from forecast transactions. The Group continues to apply hedge accounting requirements as set out in IAS 39. Qualifying instruments may be designated as hedging instruments in (i) hedges of the change in fair value of recognized assets or liabilities (fair value hedges); (ii) hedges of the variability in future cash flows attributable to a recognized asset or liability or highly probable forecast transactions (cash flow hedges); or (iii) hedges of a net investment in a foreign operation (net investment hedges).

At the time a financial instrument is designated in a hedge relationship, UBS formally documents the relationship between the hedging instrument(s) and hedged item(s), including the risk management objectives and strategy in undertaking the hedge transaction and the methods that will be used to assess the effectiveness of the hedging relationship. Accordingly, UBS assesses, both at the inception of the hedge and on an ongoing basis, whether the hedging instruments, primarily derivatives, have been "highly effective" in offsetting changes in the fair value or cash flows associated with the designated risk of the hedged items.

A hedge is considered highly effective if the following criteria are met: (i) at inception of the hedge and throughout its life, the hedge is expected to be highly effective in achieving offsetting changes in fair value or cash flows attributable to the hedged risk; and (ii) actual results of the hedge are within a range of 80–125%. In the case of hedging forecast transactions, the transaction must have a high probability of occurring and must present an exposure to variations in cash flows that could ultimately affect the reported net profit or loss. UBS discontinues hedge accounting when (i) it determines that a hedging instrument is not, or has ceased to be, highly effective as a hedge; (ii) the derivative expires or is sold, terminated or exercised; (iii) the hedged item matures, is sold or repaid; or (iv) forecast transactions are no longer deemed highly probable. The Group may also discontinue hedge accounting voluntarily.

Hedge ineffectiveness represents the amount by which the changes in the fair value of the hedging instrument differ from changes in the fair value of the hedged item attributable to the hedged risk, or the amount by which changes in the present value of future cash flows of the hedging instrument exceed changes in the present value of expected cash flows of the hedged item. Such ineffectiveness is recorded in current-period earnings in *Other net income from fair value changes on financial instruments* (prior to 1 January 2018: *Net trading income*).

Interest from derivatives designated as hedging instruments in effective fair value hedge relationships is presented within *Interest income from loans and deposits* and *Interest expense on debt issued*, within *Net interest income*. Interest from derivatives designated as hedging instruments in effective cash flow hedge relationships that is reclassified from other comprehensive income when the hedged transaction affects profit or loss is presented within *Interest income from derivative instruments designated as cash flow hedges*.

→ **Refer to Note 3 for more information**

Fair value hedges

For qualifying fair value hedges, the change in the fair value of the hedging instrument is recognized in the income statement along with the change in the fair value of the hedged item that is attributable to the hedged risk. In fair value hedges of interest rate risk, the fair value change of the hedged item attributable to the hedged risk is reflected as an adjustment to the carrying value of the hedged item. If the hedge accounting relationship is terminated for reasons other than the derecognition of the hedged item, the adjustment to the carrying value is amortized to the income statement over the remaining term to maturity of the hedged item using the effective interest rate method. For a portfolio hedge of interest rate risk, the equivalent change in fair value is reflected within *Other financial assets measured at amortized cost* or *Other financial liabilities measured at amortized cost*. If the portfolio hedge relationship is terminated for reasons other than the derecognition of the hedged item, the amount included in *Other financial assets measured at amortized cost* or *Other financial liabilities measured at amortized cost* is amortized to the income statement over the remaining term to maturity of the hedged items using the straight-line method.

Cash flow hedges

Fair value gains or losses associated with the effective portion of derivatives designated as cash flow hedges for cash flow repricing risk are recognized initially in *Other comprehensive income* within *Equity*. When the hedged forecast cash flows affect profit or loss, the associated gains or losses on the hedging derivatives are reclassified from *Equity* to the income statement.

If a cash flow hedge of forecast transactions is no longer considered effective, or if the hedge relationship is terminated, the cumulative gains or losses on the hedging derivatives previously reported in *Equity* remain there until the committed or forecast transactions occur and affect profit or loss. If the forecast transactions are no longer expected to occur, the deferred gains or losses are reclassified immediately to the income statement.

Hedges of net investments in foreign operations

Hedges of net investments in foreign operations are accounted for similarly to cash flow hedges. Gains or losses on the hedging instrument relating to the effective portion of the hedge are recognized directly in *Equity* (and presented in the statement of changes in equity and statement of comprehensive income under *Foreign currency translation*), while any gains or losses relating to the ineffective and / or undesignated portion (for example, the interest element of a forward contract) are recognized in the income statement. Upon disposal or partial disposal of the foreign operation, the cumulative value of any such gains or losses recognized in *Equity* associated with the entity is reclassified to *Other income*.

Economic hedges that do not qualify for hedge accounting

Derivative instruments that are transacted as economic hedges, but do not qualify for hedge accounting, are treated in the same way as derivative instruments used for trading purposes; i.e., realized and unrealized gains and losses are recognized in *Other net income from fair value changes on financial instruments* (prior to 1 January 2018: *Net trading income*), except for the forward points on certain short- and long-duration foreign exchange contracts, which are reported in *Net interest income*.

→ **Refer to Note 11 for more information**

k. Embedded derivatives

Derivatives may be embedded in other financial instruments (host contracts). For example, they could be represented by the conversion feature embedded in a convertible bond. Such hybrid instruments arise predominantly from the issuance of certain structured debt instruments. An embedded derivative is generally required to be separated from the host contract (from 1 January 2018: unless the host contract is a financial asset in scope of IFRS 9) and accounted for as a standalone derivative instrument at fair value through profit or loss if (i) the host contract is not carried at fair value with changes in fair value reported in the income statement; (ii) the economic characteristics and risks of the embedded derivative are not closely related to the economic characteristics and risks of the host contract; and (iii) the terms of the embedded derivative would meet the definition of a standalone derivative, were they contained in a separate contract.

Typically, UBS applies the fair value option to hybrid instruments (refer to item 3b in this Note for more information), in which case bifurcation of an embedded derivative component is not required.

Note 1 Summary of significant accounting policies (continued)

l. Financial liabilities

Debt issued measured at amortized cost includes contingent capital instruments that contain contractual provisions under which the principal amounts would be written down upon either a specified CET1 ratio breach or a determination by FINMA that a viability event has occurred. Such contractual provisions are not derivatives as the underlying is deemed to be a non-financial variable specific to a party to the contract. Where there is a legal bail-in mechanism for write-down or conversion into equity (as is the case, for instance, with senior unsecured debt issued by the Group that is subject to write-down or conversion under resolution authority granted to FINMA under Swiss law), such mechanism does not form part of the contractual terms and, therefore, does not affect the amortized cost accounting treatment applied to these instruments. If the debt were to be written down or converted into equity in a future period, this would result in the full or partial derecognition of the financial liabilities, with the difference between the carrying value of the debt written down or converted into equity and the fair value of any equity shares issued recognized in the income statement.

In cases where, as part of the Group's risk management activity, fair value hedge accounting is applied to fixed-rate debt instruments carried at amortized cost, their carrying amount is adjusted for changes in fair value related to the hedged exposure. Refer to item 3j for more information on hedge accounting.

Debt issued and subsequently repurchased in relation to market-making or other activities is treated as redeemed. A gain or loss on redemption (depending on whether the repurchase price of the bond is lower or higher than its carrying value) is recorded in *Other income*. A subsequent sale of own bonds in the market is treated as a reissuance of debt.

UBS uses the fair value option to designate certain issued debt instruments as financial liabilities designated at fair value through profit or loss, on the basis that such financial instruments include embedded derivatives and / or are managed on a fair value basis (refer to item 3b in this Note for more information).

m. Own credit

Changes in the fair value of financial liabilities designated at fair value through profit or loss related to own credit are recognized in *Other comprehensive income* directly within *Retained earnings* and will not be reclassified to the income statement in future periods.

n. Loan commitments

Policy applicable from 1 January 2018[1]

Loan commitments are arrangements under which clients can borrow stipulated amounts under defined terms and conditions.

Loan commitments that can be canceled at any time by UBS at its discretion are neither recognized on the balance sheet nor included in off-balance sheet disclosures.

Loan commitments that cannot be canceled by UBS once the commitments are communicated to the beneficiary or that are revocable only because of automatic cancelation upon deterioration in a borrower's creditworthiness are considered irrevocable and are classified as (i) derivative loan commitments measured at fair value through profit or loss; (ii) loan commitments designated at fair value through profit or loss; or (iii) other loan commitments.

The Group recognizes ECL on non-cancelable other loan commitments. In addition, UBS also recognizes ECL on loan commitments that can be canceled at any time if UBS is exposed to credit risk (refer to item g in this Note). Corresponding ECL are presented within *Provisions* on the Group's balance sheet. ECL relating to these other loan commitments are recorded in the income statement in *Credit loss (expense) / recovery*.

When a client draws on a commitment, the resulting loan is presented within *Financial assets at fair value held for trading,* or within *Financial assets at fair value not held for trading* when the associated loan commitments are measured at fair value through profit or loss, and within *Loans and advances to customers* when the associated loan commitment is not measured at fair value through profit or loss.

Comparative policy | *Policy applicable prior to 1 January 2018*

When a client draws on a commitment, the resulting loan is classified as a (i) trading asset, consistent with the associated derivative loan commitment; (ii) financial asset designated at fair value through profit or loss, consistent with the loan commitment designated at fair value through profit or loss; or as a (iii) loan when the associated loan commitment is accounted for as other loan commitment. ▲

o. Financial guarantee contracts

Policy applicable from 1 January 2018[1]

Financial guarantee contracts are contracts that require the issuer to make specified payments to reimburse the holder for an incurred loss because a specified debtor fails to make payments when due in accordance with the terms of a specified debt instrument. UBS issues such financial guarantees to banks, financial institutions and other parties on behalf of clients to secure loans, overdrafts and other banking facilities.

1 The accounting policy in this section applies from 1 January 2018, the effective date of IFRS 9. For the details of transition effects refer to Note 1c.

Certain issued financial guarantees that are managed on a fair value basis are designated at fair value through profit or loss. Financial guarantees that are not managed on a fair value basis are initially recognized in the financial statements at fair value and are subsequently measured at the higher of:
– the amount of ECL (refer to item g in this Note); and
– the amount initially recognized less the cumulative amount of income recognized as of the reporting date.

ECL resulting from guarantees is recorded in the income statement in *Credit loss (expense) / recovery*.

Comparative policy | *Policy applicable prior to 1 January 2018*
Financial guarantees that are not managed on a fair value basis are initially recognized in the financial statements at fair value and are subsequently measured at the higher of the amount initially recognized less cumulative amortization and, to the extent a payment under the guarantee has become probable, the present value of the expected payment. Any change in the liability relating to probable expected payments resulting from guarantees is recorded in the income statement in *Credit loss (expense) / recovery*. ▲

p. Other net income from fair value changes on financial instruments

The line item *Other net income from fair value changes on financial instruments* includes fair value gains and losses on financial instruments at fair value through profit or loss but excluding interest income and expense on non-derivatives (refer to item 3c in this Note), as well as the effects at derecognition, trading gains and losses and intermediation income arising from certain client-driven Global Wealth Management and Personal & Corporate Banking financial transactions. In addition, foreign currency translation effects and income and expenses from precious metals are presented within this income statement line item.

4) Fee and commission income and expenses

Policy applicable from 1 January 2018[1]
UBS earns fee income from a diverse range of services it provides to its clients. Fee income can be divided into two broad categories: fees earned from services that are provided over a certain period of time, such as asset or portfolio management, custody services and certain advisory services; and fees earned from point-in-time services such as underwriting fees and brokerage fees (e.g., securities and derivative execution and clearing).

→ **Refer to Note 4 for more information, including the disaggregation of revenues**

Performance obligations satisfied over time

Fees earned from services that are provided over a certain period of time are recognized on a pro rata basis over the service period, provided the fees are not contingent on successfully meeting specified performance criteria that are beyond the control of UBS (see measurement below).

Costs to fulfill services over time are recorded in the income statement immediately, because such services are considered to be a series of services that are substantially the same from day to day and have the same pattern of transfer. The costs to fulfill neither generate nor enhance the resources of UBS that will be used to satisfy future performance obligations and cannot be distinguished between those that relate to satisfied and unsatisfied performance obligations. Therefore, these costs do not qualify to be recognized as an asset. Where costs incurred relate to contracts that include variable consideration that is constrained by factors beyond UBS's control (e.g., successful mergers and acquisitions (M&A) activity) or where UBS has a history of not recovering such costs on similar transactions), such costs are expensed immediately as incurred.

Performance obligations satisfied at a point in time

Fees earned from providing transaction-type services are recognized when the service has been completed, provided such fees are not subject to refund or another contingency beyond the control of UBS.

Incremental costs to fulfill services provided at a point in time are typically incurred and recorded at the same time as the performance obligation is satisfied and revenue is earned, and are therefore not recognized as an asset, e.g., brokerage. Where recovery of costs to fulfill relates to an uncompleted point-in-time service for which the satisfaction of the performance obligation in the contract is dependent upon factors beyond the control of UBS, such as underwriting a successful securities issuance, or where UBS has a history of not recovering such costs through reimbursement on similar transactions, such costs are expensed immediately as incurred.

1 The accounting policy in this section applies from 1 January 2018, the effective date of IFRS 15. For the details of transition effects refer to Note 1b.

Note 1 Summary of significant accounting policies (continued)

Measurement

Fee and commission income is measured based on consideration specified in a legally enforceable contract with a customer, excluding amounts such as taxes collected on behalf of third parties. Consideration can include both fixed and variable amounts. Variable consideration includes refunds, discounts, performance bonuses and other amounts that are contingent on the occurrence or non-occurrence of a future event. Variable consideration that is contingent on an uncertain event can only be recognized to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue for a contract will not occur. This is referred to as the variable consideration constraint. UBS does not consider the highly probable criterion to be met where the contingency on which income is dependent is beyond the control of UBS. In such circumstances, UBS only recognizes revenue when the contingency has been resolved or an uncertain event has occurred. Examples include asset management performance-linked fees, which are only payable if the returns of a fund exceed a benchmark and are only recognized after the performance period has elapsed. Similarly, M&A advisory fees that are dependent on a successful client transaction are not recognized until the transaction on which the fees are dependent has been executed. Asset management fees (excluding performance-based fees) received on a periodic basis, typically quarterly, that are determined based on a fixed percentage of net asset value that has not been established at the reporting date, are estimated and accrued ratably over the period to the next invoice date, except during periods in which market volatility indicates there is a risk of significant reversal. Research revenues earned by the Investment Bank under commission-sharing or research payment account agreements are not recognized until the client has provided a definitive allocation of amounts between research providers, as prior to this UBS generally does not have an enforceable right to a specified amount of consideration.

Consideration received is allocated to the separately identifiable performance obligations in a contract. Owing to the nature of UBS's business, contracts that include multiple performance obligations are typically those that are considered to include a series of similar performance obligations fulfilled over time with the same pattern of transfer to the client, e.g., asset management. As a consequence, UBS is not required to apply significant judgment in allocating the consideration received across the various performance obligations. UBS has taken the practical expedient to not disclose information on the allocation of the transaction price to remaining performance obligations in contracts. This is because contracts are typically less than one year in duration. Where contracts have a longer duration, they are either subject to the variable consideration constraint, with fees calculated on future net asset value, which cannot be included within the transaction price for the contract, or result in revenue being recognized ratably using the output method corresponding directly to the value of the services completed to date and to which UBS would be entitled to invoice upon termination of the contract, e.g., loan commitments.

Presentation of fee and commission income and expense

Fee and commission income and expense are presented gross on the face of the income statement when UBS is considered to be principal in the contractual relationship with its customer and any suppliers used to fulfill such contracts. This occurs where UBS has control over such services and its relationship with suppliers prior to provision of the service to the client. UBS only considers itself to be an agent in relation to services provided by third parties, e.g., third-party execution costs for exchange-traded derivatives and fees payable to third-party research providers, where the client controls both the choice of supplier and the scope of the services to be provided. Furthermore, in order to be considered an agent UBS must not take responsibility for the quality of the service, transform or integrate the services into a UBS product. In such circumstances UBS is essentially acting as a payment agent for its client. When UBS is acting as an agent, any costs incurred are directly offset against the associated income.

Presentation of expenses in the income statement

UBS presents expenses primarily in line with their nature in the income statement, differentiating between expenses that are incremental and incidental to revenues, which are presented within *Total operating income*, and those that are related to personnel, general and administrative expenses, which are presented within *Total operating expenses*.

Contract assets, contract liabilities and capitalized expenses

UBS has applied the practical expedient of allowing for costs incurred to obtain a contract to be expensed as incurred where the amortization period for any asset recognized would be less than 12 months.

Where UBS provides services to clients, consideration is due immediately upon satisfaction of a point-in-time service or at the end of a prespecified period for a service performed over time; e.g., certain asset management fees are collected monthly or quarterly, through deduction from a client account, deduction from fund assets or through separate invoicing. Where receivables are recorded, they are presented within *Other financial assets measured at amortized cost*.

Contract liabilities relate to prepayments received from customers where UBS is yet to satisfy its performance obligation.

Contract assets are recorded when an entity's right to consideration in exchange for services transferred is conditional on something other than the passage of time, e.g., the entity's future performance.

UBS has not recognized any material contract assets, contract liabilities or capitalized expenses during the period and has therefore not provided a contract balances reconciliation.

Comparative policy | *Policy applicable prior to 1 January 2018*
Fees earned from services that are provided over a certain period of time are recognized ratably over the service period, with the exception of performance-linked fees or fee components with specific performance criteria. Such fees are recognized when, as of the reporting date, the performance benchmark has been met and when collectibility is reasonably assured.

Fees earned from providing transaction-type services are recognized when the service has been completed and the fee is fixed or determinable, i.e., not subject to refund or adjustment.

Fee income generated from providing a service that does not result in the recognition of a financial instrument is presented within *Net fee and commission income*. Fees generated from the acquisition, issue or disposal of a financial instrument are presented in the income statement in line with the balance sheet classification of that financial instrument. ▲

→ **Refer to Note 4 for more information**

5) Cash and cash equivalents

For the purpose of the statement of cash flows, cash and cash equivalents comprise balances with an original maturity of three months or less, including cash, money market paper and balances at central and other banks.

6) Share-based and other deferred compensation plans

Share-based compensation plans

UBS has established share-based compensation plans that are settled in UBS's equity instruments or an amount that is based on the value of such instruments. These awards are generally subject to conditions that require employees to complete a specified period of service and, for performance shares, to satisfy specified performance conditions. Compensation expense is recognized, on a per-tranche basis, over the service period based on an estimate of the number of instruments expected to vest and is adjusted to reflect actual outcomes. Where the service period is shortened, for example in the case of employees affected by restructuring programs or mutually agreed termination provisions, recognition of expense is accelerated to the termination date.

Where no future service is required, such as for employees who are eligible for retirement or who have met certain age and length-of-service criteria, the services are presumed to have been received and compensation expense is recognized immediately on, or prior to, the date of grant. Such awards may remain forfeitable until the legal vesting date if certain non-vesting conditions are not met. For equity-settled awards, forfeiture events resulting from breach of a non-vesting condition do not result in an adjustment to expense.

Compensation expense is measured by reference to the fair value of the equity instruments on the date of grant adjusted, when relevant, to take into account the terms and conditions inherent in the award, including dividend rights, transfer restrictions in effect beyond the vesting date, and non-vesting conditions. For equity-settled instruments, fair value is determined at the date of grant and is not remeasured unless their terms are modified such that the fair value immediately after modification exceeds the fair value immediately prior to modification. Any increase in fair value resulting from a modification is recognized as compensation expense, either over the remaining service period or, for vested awards, immediately. For cash-settled awards, fair value is remeasured at each reporting date such that the cumulative expense recognized equals the cash distributed.

→ **Refer to Note 30 for more information**

Other compensation plans

UBS has established deferred compensation plans that are settled in cash or financial instruments other than UBS equity, the amount of which may be fixed or may vary based on the achievement of specified performance conditions or the value of specified underlying assets. Compensation expense is recognized over the period that the employee provides services to become entitled to the award. Where the service period is shortened, for example in the case of employees affected by restructuring programs or mutually agreed termination provisions, recognition of expense is accelerated to the termination date. Where no future service is required, such as for employees who are eligible for retirement or who have met certain age and length-of-service criteria, the services are presumed to have been received and compensation expense is recognized immediately on, or prior to, the date of grant. The amount recognized is based on the present value of the amount expected to be paid under the plan and is remeasured at each reporting date, so that the cumulative expense recognized equals the cash or the fair value of respective financial instruments distributed.

→ **Refer to Note 30 for more information**

Note 1 Summary of significant accounting policies (continued)

7) Pension and other post-employment benefit plans

UBS sponsors various post-employment benefit plans for its employees worldwide, which include defined benefit and defined contribution pension plans, and other post-employment benefits such as medical and life insurance benefits that are payable after the completion of employment.

→ **Refer to Note 29 for more information**

Defined benefit plans

UBS offers defined benefit pension and medical insurance benefits. Defined benefit plans specify an amount of benefit that an employee will receive, which usually depends on one or more factors, such as age, years of service and compensation. The defined benefit liability recognized in the balance sheet is the present value of the defined benefit obligation less the fair value of the plan assets at the balance sheet date, with changes resulting from remeasurements recorded immediately in *Other comprehensive income*. If the fair value of the plan assets is higher than the present value of the defined benefit obligation, the recognition of the resulting net defined benefit asset is limited to the present value of economic benefits available in the form of refunds from the plan or reductions in future contributions to the plan. UBS applies the projected unit credit method to determine the present value of its defined benefit obligations, the related current service cost and, where applicable, past service cost. The projected unit credit method sees each period of service as giving rise to an additional unit of benefit entitlement and measures each unit separately to build up the final obligation. These amounts, which take into account the specific features of each plan, including risk sharing between employee and employer, are calculated periodically by independent qualified actuaries.

Critical accounting estimates and judgments

The net defined benefit liability or asset at the balance sheet date and the related personnel expense depend on the expected future benefits to be provided, determined using a number of economic and demographic assumptions. A range of assumptions could be applied, and different assumptions could significantly alter the defined benefit liability or asset and pension expense recognized. The most significant assumptions include life expectancy, the discount rate, expected salary increases, pension increases and, in addition for the Swiss plan and one of the US defined benefit pension plans, interest credits on retirement savings account balances. Life expectancy is determined by reference to published mortality tables. The discount rate is determined by reference to the rates of return on high-quality fixed-income investments of appropriate currency and term at the measurement date. The assumption for salary increases reflects the long-term expectations for salary growth and takes into account historical salary development by age groups, expected inflation and expected supply and demand in the labor market. A sensitivity analysis for reasonable possible movements in each significant assumption for UBS's post-employment obligations is provided within Note 29.

Defined contribution plans

A defined contribution plan is a pension plan under which UBS pays fixed contributions into a separate entity from which post-employment and other benefits are paid. UBS has no legal or constructive obligation to pay further contributions if the plan does not hold sufficient assets to pay employees the benefits relating to employee service in the current and prior periods. UBS's contributions are expensed when the employees have rendered services in exchange for such contributions. This is generally in the year of contribution. Prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in future payments is available.

8) Income taxes

UBS is subject to the income tax laws of Switzerland and those of the non-Swiss jurisdictions in which UBS has business operations.

The Group's provision for income taxes is composed of current and deferred taxes. Current income taxes represent taxes to be paid or refunded for the current period or previous periods.

Deferred taxes are recognized for temporary differences between the carrying amounts and tax bases of assets and liabilities that will result in taxable or deductible amounts in future periods and are measured using the applicable tax rates and laws that have been enacted or substantively enacted by the end of the reporting period and which will be in effect when such differences are expected to reverse.

Deferred tax assets arise from a variety of sources, the most significant being: (i) tax losses that can be carried forward to be used against profits in future years; and (ii) temporary differences that will result in deductions against profits in future years. Deferred tax assets are recognized only to the extent that it is probable that sufficient taxable profits will be available against which these differences can be used. When an entity or tax group has a history of recent losses, deferred tax assets are only recognized to the extent there are sufficient taxable temporary differences or there is convincing other evidence that sufficient taxable profit will be available against which the unused tax losses can be utilized.

Deferred tax liabilities are recognized for temporary differences between the carrying amounts of assets and liabilities in the balance sheet that reflect the expectation that certain items will give rise to taxable income in future periods.

Deferred and current tax assets and liabilities are offset when (i) they arise in the same tax reporting group; (ii) they relate to the same tax authority; (iii) the legal right to offset exists; and (iv) they are intended to be settled net or realized simultaneously.

Current and deferred taxes are recognized as income tax benefit or expense in the income statement except for current and deferred taxes recognized (i) upon the acquisition of a subsidiary (for which such amounts would affect the amount of goodwill arising from the acquisition); (ii) for gains and losses on the sale of treasury shares (for which the tax effects are recognized directly in *Equity*); (iii) for unrealized gains or losses on financial instruments that are classified as FVOCI (prior to 1 January 2018: financial assets classified as available for sale); (iv) for changes in fair value of derivative instruments designated as cash flow hedges; (v) for remeasurements of defined benefit plans; or (vi) for certain foreign currency translations of foreign operations. Amounts relating to points (iii) through (vi) are recognized in *Other comprehensive income* within *Equity*.

UBS reflects the potential effect of uncertain tax positions using expected value (i.e., a probability-weighted approach), except where the likelihood of loss is remote (less than 5%).

Critical accounting estimates and judgments

Tax laws are complex, and judgment and interpretations about the application of such laws are required when accounting for income taxes. UBS considers the performance of its businesses and the accuracy of historical forecasts and other factors in evaluating the recoverability of its deferred tax assets, including the remaining tax loss carry-forward period, and its assessment of expected future taxable profits in the forecast period used for recognizing deferred tax assets. Estimating future profitability is inherently subjective and is particularly sensitive to future economic, market and other conditions, which are difficult to predict.

The level of deferred tax asset recognition is influenced by management's assessment of UBS's future profitability based on relevant business plan forecasts. Existing assessments are reviewed and, if necessary, revised to reflect changed circumstances. This review is conducted annually, in the fourth quarter of each year, but adjustments may be made at other times, if required. In a situation where recent losses have been incurred, convincing other evidence that there will be sufficient future profitability is required.

If profit forecast assumptions in future periods deviate from the current outlook, the value of UBS's deferred tax assets may be affected. Any increase or decrease in the carrying amount of deferred tax assets would primarily be recognized through the income statement but would not affect cash flows.

In addition, judgment is required to assess the expected value of uncertain tax positions that are incorporated into the estimate of income and deferred tax and the assessment of the related probabilities, including in relation to the interpretation of tax laws, the resolution of any income tax-related appeals or litigation and the assessment of the related probabilities.

→ **Refer to Note 8 for more information**

9) Investments in associates

Interests in entities where UBS has significant influence over the financial and operating policies of the entity, but does not have control, are classified as investments in associates and accounted for under the equity method of accounting. Typically, UBS has significant influence when it holds or has the ability to hold between 20% and 50% of a company's voting rights. Investments in associates are initially recognized at cost, and the carrying amount is increased or decreased after the date of acquisition to recognize the Group's share of the investee's comprehensive income and any impairment losses.

The net investment in an associate is impaired if there is objective evidence of a loss event and the carrying value of the investment in the associate exceeds its recoverable amount.

→ **Refer to Note 31 for more information**

Note 1 Summary of significant accounting policies (continued)

10) Property, equipment and software

Property, equipment and software includes own-used properties, leasehold improvements, information technology hardware, externally purchased and internally generated software, as well as communication and other similar equipment. Property, equipment and software is carried at cost less accumulated depreciation and impairment losses and is reviewed at each reporting date for indication for impairment. Software development costs are capitalized only when the costs can be measured reliably and it is probable that future economic benefits will arise. Depreciation of property, equipment and software begins when they are available for use (i.e., when they are in the location and condition necessary for them to be capable of operating in the manner intended by management). Depreciation is calculated on a straight-line basis over an asset's estimated useful life. The estimated useful economic lives of UBS's property, equipment and software are:

- properties, excluding land: ≤ 67 years
- IT hardware and communication equipment: ≤ 7 years
- other machines and equipment: ≤ 10 years
- software: ≤ 10 years
- leasehold improvements: shorter of the lease term or the economic life of asset (typically ≤ 20 years)

→ **Refer to Note 15 for more information**

11) Goodwill and intangible assets

Goodwill represents the excess of the cost of an acquisition over the fair value of the Group's share of net identifiable assets of the acquired entity at the date of the acquisition. Goodwill is not amortized, but at the end of each reporting period or when indicators of impairment exist, UBS assesses whether there is any indication that goodwill is impaired. If such indicators exist, UBS is required to test the goodwill for impairment. Irrespective of whether there is any indication of impairment, UBS tests goodwill for impairment annually.

For the 2017 annual test, UBS considered the segments, as they are reported in Note 2a, as separate cash-generating units, since that was the level at which the performance of investments (and the related goodwill) was reviewed and assessed by management.

Following the integration in 2018 of the Wealth Management and Wealth Management Americas business divisions into the single reportable segment Global Wealth Management, UBS continued to separately monitor the goodwill previously allocated to the two former business divisions. As a consequence, for the purpose of goodwill impairment testing, the former Wealth Management and Wealth Management Americas business divisions are considered to be two separate cash-generating units referred to in Note 16 as Global Wealth Management Americas[1] and Global Wealth Management ex Americas. The remaining goodwill balances continued to be tested at the level of Asset Management and the Investment Bank, respectively, consistent with the 2017 annual test.

The impairment test is performed for each cash-generating unit to which goodwill is allocated by comparing the recoverable amount, based on its value-in-use, to the carrying amount of the respective cash-generating unit. An impairment charge is recognized in the income statement if the carrying amount exceeds the recoverable amount.

If the estimated earnings and other assumptions in future periods deviate from the current outlook, the value of UBS's goodwill may become impaired in the future, giving rise to losses in the income statement. Recognition of any impairment of goodwill would reduce net profit and equity, but would not affect cash flows.

Intangible assets are comprised of separately identifiable intangible items arising from business combinations and certain purchased trademarks and similar items. Intangible assets are recognized at cost. The cost of an intangible asset acquired in a business combination is its fair value at the date of acquisition. Intangible assets with a finite useful life are amortized using the straight-line method over their estimated useful life, generally not exceeding 20 years. In rare cases, intangible assets can have an indefinite useful life, in which case they are not amortized. At each reporting date, intangible assets are reviewed for indications of impairment. If such indications exist, the intangible assets are analyzed to assess whether their carrying amount is fully recoverable. An impairment loss is recognized if the carrying amount exceeds the recoverable amount.

Critical accounting estimates and judgments

UBS's methodology for goodwill impairment testing is based on a model that is most sensitive to the following key assumptions: (i) forecasts of earnings available to shareholders in years one to three; (ii) changes in the discount rates; and (iii) changes in the long-term growth rate.

The key assumptions are linked to external market information, where applicable. Earnings available to shareholders are estimated on the basis of forecast results, which are part of the business plan approved by the BoD. The discount rates are determined by applying a capital asset pricing model-based approach, as well as considering quantitative and qualitative inputs from both internal and external analysts, the view of management and regional differences in risk-free rates, at the level of individual cash-generating units. Long-term growth rates are determined in a consistent manner based on nominal or real GDP growth rate forecasts, considering different regions worldwide as incorporated in the business plan approved by the BoD.

The key assumptions used to determine the recoverable amounts of each cash-generating unit are tested for sensitivity by applying reasonably possible changes to those assumptions. Refer to Note 16 for details on how the reasonably possible changes may affect the results of UBS's model for goodwill impairment testing.

→ **Refer to Notes 2 and 16 for more information**

1 Now including the Global Wealth Management business in Latin America, previously part of the Wealth Management business division.

12) Provisions and contingent liabilities

Provisions are liabilities of uncertain timing or amount, and are recognized when: (i) UBS has a present obligation as a result of a past event; (ii) it is probable that an outflow of resources will be required to settle the obligation; and (iii) a reliable estimate of the amount of the obligation can be made.

The majority of UBS's provisions relate to litigation, regulatory and similar matters, restructuring, employee benefits, real estate and loan commitments and guarantees.

The Group recognizes provisions for litigation, regulatory and similar matters when, in the opinion of management after seeking legal advice, the requirements for recognition have been met. Where these factors are otherwise satisfied, a provision may be established for claims that have not yet been asserted against the Group, but are nevertheless expected to be, based on the Group's experience with similar asserted claims.

Management may undertake restructuring activities, i.e., a planned and controlled program that materially changes either the scope of the business or the manner in which it is conducted. Restructuring provisions are recognized when a detailed and formal restructuring plan has been approved and a valid expectation has been raised that the restructuring will be carried out, either through commencement of the plan or announcements to affected employees.

Provisions are recognized for lease contracts if the unavoidable costs of a contract exceed the benefits expected to be received under it (onerous lease contracts). For example, this may occur when a significant portion of a leased property is expected to be vacant for an extended period.

Provisions for employee benefits are recognized mainly in respect of service anniversaries and sabbatical leave.

Provisions are recognized at the measurement point that represents our best estimate of the consideration required to settle the present obligation at the balance sheet date. Such estimates are based on all available information and are revised over time as more information becomes available. If the effect of the time value of money is material, provisions are discounted and measured at the present value of the expenditure expected to settle or discharge the obligation, using a rate that reflects the current market assessments of the time value of money and the risks specific to the obligation.

Provisions that are similar in nature are aggregated to form a class, while the remaining provisions, including those of less significant amounts, are disclosed under *Other provisions*. Provisions are presented separately on the balance sheet and, when they are no longer considered uncertain in timing or amount, are reclassified to other liabilities.

When all conditions required to recognize a provision are not met, a contingent liability is disclosed, unless the likelihood of an outflow of resources is remote. Contingent liabilities are also disclosed for possible obligations that arise from past events whose existence will be confirmed only by uncertain future events not wholly within the control of UBS. Such disclosures are not made if it is not practicable to do so.

Critical accounting estimates and judgments

Recognition of provisions often involves significant judgment in assessing the existence of an obligation that results from past events and in estimating the probability, timing and amount of any outflows of resources. This is particularly the case for litigation, regulatory and similar matters, which, due to their nature, are subject to many uncertainties making their outcome difficult to predict. Such matters may involve unique fact patterns or novel legal theories, proceedings that have not yet been initiated or are at early stages of adjudication, or as to which alleged damages have not been quantified by the claimants. Determining whether an obligation exists as a result of a past event and estimating the probability, timing and amount of any potential outflows is based on a variety of assumptions, variables, and known and unknown uncertainties.

The amount of any provision recognized is sensitive to the assumptions used and there could be a wide range of possible outcomes for any particular matter.

Statistical or other quantitative analytical tools are of limited use in determining whether to establish or determine the amount of provisions in the case of litigation, regulatory or similar matters. Furthermore, information currently available to management may be incomplete or inaccurate, increasing the risk of erroneous assumptions with regard to the future development of such matters. Management regularly reviews all the available information regarding such matters, including legal advice, which is a significant consideration, to assess whether the recognition criteria for provisions have been satisfied and to determine the timing and amount of any potential outflows.

→ **Refer to Note 21 for more information**

Note 1 Summary of significant accounting policies (continued)

13) Foreign currency translation

Transactions denominated in a foreign currency are translated into the functional currency of the reporting entity at the spot exchange rate on the date of the transaction. At the balance sheet date, all monetary assets including those at FVOCI (prior to 1 January 2018: monetary financial assets classified as available for sale) and monetary liabilities denominated in foreign currency are translated into the functional currency using the closing exchange rate. Translation differences (which for monetary financial assets at FVOCI are determined as if they were financial assets measured at amortized cost) are reported in *Other net income from fair value changes on financial instruments* (prior to 1 January 2018: *Net trading income*).

Non-monetary items measured at historical cost are translated at the exchange rate on the date of the transaction. Prior to 1 January 2018, foreign currency translation differences on non-monetary financial assets classified as available for sale were recorded directly in *Equity* until the asset was derecognized.

Upon consolidation, assets and liabilities of foreign operations (which from 1 October 2018 also include UBS's Swiss-based operations with Swiss franc functional currency) are translated into US dollars, UBS's presentation currency, at the closing exchange rate on the balance sheet date, and income and expense items and other comprehensive income are translated at the average rate for the period. The resulting foreign currency translation differences attributable to shareholders are recognized in *Foreign currency translation* within *Equity,* which forms part of *Total equity attributable to shareholders*, whereas the foreign currency translation differences attributable to non-controlling interests are included within *Equity attributable to non-controlling interests*. Share capital issued, share premium and treasury shares held are translated at the historic average rate, whereby the difference between the historic average rate and the spot rate realized upon repayment of share capital or disposal of treasury shares is reported as *Share premium.* Cumulative amounts recognized in OCI in respect of cash flow hedges and financial assets measured at FVOCI (prior to 1 January 2018: financial assets classified as available for sale) are translated at the closing exchange rate as of balance sheet dates, with any translation effects adjusted through *Retained earnings*.

When a foreign operation is disposed or partially disposed of and UBS no longer controls the foreign operation, the cumulative amount of foreign currency translation differences within *Total equity attributable to shareholders* and *Equity attributable to non-controlling interests* related to that foreign operation is reclassified to the income statement as part of the gain or loss on disposal. Similarly, if an investment in an associate becomes an investment in a subsidiary, the cumulative amount of foreign currency translation differences is reclassified to profit or loss. When UBS disposes of a portion of its interest in a subsidiary that includes a foreign operation but retains control, the related portion of the cumulative currency translation balance is reclassified to *Equity attributable to non-controlling interests*.

→ **Refer to Note 37 for more information**

Critical accounting estimates and judgments

The determination of an entity's functional currency and the trigger for a change requires management to apply significant judgment and assumptions. IAS 21, *The Effects of Changes in Foreign Exchange Rates*, requires management to consider the underlying transactions, events and conditions that are relevant to the entity when determining the appropriate functional currency and any changes. UBS's conclusion, in the fourth quarter of 2018, that the functional currency of UBS Group AG, UBS AG's Head Office in Switzerland and UBS AG's London Branch has changed was based on a detailed assessment of the primary currencies affecting and influencing the economics of each entity, considering revenue generating income streams, expenses, funding and risk management activities.

In addition, determining the earliest date from which it is practicable to perform a restatement following a voluntary change in presentational currency also requires management to apply significant judgment and make estimates and assumptions. UBS's decision in 2018 to change the presentation currency of UBS Group AG's consolidated financial statements from Swiss francs to US dollars was made in line with IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors*, by assessing the earliest date from which it was practicable to perform a restatement, taking into consideration whether sufficiently reliable data was available for earlier periods and whether any assumptions on management intent or significant estimates of amounts were required. UBS carried out a detailed and extensive data analysis before concluding that 1 January 2004 represented the earliest date available, with the consequence that foreign currency translation gains and losses prior to 2004 have been disregarded and foreign currency translation effects first calculated from 1 January 2004 onward.

→ **Refer to Note 1b for more information**

14) Equity, treasury shares and contracts on UBS Group AG shares

Non-controlling interests

Net profit is split into *Net profit attributable to shareholders* and *Net profit attributable to non-controlling interests* (including net profit attributable to preferred noteholders, if any). Similarly, *Equity* is split into *Equity attributable to shareholders* and *Equity attributable to non-controlling interests* (including equity attributable to preferred noteholders, if any).

Non-controlling interests subject to option arrangements, e.g., written puts, are generally deemed to be acquired by UBS. As a result, the amounts allocated to non-controlling interests are reduced accordingly and a liability for the options' exercise price is recognized, with any difference between these two amounts recorded in *Share premium*.

UBS Group AG shares held (treasury shares)

UBS Group AG shares held by the Group, including those purchased as part of market-making activities, are presented in *Equity* as *Treasury shares* at their acquisition cost and are deducted from *Equity* until they are canceled or reissued. The difference between the proceeds from sales of treasury shares and their weighted average cost (net of tax, if any) is reported as *Share premium*.

Net cash settlement contracts

Contracts on UBS Group AG shares that require net cash settlement, or provide the counterparty or UBS with a settlement option that includes a choice of settling net in cash, are classified as held for trading derivatives, with changes in fair value reported in the income statement as *Other net income from fair value changes on financial instruments*.

15) Leasing

UBS enters into lease contracts, or contracts that include lease components, predominantly of premises and equipment, and primarily as lessee. Leases that transfer substantially all the risks and rewards, but not necessarily legal title in the underlying assets, are classified as finance leases. All other leases are classified as operating leases. UBS is not a lessee in any material finance leases.

Lease contracts classified as operating leases where UBS is the lessee include non-cancelable long-term leases of office buildings in most UBS locations. Operating lease rentals payable are recognized as an expense on a straight-line basis over the lease term, which commences with control of the physical use of the property. Lease incentives are treated as a reduction of rental expense and are recognized on a consistent basis over the lease term.

Where UBS acts as lessor under a finance lease, a receivable is recognized in *Other financial assets measured at amortized cost* at an amount equal to the present value of the aggregate of the minimum lease payments plus any unguaranteed residual value that UBS expects to recover at the end of the lease term. Initial direct costs are also included in the initial measurement of the lease receivable. Lease payments received during the lease term are allocated to repayment of the outstanding receivable and interest income to reflect a constant periodic rate of return on UBS's net investment using the interest rate implicit in the lease. UBS reviews the estimated unguaranteed residual value annually, and if the estimated residual value to be realized is less than the amount assumed at lease inception, a loss is recognized for the expected shortfall.

Certain arrangements do not take the legal form of a lease but convey a right to use an asset in return for a payment or series of payments. For such arrangements, UBS determines at the inception of the arrangement whether the fulfillment of the arrangement is dependent on the use of a specific asset or assets, and if so, the arrangement is accounted for as a lease.

→ **Refer to Note 33 for more information**

Note 1 Summary of significant accounting policies (continued)

b) Changes in accounting policies, comparability and other adjustments, excluding the effects of adoption of IFRS 9, *Financial Instruments*

1) Changes in functional and presentation currency

Change in functional currencies

As a consequence of legal entity structural changes over recent years – notably the transfer of the Personal & Corporate Banking and Global Wealth Management businesses booked in Switzerland from UBS AG to UBS Switzerland AG, and the creation of UBS Business Solutions AG, which houses a significant portion of the employees and associated costs that were previously held in UBS AG's Head Office in Switzerland and UBS AG's London Branch – a concentration of US dollar-influenced and -managed business activities now exist in UBS AG's Head Office in Switzerland and UBS AG's London Branch. In addition, from the fourth quarter of 2018, for risk management purposes UBS adopted the US dollar as the risk-neutral currency and has adjusted its structural risk positions accordingly. As a result of these changes, effective from 1 October 2018, the functional currency of UBS Group AG and UBS AG's Head Office in Switzerland changed prospectively from Swiss francs to US dollars and that of UBS AG's London Branch changed from British pounds to US dollars, in compliance with the requirements of IAS 21, *The Effects of Changes in Foreign Exchange Rates.*

Change in presentation currency

In 2018, the presentation currency of UBS Group AG's consolidated financial statements has changed from Swiss francs to US dollars to align with the functional currency changes of significant Group entities. UBS has restated prior periods for this voluntary presentational change in line with IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors*, from 1 January 2004. This point in time represented the earliest date from which it was practicable to perform a restatement, given the lack of sufficiently reliable data for earlier periods. As a consequence, foreign currency translation (FCT) gains or losses prior to 2004 have been disregarded, with FCT effects first calculated from 1 January 2004 onward. In addition, UBS has included a second comparative balance sheet as of 1 January 2017 in line with IAS 1, *Presentation of Financial Statements*.

Income and expenses as well as *Other comprehensive income* (OCI) were translated to US dollars at the respective average exchange rates prevailing for the relevant periods. Additionally, *Other income* was restated to reflect releases of FCT gains or losses from OCI to the income statement when calculated under the new US dollar presentation currency. The effect of such restatements for 2018, 2017 and 2016 was not material to the income statements of these periods.

Assets, liabilities and total equity were translated at closing exchange rates prevailing on the respective balance sheet dates, after reflection of deferred tax effects relating to the restatement. Share capital issued, share premium and treasury shares held were translated at historic average rates, whereby differences between historic average rate and closing exchange rate realized upon repayment of share capital or disposal of treasury shares were reported as *Share premium*. Cumulative amounts recognized in OCI in respect of cash flow hedges and financial assets measured at FVOCI (prior to 1 January 2018: financial assets classified as available for sale) were translated at closing exchange rate as of respective balance sheet dates, with any translation effects adjusted through *Retained earnings*.

The restated FCT balance as of 1 October 2018 included a cumulative gain of USD 767 million related to previously applied net investment hedges entered into by UBS Group AG or UBS AG's Head Office to hedge investments in foreign operations against their former Swiss franc functional currency.

The restated basic and diluted earnings per share (EPS) were USD 0.26 and USD 0.25 for the year ended 31 December 2017, which compares to CHF 0.28 and CHF 0.27 basic and diluted EPS under the previous Swiss franc presentation currency. For the year ended 31 December 2016, restated basic and diluted EPS were USD 0.90 and USD 0.88, which compares to CHF 0.86 and CHF 0.84 basic and diluted EPS under the previous Swiss franc presentation currency.

Note 1 Summary of significant accounting policies (continued)

Effect of the change in the Group's presentation currency from Swiss francs to US dollars

	As of or for the year ended		
	31.12.17		
In million	Under a USD presentation currency (restated) (USD)	USD based on a simple translation of CHF presentation currency[1]	Under a CHF presentation currency (CHF)
Balance sheet			
Equity			
Share capital	338	395	385
Share premium	23,598	26,613	25,942
Treasury shares	(2,210)	(2,189)	(2,133)
Retained earnings	25,932	33,599	32,752
Other comprehensive income recognized directly in equity, net of tax	4,838	(5,880)	(5,732)
Equity attributable to shareholders	**52,495**	**52,538**	**51,214**
Equity attributable to non-controlling interests	59	59	57
Total equity	**52,554**	**52,597**	**51,271**
Income statement			
Other income	511	515	509
Total operating income	**29,622**	**29,627**	**29,067**
Operating profit / (loss) before tax	**5,351**	**5,355**	**5,268**
Tax expense / (benefit)	4,305	4,234	4,139
Net profit / (loss)	1,046	1,121	1,128
Net profit / (loss) attributable to non-controlling interests	**77**	**77**	**76**
Net profit / (loss) attributable to shareholders	**969**	**1,044**	**1,053**

	As of or for the year ended		
	31.12.16		
In million	Under a USD presentation currency (restated) (USD)	USD based on a simple translation of CHF presentation currency[1]	Under a CHF presentation currency (CHF)
Balance sheet			
Equity			
Share capital	338	378	385
Share premium	25,958	27,761	28,254
Treasury shares	(2,362)	(2,210)	(2,249)
Retained earnings	25,029	31,170	31,725
Other comprehensive income recognized directly in equity, net of tax	3,953	(4,416)	(4,494)
Equity attributable to shareholders	**52,916**	**52,683**	**53,621**
Equity attributable to non-controlling interests	670	670	682
Total equity	**53,586**	**53,353**	**54,302**
Income statement			
Other income	663	603	599
Total operating income	**28,729**	**28,669**	**28,320**
Operating profit / (loss) before tax	**4,209**	**4,149**	**4,090**
Tax expense / (benefit)	777	816	805
Net profit / (loss)	3,432	3,333	3,286
Net profit / (loss) attributable to non-controlling interests	**84**	**84**	**82**
Net profit / (loss) attributable to shareholders	**3,348**	**3,250**	**3,204**

Note 1 Summary of significant accounting policies (continued)

Effect of the change in the Group's presentation currency from Swiss francs to US dollars (continued)

	As of or for the year ended		
	31.12.15		
In million	Under a USD presentation currency (restated) (USD)	USD based on a simple translation of CHF presentation currency[1]	Under a CHF presentation currency (CHF)
Balance sheet			
Equity			
Share capital	338	384	385
Share premium	28,966	31,113	31,164
Treasury shares	(1,806)	(1,690)	(1,693)
Retained earnings	22,672	29,455	29,504
Other comprehensive income recognized directly in equity, net of tax	5,166	(4,040)	(4,047)
Equity attributable to shareholders	**55,336**	**55,221**	**55,313**
Equity attributable to non-controlling interests	1,992	1,992	1,995
Total equity	**57,328**	**57,213**	**57,308**

1 Amounts presented in this column represent a translation of the previously published information under a Swiss franc presentation currency, translated to US dollars using a simplified approach. Assets, liabilities and equity were translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses were translated at the respective average rates prevailing for the relevant periods.

2) IFRS 15, *Revenue from Contracts with Customers*

Effective from 1 January 2018, UBS adopted IFRS 15, *Revenue from Contracts with Customers*, which replaced IAS 18, *Revenue,* and establishes principles for revenue recognition that apply to all contracts with customers except those relating to financial instruments, leases and insurance contracts. The standard requires an entity to recognize revenue as performance obligations are satisfied.

IFRS 15 specifies that variable consideration is only recognized when the related performance obligation has been satisfied and to the extent that it is highly probable that a significant reversal will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

IFRS 15 also provides guidance on when revenues and expenses should be presented on a gross or net basis and establishes a cohesive set of disclosure requirements for information on the nature, amount, timing and uncertainty of revenue and cash flows from contracts with customers.

As permitted by the transitional provisions of IFRS 15, UBS elected not to restate comparative figures. Instead, the cumulative effect of initially applying the standard was recognized as an adjustment to the opening balance of retained earnings. A transition adjustment of USD 28 million on a pre-tax basis and USD 25 million net of tax was posted to retained earnings to reverse income recognized prior to 1 January 2018 under IAS 18 that must be deferred under IFRS 15, either owing to the variable consideration constraint (asset management performance fees of USD 16 million) or because UBS does not have an enforceable right to a specified amount of consideration (commission-sharing agreements for research services of USD 11 million).

The adoption of IFRS 15 resulted in changes to UBS's accounting policies applicable from 1 January 2018 as set out in Note 1a.

Following the adoption of IFRS 15, fee and commission income is presented in the income statement separately from fee and commission expense.

Where UBS is acting as principal as defined by IFRS 15, costs of fulfilling contracts are required by IFRS 15 to be presented separately in the income statement within *Fee and commission expense.* Where UBS is acting as agent as defined by IFRS 15, costs of fulfilling contracts are required to be presented as a reduction in *Fee and commission income*. This resulted in a reclassification of certain brokerage fees paid in an agency capacity from *Fee and commission expense* to *Fee and commission income* from 1 January 2018, primarily relating to third-party execution costs for exchange-traded derivative transactions and fees payable to third-party research providers on behalf of clients.

Other presentation changes

In addition to the IFRS 15 changes, certain revenues presented within *Fee and commission income*, primarily distribution fees and fund management fees, have been reclassified between reporting lines in Note 4 to better reflect the nature of the revenues, with comparative-period information restated accordingly. Also, certain expenses that are incremental and incidental to revenues have been reclassified prospectively from *General and administrative expenses* to *Fee and commission expense* to improve the alignment of transaction-based costs with the associated revenue stream, primarily affecting clearing costs, client loyalty costs, and fund and custody expenses. As the effect of this reclassification was not material, prior-period information was not restated.

→ **Refer to Note 4 for more information on the nature, amount, timing and uncertainty of revenues and cash flows from contracts with customers**

3) Changes in segment reporting

Effective from the first quarter of 2018, UBS combined its Wealth Management and Wealth Management Americas business divisions into a single Global Wealth Management business division. Global Wealth Management is managed on an integrated basis, with a single set of performance targets and a unified operating plan and management structure. Consistent with this, the operating results of Global Wealth Management are presented and assessed on an integrated basis in internal management reports to the Group Executive Board, which is considered the chief operating decision maker pursuant to IFRS 8, *Operating Segments*. Consequently, beginning from 2018, Global Wealth Management qualifies as an operating and reportable segment for the purposes of segment reporting and is presented alongside Personal & Corporate Banking, Asset Management, the Investment Bank, and Corporate Center (with its units Services, Group Asset and Liability Management and Non-core and Legacy Portfolio).

Note 1 Summary of significant accounting policies (continued)

4) IFRS 7, *Financial Instruments: Disclosures*

IFRS 7, *Financial Instruments: Disclosures,* was updated in line with IFRS 9, *Financial Instruments*. UBS adopted the revised requirements on 1 January 2018, which is the date of initial application of IFRS 9. IFRS 9 transition disclosures as set out by IFRS 7 are presented in Note 1c.

In line with amendments to IFRS 7, from 1 January 2018, UBS separately presents hedging gains and losses recognized during the period in the statement of comprehensive income and the amounts reclassified to the income statement. More specifically, the effective portion of changes in fair value of hedging instruments designated as net investment hedges (before tax) recognized in other comprehensive income and the amounts reclassified to the income statement, previously included within *Foreign currency translation movements, before tax* and *Foreign exchange amounts reclassified to the income statement from equity*, are now presented in *Effective portion of changes in fair value of hedging instruments designated as net investment hedges, before tax* and *Effective portion of changes in fair value of hedging instruments designated as net investment hedges reclassified to the income statement*, respectively.

Furthermore, the line *Foreign exchange amounts reclassified to the income statement from equity* was renamed to *Foreign currency translation differences on foreign operations reclassified to the income statement*, and the line *Income tax relating to foreign currency translation movements* was renamed to *Income tax relating to foreign currency translations, including the effect of net investment hedges.*

In addition, while retaining hedge accounting under IAS 39, from 2018 the Group presents new disclosures to reflect the effects of hedge accounting on the Group's financial statements as required by consequential amendments of IFRS 7. The enhanced disclosures are included in the "Derivatives transacted for hedging purposes" section of Note 28. Specifically, hedging disclosures now include a more extensive description of UBS's hedging strategies as risk management tools, and effects of hedge accounting on financial position and performance are structured in tabular format. These additional disclosures are presented prospectively from 1 January 2018.

5) Amendments to IAS 1, *Presentation of Financial Statements*

In line with amendments to IAS 1, *Presentation of Financial Statements*, from 1 January 2018, in the income statement, UBS presents interest income and interest expense, calculated using the effective interest method, on financial instruments measured at amortized cost and financial assets measured at fair value through other comprehensive income separately from interest income and expense on financial instruments measured at fair value through profit or loss.

→ **Refer to Note 3 for more information**

6) Change in presentation of forward points on certain long-duration foreign exchange contracts transacted as economic hedges

Effective from 1 January 2018, UBS refined the presentation of forward points on certain long-duration foreign exchange contracts transacted as economic hedges, transferring the forward points from *Other net income from fair value changes on financial instruments* (prior to 1 January 2018: *Net trading income*) to *Interest income from financial instruments measured at fair value through profit or loss* to align with the presentation of forward points on certain short-duration foreign exchange contracts. The amount of forward points on certain long-duration foreign exchange contracts recognized in *Interest income from financial instruments measured at fair value through profit or loss* did not have a material effect on the Group's financial statements and prior periods have not been restated.

7) IFRS Interpretations Committee, *Payments relating to taxes other than income tax*

During the second quarter of 2018, UBS refined its treatment of prepayments or overpayments in relation to uncertain tax positions outside of the scope of IAS 12, *Income Taxes*, following the IFRS Interpretation Committee's discussion on *Payments relating to taxes other than income tax*. More specifically, prepayments for uncertain tax positions that have not yet given rise to a liability are recognized as assets because UBS will either receive a cash rebate or a benefit through the extinguishment of a future liability. Adoption of the change did not have a material effect on UBS's financial statements.

c) Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9 *Financial Instruments*

1) Introduction

Effective 1 January 2018, UBS adopted IFRS 9, *Financial Instruments*, which replaced IAS 39, *Financial Instruments: Recognition and Measurement,* and substantially changed accounting and financial reporting in three key areas: classification and measurement of financial assets, impairment and hedge accounting. In addition, UBS early adopted the Amendment to IFRS 9, *Prepayment Features with Negative Compensation*, issued in October 2017, which allows the Group to continue to apply amortized cost accounting to Swiss private mortgages and corporate loans that provide for two-way compensation if a prepayment occurs. The Group has retained hedge accounting under IAS 39 as permitted and early adopted the own credit requirements of IFRS 9 during the first quarter of 2016.

As permitted by the transitional provisions of IFRS 9, UBS elected not to restate comparative figures. Any effect on the carrying amounts of financial assets and liabilities at the date of transition to IFRS 9 was recognized as an adjustment to opening retained earnings. The detailed effects of the adoption of IFRS 9 on 1 January 2018 are presented in this Note and the updated accounting policies for classification and measurement of financial instruments and impairment of financial assets as applied from 1 January 2018 are presented in Note 1a.

2) Transition effect

The adoption of IFRS 9 effective 1 January 2018 has resulted in a reduction to IFRS consolidated equity as of 1 January 2018 of USD 591 million. This effect is comprised of classification and measurement changes of USD 360 million on a pre-tax basis and USD 300 million net of tax, as well as effects from the implementation of impairment requirements based on an expected credit loss (ECL) methodology of USD 357 million on a pre-tax basis and USD 291 million net of tax.

→ **Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors* for more information on the effect of the IFRS 9 transition on UBS's capital adequacy**

3) Governance

The implementation of IFRS 9 has been a key strategic initiative for UBS implemented under the joint sponsorship of the Group Chief Financial Officer and the Group Chief Risk Officer. The incorporation of forward-looking information into the ECL calculation and the definition and assessment of what constitutes a significant increase in credit risk (SICR) are inherently subjective and involve the use of significant expert judgment. Therefore, UBS has developed a front-to-back governance framework over the ECL calculation process jointly owned by the Group Chief Financial Officer and the Group Chief Risk Officer and has designed controls to meet the requirements of the Sarbanes-Oxley Act. UBS has efficient credit risk management processes in place that continue to be applicable and aim to ensure that the effects of economic developments are appropriately considered, mitigation actions are taken where required and risk appetite is reassessed and adjusted as needed.

→ **Refer to the "Risk management and control" section of this report for more information**

4) Retrospective amendments to UBS Group balance sheet presentation

Although the effect of IFRS 9 classification and measurement changes has been applied prospectively, UBS has made a series of changes to the presentation of its balance sheet to facilitate comparability, with information for periods ending before 1 January 2018 being presented in this revised structure. The primary changes include:

- IAS 39-specific asset categories, such as *Financial assets held to maturity* and *Financial assets available for sale*, have been superseded by the new categories *Financial assets measured at amortized cost* and *Financial assets measured at fair value through other comprehensive income*.
- A new line, *Financial assets at fair value not held for trading*, has been created to accommodate in particular financial assets previously designated at fair value, all of which are mandatorily classified at fair value through profit or loss under IFRS 9.
- *Other assets* and *Other liabilities* have been split into those measured at amortized cost, measured at fair value through profit or loss and other non-financial assets and liabilities.
- *Cash collateral on securities borrowed* and *Reverse repurchase agreements* have been combined into a single line, *Receivables from securities financing transactions*. Similarly, *Cash collateral on securities lent* and *Repurchase agreements* have been combined into a single line, *Payables from securities financing transactions*.
- Finance lease receivables, previously presented within *Loans*, are now presented within *Other financial assets measured at amortized cost*.
- Precious metal positions previously presented in *Trading portfolio assets* are now presented within the new line *Other non-financial assets*.
- *Financial liabilities designated at fair value* have been split into two lines: *Debt issued designated at fair value* and *Other financial liabilities designated at fair value*.

Note 1 Summary of significant accounting policies (continued)

The table below illustrates the revised balance sheet presentation of assets and liabilities as of 31 December 2017 in comparison with the presentation in the Annual Report 2017. The presentation of the components of equity has not changed, and therefore, for illustration purposes, total liabilities and equity are presented in a single line in the table. The table does not reflect any of the effects of adopting the classification and measurement requirements of IFRS 9, which are presented in the "*Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9*" table in this Note.

Retrospective amendments to UBS Group balance sheet presentation as of 31 December 2017

USD million		31.12.17	31.12.17
Assets	References	Former presentation	Revised presentation
Cash and balances at central banks		90,045	90,045
Loans and advances to banks (formerly: Due from banks)		14,094	14,094
Receivables from securities financing transactions (new line)	1		91,951
Cash collateral on securities borrowed (newly included in Receivables from securities financing transactions)	1	12,714	
Reverse repurchase agreements (newly included in Receivables from securities financing transactions)	1	79,238	
Cash collateral receivables on derivative instruments		24,040	24,040
Loans and advances to customers (formerly: Loans)	2	327,833	326,746
Financial assets held to maturity (superseded)	3	9,403	
Other financial assets measured at amortized cost (new line)	2, 3, 7		37,815
Total financial assets measured at amortized cost			584,691
Financial assets at fair value held for trading (formerly: Trading portfolio assets)	4	134,087	129,407
of which: assets pledged as collateral that may be sold or repledged by counterparties		*36,277*	*36,277*
Derivative financial instruments (formerly: Positive replacement values)		121,285	121,285
Brokerage receivables (new line, formerly included within Other assets)		n/a	n/a
Financial assets at fair value not held for trading (new line)	5		60,457
Financial assets designated at fair value	5	60,457	
Total financial assets measured at fair value through profit or loss			311,148
Financial assets available for sale (superseded)	6	8,889	
Financial assets measured at fair value through other comprehensive income (new line)	6		8,889
Investments in associates		1,045	1,045
Property, equipment and software		9,057	9,057
Goodwill and intangible assets		6,563	6,563
Deferred tax assets		10,056	10,056
Other non-financial assets (new line)	4, 7		7,830
Other assets (superseded)	7	30,474	
Total assets		939,279	939,279
Liabilities			
Amounts due to banks		7,728	7,728
Payables from securities financing transactions (new line)	8		17,485
Cash collateral on securities lent (newly included in Payables from securities financing transactions)	8	1,835	
Repurchase agreements (newly included in Payables from securities financing transactions)	8	15,650	
Cash collateral payables on derivative instruments		31,029	31,029
Customer deposits (formerly: Due to customers)		419,577	419,577
Debt issued measured at amortized cost		143,160	143,160
Other financial liabilities measured at amortized cost (new line)	10		37,276
Total financial liabilities measured at amortized cost			656,255
Financial liabilities at fair value held for trading (formerly: Trading portfolio liabilities)		31,251	31,251
Derivative financial instruments (formerly: Negative replacement values)		119,137	119,137
Brokerage payables designated at fair value (new line, formerly included within Other liabilities)		n/a	n/a
Financial liabilities designated at fair value (superseded)	9	55,604	
Debt issued designated at fair value (new line)	9		50,782
Other financial liabilities designated at fair value (new line)	9, 10		16,643
Total financial liabilities measured at fair value through profit or loss			217,813
Provisions		3,214	3,214
Other non-financial liabilities (new line)	10		9,443
Other liabilities (superseded)	10	58,540	
Total liabilities		886,725	886,725
Total liabilities and equity		939,279	939,279

Note 1 Summary of significant accounting policies (continued)

Explanatory footnotes to the table "Retrospective amendments to UBS Group balance sheet presentation"

Table ref.	Description of presentation changes applied retrospectively to the balance sheet as of 31 December 2017
Balance sheet assets	
1	Cash collateral on securities borrowed of USD 12,714 million and reverse repurchase agreements of USD 79,238 million as of 31 December 2017 are now presented as a total of USD 91,951 million within a single line, *Receivables from securities financing transactions*.
2	Finance lease receivables of USD 1,086 million as of 31 December 2017, previously presented within *Loans*, are now presented within *Other financial assets measured at amortized cost*.
3	*Financial assets held to maturity* measured at amortized cost of USD 9,403 million as of 31 December 2017 are now presented within *Other financial assets measured at amortized cost*.
4	Precious metal positions of USD 4,681 million as of 31 December 2017, previously presented in *Trading portfolio assets*, are now presented within *Other non-financial assets*.
5	Financial assets designated at fair value through profit or loss of USD 60,457 million as of 31 December 2017, previously presented in a separate line, are now presented within *Financial assets at fair value not held for trading*.
6	Debt and equity instruments of USD 8,889 million as of 31 December 2017, previously presented in *Financial assets available for sale,* are now presented within *Financial assets measured at fair value through other comprehensive income*.
7	The reporting line *Other assets* has been split into two new reporting lines, *Other financial assets measured at amortized cost* and *Other non-financial assets*. – Assets of USD 30,474 million as of 31 December 2017, previously presented within *Other assets*, are now presented within *Other financial assets measured at amortized cost* (USD 27,325 million) and *Other non-financial assets* (USD 3,149 million). – Financial assets now presented within *Other financial assets measured at amortized cost* include brokerage receivables of USD 19,573 million, debt securities of USD 9,403 million, loans to financial advisors of USD 3,199 million and other assets amounting to USD 5,639 million. Refer to Note 17a for more information. – Refer to Note 17b for more information on assets now presented within *Other non-financial assets*.
Balance sheet liabilities	
8	Cash collateral on securities lent of USD 1,835 million and repurchase agreements of USD 15,650 million as of 31 December 2017 are now presented within a single line, *Payables from securities financing transactions*.
9	Financial liabilities designated at fair value through profit or loss of USD 55,604 million as of 31 December 2017 are now presented within *Debt issued designated at fair value* (USD 50,782 million) and *Other financial liabilities designated at fair value* (USD 4,822 million).
10	The reporting line *Other liabilities* has been split into three new reporting lines, *Other financial liabilities measured at amortized cost*, *Other financial liabilities designated at fair value* and *Other non-financial liabilities*. – Liabilities amounting to USD 58,540 million as of 31 December 2017, previously presented within *Other liabilities,* are now presented within *Other financial liabilities measured at amortized cost* (USD 37,277 million, thereof USD 30,413 million brokerage payables), within *Other financial liabilities designated at fair value* (amounts due under unit-linked investment contracts of USD 11,821 million) and within *Other non-financial liabilities* (USD 9,443 million). – Refer to Note 22a for more information on financial liabilities now presented within *Other financial liabilities measured at amortized cost.* – Refer to Note 22b for more information on financial liabilities now presented within *Other financial liabilities designated at fair value*. – Refer to Note 22c for more information on liabilities now presented within *Other non-financial liabilities*.

Note 1 Summary of significant accounting policies (continued)

5) Transition to IFRS 9 as of 1 January 2018

Transition to classification and measurement requirements

As set out in the amended accounting policies in Note 1a, IFRS 9 requires all financial assets, except equity instruments and derivatives, to be classified at amortized cost, at fair value through other comprehensive income or at fair value through profit or loss (FVTPL), based on the business model for managing the respective assets and their contractual cash flow characteristics.

Changes resulting from the application of IFRS 9 classification and measurement requirements as of 1 January 2018 have been applied as follows:

- Determination of the business model was made based on facts and circumstances as of the 1 January 2018 transition date.
- De-designations and new designations of financial instruments at FVTPL, pursuant to transition requirements of IFRS 9, have been carried out as of 1 January 2018. These reassessments resulted in:
  i. the de-designation of certain financial assets designated at FVTPL, as they are managed on a fair value basis, and therefore mandatorily measured at fair value, or are no longer managed on a fair value basis but held to collect the contractual cash flows and therefore measured at amortized cost; and
  ii. the new designation of financial liabilities at FVTPL (e.g., brokerage payables) in order to achieve measurement consistency with associated financial assets that are mandatorily measured at FVTPL (e.g., brokerage receivables).

For UBS, the most significant IFRS 9 classification and measurement changes on transition to IFRS 9 were as follows:

- financial assets that no longer qualify for amortized cost accounting under IFRS 9 have been classified at FVTPL because their cash flow characteristics do not satisfy the solely payments of principal and interest criterion (e.g., auction rate securities and certain brokerage receivables);
- lending arrangements that no longer qualify for amortized cost accounting under IFRS 9 are classified at FVTPL because the business model within which they are managed does not have an objective to hold financial assets in order to collect the contractual cash flows or to collect contractual cash flows and sell (e.g., certain Investment Bank lending arrangements);
- equity instruments classified as available for sale under IAS 39 are classified at FVTPL under IFRS 9; and
- financial liabilities are newly designated under IFRS 9 at FVTPL, from amortized cost accounting, to align with conclusions reached for associated financial assets that will be measured at FVTPL (e.g., brokerage payables).

Effect on UBS Group income statement presentation

Upon adoption of IFRS 9, the reclassification of auction rate securities, certain loans in the Investment Bank, certain repurchase agreements and brokerage balances from amortized cost to FVTPL has resulted in the interest income from these instruments moving from *Interest income (expense) from financial instruments measured at amortized cost* to *Interest income (expense) from financial instruments measured at fair value through profit or loss*. These changes have been applied prospectively from 1 January 2018.

Effect on UBS Group statement of cash flows

Following the adoption of IFRS 9, changes have been made to the statement of cash flows to reflect the changes arising from financial instruments that have been reclassified on the balance sheet. In particular, cash flows from certain financial assets previously measured as available-for-sale assets at fair value through other comprehensive income have been reclassified from investing activities to operating activities as the assets are measured at fair value through profit or loss effective 1 January 2018.

Transition to expected credit loss requirements

As set out in the Group's amended accounting policies in Note 1a, IFRS 9 introduced a forward-looking ECL approach, which is intended to result in an earlier recognition of credit losses compared with the incurred-loss impairment approach for financial instruments under IAS 39 and the loss-provisioning approach for financial guarantees and loan commitments under IAS 37, *Provisions, Contingent Liabilities and Contingent Assets*.

The majority of ECL calculated as of the transition date relate to the private and commercial mortgage portfolio and corporate lending in Switzerland within Personal & Corporate Banking.

Models at transition

For the purpose of implementing ECL under IFRS 9, UBS has leveraged existing Pillar 1 internal ratings-based (IRB) models that are also used in determining expected loss and risk-weighted assets under the Basel III framework and Pillar 2 stress loss models.

Existing models have been adapted and 29 new models have been developed for the ECL calculation that consider the complexity, structure and risk profile of relevant portfolios and take account of the fact that the probabilities of default (PD) and the loss given default (LGD) used in the ECL calculation are point-in-time-based as opposed to the corresponding Basel III through-the-cycle (TTC) parameters. Management adjustments have also been made. UBS has leveraged its existing model risk framework, including the key model validation control executed by Model Risk Management & Control. New and revised models have been approved by UBS's Group Model Governance Board.

The assignment of internal counterparty rating grades and the determination of default probabilities for the purposes of Basel III remain unchanged.

→ **Refer to "Credit risk models" in the "Risk management and control" section of this report for more information**

Scenarios and scenario weights at transition

As outlined in Note 1a, UBS uses four different economic scenarios in the ECL calculation: an upside, a baseline, a mild downside and a severe downside scenario. ECL calculated on transition have been determined for each of the scenarios and subsequently weighted based on the probabilities in the table "Economic scenarios and weights applied."

Economic scenarios and weights applied

ECL scenario	Assigned weights in % (1.1.18)
Upside	20.0
Baseline	42.5
Mild downside	30.0
Severe downside	7.5

→ **Refer to Note 23b for information on weights applied to economic scenarios as at 31 December 2018**

UBS has established IFRS 9 ECL Scenario and Operating Committees to propose and approve the selection of the scenarios and weights to be applied and to monitor whether appropriate governance exists.

Macroeconomic and other factors at transition

Assumptions around the most important forward-looking economic factors for Switzerland, the US and other regions as applied in each of the economic scenarios to determine ECL at the date of transition can be summarized as follows.

For the baseline scenario, which is modeled along our business plan assumptions of a continuation of overall important global growth, Swiss GDP growth remains between 1% and 2% annually over the three years of the scenario. Moderate growth results in a very mild increase of unemployment, which stabilizes at around 3.5%. Asset price growth is also moderate, with the Swiss equity price index rising approximately 8% annually, while house prices grow by less than 1% annually. Policy rates, short-term interest rates and government bond yields increase very gradually over the three years of the scenario by approximately 50 basis points. GDP growth in the US remains relatively stable, and faster than in Switzerland. Monetary policy tightens at a similar pace to Switzerland and, combined with a modest decline in the unemployment rate, helps to keep inflation in check. US equity prices slightly underperform their Swiss counterparts, while house prices outperform relatively stagnant Swiss house price growth. In the rest of the world, growth remains buoyant, with moderating growth in both Europe and China contrasting with accelerating growth in other emerging markets.

In the upside scenario, which assumes GDP growth rising above trend in most countries with only a moderate rise in inflation and ongoing accommodative monetary policies, GDP growth in Switzerland peaks at around 5% annually. Strong growth leads to a decline in unemployment to very low levels (below 1%) by 2020. Asset prices grow at a robust pace, with equity prices increasing approximately 10% annually and house prices (single-family homes) rising approximately 4% annually. Policy and short-term interest rates remain low over the entire scenario, while government bond yields experience a sustained increase. In the US and the rest of the world, the scenario shows broadly similar features, with growth accelerating in Year 1 before steadily returning toward trend by Year 3. Specifically in the US, GDP growth accelerates at a slightly faster pace than in Switzerland, although the US experiences a slightly less substantial improvement in the unemployment rate by Year 3. The degree of policy tightening is marginally greater over the scenario horizon and, as in Switzerland, long-term government bond yields rise more significantly than short-term rates, and to a greater degree.

Note 1 Summary of significant accounting policies (continued)

The mild downside scenario is based on a monetary policy tightening assumption, implemented to deflate a potential asset price bubble, causing Swiss GDP to decline by almost 1% in the first year of the scenario. The unemployment rate rises to roughly 5%. Equity prices fall by more than 20% over three years, while house prices decline by 15% over the same period. The fall of the nominal asking rent index, which is cushioned by higher interest rates, is more moderate than the decline in house prices. Short-term interest rates rise significantly as a result of monetary tightening, as well as government bond yields. In this scenario, inflation in the US accelerates rapidly, leading to a sharp rise in short-term interest rates, with a similar development in Switzerland. GDP growth and house prices decline at a similar rate in the US and Switzerland. In the rest of the world, growth is also weighed down, particularly in more vulnerable emerging markets such as Russia, Turkey and Brazil, as interest rates and credit spreads rise sharply.

The severe downside scenario is modeled to mimic a severe recession caused by an event affecting Switzerland's competitiveness in key export markets, with Swiss GDP shrinking almost 7% in the first year of the scenario. The severe recession results in a substantial increase in unemployment, which peaks at around 9%. Asset prices plummet, with the Swiss equity index falling more than 55% over three years, and house prices declining 27% over the same period. Policy and short-term interest rates remain low over the entire scenario horizon. US GDP and unemployment deteriorate by a lesser degree than in Switzerland, and while house and equity prices decline sharply, the effects are also less severe than in Switzerland. With more scope to cut rates than the Swiss National Bank, short-term rates fall in the US. In the rest of the world, growth also slows sharply, particularly in the eurozone and neighboring emerging markets, such as Turkey and Russia.

→ **Refer to Note 23 for more information**

ECL measurement period at transition

As set out in Note 1a, for the majority of ECL-relevant instruments, the contractual maturity is used to calculate the measurement period, with this capped at 12 months when stage 1 ECL are required. In addition, for credit card limits and Swiss callable master credit facilities, judgment is required as UBS must determine the period over which it is exposed to credit risk. A seven-year period has been applied for credit cards and 12 months for master credit facilities. UBS's ECL-relevant financial instruments have relatively short average maturities, which significantly contribute to the level of ECL on transition.

SICR determination at transition

The identification of instruments for which a significant increase in credit risk (SICR) has been determined since initial recognition, and the corresponding allocation to stage 2 at transition, generally follow the principles described in the relevant accounting policy provided in Note 1a. Furthermore, the following principles have been applied.

General: In estimating the retrospective lifetime PDs, the economic conditions over the relevant prior periods and the general significant uncertainty inherent in such approximation have been considered to determine the allocation of instruments to stage 2 at transition.

Real estate financing: The Basel III rating methodology applied to the majority of income-producing real estate financings within Personal & Corporate Banking, which is leveraged for IFRS 9 ECL calculations, was significantly changed in 2017. As a consequence, there is no comparable rating on origination to determine whether an SICR has arisen over time. As permitted by the IFRS 9 transition requirements, a lifetime ECL allowance has therefore been recognized for certain real estate financing positions and will continue to be recognized until the positions are derecognized.

Other portfolios, including private mortgages and commercial SME clients: The Basel III rating models for other key portfolios in Personal & Corporate Banking, in particular for private client mortgages and commercial clients in the small and medium-sized enterprise segment, have recently been subject to a major redesign. While the methodology remained essentially the same and the calibration to the portfolios' average TTC PD value unchanged, the effect on the stage allocation is significant. This is due to the fact that the introduction of new models has led to a broader and different distribution of borrowers across the rating spectrum; while there was no material effect on those counterparties with an uplift in their rating, some of those that had a downward shift in their rating triggered the SICR threshold and a reclassification into stage 2 at transition.

Overview of transition effects

The table on the following pages provides a detailed overview of the IFRS 9 transition effects as of 1 January 2018. This includes:

- reclassification of IAS 39 carrying amounts to the new categories applicable under IFRS 9;
- remeasurement of carrying amounts due to reclassification (any remeasurement to fair value and / or reversal of IAS 39 allowances or IAS 37 provisions for assets moving from amortized cost to fair value); and
- recognition of IFRS 9 ECL for in-scope assets, off-balance sheet positions and other credit lines.

The following table also includes the effects recognized for deferred tax assets and therefore the total effect provided in *Retained earnings* in the table is net of tax effects. Explanatory footnotes set out after the table provide additional details on these changes.

Note 1 Summary of significant accounting policies (continued)

Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9

		31.12.17	1.1.18			
USD million	Classification under IAS 39	Carrying amount (IAS 39)	Reclassification (of IAS 39 carrying amounts)	Remeasurement due to reclassification incl. reversal of IAS 39 / IAS 37 allowances / provisions	Recognition of ECL (IFRS 9)	Carrying amount (IFRS 9)
Assets						
Cash and balances at central banks	Loans and receivables	90,045			0	90,045
Loans and advances to banks	Loans and receivables	14,094	(17)		(3)[12]	14,074
to: Brokerage receivables	*Loans and receivables*		*(17)[1]*			
Receivables from securities financing transactions	Loans and receivables	91,951	(5,085)		(2)[12]	86,864
to: Financial assets at fair value not held for trading	*Loans and receivables*		*(5,085)[2]*			
Cash collateral receivables on derivative instruments	Loans and receivables	24,040			0	24,040
Loans and advances to customers	Loans and receivables	326,746	(8,024)	0	(241)[12]	318,480
to: Financial assets at fair value not held for trading	*Loans and receivables*		*(2,747)[3]*			
to: Brokerage receivables	*Loans and receivables*		*(4,812)[1]*			
to: Financial assets at fair value held for trading	*Loans and receivables*		*(480)[4]*			
from: Financial assets at fair value not held for trading	*FVTPL (designated)*		*9[5]*	*0*		
from: Financial assets at fair value held for trading	*FVTPL (held for trading)*		*6[5]*			
Other financial assets measured at amortized cost	Loans and receivables, held to maturity	37,815	(19,004)	0	(36)[12]	18,775
to: Brokerage receivables	*Loans and receivables*		*(19,573)[1]*			
from: Financial assets measured at fair value through other comprehensive income	*Available for sale*		*569[6]*	*0*		
Total financial assets measured at amortized cost		584,691	(32,131)	0	(282)	552,277
Financial assets at fair value held for trading	FVTPL (held for trading)	129,407	(11,135)	(16)		118,256
to: Loans and advances to customers	*FVTPL (held for trading)*		*(6)[5]*			
to: Financial assets at fair value not held for trading	*FVTPL (held for trading)*		*(11,609)[7]*			
from: Loans and advances to customers	*Loans and receivables*		*480[4]*	*(16)[4]*		
of which: assets pledged as collateral that may be sold or repledged by counterparties	*FVTPL (held for trading)*	*36,277*				*36,277*
Derivative financial instruments	FVTPL (derivatives)	121,285				121,285
Brokerage receivables	Loans and receivables		24,403			24,403
from: Loans and advances to banks	*Loans and receivables*		*17[1]*			
from: Loans and advances to customers	*Loans and receivables*		*4,812[1]*			
from: Other financial assets measured at amortized cost	*Loans and receivables*		*19,573[1]*			
Financial assets at fair value not held for trading	FVTPL (designated)	60,457[9]	20,822	(295)		80,985
to: Loans and advances to customers	*FVTPL (designated)*		*(9)[5]*			
from: Financial assets at fair value held for trading	*FVTPL (held for trading)*		*11,609[7]*			
from: Receivables from securities financing transactions	*Loans and receivables*		*5,085[2]*	*(1)*		
from: Loans and advances to customers	*Loans and receivables*		*2,747[3]*	*(293)[3]*		
from: Financial assets measured at fair value through other comprehensive income	*Available for sale*		*1,391[8]*			
Total financial assets measured at fair value through profit or loss		311,148	34,090	(310)		344,928
Financial assets measured at fair value through other comprehensive income	Available for sale	8,889	(1,960)			6,930[10]
to: Other financial assets measured at amortized cost	*Available for sale*		*(569)[6]*			
to: Financial assets at fair value not held for trading	*Available for sale*		*(1,391)[8]*			
Investments in associates		1,045				1,045
Property, equipment and software		9,057				9,057
Goodwill and intangible assets		6,563				6,563
Deferred tax assets		10,056		59[11]	66[11]	10,182
Other non-financial assets		7,830				7,830
Total assets		939,279		(251)	(216)	938,812

Note 1 Summary of significant accounting policies (continued)

Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9 (continued)

	31.12.17		1.1.18			
USD million	Classification under IAS 39	Carrying amount (IAS 39)	Reclassification (of IAS 39 carrying amounts)	Remeasurement due to reclassification incl. reversal of IAS 39 / IAS 37 allowances / provisions	Recognition of ECL (IFRS 9)	Carrying amount (IFRS 9)
Liabilities						
Amounts due to banks	Amortized cost	7,728				7,728
Payables from securities financing transactions	Amortized cost	17,485	(5,212)			12,273
to: Other financial liabilities designated at fair value	*Amortized cost*		*(5,212)*[13]			
Cash collateral payables on derivative instruments	Amortized cost	31,029				31,029
Customer deposits	Amortized cost	419,577	(5,404)			414,172
to: Brokerage payables designated at fair value	*Amortized cost*		*(5,404)*[14]			
Debt issued measured at amortized cost	Amortized cost	143,160				143,160
Other financial liabilities measured at amortized cost	Amortized cost	37,276	(30,413)	(4)		6,859
to: Brokerage payables designated at fair value	*Amortized cost*		*(30,413)*[14]			
Derecognition: deferred fees on other loan commitments	*Amortized cost*			*(4)*[4]		
Total financial liabilities measured at amortized cost		656,255	(41,030)	(4)		615,222
Financial liabilities at fair value held for trading	FVTPL (held for trading)	31,251				31,251
Derivative financial instruments	FVTPL (derivatives)	119,137		59		119,196
Recognition: Loan commitments	*Amortized cost – off-balance sheet*			*61*[4]		
Derecognition: Loan commitments	*FVTPL (derivatives)*			*(2)*[5]		
Brokerage payables designated at fair value	Amortized cost		35,818			35,818
from: Customer deposits	*Amortized cost*		*5,404*[14]			
from: Other financial liabilities measured at amortized cost	*Amortized cost*		*30,413*[14]			
Debt issued designated at fair value	FVTPL (designated)	50,782				50,782
Other financial liabilities designated at fair value	FVTPL (designated)	16,643	5,212	(5)		21,850
from: Payables from securities financing transactions	*Amortized cost*		*5,212*[13]	*(5)*[13]		
Total financial liabilities measured at fair value through profit or loss		217,813	41,030	54		258,897
Provisions		3,214			76[12]	3,290
Other non-financial liabilities		9,443				9,443
Total liabilities		886,725		50	76	886,851
Equity						
Share capital		338				338
Share premium		23,598				23,598
Treasury shares		(2,210)				(2,210)
Retained earnings		25,932	74[8,15]	(300)	(291)	25,415
Other comprehensive income recognized directly in equity, net of tax		4,838	(74)[8,15]			4,764
Equity attributable to shareholders		52,495	0	(300)[15]	(291)[15]	51,905
Equity attributable to non-controlling interests		59				59
Total equity		52,554	0	(300)	(291)	51,963
Total liabilities and equity		939,279	0	(251)	(216)	938,812

Note 1 Summary of significant accounting policies (continued)

Explanatory footnotes to the table "Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9"

Table ref.	Description of classification or remeasurement changes on adoption of IFRS 9 as of 1 January 2018
1	Certain customer and prime brokerage receivable balances, in the Investment Bank and Global Wealth Management, fail the solely payments of principal and interest (SPPI) criterion for measurement at amortized cost. These include USD 4,812 million previously included within *Loans and advances to customers*, USD 17 million from *Loans and advances to banks* and USD 19,573 million previously included within *Other financial assets measured at amortized cost*. The receivables are managed under a business model whose objective is to hold the assets to collect contractual cash flows. However, the reported receivables represent an aggregation of cash receivable and payable balances that form a single unit of account at the client level and generate a return that does not constitute consideration for the time value of money, credit risk and other basic lending risks. The SPPI criterion is therefore not met and under IFRS 9 the receivables are mandatorily measured at fair value through profit or loss (FVTPL) and separately presented as *Brokerage receivables*. There was no difference between the amortized cost carrying amount and the fair value as of 1 January 2018 and therefore no remeasurement gain or loss has been recognized.
2	Based on the business model assessment under IFRS 9, certain reverse repurchase agreements with a carrying amount of USD 5,085 million as of 31 December 2017 were determined to be managed on a fair value basis and were therefore reclassified from amortized cost to FVTPL measurement under IFRS 9. The carrying value has been reclassified from *Receivables from securities financing transactions* to *Financial assets at fair value not held for trading* as of 1 January 2018. A remeasurement loss of USD 1 million has been recorded in *Retained earnings*. USD 11,787 million of forward starting reverse repurchase agreements are newly accounted for as derivatives, prior to settlement, from 1 January 2018 as they are managed on a fair value basis. The fair value of the derivatives as of 1 January 2018 was immaterial.
3	Certain positions previously included within *Loans and advances to customers* with a carrying amount of USD 2,747 million as of 31 December 2017 were reclassified to *Financial assets at fair value not held for trading* upon adoption of IFRS 9. This includes: – auction rate securities (USD 2,169 million) that are held in Corporate Center and contain an embedded leverage feature triggering the failure of the SPPI criterion; and – certain loans in the Investment Bank (USD 566 million) and in Corporate Center (USD 12 million) that either fail the SPPI criterion or are held within a business model with an intent to sell or substantially hedge the primary risks. These assets are mandatorily measured at FVTPL under IFRS 9. A corresponding net remeasurement loss of USD 293 million was recognized in *Retained earnings* related to these reclassifications. This remeasurement loss also included reversal of specific credit loss allowances (USD 11 million).
4	Due to a change in the underlying business model, loans and advances to customers with a carrying amount of USD 480 million as of 31 December 2017 have been reclassified to *Financial assets at fair value held for trading* as of 1 January 2018. A corresponding net remeasurement loss of USD 16 million, which includes the reversal of specific IAS 39 credit loss allowances, was recognized in *Retained earnings* related to this reclassification. Irrevocable loan commitments that are contractually linked with these financial assets are now recognized as *Derivative financial instruments* (derivative liabilities) and are measured at FVTPL as of 1 January 2018. This reclassification resulted in a USD 61 million loss with a corresponding entry to *Retained earnings*. Liabilities arising from deferred fees of USD 4 million related to these loan commitments recorded as *Other financial liabilities measured at amortized cost* at 31 December 2017 were derecognized with a corresponding entry to *Retained earnings*.
5	Financial assets with a carrying amount of USD 15 million as of 31 December 2017 were reclassified to *Loans and advances to customers* from *Financial assets at fair value not held for trading* (USD 9 million) and from *Financial assets at fair value held for trading* (USD 6 million) given management's intent to hold these financial assets to collect contractual cash flows. Loan commitments related to these financial assets, which were recognized as derivative liabilities with a carrying value of USD 2 million as of 31 December 2017, were accordingly derecognized on 1 January 2018 with a corresponding entry to *Retained earnings*.
6	Certain debt instruments with a carrying amount of USD 569 million as of 31 December 2017 were formerly classified as available for sale and measured at fair value through other comprehensive income (FVOCI) under IAS 39 but are measured at amortized cost under IFRS 9. Those positions, which are held to collect cash flows solely representing payment of principal and interest, are presented within *Other financial assets measured at amortized cost* as of 1 January 2018. The fair value of these assets was consistent with the amortized cost value as of 1 January 2018 and no remeasurement gain or loss has been recognized.
7	Upon adopting IFRS 9, UBS has elected to refine the assets classified within *Financial assets at fair value held for trading* to carve out those that are segregated from UBS's trading activities, where UBS's role is primarily to manage the assets on a fair value basis on behalf of others. Instead, such assets will be presented alongside others managed on a fair value basis within *Financial assets at fair value not held for trading*. As a consequence of this refinement, UBS has reclassified assets held to hedge unit-linked investment contracts of USD 11,609 million from *Financial assets at fair value held for trading* to *Financial assets at fair value not held for trading* as of 1 January 2018. No remeasurement gain or loss has been recognized.

Note 1 Summary of significant accounting policies (continued)

Explanatory footnotes to the table "Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9" (continued)

Table ref.	Description of classification or remeasurement changes on adoption of IFRS 9 as of 1 January 2018 (continued)
8	UBS holds certain global and local liquidity buffers that were determined to be managed on a fair value basis as management utilizes fair value information for reporting and decision-making purposes. Therefore, assets previously classified as available for sale under IAS 39 with a carrying amount of USD 636 million as of 31 December 2017 were reclassified to *Financial assets at fair value not held for trading*. An unrealized gain of USD 5 million related to these positions was reclassified from *Other comprehensive income* to *Retained earnings*. Additionally, equity instruments and investment fund units previously classified as available for sale under IAS 39 with a carrying amount of USD 755 million as of 31 December 2017 were reclassified to *Financial assets at fair value not held for trading* under the revised IFRS 9 measurement rules. A related unrealized gain in OCI of USD 204 million has been reclassified to *Retained earnings*. Additionally, a net tax expense of USD 134 million was transferred from OCI to *Retained earnings* related to the positions above that were reclassified out of the IAS 39 available-for-sale category.
9	Assets previously designated at FVTPL with a carrying amount of USD 60,457 million as of 31 December 2017 are no longer designated as such under IFRS 9, as it was determined that these assets were either held in a business model that is managed on a fair value basis, did not meet the SPPI criterion, or did meet the SPPI criterion and are held in a hold-to-collect business model. Of the total, assets with a carrying amount of USD 60,448 million are now mandatorily measured at FVTPL and included within *Financial assets at fair value not held for trading*. The remaining assets with a carrying amount of USD 9 million have been de-designated and were reclassified to *Loans and advances to customers*, given a change in business model to hold-to-collect (refer to footnote 5).
10	Certain debt instruments with a carrying amount of USD 6,930 million as of 31 December 2017 were formerly classified as available for sale under IAS 39 and are measured at FVOCI under IFRS 9. These instruments include US government bonds, US government-sponsored mortgage-backed securities, and other forms of debt that are held in a business model whose objective is achieved by both collecting contractual cash flows and selling and that meet the SPPI criterion. These positions are now presented within *Financial assets measured at fair value through other comprehensive income*.
11	Deferred tax assets of USD 126 million have been recognized in connection with the adoption of IFRS 9. Of the total effect, USD 66 million relates to the recognition of ECL and USD 59 million relates to classification and measurement changes upon adoption of IFRS 9.
12	Upon adoption of the ECL requirements of IFRS 9, a transition effect of USD 357 million was recognized, consisting of USD 148 million of stage 1 allowances, USD 193 million of stage 2 allowances and an incremental increase in stage 3 allowances of USD 16 million. The effect was mainly recognized within *Loans and advances to customers* (USD 241 million), with effects also recognized in *Other financial assets measured at amortized cost* (USD 36 million), *Loans and advances to banks* (USD 3 million), *Receivables from securities financing transactions* (USD 2 million) and *Provisions* (USD 76 million).
13	Certain repurchase agreements with a carrying amount of USD 5,212 million as of 31 December 2017 have been designated at FVTPL as they are managed in conjunction with reverse repurchase agreements that are mandatorily measured at FVTPL under IFRS 9. These amounts are included within *Other financial liabilities designated at fair value* as of 1 January 2018. A remeasurement gain of USD 5 million has been recognized in *Retained earnings* as of 1 January 2018 related to this reclassification. USD 7,930 million of forward starting repurchase agreements are newly accounted for as derivatives, prior to settlement, from 1 January 2018 as they are managed on a fair value basis. The fair value of the derivatives as of 1 January 2018 was immaterial.
14	To achieve measurement consistency with reclassified customer and prime brokerage receivables that are measured at FVTPL following adoption of IFRS 9, certain customer deposits with a carrying amount of USD 5,404 million and prime brokerage payables with a carrying amount of USD 30,413 million as of 31 December 2017 have been designated at FVTPL and are presented within *Brokerage payables designated at fair value* as of 1 January 2018. There was no difference between the amortized cost carrying amount and the fair value as of 1 January 2018 and therefore no remeasurement gain or loss has been recognized.
15	The adoption of IFRS 9 has resulted in a reduction to IFRS consolidated equity as of 1 January 2018 of USD 591 million. This effect is comprised of classification and measurement changes of USD 360 million on a pre-tax basis and USD 300 million net of tax, as well as effects from the implementation of ECL methodology of USD 357 million on a pre-tax basis and USD 291 million net of tax. In addition, USD 74 million has been reclassified from *Other comprehensive income* recognized directly in equity, net of tax, to *Retained earnings* (refer to footnote 8 above), with no overall effect on equity attributable to shareholders.

Note 1 Summary of significant accounting policies (continued)

Reconciliation of allowances and provisions on adoption of IFRS 9 as of 1 January 2018

The table below provides a reconciliation from the IAS 39 allowances / IAS 37 provisions to the IFRS 9 ECL allowances / provisions recognized as of 1 January 2018 upon adoption of IFRS 9.

Reconciliation of allowances and provisions on adoption of IFRS 9

	31.12.17	1.1.18		
USD million	Loss allowances and provisions (IAS 39 / IAS 37)	Reversal of allowances (IAS 39)	Recognition of ECL (IFRS 9)[1]	Allowances and provisions for ECL (IFRS 9)
On-balance sheet				
Cash and balances at central banks			0	0
Loans and advances to banks	(3)		(3)	(5)
Receivables from securities financing transactions			(2)	(2)
Cash collateral receivables on derivative instruments			0	
Loans and advances to customers	(675)	27[2]	(241)[3]	(890)
Other financial assets measured at amortized cost	(104)[4]		(36)	(139)
Total on-balance sheet	(781)	27	(282)	(1,037)
Off-balance sheet financial instruments and other credit lines				
Guarantees	(30)		(8)	(38)
Loan commitments	(4)		(33)	(37)
Other credit lines			(35)	(35)
Total off-balance sheet financial instruments and other credit lines	(34)		(76)	(110)
Total	(815)	27	(357)	(1,146)
of which: stage 1			*(148)*	*(148)*
of which: stage 2			*(193)*	*(193)*
of which: stage 3			*(16)[5]*	*(806)*

1 Includes stage 1 and stage 2 expected credit losses and additional stage 3 expected credit losses. 2 The reversal of USD 27 million of IAS 39 loss allowances relates to instruments reclassified from amortized cost to fair value through profit or loss on transition to IFRS 9. Refer also to footnotes 3 and 4 to the table "Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9." 3 Includes the reversal of collective allowances of USD 13 million. 4 Includes USD 84 million related to loans to financial advisors for which an allowance was reported as a direct reduction of the carrying amount as of 31 December 2017. 5 The incremental increase in stage 3 allowances of USD 16 million arises from additional consideration of forward-looking scenarios under IFRS 9.

Note 1 Summary of significant accounting policies (continued)

IFRS 9 transition effect on other comprehensive income and retained earnings as of 1 January 2018

The table below presents the transition effects recognized in OCI and retained earnings upon adoption of IFRS 9.

IFRS 9 impact on other comprehensive income and retained earnings

USD million	
Other comprehensive income recognized directly in equity, net of tax	
Reclassification of financial assets (available for sale to fair value through profit or loss) – equity instruments	(204)
Reclassification of financial assets (available for sale to fair value through profit or loss) – debt instruments	(5)
Tax (expense) / benefit	134
Total change in other comprehensive income	(74)
Retained earnings	
Remeasurement of financial assets (reclassified from amortized cost to fair value through profit or loss)	(310)
Reclassification of financial assets (reclassified from available for sale to fair value through profit or loss)	209
Recognition of ECL for on-balance sheet financial assets	(282)
Remeasurement of financial liabilities (reclassified from amortized cost to designated at fair value through profit or loss)	5
Recognition of derivative loan commitments measured at fair value through profit or loss	(61)
Derecognition of liabilities for deferred fees on other loan commitments	4
Derecognition of derivative loan commitments measured at fair value through profit or loss	2
Recognition of ECL for off-balance sheet positions	(76)
Tax (expense) / benefit	(9)
Total change in retained earnings	(518)
Total change in equity due to the adoption of IFRS 9	(591)

d) International Financial Reporting Standards and Interpretations to be adopted in 2019 and later and other changes

IFRS 16, *Leases*

UBS will adopt IFRS 16, *Leases*, on 1 January 2019. This will fundamentally change how UBS accounts for operating leases when acting as a lessee, with a requirement to record a lease obligation and a right-of-use asset on the balance sheet. Upon adoption of IFRS 16, assets and liabilities are expected to increase by approximately USD 3.5 billion with no material effect to the Group's equity.

Changes in Corporate Center cost allocations and equity attribution to business divisions as of the first quarter of 2019

In order to further align Group and divisional performance, UBS will adjust the methodology for the allocation of Corporate Center – Services funding costs and expenses to the business divisions. At the same time, UBS is updating its funds transfer pricing framework to better reflect the sources and usage of funding. All of these changes are effective as of 1 January 2019 and prior-period segment information will be restated.

Together, these changes will decrease the business divisions' operating results and thereby increase their adjusted cost / income ratios by approximately 1-2 percentage points, with an offsetting effect of approximately USD 0.7 billion in Corporate Center's operating profit / (loss) before tax.

Corporate Center will retain funding costs for deferred tax assets, costs relating to UBS's legal entity transformation program and other costs not attributable to or representative of the performance of the business divisions.

Alongside the update to allocations and UBS's funds transfer pricing framework, the Group is increasing the allocation of balance sheet resources from Corporate Center to the business divisions, resulting in approximately USD 220 billion of assets allocated from Corporate Center to the business divisions in restated 2018 numbers, predominantly from high-quality liquid assets and certain other assets centrally managed on behalf of the business divisions.

Upon adoption of IFRS 16, *Leases*, as of 1 January 2019, UBS intends to additionally allocate approximately USD 3.5 billion of newly recognized right of use assets to the business divisions.

Changes to Corporate Center segment reporting effective first quarter 2019

As announced in the third quarter 2018 report, UBS will no longer separately assess the performance of Non-core and Legacy Portfolio, given its substantially reduced size and resource consumption. In addition, following the aforementioned changes to UBS's methodology for allocating funding costs and expenses from Corporate Center – Services and Corporate Center – Group Asset and Liability Management (Group ALM) to the business divisions, the operating loss retained in Corporate Center – Services and Corporate Center – Group ALM will be significantly reduced. As a consequence and in compliance with IFRS 8, *Operating Segments*, beginning with the first quarter 2019 report, UBS will provide results for total Corporate Center only and will not separately report Corporate Center – Services, Group ALM and Non-core and Legacy Portfolio. Furthermore, UBS will operationally combine Group Treasury with Group ALM and call this combined unit Group Treasury. Commentary on performance of this function will be included in the Corporate Center management discussion and analysis in UBS's quarterly and annual reporting. Former Group ALM total risk management net income after allocations will continue to be disclosed separately. Prior-period information will be restated.

IFRIC 23, *Uncertainty over Income Tax Treatments*

In June 2017, the IASB issued IFRIC Interpretation 23, *Uncertainty over Income Tax Treatments* (IFRIC 23), which addresses how uncertain tax positions should be accounted for under IFRS. IFRIC 23 requires that, where acceptance of the tax treatment by the relevant tax authority is considered probable, it should be assumed as an accounting recognition matter that treatment of the item will ultimately be accepted. Therefore, no tax provision would be required in such cases. However, if acceptance of the tax treatment is not considered probable, the entity is required to reflect that uncertainty using an expected value (i.e., a probability-weighted approach) or the single most likely amount.

IFRIC 23 is mandatorily effective for accounting periods beginning on or after 1 January 2019 and any resulting change to the tax provisions should be recognized in retained earnings.

UBS expects to recognize a net tax expense of USD 11 million in retained earnings on 1 January 2019 in respect of the adoption of IFRIC 23, which will be reflected in our first quarter 2019 report.

Note 1 Summary of significant accounting policies (continued)

Amendments to IAS 19, *Employee Benefits*

In February 2018, the IASB issued amendments to IAS 19, *Employee Benefits*, which address the accounting when a plan amendment, curtailment or settlement occurs during the reporting period. The amendments require entities to use the updated actuarial assumption to determine current service cost and net interest for the remainder of the annual reporting period after such an event. The amendments also clarify how the requirements for accounting for a plan amendment, curtailment or settlement affect the asset ceiling requirements. The amendments are effective prospectively for plan amendments, curtailments or settlements that occur on or after 1 January 2019. The adoption will have no effect on the Group's financial statements on transition at 1 January 2019.

Annual Improvements to IFRS Standards 2015–2017 Cycle

In December 2017, the IASB issued *Annual Improvements to IFRS Standards 2015–2017 Cycle*, which resulted in amendments to IFRS 3, *Business Combinations*, IFRS 11, *Joint Arrangements*, IAS 12, *Income Taxes,* and IAS 23, *Borrowing Costs*. The amendments are mandatorily effective as of 1 January 2019. The adoption of these amendments will have no material effect on the Group's financial statements on the transition date.

Conceptual Framework

In March 2018, the IASB issued a revised version of its Conceptual Framework for Financial Reporting (the Framework). The Framework sets out the fundamental concepts of financial reporting that guide the IASB in developing IFRS standards. The amended Framework seeks to improve the concepts for reporting assets, liabilities, income and expenses, explains how to decide when assets and liabilities should be measured using historical cost and when they should be measured at current value, and provides up-to-date tools that will help the IASB in setting IFRS standards. It underpins existing IFRS standards but does not override them. Preparers use the Framework as a point of reference to develop accounting policies in rare instances where a particular business transaction is not covered by existing IFRS standards.

The IASB and the IFRS Interpretations Committee will begin to use the new Framework immediately in developing new, or amending existing, financial reporting standards and interpretations. For UBS, the Framework becomes effective in annual periods beginning on 1 January 2020. UBS is currently assessing the effect of the amended Framework on its financial accounting policies.

Amendments to IFRS 3, *Business Combinations*

In October 2018, the IASB issued *Definition of a Business (Amendments to IFRS 3)*. The amendments clarify the definition of a business, with the objective of assisting in the determination of whether a transaction should be accounted for as a business combination or an asset acquisition. The amendments apply to transactions for which the acquisition date is on or after 1 January 2020, with early application permitted. Adoption of these amendments is not expected to have a material effect on the financial statements.

Note 2a Segment reporting

The operational structure of the Group as of 31 December 2018 was comprised of Corporate Center and four business divisions: Global Wealth Management, Personal & Corporate Banking, Asset Management and the Investment Bank.

→ **Refer to "Segment reporting" in Note 1a for more information**

Global Wealth Management

In the first quarter of 2018, Wealth Management and Wealth Management Americas were combined into a single unit. Global Wealth Management provides investment advice and solutions to private clients, in particular in the ultra high net worth and high net worth segments. Clients benefit from Global Wealth Management's comprehensive set of capabilities, including wealth planning, investing, lending, asset protection, philanthropy, corporate and banking services as well as family office services in collaboration with the Investment Bank and Asset Management. Global Wealth Management has a global footprint, with the US representing its largest market. Clients are served through local offices and dedicated advisors. The ultra high net worth business is managed globally across the regions.

Personal & Corporate Banking

Personal & Corporate Banking provides comprehensive financial products and services to private, corporate and institutional clients and operates in Switzerland in the private and corporate loan market. Personal & Corporate Banking is central to UBS's universal bank model in Switzerland and it works with the wealth management, investment bank and asset management businesses to help clients receive the best products and solutions for their specific financial needs. While Personal & Corporate Banking operates primarily in its home market of Switzerland, it also provides capabilities to support the growth of the international business activities of UBS's corporate and institutional clients through local hubs in Frankfurt, New York, Hong Kong and Singapore. The business is divided into Personal Banking and Corporate & Institutional Clients (CIC).

Asset Management

Asset Management is a large-scale and diversified global asset manager. It offers investment capabilities and styles across all major traditional and alternative asset classes, as well as platform solutions and advisory support to institutions, wholesale intermediaries and Global Wealth Management clients around the world. Asset Management offers clients a wide range of investment products and services in different asset classes in the form of segregated, pooled or advisory mandates as well as registered investment funds in various jurisdictions. It covers the main asset management markets globally, with a presence in 23 countries grouped in four regions: the Americas; Europe, Middle East and Africa; Switzerland; and Asia Pacific.

Investment Bank

The Investment Bank provides a range of services to institutional, corporate and wealth management clients to help them raise capital, grow their businesses, invest and manage risks. It is focused on its traditional strengths in advisory, capital markets, equities and foreign exchange, complemented by a targeted rates and credit platform. The Investment Bank uses its research and technology capabilities to support its clients as they adapt to the evolving market structures and changes in the regulatory, technological, economic and competitive landscape. The Investment Bank delivers solutions to corporate, institutional and wealth management clients, using its intellectual capital and electronic platforms. It also provides services to Global Wealth Management, Personal & Corporate Banking and Asset Management. It has a global reach, with a presence in 33 countries and principal offices in all major financial hubs.

Corporate Center

Corporate Center provides services to the Group through the Corporate Center – Services and Group Asset and Liability Management (Group ALM) units. Corporate Center also includes the Non-Core and Legacy Portfolio unit.

Corporate Center – Services consists of the Group Chief Operating Officer area (Group Technology, Group Corporate Services, Group Human Resources, Group Operations and Group Sourcing), Group Finance (excluding Group ALM), Group Legal, Group Risk Control, Communications & Branding, Group Compliance, Regulatory & Governance, and UBS in society.

Group ALM manages the structural risk of UBS's balance sheet, including interest rate risk, structural foreign exchange risk and collateral risk, as well as the risks associated with the Group's liquidity and funding portfolios. Group ALM also seeks to optimize financial performance by matching assets and liabilities. Group ALM serves all business divisions and the other Corporate Center units through three main risk management areas, and its risk management is fully integrated into the Group's risk governance framework.

Non-core and Legacy Portfolio manages legacy positions from businesses exited by the Investment Bank. It is overseen by a committee chaired by the Group Chief Risk Officer.

Note 2a Segment reporting (continued)

USD million	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center – Services	Corporate Center – Group ALM	Corporate Center – Non-core and Legacy Portfolio	UBS
For the year ended 31 December 2018[1]								
Net interest income	4,206	2,057	(31)	937	(398)	(780)	35	6,025
Non-interest income	12,659	2,166	1,874	7,641	(158)	(123)	246	24,306
Allocations from CC – Group ALM	90	56	15	(391)	43	295	(108)	0
Income[2]	16,956	4,278	1,857	8,188	(513)	(608)	172	30,330
Credit loss (expense) / recovery	(15)	(56)	0	(38)	0	(1)	(8)	(118)
Total operating income	16,941	4,222	1,857	8,150	(513)	(609)	165	30,213
Personnel expenses	7,683	803	703	2,941	3,927	41	35	16,132
General and administrative expenses	1,724	285	202	651	3,789	42	104	6,797
Services (to) / from CC and other BDs	3,852	1,208	498	2,889	(8,624)	1	176	0
of which: services from CC – Services	*3,740*	*1,285*	*541*	*2,811*	*(8,697)*	*169*	*153*	*0*
Depreciation and impairment of property, equipment and software	4	14	2	8	1,199	0	0	1,228
Amortization and impairment of intangible assets[3]	50	0	1	12	2	0	0	65
Total operating expenses	13,313	2,310	1,406	6,501	293	84	315	24,222
Operating profit / (loss) before tax	**3,628**	**1,912**	**451**	**1,649**	**(806)**	**(693)**	**(150)**	**5,991**
Tax expense / (benefit)								1,468
Net profit / (loss)								**4,522**
Additional information								
Total assets	200,036	138,809	24,371	258,691	21,733	280,135	34,715	958,489
Additions to non-current assets	196	23	1	89	1,666	0	0	1,975

1 Prior-period information may not be comparable as a result of the adoption of IFRS 9 and IFRS 15, both effective 1 January 2018. Refer to Note 1b and c for more information on these changes. 2 Impairments of financial assets classified at fair value through other comprehensive income for the year ended 31 December 2018 totaled USD 0 million. 3 Refer to Note 16 for more information.

Note 2a Segment reporting (continued)

USD million	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center			UBS
					Services	Group ALM	Non-core and Legacy Portfolio	
For the year ended 31 December 2017[1]								
Net interest income	3,722	1,954	(33)	1,217	(355)	128	24	6,656
Non-interest income	12,196	1,807	2,097	7,020	76	(147)	50	23,098
Allocations from CC – Group ALM	377	184	19	(351)	123	(268)	(84)	0
Income[2]	16,295	3,945	2,083	7,886	(157)	(288)	(11)	29,754
Credit loss (expense) / recovery	(8)	(20)	0	(92)	0	0	(11)	(131)
Total operating income	16,287	3,925	2,083	7,794	(157)	(288)	(22)	29,622
Personnel expenses	7,674	852	731	3,006	3,857	34	44	16,199
General and administrative expenses	1,263	296	235	675	4,336	27	117	6,949
Services (to) / from CC and other BDs	3,726	1,156	524	2,824	(8,445)	(13)	228	0
of which: services from CC – Services	*3,626*	*1,251*	*562*	*2,729*	*(8,510)*	*145*	*198*	*0*
Depreciation and impairment of property, equipment and software	4	13	1	10	1,024	0	0	1,053
Amortization and impairment of intangible assets[3]	49	0	3	12	7	0	0	71
Total operating expenses	12,717	2,317	1,495	6,527	779	48	388	24,272
Operating profit / (loss) before tax	**3,571**	**1,607**	**587**	**1,267**	**(935)**	**(336)**	**(411)**	**5,351**
Tax expense / (benefit)								4,305
Net profit / (loss)								**1,046**
Additional information								
Total assets	194,990	139,062	14,638	269,731	21,371	252,092	47,395	939,279
Additions to non-current assets	120	15	1	3	1,606	0	0	1,746

1 Prior-period information may not be comparable as a result of the adoption of IFRS 9 and IFRS 15, both effective 1 January 2018. Refer to Note 1b and c for more information on these changes. 2 Impairments of financial assets classified at fair value through other comprehensive income (prior to 2018 classified as financial assets available for sale) for the year ended 31 December 2017 totaled USD 15 million, of which USD 12 million was recorded in Asset Management. 3 Refer to Note 16 for more information.

Note 2a Segment reporting (continued)

USD million	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center – Services	Corporate Center – Group ALM	Corporate Center – Non-core and Legacy Portfolio	UBS
For the year ended 31 December 2016[1]								
Net interest income	3,318	1,914	(33)	1,012	(326)	599	3	6,487
Non-interest income	11,427	1,791	1,980	7,041	186	(237)	89	22,279
Allocations from CC – Group ALM	512	336	7	(264)	37	(517)	(112)	0
Income[2]	15,257	4,042	1,955	7,790	(103)	(155)	(20)	28,766
Credit loss (expense) / recovery	(8)	(6)	0	(11)	0	0	(12)	(38)
Total operating income	15,249	4,035	1,955	7,779	(103)	(155)	(32)	28,729
Personnel expenses	7,254	855	736	3,122	3,847	31	67	15,913
General and administrative expenses	1,221	287	244	812	4,192	17	744	7,517
Services (to) / from CC and other BDs	3,627	1,093	512	2,798	(8,263)	(49)	283	0
of which: services from CC – Services	*3,520*	*1,201*	*537*	*2,707*	*(8,303)*	*112*	*227*	*0*
Depreciation and impairment of property, equipment and software	4	15	1	22	955	0	0	997
Amortization and impairment of intangible assets[3]	54	0	5	12	21	0	0	93
Total operating expenses	12,159	2,250	1,498	6,765	753	(1)	1,094	24,519
Operating profit / (loss) before tax	**3,090**	**1,785**	**457**	**1,014**	**(856)**	**(154)**	**(1,126)**	**4,209**
Tax expense / (benefit)								777
Net profit / (loss)								**3,432**
Additional information								
Total assets	178,250	137,467	11,817	238,066	23,488	262,530	67,288	918,906
Additions to non-current assets	31	24	1	3	1,781	0	0	1,840

1 Prior-period information may not be comparable as a result of the adoption of IFRS 9 and IFRS 15, both effective 1 January 2018. Refer to Note 1b and c for more information on these changes. 2 Impairments of financial assets classified at fair value through other comprehensive income (prior to 2018 classified as financial assets available for sale) for the year ended 31 December 2016 totaled USD 5 million, of which USD 3 million was recorded in Asset Management. 3 Refer to Note 16 for more information.

Note 2b Segment reporting by geographic location

The operating regions shown in the table below correspond to the regional management structure of the Group. The allocation of operating income to these regions reflects, and is consistent with, the basis on which the business is managed and its performance is evaluated. These allocations involve assumptions and judgments that management considers to be reasonable, and may be refined to reflect changes in estimates or management structure. The main principles of the allocation methodology are that client revenues are attributed to the domicile of the client and trading and portfolio management revenues are attributed to the country where the risk is managed. This revenue attribution is consistent with the mandate of the regional Presidents. Certain revenues, such as those related to Corporate Center – Non-core and Legacy Portfolio, are managed at a Group level. These revenues are included in the *Global* line.

The geographic analysis of non-current assets is based on the location of the entity in which the assets are recorded.

For the year ended 31 December 2018

	Total operating income		Total non-current assets	
	USD billion	Share %	USD billion	Share %
Americas	12.8	42	7.4	43
of which: USA	*12.2*	*41*	*7.0*	*41*
Asia Pacific	5.0	16	0.9	5
Europe, Middle East and Africa	6.3	21	2.0	12
Switzerland	7.3	24	6.8	40
Global	(1.1)	(3)	0.0	0
Total	**30.2**	**100**	**17.1**	**100**

For the year ended 31 December 2017[1]

	Total operating income		Total non-current assets	
	USD billion	Share %	USD billion	Share %
Americas	12.1	41	7.4	44
of which: USA	*11.6*	*39*	*6.9*	*41*
Asia Pacific	4.8	16	0.8	5
Europe, Middle East and Africa	6.2	21	2.0	12
Switzerland	7.0	24	6.5	40
Global	(0.5)	(2)	0.0	0
Total	**29.6**	**100**	**16.7**	**100**

For the year ended 31 December 2016[1]

	Total operating income		Total non-current assets	
	USD billion	Share %	USD billion	Share %
Americas	11.6	40	7.2	47
of which: USA	*11.1*	*39*	*6.8*	*44*
Asia Pacific	4.3	15	0.7	4
Europe, Middle East and Africa	6.2	22	1.8	11
Switzerland	7.0	24	5.9	38
Global	(0.4)	(1)	0.0	0
Total	**28.7**	**100**	**15.6**	**100**

1 2017 and 2016 figures have been restated for the change of the presentation currency from Swiss francs to US dollars. Refer to Note 1b item 1 for more information. In addition, 2017 and 2016 figures have been restated to reflect the regional representation of Global Wealth Management after combining Wealth Management and Wealth Management Americas in 2018. Refer to Note 1b item 3 for more information.

Income statement notes

Note 3 Net interest income and other net income from fair value changes on financial instruments

Change in presentation of net interest income and other net income from fair value changes on financial instruments

The table on the following pages reflects certain presentation changes made to reflect the effects from the adoption of new standards and interpretations in 2018. These changes are summarized as follows:

- In line with amendments to IAS 1, *Presentation of Financial Statements*, from 1 January 2018, UBS presents interest income and interest expense calculated, using the effective interest rate method, on financial instruments measured at amortized cost and financial assets measured at fair value through other comprehensive income separately from interest income and expense on financial instruments measured at fair value through profit or loss (FVTPL) in the income statement. Comparative information has been adjusted accordingly. As a result of this change, forward points on certain short-duration foreign exchange contracts are now presented within *Interest income from financial instruments at fair value held for trading* that were previously presented within *Interest income from loans and deposits*. Comparative information was restated accordingly.
- Upon adoption of IFRS 9, certain assets and liabilities were reclassified from amortized cost to fair value through profit or loss (auction rate securities, certain loans in the Investment Bank, certain repurchase agreements and brokerage balances). This has resulted in the interest income from these instruments moving from *Interest income (expense) from financial instruments measured at amortized cost* to *Interest income (expense) from financial instruments measured at fair value through profit or loss*. These changes have been applied prospectively from 1 January 2018 with certain prior-period information being adjusted for comparability. Comparative information for brokerage balances now separately presents the related interest income and expense, which was formerly included within *Interest income (expense) from loans and deposits*.
- A new line, *Interest income from financial instruments at fair value not held for trading*, has been included to accommodate in particular interest income from financial assets previously designated at fair value under IAS 39, which are now mandatorily classified at fair value through profit or loss under IFRS 9. Comparative information has been adjusted accordingly.
- Net gains / losses from financial assets previously designated at fair value under IAS 39 (2017: net gains of USD 2,614 million; 2016: net losses of USD 174 million) are no longer separately disclosed in the table on the following pages as assets are now mandatorily classified at fair value through profit or loss under IFRS 9.

Note 3 Net interest income and other net income from fair value changes on financial instruments (continued)

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	3,710	5,018	5,403
Net interest income from financial instruments measured at fair value through profit or loss	2,315	1,638	1,084
Other net income from fair value changes on financial instruments	5,984	5,065	5,023
Total[1]	12,008	11,721	11,510
Global Wealth Management	*5,254*	*5,149*	*4,893*
of which: net interest income	*4,310*	*4,103*	*3,843*
of which: transaction-based income from foreign exchange and other intermediary activity[2]	*944*	*1,046*	*1,050*
Personal & Corporate Banking	*2,514*	*2,510*	*2,563*
of which: net interest income	*2,106*	*2,127*	*2,225*
of which: transaction-based income from foreign exchange and other intermediary activity[2]	*408*	*383*	*337*
Asset Management	*(30)*	*(24)*	*(29)*
Investment Bank	*4,812*	*4,363*	*4,330*
Corporate Client Solutions	*1,056*	*1,087*	*830*
Investor Client Services	*3,756*	*3,276*	*3,500*
Corporate Center	*(541)*	*(278)*	*(246)*
CC – Services	*(159)*	*(43)*	*(90)*
CC – Group ALM	*(554)*	*(162)*	*(96)*
CC – Non-core and Legacy Portfolio	*173*	*(72)*	*(60)*

Net interest income[3]

Net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income			
Interest income from loans and deposits[4,5]	7,801	6,722	8,079
Interest income from brokerage balances		1,030	906
Interest income from securities financing transactions[6]	1,567	1,573	1,152
of which: interest income from securities financing transactions measured at fair value through profit or loss since 1 January 2018		*581*	*260*
Interest income from other financial instruments measured at amortized cost	266	99	54
Interest income from debt instruments measured at fair value through other comprehensive income	142	152	189
Interest income from derivative instruments designated as cash flow hedges	324	846	
Total interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	10,100	10,422	10,379
Interest expense on loans and deposits[7]	1,980	1,050	689
Interest expense on brokerage balances		354	147
Interest expense on securities financing transactions[8]	1,130	1,473	1,251
of which: interest expense on securities financing transactions measured at fair value through profit or loss since 1 January 2018		*568*	*241*
Interest expense on debt issued	3,281	2,528	2,889
Total interest expense from financial instruments measured at amortized cost	6,391	5,404	4,976
Total net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	3,710	5,018	5,403
Net interest income from financial instruments measured at fair value through profit or loss			
Interest income from financial instruments at fair value held for trading[4,9]	3,724	3,483	3,201
Interest income from brokerage balances	1,243		
Interest income from financial instruments at fair value not held for trading[9]	1,951	512	330
of which: interest income from securities financing transactions measured at fair value through profit or loss since 1 January 2018[10]	*970*		
Other interest income	50	61	48
Total interest income from financial instruments measured at fair value through profit or loss	6,968	4,056	3,579
Interest expense on financial instruments at fair value held for trading[11]	1,671	1,537	1,644
Interest expense on brokerage balances	668		
Interest expense on financial instruments designated at fair value	2,314	881	851
of which: interest expense on securities financing transactions measured at fair value through profit or loss since 1 January 2018[12]	*765*		
Total interest expense from financial instruments measured at fair value through profit or loss	4,653	2,418	2,495
Total net interest income from financial instruments measured at fair value through profit or loss	2,315	1,638	1,084

Note 3 Net interest income and other net income from fair value changes on financial instruments (continued)

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Other net income from fair value changes on financial instruments			
Investment Bank Corporate Client Solutions	709	611	188
Investment Bank Investor Client Services	3,537	2,863	3,382
Other business divisions and Corporate Center	1,738	1,591	1,453
Other net income from fair value changes on financial instruments	5,984	5,065	5,023
of which: net gains / (losses) from financial liabilities designated at fair value[13]	*9,382*	*(3,979)*	*(1,516)*

1 Net interest income and other net income from fair value changes on financial instruments presented for business divisions and Corporate Center units includes allocations from Corporate Center – Group ALM. 2 Mainly includes spread-related income in connection with client-driven transactions, foreign currency translation effects and income and expenses from precious metals, which are included in the income statement line Other net income from fair value changes on financial instruments. 3 Prior-period information may not be comparable as a result of the adoption of IFRS 9, effective 1 January 2018. Refer to Note 1c for more information on these changes. Negative interest income and negative interest expense are each individually approximately 9% of net interest income (2017: approximately 8% of net interest income; 2016: approximately 5% of net interest income). 4 As a consequence of amendments to IAS 1, Presentation of Financial Statements, effective 1 January 2018, forward points on certain short-duration foreign exchange contracts previously presented within Interest income from loans and deposits are now presented within Interest income from financial instruments at fair value held for trading. Comparative information was restated accordingly. 5 Consists of interest income from cash and balances at central banks, loans and advances to banks, and negative interest on amounts due to banks and customer deposits. 6 Includes interest income on receivables from securities financing transactions and negative interest, including fees, on payables from securities financing transactions. 7 Consists of interest expense on amounts due to banks and customer deposits, and negative interest on cash and balances at central banks, loans and advances to banks. 8 Includes interest expense on payables from securities financing transactions and negative interest, including fees, on receivables from securities financing transactions. 9 Includes dividend income. 10 Includes interest income on certain reverse repurchase agreements that are measured at fair value through profit or loss since 1 January 2018 and negative interest, including fees, on the corresponding repurchase agreements. 11 Includes expense related to dividend payment obligations on financial instruments held for trading. 12 Includes interest expense on certain repurchase agreements that are measured at fair value through profit or loss since 1 January 2018 and negative interest, including fees, on the corresponding reverse repurchase agreements. 13 Excludes fair value changes of hedges related to financial liabilities designated at fair value and foreign currency translation effects arising from translating foreign currency transactions into the respective functional currency, both of which are reported within Other net income from fair value changes on financial instruments. 2018 includes a net gain of USD 2,152 million related to amounts due under unit-linked investment contracts, which are designated at fair value under IFRS 9. Refer to Note 1c for more information.

Note 4 Net fee and commission income[1]

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Underwriting fees	811	1,003	739
of which: equity underwriting fees	*431*	*573*	*356*
of which: debt underwriting fees	*380*	*429*	*383*
M&A and corporate finance fees	768	698	742
Brokerage fees	3,521	3,820	3,802
Investment fund fees	4,954	4,322	4,265
Portfolio management and related services	7,756	7,666	7,069
Other	1,786	1,854	1,757
Total fee and commission income[2]	19,598	19,362	18,374
of which: recurring	*12,911*		
of which: transaction-based	*6,594*		
of which: performance-based	*93*		
Brokerage fees paid	316	673	769
Other	1,387	1,167	1,013
Total fee and commission expense	1,703	1,840	1,781
Net fee and commission income	17,895	17,522	16,593
of which: net brokerage fees	*3,205*	*3,147*	*3,033*

1 Upon adoption of IFRS 15, certain brokerage fees paid in an agency capacity have been reclassified from Fee and commission expense to Fee and commission income on a prospective basis from 1 January 2018, primarily relating to third-party execution costs for exchange-traded derivative transactions and fees payable to third-party research providers on behalf of clients. In addition to the IFRS 15 changes, certain revenues, primarily distribution fees and fund management fees, have been reclassified between reporting lines to better reflect the nature of the revenues, with prior-period information restated accordingly. This resulted in the following effects: For the year ended 31 December 2017, USD 316 million was reclassified from Underwriting fees to Brokerage fees and USD 1,040 million was reclassified from Portfolio management and related services to Investment fund fees. For the year ended 31 December 2016, USD 220 million was reclassified from Underwriting fees to Brokerage fees and USD 1,061 million was reclassified from Portfolio management and related services to Investment fund fees. Also, certain expenses that are incremental and incidental to revenues have been reclassified prospectively from General and administrative expenses to Fee and commission expense to improve the alignment of transaction-based costs with the associated revenue stream, primarily affecting clearing costs, client loyalty costs, fund and custody expenses. As the effect of this reclassification was not material, prior-period information was not restated. 2 Reflects third-party fee and commission income of USD 12,059 million for Global Wealth Management, USD 3,525 million for the Investment Bank, USD 2,579 million for Asset Management, USD 1,338 million for Personal & Corporate Banking and USD 97 million for Corporate Center.

Note 5 Other income

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Associates, joint ventures and subsidiaries			
Net gains / (losses) from acquisitions and disposals of subsidiaries[1]	(290)[2,3]	32	(96)
Net gains / (losses) from disposals of investments in associates	46[4]	0	0
Share of net profits of associates and joint ventures	529[5]	76	109
Impairments related to associates		(7)	
Total	284	101	12
Financial assets measured at fair value through other comprehensive income			
Net gains / (losses) from disposals	0	195	350
Impairments	0	(15)	(5)
Total	1	180	345
Net gains / (losses) from disposals of financial assets measured at amortized cost	0	14	(3)
Net income from properties (excluding net gains / (losses) from disposals)[6]	24	24	26
Net gains / (losses) from disposals of properties held for sale	40[3]	0	128
Other	79	191	156
Total other income	427	511	663

1 Includes foreign exchange gains / losses reclassified from other comprehensive income related to disposed foreign subsidiaries and branches. As a result of the change in presentation currency, foreign exchange gains / losses were restated. Refer to Note 1b for more information. 2 Includes a remeasurement loss of USD 270 million related to UBS Securities China. Refer to Note 32 for more information. 3 Includes a USD 25 million gain on sale of subsidiaries and a USD 31 million pre-tax gain on sale of real estate related to the sale of Widder Hotel. Refer to Note 32 for more information. 4 Reflects a net foreign currency translation gain related to UBS Securities China. Refer to Note 32 for more information. 5 Includes a USD 460 million valuation gain on our equity ownership in SIX related to the sale of SIX Payment Services to Worldline. Refer to Note 31b for more information. 6 Includes net rent received from third parties and net operating expenses.

Note 6 Personnel expenses

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Salaries[1]	6,448	6,154	6,305
Variable compensation – performance awards[2]	2,995	3,151	3,013
of which: guarantees for new hires	*43*	*36*	*30*
Variable compensation – other[2]	243	252	425
of which: replacement payments[3]	*72*	*72*	*87*
of which: forfeiture credits	*(136)*	*(107)*	*(74)*
of which: severance payments[4]	*123*	*113*	*220*
of which: retention plan and other payments[5]	*185*	*174*	*191*
Financial advisor variable compensation[2,6]	4,054	4,064	3,740
Contractors	489	460	426
Social security	791	814	755
Pension and other post-employment benefit plans[7]	457	723	678
Other personnel expenses	654	581	570
Total personnel expenses	16,132	16,199	15,913

1 Includes role-based allowances. 2 Refer to Note 30 for more information. 3 Replacement payments are payments made to compensate employees for deferred awards forfeited as a result of joining UBS. 4 Includes legally obligated and standard severance payments. 5 Includes interest expense related to Deferred Contingent Capital Plan awards. 6 Financial advisor variable compensation consists of formulaic compensation based directly on compensable revenues generated by financial advisors and supplemental compensation calculated based on financial advisor productivity, firm tenure, new assets and other variables. It also includes expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. 7 Changes to the pension fund of UBS in Switzerland in 2018 resulted in a reduction in the pension obligation recognized by UBS. As a consequence, a pre-tax gain of USD 241 million was recognized in the income statement in 2018, with no overall effect on total equity. Refer to Note 29 for more information.

Note 7 General and administrative expenses

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Occupancy	914	908	946
Rent and maintenance of IT and other equipment	654	570	517
Communication and market data services	638	622	634
Administration	590	612	716
of which: UK and German bank levy[1]	*58*	*20*	*124*
Marketing and public relations	366	419	473
Travel and entertainment	425	425	428
Professional fees	1,015	1,227	1,247
Outsourcing of IT and other services	1,427	1,597	1,656
Litigation, regulatory and similar matters[2]	657	434	805
Other	110	135	94
Total general and administrative expenses	6,797	6,949	7,517

1 The UK bank levy expenses of USD 40 million for 2018 and USD 17 million for 2017 included a credit of USD 45 million and USD 85 million, respectively, related to prior years. 2 Reflects the net increase in provisions for litigation, regulatory and similar matters recognized in the income statement. Refer to Note 21 for more information. Also includes recoveries from third parties of USD 29 million, USD 55 million and USD 13 million for the years ended 31 December 2018, 31 December 2017 and 31 December 2016, respectively.

Note 8 Income taxes

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Tax expense / (benefit)			
Swiss			
Current	469	455	465
Deferred	2,377	107	614
Non-Swiss			
Current	575	435	356
Deferred	(1,953)	3,308	(658)
Total income tax expense / (benefit) recognized in the income statement	**1,468**	**4,305**	**777**

Income tax recognized in the income statement

An income tax expense of USD 1,468 million was recognized for the Group in 2018, which included a net Swiss tax expense of USD 2,846 million and a net non-Swiss tax benefit of USD 1,378 million.

The Swiss tax expense included a deferred tax expense of USD 2,377 million, which reflected a net decrease in deferred tax assets (DTA) previously recognized in relation to tax losses carried forward and deductible temporary differences of USD 760 million following their offset against profits for the year and the write-off of a Swiss temporary difference DTA of USD 1,617 million relating to UBS AG's investment in our US intermediate holding company (US IHC), UBS Americas Holding LLC. The write-off occurred because the deductible temporary difference between the tax and accounting values in respect of UBS AG's investment in the US IHC is no longer expected to reverse in the foreseeable future, reflecting the expected repatriation of a significant portion of future US earnings. In addition, it included a current tax expense of USD 469 million related to taxable profits earned by Swiss subsidiaries against which no losses were available to offset.

The non-Swiss tax expense included a deferred tax benefit of USD 1,953 million. This primarily reflected a net increase in US DTAs of USD 2,052 million following the review of the approach to the remeasurement of those DTAs. It also included other net deferred tax expenses of USD 99 million and a current tax expense of USD 575 million related to taxable profits earned by non-Swiss subsidiaries and branches against which no losses were available to offset.

UBS considers the performance of its businesses and the accuracy of historical forecasts and other factors in evaluating the recoverability of its DTAs, including the length of time remaining until expiration for tax loss carry-forwards and its assessment of expected future taxable profits. Estimating future profitability is inherently subjective and is particularly sensitive to future economic, market and other conditions, which are difficult to predict.

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Operating profit / (loss) before tax	5,991	5,351	4,209
of which: Swiss	*1,843*	*2,093*	*2,674*
of which: non-Swiss	*4,148*	*3,258*	*1,535*
Income taxes at Swiss tax rate of 21%	1,258	1,124	884
Increase / (decrease) resulting from:			
Non-Swiss tax rates differing from Swiss tax rate	55	217	73
Tax effects of losses not recognized	223	173	182
Previously unrecognized tax losses now utilized	(25)	(368)	(38)
Non-taxable and lower taxed income	(430)	(309)	(347)
Non-deductible expenses and additional taxable income	905	606	933
Adjustments related to prior years – current tax	114	(13)	22
Adjustments related to prior years – deferred tax	26	4	2
Change in deferred tax recognition	(795)	(165)	(969)
Adjustments to deferred tax balances arising from changes in tax rates	0	2,897	19
Other items	137	139	17
Income tax expense / (benefit)	**1,468**	**4,305**	**777**

Note 8 Income taxes (continued)

The tax expense of USD 1,468 million for 2018 was lower than the tax expense of USD 4,305 million in 2017. This was mainly because 2017 included a large net deferred tax expense of USD 3,415 million, which was primarily the result of a net write-down of DTAs related to the US federal corporate tax rate reduction included in the Tax Cuts and Jobs Act enacted in the fourth quarter of 2017.

The components of operating profit before tax, and the differences between income tax expense reflected in the financial statements and the amounts calculated at the Swiss tax rate, are provided in the table on the previous page and explained below.

Non-Swiss tax rates differing from Swiss tax rate

To the extent that Group profits or losses arise outside Switzerland, the applicable local tax rate may differ from the Swiss tax rate. This item reflects, for such profits or losses, an adjustment from the tax expense / benefit that would arise at the Swiss tax rate and the tax expense / benefit that would arise at the applicable local tax rate. If an entity generates a profit, a tax expense arises where the local tax rate is in excess of the Swiss tax rate and a tax benefit arises where the local tax rate is below the Swiss tax rate. Conversely, if an entity incurs a loss, a tax benefit arises where the local tax rate is in excess of the Swiss tax rate and a tax expense arises where the local tax rate is less than the Swiss tax rate.

Tax effects of losses not recognized

This item relates to tax losses of entities arising in the year that are not recognized as DTAs. Consequently, no tax benefit arises in relation to those losses. Therefore, the tax benefit calculated by applying the local tax rate to those losses as described above is reversed.

Previously unrecognized tax losses now utilized

This item relates to taxable profits of the year that are offset by tax losses of previous years for which no DTAs were previously recorded. Consequently, no current tax or deferred tax expense arises in relation to those taxable profits. Therefore, the tax expense calculated by applying the local rate on those profits is reversed.

Non-taxable and lower taxed income

This item relates to tax deductions for the year in respect of permanent differences. These include deductions in respect of profits that are either not taxable or are taxable at a lower rate of tax than the local tax rate. They also include deductions made for tax purposes, which are not reflected in the accounts.

Non-deductible expenses and additional taxable income

This item relates to additional taxable income for the year in respect of permanent differences. These include income that is recognized for tax purposes by an entity, but is not included in its profit that is reported in the financial statements. In addition, they include expenses for the year that are non-deductible. For example, the costs of entertaining clients are not deductible in certain locations.

Adjustments related to prior years – current tax

This item relates to adjustments to current tax expense for prior years, e.g., if the tax payable for a year is agreed with the tax authorities in an amount that differs from the amount previously reflected in the financial statements.

Adjustments related to prior years – deferred tax

This item relates to adjustments to deferred tax positions recognized in prior years, e.g., if a tax loss for a year is fully recognized and the amount of the tax loss agreed with the tax authorities is expected to differ from the amount previously recognized as DTAs in the accounts.

Change in deferred tax recognition

This item relates to changes in DTAs, including those previously recognized resulting from reassessments of expected future taxable profits. It also includes changes in temporary differences in the year, for which deferred tax is not recognized. The net benefit in the year mainly relates to the upward revaluation of US DTAs, partly offset by the write-off of the Swiss temporary difference DTA relating to UBS AG's investment in the US intermediate holding company.

Adjustments to deferred tax balances arising from changes in tax rates

This item relates to remeasurements of DTAs and liabilities recognized due to changes in tax rates. These have the effect of changing the future tax saving that is expected from tax losses or deductible tax differences and therefore the amount of DTAs recognized or, alternatively, changing the tax cost of additional taxable income from taxable temporary differences and therefore the deferred tax liability.

Other items

Other items include other differences between profits or losses at the local tax rate and the actual local tax expense or benefit, including increases in provisions for uncertain positions in relation to the current year and other items.

Income tax recognized directly in equity

Certain tax expenses and benefits were recognized directly in equity during the year. These included the following items:
- a net tax benefit of USD 345 million recognized in other comprehensive income (OCI) (2017: net benefit of USD 164 million), which included a tax benefit of USD 67 million related to cash flow hedges (2017: benefit of USD 163 million), a tax benefit of USD 12 million related to financial assets recognized at fair value through OCI (2017: expense of USD 6 million), a tax expense of USD 2 million related to foreign currency translation gains and losses (2017: expense of USD 2 million), a tax benefit of USD 276 million related to defined benefit pension plans (2017: benefit of USD 11 million) and a tax expense of USD 8 million related to own credit (2017: expense of USD 2 million);
- a tax benefit of USD 4 million recognized in share premium (2017: benefit of USD 21 million).

Deferred tax assets and liabilities

The Group has gross DTAs, valuation allowances and recognized DTAs related to tax loss carry-forwards and deductible temporary differences and also deferred tax liabilities in respect of taxable temporary differences as shown in the table below. The valuation allowances reflect DTAs that were not recognized because it was not considered probable that future taxable profits will be available to utilize the related tax loss carry-forwards and deductible temporary differences.

Of the recognized DTAs as of 31 December 2018, USD 9.5 billion related to the US, USD 0.3 billion related to Switzerland and USD 0.3 billion related to other locations (as of 31 December 2017, USD 7.2 billion related to the US, USD 2.5 billion related to Switzerland and USD 0.4 billion related to other locations).

As of 31 December 2018, the Group has recognized DTAs of USD 53 million (31 December 2017: USD 1,263 million) in respect of entities that incurred losses in either the current or preceding year. The recognition of these DTAs is supported by projections of future taxable profits for these entities.

USD million	31.12.18			31.12.17		
Deferred tax assets[1]	Gross	Valuation allowance	Recognized	Gross	Valuation allowance	Recognized
Tax loss carry-forwards	15,088	(8,989)	6,099	17,372	(11,480)	5,892
Temporary differences	4,571	(565)	4,006	5,165	(1,001)	4,164
of which: related to real estate costs capitalized for US tax purposes	*2,159*	*(25)*	*2,134*	*0*	*0*	*0*
of which: related to compensation and benefits	*1,150*	*(192)*	*959*	*1,165*	*(228)*	*937*
of which: related to trading assets	*390*	*(50)*	*339*	*485*	*(60)*	*425*
of which: related to investments in subsidiaries and goodwill	*202*	*0*	*202*	*2,392*	*0*	*2,392*
of which: other	*670*	*(298)*	*372*	*1,123*	*(713)*	*410*
Total deferred tax assets	19,659	(9,554)	10,105	22,537	(12,481)	10,056
Deferred tax liabilities						
Goodwill and intangible assets			26			19
Other			62			35
Total deferred tax liabilities			88			54

1 Less deferred tax liabilities as applicable.

Note 8 Income taxes (continued)

As of 31 December 2018, tax loss carry-forwards totaling USD 38,428 million (31 December 2017: USD 47,427 million) that are not recognized as DTAs were available to be offset against future taxable profits. These tax losses expire as outlined in the table below.

Unrecognized tax loss carry-forwards

USD million	31.12.18	31.12.17
Within 1 year	0	171
From 2 to 5 years	464	106
From 6 to 10 years	16,297	3,267
From 11 to 20 years	4,457	26,688
No expiry	17,210	17,195
Total	38,428	47,427

As of 31 December 2018, USD 20.0 billion of the unrecognized tax losses carried forward related to the US, USD 14.2 billion related to the UK and USD 4.2 billion related to other locations (at 31 December 2017, USD 28.6 billion related to the US, USD 14.3 billion related to the UK and USD 4.5 billion related to other locations).

In general, Swiss tax losses can be carried forward for seven years, US federal tax losses incurred prior to 31 December 2017 for 20 years and US federal tax losses incurred after 31 December 2017 and also UK tax losses for an unlimited period. The amounts of US tax loss carry-forwards that are included in the above table are based on their amount for federal tax purposes rather than for state and local tax purposes.

Deferred tax liabilities are recognized in respect of investments in subsidiaries, branches and associates and interests in joint arrangements, except to the extent that the Group can control the timing of the reversal of the associated taxable temporary difference and it is probable that it will not reverse in the foreseeable future. However, as of 31 December 2018, this exception was not considered to apply to any taxable temporary differences.

Note 9 Earnings per share (EPS) and shares outstanding

	As of or for the year ended		
	31.12.18	31.12.17	31.12.16
Basic earnings (USD million)			
Net profit / (loss) attributable to shareholders	4,516	969	3,348
Diluted earnings (USD million)			
Net profit / (loss) attributable to shareholders	4,516	969	3,348
Less: (profit) / loss on own equity derivative contracts	(2)	0	0
Net profit / (loss) attributable to shareholders for diluted EPS	4,514	969	3,348
Weighted average shares outstanding			
Weighted average shares outstanding for basic EPS[1]	3,730,297,877	3,716,174,261	3,719,764,322
Effect of dilutive potential shares resulting from notional shares, in-the-money options and warrants outstanding	111,271,269	120,540,272	104,244,665
Weighted average shares outstanding for diluted EPS	3,841,569,146	3,836,714,533	3,824,008,987
Earnings per share (USD)			
Basic	1.21	0.26	0.90
Diluted	1.18	0.25	0.88
Shares outstanding			
Shares issued	3,855,634,749	3,853,096,603	3,850,766,389
Treasury shares	166,467,802	132,301,550	138,441,772
Shares outstanding	3,689,166,947	3,720,795,053	3,712,324,617

1 The weighted average shares outstanding for basic EPS are calculated by taking the number of shares at the beginning of the period, adjusted by the number of shares acquired or issued during the period, multiplied by a time-weighted factor for the period outstanding. As a result, balances are affected by the timing of acquisitions and issuances during the period.

The table below outlines the potential shares which could dilute basic earnings per share in the future, but were not dilutive for the periods presented.

Number of shares	31.12.18	31.12.17	31.12.16
Potentially dilutive instruments			
Employee share-based compensation awards	3,605,198	24,124,341	46,981,698
Other equity derivative contracts	11,912,450	9,122,496	8,419,122
Total	15,517,648	33,246,837	55,400,820

Balance sheet notes

Note 10 Financial assets at amortized cost and other positions in scope of expected credit loss measurement

The tables on the following pages provide information on financial instruments and certain non-financial instruments (e.g., committed unconditionally revocable credit lines) that are subject to ECL. UBS has established ECL disclosure segments or "ECL segments" to disaggregate portfolios based on shared risk characteristics and on the same or similar rating methods applied. The key segments are presented in the table below. Tables provided for 31 December 2018 include additional detail on certain segments that have not been provided for balances as of 1 January 2018.

→ **Refer to Note 1c for the comparative information as of 31 December 2017 under IAS 39**

→ **Refer to Note 23 for more information on expected credit loss measurement**

Segment	Segment description	Description of credit risk sensitivity	Business division / Corporate Center
Private clients with mortgages	Lending to private clients secured by owner-occupied real estate and personal account overdrafts of those clients	Sensitive to the interest rate environment, employment status and influence from regional effects (e.g., property values)	– Personal & Corporate Banking – Global Wealth Management
Real estate financing	Rental or income-producing real estate financing to private and corporate clients secured by real estate	Sensitive to GDP development, the interest rate environment and regional effects (e.g., property values)	– Personal & Corporate Banking – Global Wealth Management
Large corporate clients	Lending to large corporate and multinational clients	Sensitive to GDP development, seasonality and business cycles and collateral values (diverse collateral including real estate and other collateral types)	– Personal & Corporate Banking – Investment Bank
SME clients	Lending to small and medium-sized corporate clients	Sensitive to GDP development, the interest rate environment and, to some extent, seasonality and business cycles and collateral values (diverse collateral including real estate and other collateral types)	– Personal & Corporate Banking
Lombard	Loans secured by pledges of marketable securities, guarantees and other forms of collateral	Sensitive to the market (e.g., changes in collateral as well as in invested assets)	– Personal & Corporate Banking – Global Wealth Management
Credit cards	Credit card solutions in Switzerland and the US	Sensitive to the interest rate environment and employment status	– Personal & Corporate Banking – Global Wealth Management
Commodity trade finance	Working capital financing of commodity traders, generally extended on a self-liquidating transactional basis	Sensitive primarily to the strength of individual transaction structures and collateral values (price volatility of commodities) as the primary source for debt service is directly linked to the shipments financed	– Personal & Corporate Banking

→ **Refer to Note 23g for more details on sensitivity**

Note 10 Financial assets at amortized cost and other positions in scope of expected credit loss measurement (continued)

For amortized cost instruments, the net carrying value represents the maximum exposure to credit risk, taking into account the allowance for credit losses. Financial assets measured at fair value through other comprehensive income (FVOCI) are also subject to ECL; however, unlike for amortized cost instruments, the allowance does not reduce the carrying value of these financial assets. The carrying value of financial assets measured at FVOCI represents the maximum exposure to credit risk.

No purchased credit-impaired financial assets are recognized in the period. Originated credit-impaired financial assets were not material and are not presented in the table below and on the following page.

In addition to on-balance sheet financial assets, certain off-balance sheet financial instruments and other credit lines are also subject to ECL. The maximum exposure to credit risk for off-balance sheet financial instruments is calculated based on notional amounts.

USD million	31.12.18							
	Carrying amount[1]				ECL allowances			
Financial instruments measured at amortized cost	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Cash and balances at central banks	108,370	108,370	0	0	0	0	0	0
Loans and advances to banks	16,868	16,666	202	0	(7)	(4)	(1)	(3)
Receivables from securities financing transactions	95,349	95,349	0	0	(2)	(2)	0	0
Cash collateral receivables on derivative instruments	23,602	23,602	0	0	0	0	0	0
Loans and advances to customers	320,352	298,248	20,357	1,748	(772)	(69)	(155)	(549)
of which: Private clients with mortgages	*126,335*	*115,679*	*9,859*	*796*	*(138)*	*(16)*	*(83)*	*(39)*
of which: Real estate financing	*36,474*	*28,578*	*7,858*	*38*	*(59)*	*(3)*	*(40)*	*(16)*
of which: Large corporate clients	*11,390*	*10,845*	*457*	*88*	*(95)*	*(9)*	*(4)*	*(82)*
of which: SME clients	*9,924*	*8,029*	*1,263*	*632*	*(281)*	*(13)*	*(12)*	*(256)*
of which: Lombard	*111,722*	*111,707*	*0*	*14*	*(21)*	*(4)*	*0*	*(17)*
of which: Credit cards	*1,529*	*1,216*	*297*	*16*	*(30)*	*(6)*	*(13)*	*(11)*
of which: Commodity trade finance	*3,260*	*2,798*	*445*	*16*	*(86)*	*(5)*	*(3)*	*(78)*
Other financial assets measured at amortized cost	22,563	21,862	223	478	(155)	(43)	(4)	(109)
of which: Loans to financial advisors	*3,291*	*3,104*	*62*	*125*	*(113)*	*(34)*	*(2)*	*(77)*
Total financial assets measured at amortized cost	587,104	564,096	20,782	2,226	(937)	(117)	(159)	(660)
Financial assets measured at fair value through other comprehensive income	6,667	6,667	0	0	0	0	0	0
Total on-balance sheet financial assets in scope of ECL requirements	593,770	570,763	20,782	2,226	(937)	(117)	(159)	(660)
	Total exposure				ECL provisions			
Off-balance sheet (in scope of ECL)	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Guarantees	18,146	17,321	611	215	(43)	(7)	(2)	(34)
of which: Large corporate clients	*3,862*	*3,599*	*136*	*127*	*(8)*	*(1)*	*(1)*	*(6)*
of which: SME clients	*1,298*	*1,057*	*164*	*77*	*(26)*	*0*	*0*	*(25)*
of which: Financial intermediaries and hedge funds	*7,193*	*7,125*	*67*	*0*	*(4)*	*(3)*	*0*	*0*
of which: Lombard	*834*	*834*	*0*	*0*	*0*	*0*	*0*	*0*
of which: Commodity trade finance	*2,097*	*1,851*	*236*	*11*	*(1)*	*(1)*	*0*	*0*
Irrevocable loan commitments	31,212	30,590	568	53	(37)	(32)	(5)	0
of which: Large corporate clients	*22,019*	*21,492*	*519*	*7*	*(31)*	*(26)*	*(4)*	*0*
Forward starting reverse repurchase and securities borrowing agreements	937	937	0	0	0	0	0	0
Committed unconditionally revocable credit lines	36,634	35,121	1,420	93	(36)	(19)	(16)	0
of which: Real estate financing	*2,562*	*2,150*	*401*	*11*	*(17)*	*(4)*	*(12)*	*0*
of which: Large corporate clients	*4,260*	*4,152*	*91*	*17*	*(2)*	*(1)*	*0*	*0*
of which: SME clients	*4,505*	*4,163*	*285*	*57*	*(7)*	*(6)*	*(1)*	*0*
of which: Lombard	*7,402*	*7,402*	*0*	*0*	*0*	*(1)*	*0*	*0*
of which: Credit cards	*7,343*	*7,035*	*309*	*0*	*(6)*	*(4)*	*(2)*	*0*
of which: Commodity trade finance	*3,467*	*3,209*	*254*	*4*	*(2)*	*(2)*	*0*	*0*
Irrevocable committed prolongation of existing loans	3,339	2,861	456	22	(1)	(1)	0	0
Total off-balance sheet financial instruments and other credit lines	90,268	86,830	3,055	383	(116)	(59)	(23)	(34)
Total allowances and provisions					(1,054)	(176)	(183)	(695)

1 The carrying value of financial assets measured at amortized cost represents the total gross exposure net of the respective ECL allowances.

Note 10 Financial assets at amortized cost and other positions in scope of expected credit loss measurement (continued)

USD million	1.1.18							
	Carrying amount[1]				ECL allowances			
Financial instruments measured at amortized cost	Total	Stage 1	Stage 2	Stage 3[2]	Total	Stage 1	Stage 2	Stage 3
Cash and balances at central banks	90,045	90,045	0	0	0	0	0	0
Loans and advances to banks	14,074	14,055	19	0	(5)	(3)	0	(3)
Receivables from securities financing transactions	86,864	86,864	0	0	(2)	(2)	0	0
Cash collateral receivables on derivative instruments	24,040	24,040	0	0	0	0	0	0
Loans and advances to customers	318,480	288,420	28,531	1,529	(890)	(62)	(167)	(661)
of which: Private clients with mortgages	*122,652*	*106,554*	*15,394*	*704*	*(128)*	*(12)*	*(71)*	*(45)*
of which: Real estate financing	*36,824*	*26,888*	*9,907*	*29*	*(64)*	*(4)*	*(54)*	*(6)*
of which: Large corporate clients	*11,289*	*10,626*	*572*	*90*	*(71)*	*(6)*	*0*	*(65)*
of which: SME clients	*10,589*	*8,431*	*1,557*	*601*	*(295)*	*(8)*	*(24)*	*(262)*
of which: Lombard	*114,638*	*114,621*	*0*	*17*	*(86)*	*(5)*	*0*	*(81)*
Other financial assets measured at amortized cost	18,775	18,265	33	477	(139)	(30)	(1)	(108)
of which: Loans to financial advisors	*3,165*	*2,949*	*33*	*184*	*(118)*	*(29)*	*(1)*	*(89)*
Total financial assets measured at amortized cost	**552,277**	**521,689**	**28,582**	**2,006**	**(1,037)**	**(97)**	**(168)**	**(772)**
Financial assets measured at fair value through other comprehensive income	**6,930**	**6,930**	**0**	**0**	**0**	**0**	**0**	**0**
Total on-balance sheet financial assets in scope of ECL requirements	**559,208**	**528,619**	**28,582**	**2,006**	**(1,037)**	**(97)**	**(168)**	**(772)**
	Total exposure				ECL provisions			
Off-balance sheet (in scope of ECL)	Total	Stage 1	Stage 2	Stage 3[2]	Total	Stage 1	Stage 2	Stage 3
Guarantees	17,596	16,753	649	194	(38)	(6)	(2)	(30)
Irrevocable loan commitments	31,650	30,933	679	38	(37)	(25)	(8)	(4)
of which: Large corporate clients	*22,568*	*21,896*	*645*	*26*	*(28)*	*(19)*	*(4)*	*(4)*
Forward starting reverse repurchase and securities borrowing agreements	1,247	1,247	0	0	0	0	0	0
Committed unconditionally revocable credit lines	37,639	35,362	2,213	64	(35)	(19)	(15)	0
of which: Real estate financing	*3,184*	*2,151*	*1,033*	*0*	*(10)*	*(2)*	*(7)*	*0*
of which: SME clients	*4,893*	*4,423*	*416*	*54*	*(7)*	*(5)*	*(2)*	*0*
Irrevocable committed prolongation of existing loans	1,677	1,676	0	1	0	0	0	0
Total off-balance sheet financial instruments and other credit lines	**89,809**	**85,972**	**3,541**	**295**	**(110)**	**(50)**	**(25)**	**(34)**
Total allowances and provisions					**(1,146)**	**(148)**	**(193)**	**(806)**

1 The carrying value of financial assets measured at amortized cost represents the total gross exposure net of the respective ECL allowances. 2 Upon adoption of IFRS 9 as of 1 January 2018, an instrument is classified as credit-impaired if the counterparty is defaulted, and / or the instrument is purchased or originated credit-impaired and includes credit-impaired exposures for which no loss has occurred or no allowance has been recognized (e.g., because they are expected to be fully recoverable through the collateral held). Refer to Note 1c for more information on the adoption of IFRS 9.

Note 11 Derivative instruments

Derivatives: overview

A derivative is a financial instrument for which the value is derived from one or more variables (underlyings). Underlyings may be indices, foreign currency exchange or interest rates, or the value of shares, commodities, bonds or other financial instruments. A derivative commonly requires little or no initial net investment by either counterparty to the trade.

The majority of derivative contracts are negotiated with respect to notional amounts, tenor, price and settlement mechanisms, as is customary with other financial instruments.

Over-the-counter (OTC) derivative contracts are usually traded under a standardized International Swaps and Derivatives Association (ISDA) master agreement between UBS and its counterparties. Terms are negotiated directly with counterparties and the contracts have industry standard settlement mechanisms prescribed by ISDA. Beginning in 2016, regulators in various jurisdictions began a phased introduction of rules requiring the payment and collection of initial and variation margin on certain OTC derivative contracts, which may have a bearing on their price and other relevant terms.

The industry continues to promote the use of central counterparties (CCPs) to clear OTC trades. The trend toward CCP clearing and settlement will generally facilitate the reduction of systemic credit exposures.

Other derivative contracts are standardized in terms of their amounts and settlement dates, and are bought and sold on regulated exchanges. These are commonly referred to as exchange-traded derivatives (ETD) contracts. Exchanges offer the benefits of pricing transparency, standardized daily settlement of changes in value and consequently reduced credit risk.

For presentation purposes, the Group's derivative contracts are subject to IFRS netting provisions. Derivative instruments are measured at fair value and generally classified on the balance sheet as *Derivative financial instruments* within *Assets* when having positive replacement values and *Derivative financial instruments* within *Liabilities* when having negative replacement values. However, ETD that are economically settled on a daily basis and OTC derivatives that are either legally settled or in substance net settled on a daily basis are classified as *Cash collateral receivables on derivative instruments* or *Cash collateral payables on derivative instruments*. Changes in the replacement values of derivatives are recorded in *Other net income from fair value changes on financial instruments,* except for interest on derivatives designated as hedging instruments in effective hedge accounting relationships and forward points on certain short- and long-duration foreign exchange contracts, which are recorded in *Net interest income*.

→ **Refer to Note 1a items 3j and 3k for more information**

→ **Refer to Note 25 for more information on derivative financial assets and liabilities after consideration of netting potential allowed under enforceable netting arrangements**

The Group uses various derivative instruments for both trading and hedging purposes. Derivative product types as well as valuation principles and techniques applied by the Group are described in Note 24. Positive replacement values represent the estimated amount the Group would receive if the derivative contract were sold on the balance sheet date. Negative replacement values indicate the estimated amount the Group would pay to transfer its obligations in respect of the underlying contract were it required or entitled to do so on the balance sheet date.

Derivatives embedded in other financial instruments are not included in the "Derivative instruments" table within this Note. Bifurcated embedded derivatives are presented on the same balance sheet line as the host contract. In cases where UBS applies the fair value option to hybrid instruments, bifurcation of an embedded derivative component is not required and as such this component is also not included in the "Derivative instruments" table.

→ **Refer to Notes 19 and 24 for more information**

Risks of derivative instruments

Derivative instruments are transacted in many trading portfolios, which generally include several types of instruments, not just derivatives. The market risk of derivatives is predominantly managed and controlled as an integral part of the market risk of these portfolios. The Group's approach to market risk is described in the audited portions of "Market risk" in the "Risk management and control" section of this report.

Derivative instruments are also transacted with many different counterparties, most of whom are also counterparties for other types of business. The credit risk of derivatives is managed and controlled in the context of the Group's overall credit exposure to its counterparties. The Group's approach to credit risk is described in the audited portions of "Credit risk" in the "Risk management and control" section of this report. It should be noted that, although the derivative financial assets shown on the balance sheet can be an important component of the Group's credit exposure, the positive replacement values related to a respective counterparty are rarely an adequate reflection of the Group's credit exposure in its derivatives business with that counterparty. This is generally the case because, on the one hand, replacement values can increase over time (potential future exposure), while on the other hand, exposure may be mitigated by entering into master netting agreements and bilateral collateral arrangements. Both the exposure measures used internally by the Group to control credit risk and the capital requirements imposed by regulators reflect these additional factors.

→ **Refer to Note 25 for more information on derivative financial assets and liabilities after consideration of netting potential allowed under enforceable netting arrangements**

Note 11 Derivative instruments (continued)

Derivative instruments[1,2]

	31.12.18					31.12.17				
USD billion	PRV[3]	Notional values related to PRV[4]	NRV[5]	Notional values related to NRV[4]	Other notional values[4,6]	PRV[3]	Notional values related to PRV[4]	NRV[5]	Notional values related to NRV[4]	Other notional values[4,6]
Interest rate contracts										
Over-the-counter (OTC) contracts										
Forward contracts	0.0	1.4	0.1	3.1	2,873.9	0.1	22.6	0.3	8.5	2,381.2
Swaps	29.5	459.8	23.5	441.8	7,189.1	36.3	553.2	29.0	465.5	7,724.9
Options	7.6	562.2	9.0	550.0		8.7	572.6	10.1	561.4	
Exchange-traded contracts										
Futures					516.1					467.3
Options	0.0	27.7	0.0	26.3	199.7	0.0	23.2	0.0	35.2	159.4
Agency transactions[7]	0.0		0.1			0.0		0.0		
Total	37.1	1,051.1	32.7	1,021.3	10,778.8	45.2	1,171.6	39.4	1,070.5	10,732.8
Credit derivative contracts										
Over-the-counter (OTC) contracts										
Credit default swaps	1.7	68.8	2.1	73.2		2.7	87.4	3.0	96.8	1.2
Total return swaps	0.2	3.0	0.6	3.7		0.2	2.3	0.9	4.0	
Options and warrants	0.0	2.7	0.0	1.4		0.0	4.4	0.0	0.1	
Total	1.9	74.5	2.7	78.3		2.9	94.1	3.9	100.8	1.2
Foreign exchange contracts										
Over-the-counter (OTC) contracts										
Forward contracts	20.3	708.7	20.9	731.2		17.6	699.0	18.3	709.5	
Interest and currency swaps	24.8	1,299.7	24.6	1,203.5		24.4	1,308.5	22.3	1,126.9	
Options	8.3	613.8	7.8	577.4		6.3	438.1	6.0	407.9	
Exchange-traded contracts										
Futures					0.4					0.4
Options	0.0	3.6	0.0	5.3		0.0	4.8	0.1	5.7	
Agency transactions[7]	0.0		0.1			0.0		0.0		
Total	53.5	2,625.7	53.4	2,517.3	0.4	48.4	2,450.3	46.7	2,250.0	0.4
Equity / index contracts										
Over-the-counter (OTC) contracts										
Forward contracts	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Swaps	4.7	78.5	5.6	86.3		3.4	73.0	5.7	103.0	
Options	5.5	97.6	7.2	139.6		6.0	78.6	8.4	128.2	
Exchange-traded contracts										
Futures					71.7					53.3
Options	10.1	232.8	9.0	262.8	34.1	7.1	238.6	7.1	268.0	31.8
Agency transactions[7]	11.2		13.3			6.3		6.3		
Total	31.4	408.9	35.0	488.8	105.9	22.8	390.2	27.4	499.2	85.0

Table continues on the next page.

Derivative instruments (continued)[1,2]

Table continued from the previous page.

USD billion	31.12.18 PRV[3]	31.12.18 Notional values related to PRV[4]	31.12.18 NRV[5]	31.12.18 Notional values related to NRV[4]	31.12.18 Other notional values[4,6]	31.12.17 PRV[3]	31.12.17 Notional values related to PRV[4]	31.12.17 NRV[5]	31.12.17 Notional values related to NRV[4]	31.12.17 Other notional values[4,6]
Commodity contracts										
Over-the-counter (OTC) contracts										
Forward contracts	0.1	3.2	0.1	3.4		0.1	3.0	0.1	3.9	
Swaps	0.7	15.2	0.4	9.9		0.2	8.7	0.4	13.1	
Options	0.4	18.6	0.3	16.1		0.3	11.6	0.1	8.1	
Exchange-traded contracts										
Futures					8.5					8.4
Forward contracts	0.0	6.6	0.0	5.4		0.2	9.6	0.0	8.1	
Options	0.1	2.9	0.0	3.7	0.1	0.0	1.0	0.1	4.6	0.3
Agency transactions[7]	0.4		0.7			0.9		0.9		
Total	1.8	46.4	1.5	38.5	8.6	1.8	33.9	1.6	37.8	8.6
Unsettled purchases of non-derivative financial instruments[8]	0.2	17.0	0.1	6.0		0.1	12.4	0.1	11.2	
Unsettled sales of non-derivative financial instruments[8]	0.4	15.1	0.2	13.2		0.1	15.2	0.1	9.0	
Total derivative instruments, based on IFRS netting[9]	126.2	4,238.6	125.7	4,163.4	10,893.6	121.3	4,167.7	119.1	3,978.6	10,828.0

1 Derivative financial liabilities as of 31 December 2018 include USD 0.0 billion related to derivative loan commitments (31 December 2017: USD 0.0 billion). No notional amounts related to these commitments are included in this table, but they are disclosed within Note 34 under Loan commitments. 2 Upon adoption of IFRS 9 on 1 January 2018, certain forward starting repurchase and reverse repurchase agreements have been classified as measured at fair value through profit or loss and are recognized within derivative instruments. The fair value of these derivative instruments was not material as of 31 December 2018. No notional amounts related to these instruments are included in this table, but they are disclosed within Note 34 under Forward starting transactions. 3 PRV: positive replacement value. 4 In cases where replacement values are presented on a net basis on the balance sheet, the respective notional values of the netted replacement values are still presented on a gross basis. 5 NRV: negative replacement value. 6 Other notional values relate to derivatives that are cleared through either a central counterparty or an exchange. The fair value of these derivatives is presented on the balance sheet net of the corresponding cash margin under Cash collateral receivables on derivative instruments and Cash collateral payables on derivative instruments and was not material for all periods presented. 7 Notional values of exchange-traded agency transactions and OTC-cleared transactions entered into on behalf of clients are not disclosed as they have a significantly different risk profile. 8 Changes in the fair value of purchased and sold non-derivative financial instruments between trade date and settlement date are recognized as replacement values. 9 Financial assets and liabilities are presented net on the balance sheet if UBS has the unconditional and legally enforceable right to offset the recognized amounts, both in the normal course of business and in the event of default, bankruptcy or insolvency of the entity and all of the counterparties, and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously. Refer to Note 25 for more information on netting arrangements.

The notional amount of a derivative is generally the quantity of the underlying instrument on which the derivative contract is based and is the reference against which changes in the value of the derivative are measured. Notional values in themselves are generally not a direct indication of the values that are exchanged between parties, and are therefore not a direct measure of risk or financial exposure but are viewed as an indication of the scale of the different types of derivatives entered into by the Group.

On a notional value basis, approximately 56% of OTC interest rate contracts held as of 31 December 2018 (31 December 2017: 54%) mature within one year, 28% (31 December 2017: 28%) within one to five years and 16% (31 December 2017: 18%) after five years. Notional values of interest rate contracts cleared with a clearing house that qualify for IFRS balance sheet netting or are legally settled on a daily basis are presented under *Other notional values* and are categorized into maturity buckets on the basis of contractual maturities of the cleared underlying derivative contracts.

Derivatives transacted for sales and trading purposes

Most of the Group's derivative transactions relate to sales and trading activities. Sales activities include the structuring and marketing of derivative products to customers to enable them to take, transfer, modify or reduce current or expected risks. Trading activities include market-making to directly support the facilitation and execution of client activity. Market-making involves quoting bid and offer prices to other market participants with the intention of generating revenues based on spread and volume.

Credit derivatives

UBS is an active dealer in the fixed income market, including credit default swaps (CDS) and related products, with respect to a large number of issuers' securities. The primary objectives of these activities are ongoing hedging of trading book exposures and market-making, primarily on behalf of clients.

Note 11 Derivative instruments (continued)

Market-making activity, which is undertaken within the Investment Bank, consists of buying and selling single-name CDS, index CDS, loan CDS and related referenced cash instruments to facilitate client trading activity. UBS also actively utilizes CDS to economically hedge specific counterparty credit risks in its accrual and traded loan portfolios (including off-balance sheet loan commitments) with the aim of reducing concentrations in individual names, sectors or specific portfolios.

In addition, UBS actively utilizes CDS to economically hedge specific counterparty credit risks in its OTC derivative portfolios, including financial instruments that are designated at fair value through profit or loss.

The tables below provide more information on credit protection bought and sold, including replacement and notional value information by instrument type and counterparty type. The value of protection bought and sold is not, in isolation, a measure of UBS's credit risk. Counterparty relationships are viewed in terms of the total outstanding credit risk, which relates to other instruments in addition to CDS, and in connection with collateral arrangements in place. On a notional value basis, approximately 14% of credit protection bought and sold as of 31 December 2018 matures within one year (31 December 2017: 23%), approximately 74% within one to five years (31 December 2017: 65%) and approximately 12% after five years (31 December 2017: 12%).

Credit derivatives by type of instrument

	Protection bought			Protection sold		
USD billion	PRV	NRV	Notional values	PRV	NRV	Notional values
Single-name credit default swaps	0.6	0.6	43.3	0.5	1.0	44.9
Multi-name index-linked credit default swaps	0.3	0.3	29.1	0.3	0.2	24.4
Multi-name other credit default swaps	0.0	0.0	0.1	0.0	0.0	0.1
Total rate of return swaps	0.2	0.7	4.7	0.0	0.0	2.0
Options and warrants	0.0	0.0	4.1	0.0	0.0	0.1
Total 31 December 2018	1.1	1.6	81.3	0.8	1.2	71.4
of which: credit derivatives related to economic hedges	*0.9*	*1.3*	*59.2*	*0.5*	*1.1*	*48.9*
of which: credit derivatives related to market-making	*0.2*	*0.4*	*22.1*	*0.3*	*0.2*	*22.6*

	Protection bought			Protection sold		
USD billion	PRV	NRV	Notional values	PRV	NRV	Notional values
Single-name credit default swaps	0.6	1.2	62.9	1.1	0.7	57.1
Multi-name index-linked credit default swaps	0.2	1.0	32.6	0.9	0.2	32.8
Multi-name other credit default swaps	0.0	0.0	0.1	0.0	0.0	0.0
Total rate of return swaps	0.0	0.8	4.6	0.1	0.0	1.7
Options and warrants	0.0	0.0	4.4	0.0	0.0	0.1
Total 31 December 2017	0.8	3.0	104.5	2.1	0.9	91.7
of which: credit derivatives related to economic hedges	*0.8*	*2.5*	*83.7*	*1.6*	*0.9*	*72.3*
of which: credit derivatives related to market-making	*0.0*	*0.5*	*20.9*	*0.5*	*0.0*	*19.4*

Note 11 Derivative instruments (continued)

Credit derivatives by counterparty

	Protection bought			Protection sold		
USD billion	PRV	NRV	Notional values	PRV	NRV	Notional values
Broker-dealers	0.2	0.1	13.0	0.1	0.2	11.5
Banks	0.4	0.4	29.2	0.3	0.5	25.6
Central clearing counterparties	0.2	0.4	31.9	0.4	0.3	30.8
Other	0.3	0.7	7.2	0.0	0.3	3.5
Total 31 December 2018	1.1	1.6	81.3	0.8	1.2	71.4

	Protection bought			Protection sold		
USD billion	PRV	NRV	Notional values	PRV	NRV	Notional values
Broker-dealers	0.2	0.2	16.6	0.2	0.1	12.6
Banks	0.3	0.8	38.0	0.6	0.4	32.4
Central clearing counterparties	0.1	1.1	42.5	1.0	0.1	41.6
Other	0.3	0.9	7.4	0.3	0.2	5.0
Total 31 December 2017	0.8	3.0	104.5	2.1	0.9	91.7

UBS's CDS trades are documented using industry standard forms of documentation or equivalent terms documented in a bespoke agreement. The agreements that govern CDS generally do not contain recourse provisions that would enable UBS to recover from third parties any amounts paid out by UBS.

The types of credit events that would require UBS to perform under a CDS contract are subject to agreement between the parties at the time of the transaction. However, nearly all transactions are traded with reference to credit events that are applicable under certain market conventions based on the type of reference entity to which the transaction relates. Applicable credit events according to market conventions include bankruptcy, failure to pay, restructuring, obligation acceleration and repudiation / moratorium.

Contingent collateral features of derivative liabilities

Certain derivative instruments contain contingent collateral or termination features triggered upon a downgrade of the published credit ratings of the Group in the normal course of business. Based on UBS's credit ratings as of 31 December 2018, USD 0.0 billion, USD 0.3 billion and USD 1.0 billion would have been required for contractual obligations related to OTC derivatives in the event of a one-notch, two-notch and three-notch reduction in long-term credit ratings, respectively. In evaluating UBS's liquidity requirements, UBS considers additional collateral or termination payments that would be required in the event of a reduction in UBS's long-term credit ratings, and a corresponding reduction in UBS's short-term ratings.

Note 12 Financial assets and liabilities at fair value held for trading

USD million	31.12.18	31.12.17
Financial assets at fair value held for trading[1]		
Government bills / bonds	11,161	13,186
Corporate and municipal bonds	6,768	8,785
Loans	3,566	3,946
Investment fund units	9,716	9,881
Asset-backed securities	392	377
Equity instruments	72,768	81,623
Financial assets for unit-linked investment contracts[2]		11,609
Total financial assets at fair value held for trading	104,370	129,407
Financial liabilities at fair value held for trading[1]		
Government bills / bonds	2,839	5,549
Corporate and municipal bonds	3,530	3,629
Investment fund units	689	841
Equity instruments	21,886	21,230
Other	0	2
Total financial liabilities at fair value held for trading	28,943	31,251

1 Refer to Note 24c for more information on product type and fair value hierarchy categorization. 2 Financial assets for unit-linked investment contracts were reclassified from Financial assets at fair value held for trading to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information.

Note 13 Financial assets at fair value not held for trading

USD million	31.12.18	31.12.17
Financial assets at fair value not held for trading[1]		
Government bills / bonds	22,493	26,633
Corporate and municipal bonds	17,236	22,022
Financial assets for unit-linked investment contracts[2]	21,446	
Loans	8,132	10,405
Securities financing transactions[3]	9,937	298
Auction rate securities[4]	1,664	
Investment fund units	710	597
Equity instruments[5]	702	
Other	369	501
Total financial assets at fair value not held for trading	82,690	60,457

1 Refer to Note 24c for more information on product type and fair value hierarchy categorization. 2 Financial assets for unit-linked investment contracts were reclassified from Financial assets at fair value held for trading to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 3 Certain reverse repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 4 Auction rate securities have been reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 5 Upon adoption of IFRS 9 on 1 January 2018, equity instruments that were formerly classified as available for sale under IAS 39 were reclassified to Financial assets at fair value not held for trading. Refer to Note 1c for more information.

Note 14 Financial assets measured at fair value through other comprehensive income

USD million	31.12.18	31.12.17
Financial assets measured at fair value through other comprehensive income[1]		
Debt instruments		
Government and government agencies	6,463	7,181
of which: USA	*6,101*	*6,739*
Banks	149	307
Corporates and other	54	842
Total debt instruments	6,667	8,330
Equity instruments[2]		560
Total financial assets measured at fair value through other comprehensive income	6,667	8,889
Unrealized gains – before tax	4	221
Unrealized (losses) – before tax	(146)	(108)
Net unrealized gains / (losses) – before tax	(143)	114
Net unrealized gains / (losses) – after tax	(104)	6

1 Refer to Note 24c for more information on product type and fair value hierarchy categorization. Refer also to Note 10 and Note 23 for more information on expected credit loss measurement. 2 Comparative-period information includes equity instruments that were formerly classified as available for sale under IAS 39 and have been reclassified to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information.

Note 15 Property, equipment and software

At historical cost less accumulated depreciation

USD million	Own-used properties	Leasehold improvements	IT hardware and communications equipment	Internally generated software	Purchased software	Other machines and equipment	Projects in progress	2018	2017
Historical cost									
Balance at the beginning of the year	7,923	3,375	1,615	4,266	432	861	1,050	19,522	17,842
Additions[1]	21	20	182	1	50	21	1,406	1,702	1,638
Disposals / write-offs[2]	(17)	(386)	(213)	(108)	(15)	(111)	0	(849)	(634)
Reclassifications	(174)	152	8	1,054	12	36	(1,283)	(195)[7]	(47)
Foreign currency translation	(74)	(40)	(25)	(41)	(9)	(8)	(16)	(213)	724
Balance at the end of the year	7,679	3,122	1,568	5,173	469	799	1,157	19,966	19,522
Accumulated depreciation									
Balance at the beginning of the year	4,528	2,069	1,131	1,854	272	610	0	10,465	9,656
Depreciation	159	198	172	498	61	65	0	1,153	1,035
Impairment[3]	0	2	3	66	4	0	0	75	18
Disposals / write-offs[2]	(16)	(380)	(213)	(108)	(15)	(108)	0	(840)	(626)
Reclassifications	(129)	4	0	0	0	0	0	(124)[7]	(5)
Foreign currency translation	(42)	(21)	(18)	(18)	(7)	(6)	0	(111)	387
Balance at the end of the year	4,500	1,873	1,077	2,291	316	561	0	10,619	10,465
Net book value									
Net book value at the beginning of the year	3,394	1,306	483	2,412	159	251	1,050	9,057	8,186
Net book value at the end of the year[4,5]	**3,179**	**1,249**	**491**	**2,882**	**153**	**238**	**1,157[6]**	9,348	9,057

1 Includes USD 7 million additional assets related to acquisition of businesses in 2018. 2 Includes write-offs of fully depreciated assets. 3 Impairment charges recorded in 2018 relate to assets for which the recoverable amount was determined based on value-in-use. Recoverable amounts for these impaired assets were not material as of 31 December 2018. 4 As of 31 December 2018, contractual commitments to purchase property in the future amounted to approximately USD 0.3 billion (31 December 2017: approximately USD 0.3 billion). 5 Includes USD 26 million related to leased assets, mainly Own-used properties. 6 Consists of USD 803 million related to Internally generated software, USD 295 million related to Own-used properties and USD 59 million related to Leasehold improvements. 7 Reflects reclassifications to Properties held for sale (USD 70 million on a net basis) of properties sold in 2018.

Note 16 Goodwill and intangible assets

Introduction

UBS performs an impairment test on its goodwill assets on an annual basis or when indicators of impairment exist.

For annual tests prior to 2018, UBS considered the segments, as they were reported in Note 2a, as separate cash-generating units, as that was the level at which the performance of investments (and the related goodwill) was reviewed and assessed by management. Following the integration in 2018 of the Wealth Management and Wealth Management Americas business divisions into the single reportable segment Global Wealth Management, UBS continued to separately monitor the goodwill previously allocated to the two former business divisions. As a consequence, for the purposes of goodwill impairment testing, the former Wealth Management and Wealth Management Americas business divisions are considered to be two separate cash-generating units, referred to in this Note as Global Wealth Management Americas[1] and Global Wealth Management ex Americas. The remaining goodwill balances continued to be tested at the level of Asset Management and the Investment Bank, respectively, consistent with the 2017 annual test.

The impairment test is performed for each cash-generating unit to which goodwill is allocated by comparing the recoverable amount, based on its value-in-use, with the carrying amount of the respective cash-generating unit. An impairment charge is recognized if the carrying amount exceeds the recoverable amount. As of 31 December 2018, total goodwill recognized on the balance sheet was USD 6.4 billion, of which USD 3.7 billion was carried by the Global Wealth Management Americas cash-generating unit, USD 1.2 billion was carried by the Global Wealth Management ex Americas cash-generating unit, USD 1.4 billion was carried by Asset Management and USD 0.1 billion was carried by the Investment Bank. Based on the impairment testing methodology described below, UBS concluded that the goodwill balances as of 31 December 2018 allocated to these cash-generating units are not impaired.

Methodology for goodwill impairment testing

The recoverable amounts are determined using a discounted cash flow model, which has been adapted to use inputs that consider features of the banking business and its regulatory environment. The recoverable amount of a cash-generating unit is the sum of the discounted earnings attributable to shareholders from the first three forecast years and the terminal value, adjusted for the effect of the capital assumed to be needed over the next three years and to support growth beyond this period. The terminal value, which covers all periods beyond the third year, is calculated on the basis of the forecast of third-year profit, the discount rate and the long-term growth rate, as well as the implied perpetual capital growth.

The carrying amount for each cash-generating unit is determined by reference to the Group's equity attribution framework. Within this framework, which is described in the "Capital management" section of this report, we attribute equity to the businesses on the basis of their risk-weighted assets and leverage ratio denominator, their goodwill and intangible assets as well as equity directly associated with activity that Corporate Center – Group Asset and Liability Management manages centrally on behalf of the business divisions. The framework is primarily used for purposes of measuring the performance of the businesses and includes certain management assumptions. Attributed equity equals the capital that a cash-generating unit requires to conduct its business and is currently considered a reasonable approximation of the carrying value of the cash-generating units. The attributed equity methodology is aligned with the business planning process, the inputs from which are used in calculating the recoverable amounts of the respective cash-generating unit.

→ **Refer to the "Capital management" section of this report for more information on the equity attribution framework**

Assumptions

Valuation parameters used within the Group's impairment test model are linked to external market information, where applicable. The model used to determine the recoverable amount is most sensitive to changes in the forecast earnings available to shareholders in years one to three, to changes in the discount rates and to changes in the long-term growth rate. The applied long-term growth rate is based on long-term economic growth rates for different regions worldwide. Earnings available to shareholders are estimated on the basis of forecast results, which are part of the business plan approved by the Board of Directors.

The discount rates are determined by applying a capital asset pricing model-based approach, as well as considering quantitative and qualitative inputs from both internal and external analysts and the view of management.

[1] Now including the Global Wealth Management business in Latin America, previously part of the Wealth Management business division.

Note 16 Goodwill and intangible assets (continued)

Following the change of the Group's presentation currency to US dollars, UBS has refined its assumptions on long-term growth rates and discount rates. The discount rates now take into account regional differences in risk-free rates, at the level of individual cash-generating units. Consistently, long-term growth rates are determined based on nominal or real GDP growth rate forecasts, depending on region. The change to nominal GDP forecasts for some regions results in higher long-term growth rates and thus higher recoverable amounts for all cash-generating units. The change did not affect the outcome of the impairment test.

Key assumptions used to determine the recoverable amounts of each cash-generating unit are tested for sensitivity by applying a reasonably possible change to those assumptions. Forecast earnings available to shareholders were changed by 20%, the discount rates were changed by 1.5 percentage points and the long-term growth rates were changed by 0.75 percentage points. Under all scenarios, reasonably possible changes in key assumptions did not result in an impairment of goodwill or intangible assets that would be material to the consolidated financial statements or to the reported financial performance of any of the business divisions. As of 31 December 2018, the Investment Bank's recoverable amount exceeded its carrying amount by USD 2.5 billion. A reasonably possible change in the forecast earnings or the discount rate used in the calculation of the Investment Bank's recoverable amount would cause its carrying amount to exceed the recoverable amount. More specifically, if forecast earnings used in the calculation of the Investment Bank's recoverable amount were reduced by approximately 12% or the discount rate increased by 1.4 percentage points, then the Investment Bank's recoverable amount would be equal to its carrying amount.

If the estimated earnings and other assumptions in future periods deviate from the current outlook, the value of goodwill may become impaired in the future, giving rise to losses in the income statement. Recognition of any impairment of goodwill would reduce IFRS equity and net profit. It would not affect cash flows and, as goodwill is required to be deducted from capital under the Basel III capital framework, no effect would be expected on the Group's capital ratios.

Discount and growth rates

	Discount rates		Growth rates	
In %	31.12.18	31.12.17	31.12.18	31.12.17
Global Wealth Management Americas	9.5	9.0	3.2	2.4
Global Wealth Management ex Americas	8.5	9.0	3.0	1.7
Asset Management	9.0	9.0	2.7	2.4
Investment Bank	11.0	11.0	3.5	2.4

	Goodwill	Intangible assets				
USD million	Total	Infrastructure[1]	Customer relationships, contractual rights and other	Total	2018	2017
Historical cost						
Balance at the beginning of the year	6,342	760	786	1,546	7,888	7,687
Additions	161		109	109	270	105
Disposals	(40)		(5)	(5)	(45)	(63)
Write-offs			(7)	(7)	(7)	0
Foreign currency translation	(71)		(17)	(17)	(88)	160
Balance at the end of the year	6,392	760	865	1,625	8,018	7,888
Accumulated amortization and impairment						
Balance at the beginning of the year		653	672	1,325	1,325	1,245
Amortization		38	24	62	62	71
Impairment[2]			4	4	4	0
Disposals			(1)	(1)	(1)	(16)
Write-offs			(7)	(7)	(7)	0
Foreign currency translation			(12)	(12)	(12)	26
Balance at the end of the year		691	679	1,371	1,371	1,325
Net book value at the end of the year	6,392	68	186	254	6,647	6,563

1 Consists of the branch network intangible asset recognized in connection with the acquisition of PaineWebber Group, Inc. 2 Impairment charges recorded in 2018 and 2017 relate to assets for which the recoverable amount was determined based on value-in-use (recoverable amount of the impaired assets: USD 18 million for 2018 and USD 0 million for 2017).

Note 16 Goodwill and intangible assets (continued)

The table below presents goodwill and intangible assets by cash-generating unit for the year ended 31 December 2018.

USD million	Global Wealth Management Americas	Global Wealth Management ex Americas	Investment Bank	Asset Management	Corporate Center – Services	Total
Goodwill						
Balance at the beginning of the year	3,742	1,148	35	1,418		6,342
Additions		79	82	0		161
Disposals	(13)		0	(27)		(40)
Foreign currency translation	(8)	(21)	(5)	(37)		(71)
Balance at the end of the year	3,721	1,206	112	1,354		6,392
Intangible assets						
Balance at the beginning of the year	164	25	29	1	2	221
Additions / transfers	22	86			1	109
Disposals	0		(4)	0		(4)
Amortization	(44)	(6)	(10)	(1)	(2)	(62)
Impairment	0	0	(3)	0		(4)
Foreign currency translation	(4)	0	(1)	0	0	(5)
Balance at the end of the year	138	104	11	0	1	254

The table below presents estimated aggregated amortization expenses for intangible assets.

USD million	Intangible assets
Estimated, aggregated amortization expenses for:	
2019	65
2020	52
2021	21
2022	21
2023	18
Thereafter	76
Not amortized due to indefinite useful life	2
Total	254

Note 17 Other assets

a) Other financial assets measured at amortized cost

USD million	31.12.18	31.12.17
Prime brokerage receivables[1]		19,573
Debt securities	13,562	9,403
of which: government bills / bonds	*8,778*	*6,632*
Loans to financial advisors[2]	3,291	3,199
Fee- and commission-related receivables	1,643	1,826
Finance lease receivables	1,091	1,086
Settlement and clearing accounts	1,050	735
Accrued interest income	694	592
Other	1,233	1,401
Total other financial assets measured at amortized cost	22,563	37,815

1 Upon adoption of IFRS 9 on 1 January 2018, prime brokerage receivables and payables were reclassified from amortized cost to fair value through profit or loss. Brokerage receivables and payables are now presented separately on the balance sheet. Refer to Note 1c for more information. 2 Related to financial advisors in the US and Canada.

b) Other non-financial assets

USD million	31.12.18	31.12.17
Precious metals and other physical commodities	4,298	4,681
Bail deposit[1]	1,312	1,371
Prepaid expenses	990	1,039
VAT and other tax receivables	334	368
Properties and other non-current assets held for sale	82	98
Other	395	273
Total other non-financial assets	7,410	7,830

1 Refer to item 1 in Note 21b for more information.

Note 18 Amounts due to banks and customer deposits

USD million	31.12.18	31.12.17
Amounts due to banks	10,962	7,728
Customer deposits	419,838	419,577
of which: demand deposits	*181,869*	*193,457*
of which: retail savings / deposits	*165,790*	*166,013*
of which: time deposits	*53,624*	*48,617*
of which: fiduciary deposits	*18,556*	*11,490*
Total amounts due to banks and customer deposits	430,801	427,305

Note 19 Debt issued designated at fair value

USD million	31.12.18	31.12.17
Issued debt instruments		
Equity-linked[1]	34,392	35,046
Rates-linked	12,073	5,961
Credit-linked	3,282	3,013
Fixed-rate	5,099	4,022
Other	2,185	2,740
Total debt issued designated at fair value	57,031	50,782
of which: issued by UBS AG with original maturity greater than one year[2]	*40,289*	*38,230*
of which: life-to-date own credit (gain) / loss	*(270)*	*163*

1 Includes investment fund unit-linked instruments issued. 2 Issued by the legal entity UBS AG. Based on original contractual maturity without considering any early redemption features. More than 99% of the balance as of 31 December 2018 was unsecured (31 December 2017: more than 99% of the balance was unsecured).

As of 31 December 2018 and 31 December 2017, the contractual redemption amount at maturity of debt issued designated at fair value through profit or loss was not materially different from the carrying value.

The table below shows the residual contractual maturity of the carrying value of debt issued designated at fair value, split between fixed-rate and floating-rate instruments based on the contractual terms, and does not consider any early redemption features. Interest rate ranges for future interest payments related to debt issued designated at fair value have not been included in the table below as a majority of the debt instruments issued are structured products, and therefore the future interest payments are highly dependent upon the embedded derivative and prevailing market conditions at the point in time that each interest payment is made.

→ **Refer to Note 27 for maturity information on an undiscounted cash flow basis**

Contractual maturity of carrying value

USD million	2019	2020	2021	2022	2023	2024–2028	Thereafter	Total 31.12.18	Total 31.12.17
UBS AG[1]									
Non-subordinated debt									
Fixed-rate	3,904	1,509	1,178	447	274	802	3,694	11,807	9,664
Floating-rate	19,921	4,669	3,947	1,610	2,758	5,544	5,113	43,562	39,063
Subtotal	23,825	6,178	5,126	2,057	3,031	6,346	8,807	55,370	48,728
Other subsidiaries[2]									
Non-subordinated debt									
Fixed-rate	805	25	66	7	0	321	6	1,230	1,437
Floating-rate	13	119	83	6	26	0	183	431	617
Subtotal	818	145	149	13	26	321	189	1,662	2,054
Total	24,643	6,322	5,275	2,070	3,058	6,668	8,996	57,031	50,782

1 Comprises instruments issued by the legal entity UBS AG. 2 Comprises instruments issued by subsidiaries of UBS AG.

Note 20 Debt issued measured at amortized cost

USD million	31.12.18	31.12.17
Certificates of deposit	7,980	24,447
Commercial paper	27,514	24,140
Other short-term debt	3,531	3,683
Short-term debt[1]	**39,025**	**52,270**
Senior unsecured debt that contributes to total loss-absorbing capacity (TLAC)	29,988	27,937
Senior unsecured debt other than TLAC	33,018	33,102
of which: issued by UBS AG with original maturity greater than one year[2]	*32,133*	*33,090*
Covered bonds	3,947	4,218
Subordinated debt	17,665	16,983
of which: high-trigger loss-absorbing additional tier 1 capital instruments	*7,785*	*5,321*
of which: low-trigger loss-absorbing additional tier 1 capital instruments	*2,369*	*2,445*
of which: low-trigger loss-absorbing tier 2 capital instruments	*6,808*	*8,500*
of which: non-Basel III-compliant tier 2 capital instruments	*703*	*718*
Debt issued through the Swiss central mortgage institutions	8,569	8,561
Other long-term debt	58	89
of which: issued by UBS AG with original maturity greater than one year[2]	*52*	*68*
Long-term debt[3]	**93,246**	**90,890**
Total debt issued measured at amortized cost[4]	**132,271**	**143,160**

1 Debt with an original maturity of less than one year. 2 Issued by the legal entity UBS AG. Based on original contractual maturity without considering any early redemption features. As of 31 December 2018, 100% of the balance was unsecured (31 December 2017: 100% of the balance was unsecured). 3 Debt with original maturity greater than or equal to one year. The classification of debt issued into short-term and long-term does not consider any early redemption features. 4 Net of bifurcated embedded derivatives, the fair value of which was not material for the periods presented.

The Group uses interest rate and foreign exchange derivatives to manage the risks inherent in certain debt instruments held at amortized cost. In certain cases, the Group applies hedge accounting for interest rate risk as discussed in Note 1a item 3j and Note 28. As a result of applying hedge accounting, the life-to-date adjustment to the carrying value of debt issued was a decrease of USD 298 million as of 31 December 2018 and an increase of USD 35 million as of 31 December 2017, reflecting changes in fair value due to interest rate movements.

Note 20 Debt issued measured at amortized cost (continued)

Subordinated debt consists of unsecured debt obligations that are contractually subordinated in right of payment to all other present and future non-subordinated obligations of the respective issuing entity. All of the subordinated debt instruments outstanding as of 31 December 2018 pay a fixed rate of interest.

The table below shows the residual contractual maturity of the carrying value of debt issued, split between fixed-rate and floating-rate based on the contractual terms, and does not consider any early redemption features. The effects from interest rate swaps, which are used to hedge various fixed-rate debt issuances by changing the repricing characteristics into those similar to floating-rate debt, are also not considered in the table below.

→ **Refer to Note 27 for maturity information on an undiscounted cash flow basis**

Contractual maturity of carrying value

USD million	2019	2020	2021	2022	2023	2024–2028	Thereafter	Total 31.12.18	Total 31.12.17
UBS Group AG[1]									
Subordinated debt									
Fixed-rate									7,766[4]
Subtotal	0	0	0	0	0	0	0	0	7,766
UBS AG[2]									
Non-subordinated debt									
Fixed-rate	21,287	9,397	4,078	2,726	1,635	0	985	40,108	57,566
Floating-rate	25,450	6,482	1,964	0	369	0	770	35,035	31,930
Subordinated debt									
Fixed-rate	0	0	0	1,945	0	5,566	0	7,511	9,217
Subtotal	46,737	15,879	6,042	4,671	2,005	5,566	1,755	82,654	98,714
Other subsidiaries[3]									
Non-subordinated debt									
Fixed-rate	765	2,200	2,955	4,512	4,882	17,569	646	33,529	30,561
Floating-rate	0	300	998	2,506	2,128	0	0	5,933	6,120
Subordinated debt									
Fixed-rate	0	0	0	0	0	0	10,154	10,154[4]	0
Subtotal	765	2,500	3,953	7,017	7,011	17,569	10,801	49,616	36,681
Total	47,502	18,379	9,994	11,688	9,015	23,135	12,556	132,271	143,160

1 Comprises debt issued by the legal entity UBS Group AG. 2 Comprises debt issued by the legal entity UBS AG. 3 Comprises debt issued by other direct subsidiaries of UBS Group AG and by subsidiaries of UBS AG. 4 Originally issued by UBS Group AG, which was replaced by UBS Group Funding (Switzerland) AG as issuer on 25 May 2018.

Note 21 Provisions and contingent liabilities

a) Provisions

The table below presents an overview of total provisions recognized under both IAS 37 and IFRS 9.

USD million	31.12.18	31.12.17
Provisions recognized under IAS 37	3,377	3,180
Provisions for off-balance sheet financial instruments[1]	79	34
Provisions for other credit lines[1]	37	0
Total provisions	3,494	3,214

1 Provisions recognized in 2018 relate to exposures in the scope of the expected credit loss requirements of IFRS 9. Refer to Notes 1c, 10 and 23 for more information. 2017 provisions for off-balance sheet financial instruments relate to loss provisions recognized under IAS 37.

The following table presents additional information for provisions recognized under IAS 37.

USD million	Operational risks[1]	Litigation, regulatory and similar matters[2]	Restruc-turing	Real estate	Employee benefits[5]	Other	Total 2018	Total 2017
Balance at the beginning of the year	44	2,508	331	137	70	91	3,180	4,048
Additions from acquired companies	0	0	0	2	0	0	2	7
Increase in provisions recognized in the income statement	27	905	174	4	10	35	1,155	1,004
Release of provisions recognized in the income statement	(5)	(220)	(65)	(1)	(7)	(14)	(311)	(347)
Provisions used in conformity with designated purpose	(20)	(350)	(214)	(10)	0	(33)	(628)	(1,632)
Capitalized reinstatement costs	0	0	0	1	0	0	1	8
Foreign currency translation / unwind of discount	0	(16)	(1)	(1)	(2)	(1)	(21)	94
Balance at the end of the year	46	2,827	224[3]	131[4]	70	78	3,377	3,180

1 Comprises provisions for losses resulting from security risks and transaction processing risks. 2 Comprises provisions for losses resulting from legal, liability and compliance risks. 3 Primarily consists of personnel-related restructuring provisions of USD 50 million as of 31 December 2018 (31 December 2017: USD 85 million) and provisions for onerous lease contracts of USD 170 million as of 31 December 2018 (31 December 2017: USD 241 million). 4 Consists of reinstatement costs for leasehold improvements of USD 89 million as of 31 December 2018 (31 December 2017: USD 95 million) and provisions for onerous lease contracts of USD 42 million as of 31 December 2018 (31 December 2017: USD 42 million). 5 Includes provisions for sabbatical and anniversary awards.

Restructuring provisions primarily relate to onerous lease contracts and severance payments. The use of onerous lease provisions is driven by the maturities of the underlying lease contracts. Severance-related provisions are used within a short time period, usually within six months, but potential changes in amount may be triggered when natural staff attrition reduces the number of people affected by a restructuring and therefore the estimated costs.

Information on provisions and contingent liabilities in respect of litigation, regulatory and similar matters, as a class, is included in Note 21b. There are no material contingent liabilities associated with the other classes of provisions.

b) Litigation, regulatory and similar matters

The Group operates in a legal and regulatory environment that exposes it to significant litigation and similar risks arising from disputes and regulatory proceedings. As a result, UBS (which for purposes of this Note may refer to UBS Group AG and / or one or more of its subsidiaries, as applicable) is involved in various disputes and legal proceedings, including litigation, arbitration, and regulatory and criminal investigations.

Such matters are subject to many uncertainties, and the outcome and the timing of resolution are often difficult to predict, particularly in the earlier stages of a case. There are also situations where the Group may enter into a settlement agreement. This may occur in order to avoid the expense, management distraction or reputational implications of continuing to contest liability, even for those matters for which the Group believes it should be exonerated. The uncertainties inherent in all such matters affect the amount and timing of any potential outflows for both matters with respect to which provisions have been established and other contingent liabilities. The Group makes provisions for such matters brought against it when, in the opinion of management after seeking legal advice, it is more likely than not that the Group has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required, and the amount can be reliably estimated. Where these factors are otherwise satisfied, a provision may be established for claims that have not yet been asserted against the Group, but are nevertheless expected to be, based on the Group's experience with similar asserted claims. If any of those conditions is not met, such matters result in contingent liabilities. If the amount of an obligation cannot be reliably estimated, a liability exists that is not recognized even if an outflow of resources is probable. Accordingly, no provision is established even if the potential outflow of resources with respect to such matters could be significant. Developments relating to a matter that occur after the relevant reporting period, but prior to the issuance of financial statements, which affect management's assessment of the provision for such matter (because, for example, the developments provide evidence of conditions that existed at the end of the reporting period), are adjusting events after the reporting period under IAS 10 and must be recognized in the financial statements for the reporting period.

Note 21 Provisions and contingent liabilities (continued)

Specific litigation, regulatory and other matters are described below, including all such matters that management considers to be material and others that management believes to be of significance due to potential financial, reputational and other effects. The amount of damages claimed, the size of a transaction or other information is provided where available and appropriate in order to assist users in considering the magnitude of potential exposures.

In the case of certain matters below, we state that we have established a provision, and for the other matters, we make no such statement. When we make this statement and we expect disclosure of the amount of a provision to prejudice seriously our position with other parties in the matter because it would reveal what UBS believes to be the probable and reliably estimable outflow, we do not disclose that amount. In some cases we are subject to confidentiality obligations that preclude such disclosure. With respect to the matters for which we do not state whether we have established a provision, either (a) we have not established a provision, in which case the matter is treated as a contingent liability under the applicable accounting standard; or (b) we have established a provision but expect disclosure of that fact to prejudice seriously our position with other parties in the matter because it would reveal the fact that UBS believes an outflow of resources to be probable and reliably estimable.

With respect to certain litigation, regulatory and similar matters for which we have established provisions, we are able to estimate the expected timing of outflows. However, the aggregate amount of the expected outflows for those matters for which we are able to estimate expected timing is immaterial relative to our current and expected levels of liquidity over the relevant time periods.

The aggregate amount provisioned for litigation, regulatory and similar matters as a class is disclosed in the "Provisions" table in Note 21a above. It is not practicable to provide an aggregate estimate of liability for our litigation, regulatory and similar matters as a class of contingent liabilities. Doing so would require us to provide speculative legal assessments as to claims and proceedings that involve unique fact patterns or novel legal theories, that have not yet been initiated or are at early stages of adjudication, or as to which alleged damages have not been quantified by the claimants. Although we therefore cannot provide a numerical estimate of the future losses that could arise from litigation, regulatory and similar matters, we believe that the aggregate amount of possible future losses from this class that are more than remote substantially exceeds the level of current provisions.

Litigation, regulatory and similar matters may also result in non-monetary penalties and consequences. For example, the non-prosecution agreement described in item 5 of this Note, which we entered into with the US Department of Justice (DOJ), Criminal Division, Fraud Section in connection with our submissions of benchmark interest rates, including, among others, the British Bankers' Association London Interbank Offered Rate (LIBOR), was terminated by the DOJ based on its determination that we had committed a US crime in relation to foreign exchange matters. As a consequence, UBS AG pleaded guilty to one count of wire fraud for conduct in the LIBOR matter, paid a fine and is subject to probation through January 2020.

A guilty plea to, or conviction of, a crime could have material consequences for UBS. Resolution of regulatory proceedings may require us to obtain waivers of regulatory disqualifications to maintain certain operations, may entitle regulatory authorities to limit, suspend or terminate licenses and regulatory authorizations, and may permit financial market utilities to limit, suspend or terminate our participation in such utilities. Failure to obtain such waivers, or any limitation, suspension or termination of licenses, authorizations or participations, could have material consequences for UBS.

The risk of loss associated with litigation, regulatory and similar matters is a component of operational risk for purposes of determining our capital requirements. Information concerning our capital requirements and the calculation of operational risk for this purpose is included in the "Capital management" section of this report.

Provisions for litigation, regulatory and similar matters by business division and Corporate Center unit[1]

USD million	Global Wealth Manage-ment	Personal & Corporate Banking	Asset Manage-ment	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Total 2018	Total 2017
Balance at the beginning of the year	569	81	1	354	246	0	1,256	2,508	3,204
Increase in provisions recognized in the income statement	659	41	0	83	32	0	90	905	703
Release of provisions recognized in the income statement	(33)	(1)	(1)	(146)	(38)	0	0	(220)	(214)
Provisions used in conformity with designated purpose	(184)	(3)	0	(18)	(1)	0	(143)	(350)	(1,251)
Foreign currency translation / unwind of discount	(9)	(1)	0	(3)	(2)	0	(1)	(16)	66
Balance at the end of the year	1,003	117	0	269	236	0	1,202	2,827	2,508

1 Provisions, if any, for the matters described in this Note are recorded in Global Wealth Management (items 3 and 4), the Investment Bank (item 7) and Corporate Center – Non-core and Legacy Portfolio (item 2). Provisions, if any, for the matters described in items 1 and 6 of this Note are allocated between Global Wealth Management and Personal & Corporate Banking, and provisions, if any, for the matters described in this Note in item 5 are allocated between the Investment Bank, Corporate Center – Services and Corporate Center – Non-core and Legacy Portfolio.

1. Inquiries regarding cross-border wealth management businesses

Tax and regulatory authorities in a number of countries have made inquiries, served requests for information or examined employees located in their respective jurisdictions relating to the cross-border wealth management services provided by UBS and other financial institutions. It is possible that the implementation of automatic tax information exchange and other measures relating to cross-border provision of financial services could give rise to further inquiries in the future. UBS has received disclosure orders from the Swiss Federal Tax Administration (FTA) to transfer information based on requests for international administrative assistance in tax matters. The requests concern a number of UBS account numbers pertaining to current and former clients and are based on data from 2006 and 2008. UBS has taken steps to inform affected clients about the administrative assistance proceedings and their procedural rights, including the right to appeal. The requests are based on data received from the German authorities, who seized certain data related to UBS clients booked in Switzerland during their investigations and have apparently shared this data with other European countries. UBS expects additional countries to file similar requests.

The Swiss Federal Administrative Court ruled in 2016 that, in the administrative assistance proceedings related to a French bulk request, UBS has the right to appeal all final FTA client data disclosure orders. On 30 July 2018, the Swiss Federal Administrative Court granted UBS's appeal by holding the French administrative assistance request inadmissible. The FTA filed a final appeal with the Swiss Federal Supreme Court.

Since 2013, UBS (France) S.A., UBS AG and certain former employees have been under investigation in France for alleged complicity in having illicitly solicited clients on French territory, regarding the laundering of proceeds of tax fraud, and of banking and financial solicitation by unauthorized persons. In connection with this investigation, the investigating judges ordered UBS AG to provide bail ("caution") of EUR 1.1 billion and UBS (France) S.A. to post bail of EUR 40 million, which was reduced on appeal to EUR 10 million.

In March 2017, the investigating judges issued a trial order ("ordonnance de renvoi") that charges UBS AG and UBS (France) S.A., as well as various former employees, with illicit solicitation of clients on French territory and with participation in the laundering of the proceeds of tax fraud. The trial on these charges in the court of first instance took place from 8 October 2018 until 15 November 2018. During the trial, the prosecutors and the French State requested penalties and civil monetary damages in connection with the money laundering charges aggregating EUR 5.3 billion. On 20 February 2019, the court announced a verdict finding UBS AG guilty of illicitly soliciting clients on French territory and laundering the proceeds of tax fraud, and UBS France S.A. guilty of aiding and abetting unlawful solicitation and laundering the proceeds of tax fraud. The court imposed fines aggregating EUR 3.7 billion on UBS AG and UBS France S.A. and awarded EUR 800 million of civil damages to the French state. UBS has appealed the decision. Under French law, the judgment is suspended while the appeal is pending. The Court of Appeal will retry the case de novo as to both the law and the facts and the fines and penalties can be greater than or less than those imposed by the court of first instance. A subsequent appeal to the Cour de Cassation, France's highest court, is possible with respect to questions of law.

UBS believes that based on both the law and the facts the judgment of the court of first instance should be reversed. UBS believes it followed its obligations under Swiss and French law as well as the European Savings Tax Directive. Even assuming liability, which it contests, UBS believes the penalties and damage amounts awarded greatly exceeded the amounts that could be supported by the law and the facts. In particular, UBS believes the court incorrectly based the penalty on the total regularized assets rather than on any unpaid taxes on those assets for which a fraud has been characterized, and further incorrectly awarded damages based on costs that were not proven by the civil party. Notwithstanding that UBS believes it should be acquitted, our balance sheet at 31 December 2018 reflected provisions with respect to this matter in an amount of USD 516 million. The wide range of possible outcomes in this case contributes to a high degree of estimation uncertainty. The provision reflected on our balance sheet at 31 December 2018 reflects our best estimate of possible financial implications, although it is reasonably possible that actual penalties and civil damages could exceed the provision amount.

In 2016, UBS was notified by the Belgian investigating judge that it is under formal investigation ("inculpé") regarding the laundering of proceeds of tax fraud, of banking and financial solicitation by unauthorized persons, and of serious tax fraud. In 2018, tax authorities and a prosecutor's office in Italy asserted that UBS is potentially liable for taxes and penalties as a result of its activities in Italy from 2012 to 2017.

UBS has, and reportedly numerous other financial institutions have, received inquiries from authorities concerning accounts relating to the Fédération Internationale de Football Association (FIFA) and other constituent soccer associations and related persons and entities. UBS is cooperating with authorities in these inquiries.

Our balance sheet at 31 December 2018 reflected provisions with respect to matters described in this item 1 in an amount that UBS believes to be appropriate under the applicable accounting standard. As in the case of other matters for which we have established provisions, the future outflow of resources in respect of such matters cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provision that we have recognized.

Note 21 Provisions and contingent liabilities (continued)

2. Claims related to sales of residential mortgage-backed securities and mortgages

From 2002 through 2007, prior to the crisis in the US residential loan market, UBS was a substantial issuer and underwriter of US residential mortgage-backed securities (RMBS) and was a purchaser and seller of US residential mortgages. A subsidiary of UBS, UBS Real Estate Securities Inc. (UBS RESI), acquired pools of residential mortgage loans from originators and (through an affiliate) deposited them into securitization trusts. In this manner, from 2004 through 2007, UBS RESI sponsored approximately USD 80 billion in RMBS, based on the original principal balances of the securities issued.

UBS RESI also sold pools of loans acquired from originators to third-party purchasers. These whole loan sales during the period 2004 through 2007 totaled approximately USD 19 billion in original principal balance.

UBS was not a significant originator of US residential loans. A branch of UBS originated approximately USD 1.5 billion in US residential mortgage loans during the period in which it was active from 2006 to 2008, and securitized less than half of these loans.

Lawsuits related to contractual representations and warranties concerning mortgages and RMBS: When UBS acted as an RMBS sponsor or mortgage seller, it generally made certain representations relating to the characteristics of the underlying loans. In the event of a material breach of these representations, UBS was in certain circumstances contractually obligated to repurchase the loans to which the representations related or to indemnify certain parties against losses. In 2012, certain RMBS trusts filed an action in the US District Court for the Southern District of New York seeking to enforce UBS RESI's obligation to repurchase loans in the collateral pools for three RMBS securitizations issued and underwritten by UBS with an original principal balance of approximately USD 2 billion. In July 2018, UBS and the trustee entered into an agreement under which UBS will pay USD 850 million to resolve this matter. A significant portion of this amount will be borne by other parties that indemnified UBS. The settlement remains subject to court approval and proceedings to determine how the settlement funds will be distributed to RMBS holders. After giving effect to this settlement, UBS considers claims relating to substantially all loan repurchase demands to be resolved, and believes that new demands to repurchase US residential mortgage loans are time-barred under a decision rendered by the New York Court of Appeals.

Mortgage-related regulatory matters: Since 2014, the US Attorney's Office for the Eastern District of New York has sought information from UBS pursuant to the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA), related to UBS's RMBS business from 2005 through 2007. On 8 November 2018, the DOJ filed a civil complaint in the District Court for the Eastern District of New York. The complaint seeks unspecified civil monetary penalties under FIRREA related to UBS's issuance, underwriting and sale of 40 RMBS transactions in 2006 and 2007. UBS moved to dismiss the civil complaint on 6 February 2019.

Our balance sheet at 31 December 2018 reflected a provision with respect to matters described in this item 2 in an amount that UBS believes to be appropriate under the applicable accounting standard. As in the case of other matters for which we have established provisions, the future outflow of resources in respect of this matter cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provision that we have recognized.

3. Madoff

In relation to the Bernard L. Madoff Investment Securities LLC (BMIS) investment fraud, UBS AG, UBS (Luxembourg) S.A. (now UBS Europe SE, Luxembourg branch) and certain other UBS subsidiaries have been subject to inquiries by a number of regulators, including the Swiss Financial Market Supervisory Authority (FINMA) and the Luxembourg Commission de Surveillance du Secteur Financier. Those inquiries concerned two third-party funds established under Luxembourg law, substantially all assets of which were with BMIS, as well as certain funds established in offshore jurisdictions with either direct or indirect exposure to BMIS. These funds faced severe losses, and the Luxembourg funds are in liquidation. The documentation establishing both funds identifies UBS entities in various roles, including custodian, administrator, manager, distributor and promoter, and indicates that UBS employees serve as board members.

In 2009 and 2010, the liquidators of the two Luxembourg funds filed claims against UBS entities, non-UBS entities and certain individuals, including current and former UBS employees, seeking amounts totaling approximately EUR 2.1 billion, which includes amounts that the funds may be held liable to pay the trustee for the liquidation of BMIS (BMIS Trustee).

A large number of alleged beneficiaries have filed claims against UBS entities (and non-UBS entities) for purported losses relating to the Madoff fraud. The majority of these cases have been filed in Luxembourg, where decisions that the claims in eight test cases were inadmissible have been affirmed by the Luxembourg Court of Appeal, and the Luxembourg Supreme Court has dismissed a further appeal in one of the test cases.

In the US, the BMIS Trustee filed claims against UBS entities, among others, in relation to the two Luxembourg funds and one of the offshore funds. The total amount claimed against all defendants in these actions was not less than USD 2 billion. In 2014, the US Supreme Court rejected the BMIS Trustee's motion for leave to appeal decisions dismissing all claims except those for the recovery of fraudulent conveyances and preference payments. In 2016, the bankruptcy court dismissed the remaining claims against the UBS entities. The BMIS Trustee appealed.

4. Puerto Rico

Declines since 2013 in the market prices of Puerto Rico municipal bonds and of closed-end funds (funds) that are sole-managed and co-managed by UBS Trust Company of Puerto Rico and distributed by UBS Financial Services Incorporated of Puerto Rico (UBS PR) have led to multiple regulatory inquiries, as well as customer complaints and arbitrations with aggregate claimed damages of USD 2.9 billion, of which claims with aggregate claimed damages of USD 1.9 billion have been resolved through settlements, arbitration or withdrawal of the claim. The claims have been filed by clients in Puerto Rico who own the funds or Puerto Rico municipal bonds and / or who used their UBS account assets as collateral for UBS non-purpose loans; customer complaint and arbitration allegations include fraud, misrepresentation and unsuitability of the funds and of the loans.

A shareholder derivative action was filed in 2014 against various UBS entities and current and certain former directors of the funds, alleging hundreds of millions of US dollars in losses in the funds. In 2015, defendants' motion to dismiss was denied and a request for permission to appeal that ruling was denied by the Puerto Rico Supreme Court. In 2014, a federal class action complaint also was filed against various UBS entities, certain members of UBS PR senior management and the co-manager of certain of the funds, seeking damages for investor losses in the funds during the period from May 2008 through May 2014. Following denial of the plaintiffs' motion for class certification, the case was dismissed in October 2018.

In 2014 and 2015, UBS entered into settlements with the Office of the Commissioner of Financial Institutions for the Commonwealth of Puerto Rico, the US Securities and Exchange Commission (SEC) and the Financial Industry Regulatory Authority in relation to their examinations of UBS's operations. We also understand that the DOJ is conducting a criminal inquiry into the impermissible reinvestment of non-purpose loan proceeds. We are cooperating with the authorities in this inquiry.

In 2011, a purported derivative action was filed on behalf of the Employee Retirement System of the Commonwealth of Puerto Rico (System) against over 40 defendants, including UBS PR, which was named in connection with its underwriting and consulting services. Plaintiffs alleged that defendants violated their purported fiduciary duties and contractual obligations in connection with the issuance and underwriting of USD 3 billion of bonds by the System in 2008 and sought damages of over USD 800 million. In 2016, the court granted the System's request to join the action as a plaintiff, but ordered that plaintiffs must file an amended complaint. In 2017, the court denied defendants' motion to dismiss the amended complaint.

Beginning in 2015, and continuing through 2017, certain agencies and public corporations of the Commonwealth of Puerto Rico (Commonwealth) defaulted on certain interest payments on Puerto Rico bonds. In 2016, US federal legislation created an oversight board with power to oversee Puerto Rico's finances and to restructure its debt. The oversight board has imposed a stay on the exercise of creditors' rights. In 2017, the oversight board placed certain of the bonds into a bankruptcy-like proceeding under the supervision of a Federal District Judge. These events, further defaults, any further legislative action to create a legal means of restructuring Commonwealth obligations or to impose additional oversight on the Commonwealth's finances, or any restructuring of the Commonwealth's obligations, may increase the number of claims against UBS concerning Puerto Rico securities, as well as potential damages sought.

Our balance sheet at 31 December 2018 reflected provisions with respect to matters described in this item 4 in amounts that UBS believes to be appropriate under the applicable accounting standard. As in the case of other matters for which we have established provisions, the future outflow of resources in respect of such matters cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provisions that we have recognized.

Note 21 Provisions and contingent liabilities (continued)

5. Foreign exchange, LIBOR and benchmark rates, and other trading practices

Foreign exchange-related regulatory matters: Beginning in 2013 numerous authorities commenced investigations concerning possible manipulation of foreign exchange markets and precious metals prices. In 2014 and 2015, UBS reached settlements with the UK Financial Conduct Authority (FCA) and the US Commodity Futures Trading Commission (CFTC) in connection with their foreign exchange investigations, FINMA issued an order concluding its formal proceedings relating to UBS's foreign exchange and precious metals businesses, and the Board of Governors of the Federal Reserve System (Federal Reserve Board) and the Connecticut Department of Banking issued a Cease and Desist Order and assessed monetary penalties against UBS AG. In 2015, the DOJ's Criminal Division terminated the 2012 non-prosecution agreement with UBS AG related to UBS's submissions of benchmark interest rates and UBS AG pleaded guilty to one count of wire fraud, paid a fine and is subject to probation through January 2020. UBS has ongoing obligations to cooperate with these authorities and to undertake certain remediation measures. UBS has also been granted conditional immunity by the Antitrust Division of the DOJ and by authorities in other jurisdictions in connection with potential competition law violations relating to foreign exchange and precious metals businesses. Investigations relating to foreign exchange and precious metals matters by certain authorities remain ongoing notwithstanding these resolutions.

Foreign exchange-related civil litigation: Putative class actions have been filed since 2013 in US federal courts and in other jurisdictions against UBS and other banks on behalf of putative classes of persons who engaged in foreign currency transactions with any of the defendant banks. UBS has entered into a settlement agreement that would resolve US federal court class actions relating to foreign currency transactions with the defendant banks and persons who transacted in foreign exchange futures contracts and options on such futures. The settlement agreement, which has been approved by the court, requires, among other things, that UBS pay an aggregate of USD 141 million and provide cooperation to the settlement classes. Certain class members have excluded themselves from that settlement and have filed individual actions in US and English courts against UBS and other banks alleging violations of US and European competition laws and unjust enrichment.

In 2015, a putative class action was filed in federal court against UBS and numerous other banks on behalf of persons and businesses in the US who directly purchased foreign currency from the defendants and alleged co-conspirators for their own end use. In March 2017, the court granted UBS's (and the other banks') motions to dismiss the complaint. The plaintiffs filed an amended complaint in August 2017. In March 2018, the court denied the defendants' motions to dismiss the amended complaint.

In 2016, a putative class action was filed in federal court in New York against UBS and numerous other banks on behalf of persons and entities who had indirectly purchased foreign exchange instruments from a defendant or co-conspirator in the US. The complaint asserts claims under federal and state antitrust laws. In response to defendants' motion to dismiss, plaintiffs agreed to dismiss their complaint.

In 2017, two new putative class actions were filed in federal court in New York against UBS and numerous other banks on behalf of different proposed classes of indirect purchasers of currency, and a consolidated complaint was filed in June 2017. In March 2018, the court dismissed the consolidated complaint. In October 2018, the court granted plaintiffs' motion seeking leave to file an amended complaint.

Putative class actions were also filed against UBS and other banks in federal court in New York and other jurisdictions on behalf of putative classes of persons who had bought or sold physical precious metals and various precious metal products and derivatives. The complaints in these lawsuits asserted claims under the antitrust laws and the Commodity Exchange Act (CEA), and other claims. In July 2018, the court in New York granted UBS's motions to dismiss amended complaints in the putative class actions relating to gold and silver. In 2017, the court granted UBS's motion to dismiss the platinum and palladium action. Plaintiffs in the platinum and palladium action subsequently filed an amended complaint that did not allege claims against UBS.

LIBOR and other benchmark-related regulatory matters: Numerous government agencies, including the SEC, the CFTC, the DOJ, the FCA, the UK Serious Fraud Office, the Monetary Authority of Singapore, the Hong Kong Monetary Authority, FINMA, various state attorneys general in the US and competition authorities in various jurisdictions, have conducted or are continuing to conduct investigations regarding potential improper attempts by UBS, among others, to manipulate LIBOR and other benchmark rates at certain times. In 2012, UBS reached settlements relating to benchmark interest rates with the UK Financial Services Authority, the CFTC and the Criminal Division of the DOJ, and FINMA issued an order in its proceedings with respect to UBS relating to benchmark interest rates. In addition, UBS entered into settlements with the European Commission and with the Swiss Competition Commission (WEKO) regarding its investigation of bid-ask spreads in connection with Swiss franc interest rate derivatives. UBS has ongoing obligations to cooperate with the authorities with whom we have reached resolutions and to undertake certain remediation measures with respect to benchmark interest rate submissions. In December 2018, UBS entered into a settlement agreement with the New York and other state attorneys general under which it will pay USD 68 million to resolve claims by the attorneys general related to LIBOR. UBS has been granted conditional leniency or conditional immunity from authorities in certain jurisdictions, including the Antitrust Division of the DOJ and WEKO, in connection with potential antitrust or competition law violations related to certain rates. However, UBS has not reached a final settlement with WEKO as the Secretariat of WEKO has asserted that UBS does not qualify for full immunity.

LIBOR and other benchmark-related civil litigation: A number of putative class actions and other actions are pending in the federal courts in New York against UBS and numerous other banks on behalf of parties who transacted in certain interest rate benchmark-based derivatives. Also pending in the US and in other jurisdictions are a number of other actions asserting losses related to various products whose interest rates were linked to LIBOR and other benchmarks, including adjustable rate mortgages, preferred and debt securities, bonds pledged as collateral, loans, depository accounts, investments and other interest-bearing instruments. The complaints allege manipulation, through various means, of certain benchmark interest rates, including USD LIBOR, Euroyen TIBOR, Yen LIBOR, EURIBOR, CHF LIBOR, GBP LIBOR, USD and SGD SIBOR and SOR and Australian BBSW, and seek unspecified compensatory and other damages under varying legal theories.

USD LIBOR class and individual actions in the US: In 2013 and 2015, the district court in the USD LIBOR actions dismissed, in whole or in part, certain plaintiffs' antitrust claims, federal racketeering claims, CEA claims, and state common law claims. Although the Second Circuit vacated the district court's judgment dismissing antitrust claims, the district court again dismissed antitrust claims against UBS in 2016. Certain plaintiffs have appealed that decision to the Second Circuit. Separately, in 2018, the Second Circuit reversed in part the district court's 2015 decision dismissing certain individual plaintiffs' claims. UBS entered into an agreement in 2016 with representatives of a class of bondholders to settle their USD LIBOR class action. The agreement has received preliminary court approval and remains subject to final approval. In 2018, the district court denied plaintiffs' motions for class certification in the USD class actions for claims pending against UBS, and plaintiffs sought permission to appeal that ruling to the Second Circuit. In July 2018, the Second Circuit denied the petition to appeal of the class of USD lenders and in November 2018 denied the petition of the USD exchange class. In January 2019, a putative class action was filed in the District Court for the Southern District of New York against UBS and numerous other banks on behalf of US residents who, from 1 February 2014 through the present, directly transacted with a defendant bank in USD LIBOR instruments. The complaint asserts antitrust and unjust enrichment claims.

Other benchmark class actions in the US: In 2014, the court in one of the Euroyen TIBOR lawsuits dismissed certain of the plaintiff's claims, including a federal antitrust claim, for lack of standing. In 2015, this court dismissed the plaintiff's federal racketeering claims on the same basis and affirmed its previous dismissal of the plaintiff's antitrust claims against UBS. In 2017, this court also dismissed the other Yen LIBOR / Euroyen TIBOR action in its entirety on standing grounds, as did the court in the CHF LIBOR action. Also in 2017, the courts in the EURIBOR lawsuit dismissed the cases as to UBS and certain other foreign defendants for lack of personal jurisdiction. In October 2018, the court in the SIBOR / SOR action dismissed all but one of plaintiffs' claims against UBS. Plaintiffs in the CHF LIBOR and SIBOR / SOR actions have filed amended complaints following the dismissals, which UBS and other defendants have moved to dismiss. In November 2018, the court in the BBSW lawsuit dismissed the case as to UBS and certain other foreign defendants for lack of personal jurisdiction. Following that dismissal, plaintiffs in the BBSW action moved in January 2019 to file an amended complaint seeking to re-name UBS and certain other banks as defendants. UBS and other defendants also moved to dismiss the GBP LIBOR action in December 2016, but that motion was denied as to UBS in December 2018. UBS moved for reconsideration of that decision in January 2019.

Government bonds: Putative class actions have been filed since 2015 in US federal courts against UBS and other banks on behalf of persons who participated in markets for US Treasury securities since 2007. A consolidated complaint was filed in 2017 in the US District Court for the Southern District of New York alleging that the banks colluded with respect to, and manipulated prices of, US Treasury securities sold at auction and in the secondary market and asserting claims under the antitrust laws and for unjust enrichment. Defendants' motions to dismiss the consolidated complaint are pending.

Note 21 Provisions and contingent liabilities (continued)

UBS and reportedly other banks are responding to investigations and requests for information from various authorities regarding US Treasury securities and other government bond trading practices. As a result of its review to date, UBS has taken appropriate action.

With respect to additional matters and jurisdictions not encompassed by the settlements and orders referred to above, our balance sheet at 31 December 2018 reflected a provision in an amount that UBS believes to be appropriate under the applicable accounting standard. As in the case of other matters for which we have established provisions, the future outflow of resources in respect of such matters cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provision that we have recognized.

6. Swiss retrocessions

The Federal Supreme Court of Switzerland ruled in 2012, in a test case against UBS, that distribution fees paid to a firm for distributing third-party and intra-group investment funds and structured products must be disclosed and surrendered to clients who have entered into a discretionary mandate agreement with the firm, absent a valid waiver.

FINMA has issued a supervisory note to all Swiss banks in response to the Supreme Court decision. UBS has met the FINMA requirements and has notified all potentially affected clients.

The Supreme Court decision has resulted, and may continue to result, in a number of client requests for UBS to disclose and potentially surrender retrocessions. Client requests are assessed on a case-by-case basis. Considerations taken into account when assessing these cases include, among other things, the existence of a discretionary mandate and whether or not the client documentation contained a valid waiver with respect to distribution fees.

Our balance sheet at 31 December 2018 reflected a provision with respect to matters described in this item 6 in an amount that UBS believes to be appropriate under the applicable accounting standard. The ultimate exposure will depend on client requests and the resolution thereof, factors that are difficult to predict and assess. Hence, as in the case of other matters for which we have established provisions, the future outflow of resources in respect of such matters cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provision that we have recognized.

7. Investigation of UBS's role in initial public offerings in Hong Kong

The Hong Kong Securities and Futures Commission (SFC) has been conducting investigations into UBS's role as a sponsor of certain initial public offerings listed on the Hong Kong Stock Exchange. The SFC has previously indicated that it intended to take enforcement action against UBS and certain employees in relation to certain of these offerings. In March 2018, the SFC issued a decision notice in relation to one of the offerings under investigation. On 13 March 2019, UBS Securities Hong Kong Limited and UBS AG entered into a settlement agreement with the SFC resolving all of the SFC's pending investigations related to sponsorship of initial public offerings (IPOs) by UBS. The agreement provides for a fine of HKD 375 million (USD 48 million) and the suspension of UBS Securities Hong Kong Limited's ability to act as a sponsor for Hong Kong-listed IPOs for one year.

Note 22 Other liabilities

a) Other financial liabilities measured at amortized cost

USD million	31.12.18	31.12.17
Prime brokerage payables[1]		30,413
Other accrued expenses	2,192	2,507
Accrued interest expenses	1,544	1,552
Settlement and clearing accounts	1,486	1,432
Other	1,663	1,373
Total other financial liabilities measured at amortized cost	6,885	37,276

1 Upon adoption of IFRS 9 on 1 January 2018, prime brokerage receivables and payables were reclassified from amortized cost to fair value through profit or loss. Brokerage receivables and payables are now presented separately on the balance sheet. Refer to Note 1c for more information.

b) Other financial liabilities designated at fair value

USD million	31.12.18	31.12.17
Amounts due under unit-linked investment contracts	21,679	11,821
Securities financing transactions[1]	9,461	384
Over-the-counter debt instruments	2,450	4,428
of which: life-to-date own credit (gain) / loss	*(51)*	*37*
Other	5	9
Total other financial liabilities designated at fair value[2]	33,594	16,643

1 Certain repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 as of 1 January 2018. Refer to Note 1c for more information. 2 As of 31 December 2018 and 31 December 2017, the contractual redemption amount at maturity of other financial liabilities designated at fair value through profit or loss was not materially different from the carrying value.

c) Other non-financial liabilities

USD million	31.12.18	31.12.17
Compensation-related liabilities	7,278	7,873
of which: accrued expenses	*2,696*	*2,740*
of which: Deferred Contingent Capital Plan	*1,983*	*2,044*
of which: other deferred compensation plans	*1,823*	*2,140*
of which: net defined benefit pension and post-employment liabilities[1]	*775*	*949*
Current and deferred tax liabilities[2]	1,002	935
VAT and other tax payables	431	426
Deferred income	215	153
Other	98	55
Total other non-financial liabilities	9,022	9,443

1 Refer to Note 29 for more information. 2 Refer to Note 8 for more information.

Additional information

Note 23 Expected credit loss measurement

a) Expected credit losses in the period

Total net credit loss expenses amounted to USD 118 million in 2018, reflecting expected credit losses (ECL) of USD 23 million related to stage 1 and 2 positions and net losses of USD 95 million related to credit-impaired (stage 3) positions.

In the Investment Bank and Global Wealth Management, increased stage 1 and 2 ECL provisions recognized over the year primarily relate to loans and credit facilities originated during 2018 and to a lesser extent to changes in credit quality of existing assets. In Personal & Corporate Banking, ECL remained unchanged over the year primarily because increased ECL from new transactions and minor changes in applied credit risk models were offset by ECL net recoveries as a lower proportion of transactions was subject to stage 2 classification.

Stage 3 net losses of USD 95 million were recognized across a number of defaulted positions, mainly in Personal & Corporate Banking (USD 56 million) and to a lesser extent in the Investment Bank (USD 29 million).

b) Changes to ECL models, scenarios, scenario weights and key inputs

Refer to Note 1a and 1c for information on ECL models, scenarios, scenario weights and key inputs applied at transition to IFRS 9 as of 1 January 2018. No changes were applied to the determination of a significant increase in credit risk (SICR) and the ECL measurement period during the year 2018. Apart from updating market data, such as house prices, equity indices and foreign exchange rates, and macroeconomic factors, such as gross domestic product (GDP) and unemployment rates, no significant changes were applied to the models used to calculate ECL during the year 2018.

The four scenarios and the related macroeconomic factors were reviewed in light of the economic and political conditions prevailing at year-end 2018. UBS has determined that the fundamental risk assessment made upon transition to IFRS 9 on 1 January 2018 is still appropriate and that potential developments remain suitably covered by the baseline scenario, which is aligned with the business plan, and the three additional scenarios introduced to capture potential non-linearity of credit losses required under IFRS 9. The key parameters (e.g., the real GDP growth, consumer price inflation, unemployment rate) of each scenario have been updated over the course of the year, but remained materially unchanged from what was applied at transition (refer to Note 1c). The key parameters applied as of 31 December 2018 are summarized in the table on the following page.

The determination of the scenario weights is subject to the process and governance outlined in Note 1a Section 3g. An econometric model is used to provide an input into the scenario weight assessment process giving a first indication of the probability that the GDP forecast used for each scenario would materialize, if historically observed deviations of GDP growth from trend growth were representative. As such historical analyses of GDP development do not include an assessment of the underlying economic or political causes, management positions the model output into the context of current conditions and future expectations and applies judgment in determining the final scenario weights. The reviews during 2018 reflected the increasing probability of a weakening economy in key markets, after a long spell of substantial expansion, and the uncertainties about the influence that several political developments with unforeseeable outcomes may have on future growth. At year-end 2018, management reflected these developments by giving more weight to the mild and severe downside scenarios compared to transition date.

Non-linearity of credit losses in relation to macroeconomic factors is usually most pronounced in portfolios that are most sensitive to interest rates, especially in the areas of mortgage loans to private clients and real estate financing. The mild downside scenario reflects a significant rise of interest rates as a key component and is also particularly relevant for credit risk management purposes.

As noted above, scenario weights are a reflection of risks identified during management's assessment of economic and geopolitical risks and not a specific expectation that a particular narrative with its defined macroeconomic factors (e.g., interest rates) will materialize. Other scenarios for a mild downside with less focus on interest rates would, however, not have been representative of the potential asymmetry of loan losses in a downturn. A more severe recession can be triggered by political factors that cannot be modeled based on observed history; given this consideration, the weight assigned to the severe downside case was based on management's assessment of the geopolitical risks that might affect all of our key markets and portfolios.

ECL scenario	Assigned weights in %	
	31.12.18	1.1.18
Upside	10.0	20.0
Baseline	45.0	42.5
Mild downside	35.0	30.0
Severe downside	10.0	7.5

Note 23 Expected credit loss measurement (continued)

	1-year shock				3-year cumulative shock			
Key parameters	Upside	Baseline	Mild downside	Severe downside	Upside	Baseline	Mild downside	Severe downside
Real GDP growth (% change)								
United States	5.5	2.8	(0.5)	(5.2)	9.9	7.0	0.0	(3.6)
Eurozone	4.3	1.8	(0.3)	(10.4)	8.5	4.7	0.7	(13.4)
Switzerland	5.0	2.0	(0.8)	(7.0)	9.4	5.5	(0.1)	(6.9)
Consumer price inflation (% change)								
United States	3.5	2.1	4.9	(1.0)	10.4	5.5	11.1	0.6
Eurozone	2.4	1.6	2.8	(1.1)	8.1	5.3	6.2	(1.4)
Switzerland	1.4	0.9	1.8	(1.8)	7.1	2.8	4.2	(1.2)
Unemployment rate (%, average)								
United States	(1.7)	(0.6)	0.6	3.4	(1.5)	(0.5)	1.8	2.9
Eurozone	(1.0)	(0.5)	0.0	3.2	(1.9)	(0.9)	0.1	3.7
Switzerland	(1.5)	(0.3)	0.6	4.3	(1.4)	0.1	1.6	5.3
Fixed income: 10-year government bonds (bps)								
USD	61.0	3.9	187.5	(160.0)	249.1	5.7	262.5	(135.0)
EUR	40.0	22.0	75.0	(20.0)	146.7	60.7	225.0	(10.0)
CHF	48.0	19.7	187.5	(75.0)	208.0	53.2	262.5	(40.0)
Equity indices (% change)								
S&P 500	14.8	5.8	(20.3)	(50.1)	38.7	15.1	(23.5)	(48.2)
EuroStoxx 50	17.0	6.0	(15.5)	(63.7)	38.4	15.6	(14.7)	(65.9)
SPI	13.9	4.2	(19.0)	(56.2)	37.1	10.4	(24.0)	(56.7)
Swiss real estate (% change)								
Single-Family Homes	4.5	(0.3)	(7.3)	(15.2)	14.1	1.4	(15.8)	(27.0)
Other real estate (% change)								
United States (S&P/Case-Shiller)	10.3	6.9	(2.7)	(16.0)	30.9	17.7	(17.0)	(22.1)
Eurozone (Housing Price Index)	4.9	1.9	(0.2)	(9.5)	15.4	8.2	3.0	(18.3)

c) Development of ECL allowances and provisions

The ECL allowances and provisions recognized in the period are impacted by a variety of factors, such as:
- origination of new instruments during the period;
- effect of passage of time as the ECL on an instrument for the remaining lifetime reduces (all other factors remaining the same);
- credit impairment: increased ECL as default is certain and PD increases to 100%;
- discount unwind within ECL as it is measured on a present value basis;
- derecognition of instruments in the period;
- change in individual asset quality of instruments;
- portfolio effect of updating forward-looking scenarios and the respective weights;
- movements from a “maximum 12-month ECL” to the recognition of “lifetime ECL” (and vice versa) following transfers between the stages 1, 2 and 3 (SICR or credit-impairment status);
- changes in credit risk and / or economic forecasting models or updates to model parameters;
- foreign exchange translations for assets denominated in foreign currencies and other movements.

Note 23 Expected credit loss measurement (continued)

The following table explains the changes in the ECL allowances and provisions for *Loans and advances to customers*, *Loans to financial advisors* and off-balance sheet financial instruments and other credit lines between the beginning and the end of the period due to the factors listed on the previous page.

	Development of ECL allowances and provisions			
USD million	Total	Stage 1	Stage 2	Stage 3
Balance as of 1 January 2018	(1,117)	(141)	(193)	(783)
ECL movements due to stage transfer (profit or loss neutral)[1]	0	(97)	95	2
ECL movements with profit or loss impact[2]	(104)	66	(83)	(88)
Net movement from new and derecognized transactions[3]	(10)	(44)	15	19
of which: Private clients with mortgages	*(3)*	*(6)*	*4*	*0*
of which: Real estate financing	*(3)*	*(8)*	*5*	*0*
of which: Large corporate clients	*2*	*(6)*	*1*	*8*
of which: SME clients	*(10)*	*(14)*	*4*	*0*
Book quality movements	(89)	112	(87)	(114)
Remeasurements due to stage transfers[4]	(16)	95	(103)	(7)
of which: Private clients with mortgages	*(11)*	*54*	*(63)*	*(1)*
of which: Real estate financing	*5*	*24*	*(19)*	*0*
of which: Large corporate clients	*(1)*	*0*	*(3)*	*1*
of which: SME clients	*1*	*7*	*(7)*	*0*
Remeasurements without stage transfers[5]	(73)	17	16	(106)
of which: Private clients with mortgages	*(9)*	*2*	*(3)*	*(7)*
of which: Real estate financing	*8*	*4*	*12*	*(8)*
of which: Large corporate clients	*(56)*	*(2)*	*(6)*	*(48)*
of which: SME clients	*(55)*	*9*	*6*	*(70)*
Model and methodology changes[6]	(13)	(2)	(11)	0
Other allowance and provision movements	227	10	1	216
Write-offs / recoveries[7]	200	1	0	199
Reclassifications[8]	25	7	3	15
Foreign exchange movements[9]	8	0	0	8
Other	(6)	2	(1)	(6)
Balance as of 31 December 2018	(1,002)	(162)	(180)	(661)

1 Represents ECL allowances and provisions prior to ECL remeasurement due to stage transfer. 2 Includes ECL movements from new and derecognized transactions, book quality changes, model and methodology changes and foreign exchange rates. 3 Represents the increase and decrease in allowances and provisions resulting from financial instruments (including guarantees and facilities) that were newly originated, purchased or renewed and from the final derecognition of loans or facilities on their maturity date or earlier. 4 Represents the remeasurement between 12-month and lifetime ECL due to stage transfers. 5 Represents the change in allowances and provisions related to changes in model inputs or assumptions, including changes in forward-looking macroeconomic conditions, changes in the exposure profile, PD and LGD changes, and unwinding of the time value. 6 Represents the change in the allowances and provisions related to changes in models and methodologies. 7 Represents the decrease in allowances and provisions resulting from write-offs of the ECL allowance against the gross carrying amount when all or part of a financial asset is deemed uncollectible or forgiven. 8 Represents reclassifications to Other assets measured at amortized cost. 9 Represents the change in allowances and provisions related to movements in foreign exchange rates.

Note 23 Expected credit loss measurement (continued)

d) Maximum exposure to credit risk

The tables on the following pages provide the Group's maximum exposure to credit risk for financial instruments subject to ECL and the respective collateral and other credit enhancements mitigating credit risk for these classes of financial instruments.

The maximum exposure to credit risk includes the carrying amounts of financial instruments recognized on the balance sheet subject to credit risk and the notional amounts for off-balance sheet arrangements. Where information is available, collateral is presented at fair value. For other collateral, such as real estate, a reasonable alternative value is used. Credit enhancements, such as credit derivative contracts and guarantees, are included at their notional amounts. Both are capped at the maximum exposure to credit risk for which they serve as security. The "Risk management and control" section of this report describes management's view of credit risk and the related exposures, which can differ in certain respects from the requirements of IFRS.

Maximum exposure to credit risk

	31.12.18								
		Collateral				Credit enhancements			
USD billion	Maximum exposure to credit risk	Cash collateral received	Collateralized by securities	Secured by real estate	Other collateral[1]	Netting	Credit derivative contracts	Guarantees	Exposure to credit risk after collateral and credit enhancements
Financial assets measured at amortized cost on the balance sheet									
Cash and balances at central banks	108.4								108.4
Loans and advances to banks[2]	16.9		0.1						16.8
Receivables from securities financing transactions	95.3		92.5		2.5				0.3
Cash collateral receivables on derivative instruments[3,4]	23.6					14.5			9.1
Loans and advances to customers[5]	320.4	17.0	104.4	167.1	16.2		0.0	1.2	14.3
Other financial assets measured at amortized cost	22.6	0.1	0.4	0.0	1.1				20.9
Total financial assets measured at amortized cost	587.1	17.2	197.4	167.2	19.9	14.5	0.0	1.2	169.8
Financial assets measured at fair value through other comprehensive income – debt	6.7								6.7
Total maximum exposure to credit risk reflected on the balance sheet in scope of ECL	593.8	17.2	197.4	167.2	19.9	14.5	0.0	1.2	176.5
Guarantees[6]	18.1	1.3	2.5	0.1	1.2			2.7	10.2
Loan commitments[6]	31.2	0.4	2.8	1.5	5.7		0.2	0.7	19.8
Forward starting transactions, reverse repurchase and securities borrowing agreements	0.9		0.9						0.0
Committed unconditionally revocable credit lines	36.6	1.1	6.5	4.2	3.9				21.0
Total maximum exposure to credit risk not reflected on the balance sheet, in scope of ECL	86.8	2.8	12.7	5.8	10.8	0.0	0.2	3.4	51.0

Note 23 Expected credit loss measurement (continued)

Maximum exposure to credit risk (continued)

	31.12.17								
		Collateral				Credit enhancements			Exposure to credit risk after collateral and credit enhancements
USD billion	Maximum exposure to credit risk	Cash collateral received	Collateralized by securities	Secured by real estate	Other collateral[1]	Netting	Credit derivative contracts	Guarantees	
Financial assets measured at amortized cost on the balance sheet									
Cash and balances at central banks	90.0								90.0
Loans and advances to banks[2]	14.1		0.1					0.0	14.0
Receivables from securities financing transactions	92.0		87.2		4.3				0.4
Cash collateral receivables on derivative instruments[3,4]	24.0					12.8			11.3
Loans and advances to customers[5]	326.7	16.5	114.3	164.3	15.2		0.0	1.4	15.1
Other financial assets measured at amortized cost	37.8	0.1	20.0		1.1				16.7
Total financial assets measured at amortized cost	**584.7**	**16.6**	**221.6**	**164.3**	**20.7**	**12.8**	**0.0**	**1.4**	**147.4**
Financial assets measured at fair value through other comprehensive income – debt	**8.1**								**8.1**
Total maximum exposure to credit risk reflected on the balance sheet in scope of ECL	**592.8**	**16.6**	**221.6**	**164.3**	**20.7**	**12.8**	**0.0**	**1.4**	**155.6**
Guarantees[6]	17.7	1.0	2.1	0.2	1.3		0.0	3.1	9.9
Loan commitments[6]	32.1	0.0	2.9	1.1	5.8		0.1	1.2	21.0
Forward starting transactions, reverse repurchase and securities borrowing agreements	13.0		12.8						0.3
Total maximum exposure to credit risk not reflected on the balance sheet, in scope of ECL	**62.8**	**1.1**	**17.8**	**1.2**	**7.1**	**0.0**	**0.1**	**4.3**	**31.2**

1 Includes but is not limited to life insurance contracts, inventory, accounts receivable, mortgage loans, patents and copyrights. 2 Loans and advances to banks include amounts held with third-party banks on behalf of clients. The credit risk associated with these balances may be borne by those clients. 3 Included within Cash collateral receivables on derivative instruments are margin balances due from exchanges or clearing houses. Some of these margin balances reflect amounts transferred on behalf of clients who retain the associated credit risk. 4 The amount shown in the "Netting" column represents the netting potential not recognized on the balance sheet. Refer to Note 25 for more information. 5 Collateral arrangements generally incorporate a range of collateral, including cash, securities, property and other collateral. 6 The amount shown in the "Guarantees" column largely relates to sub-participations. Refer to Note 34 for more information.

Prior-period information is presented under IAS 39 requirements.

Note 23 Expected credit loss measurement (continued)

e) Financial assets subject to credit risk by rating category

The table below shows the credit quality and the maximum exposure to credit risk based on the Group's internal credit rating system and year-end stage classification. With the transition to IFRS 9, the credit risk rating reflects the Group's assessment of the probability of default of individual counterparties, prior to substitutions. The amounts presented are gross of impairment allowances.

→ **Refer to the "Risk management and control" section of this report for more details on the Group's internal grading system**

Financial assets subject to credit risk by rating category

USD million	31.12.18								
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Credit-impaired (defaulted)	Total gross carrying amount	ECL allowances	Net carrying amount (maximum exposure to credit risk)
Financial assets measured at amortized cost									
Cash and balances at central banks	103,635	4,735	0	0	0	0	108,370	0	108,370
of which: stage 1	*103,635*	*4,735*	*0*	*0*	*0*	*0*	*108,370*	*0*	*108,370*
Loans and advances to banks	829	13,462	1,347	927	307	3	16,875	(7)	16,868
of which: stage 1	*829*	*13,462*	*1,347*	*763*	*268*	*0*	*16,669*	*(4)*	*16,666*
of which: stage 2	*0*	*0*	*0*	*164*	*39*	*0*	*203*	*(1)*	*202*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*3*	*3*	*(3)*	
Receivables from securities financing transactions	29,065	24,653	13,602	26,865	1,165	0	95,350	(2)	95,349
of which: stage 1	*29,065*	*24,653*	*13,602*	*26,865*	*1,165*	*0*	*95,350*	*(2)*	*95,349*
Cash collateral receivables on derivative instruments	5,136	10,042	5,282	3,040	101	0	23,601	0	23,602
of which: stage 1	*5,136*	*10,042*	*5,282*	*3,040*	*101*	*0*	*23,601*	*0*	*23,602*
Loans and advances to customers	3,642	172,742	52,566	73,863	16,014	2,297	321,124	(772)	320,352
of which: stage 1	*3,621*	*172,002*	*49,277*	*62,305*	*11,111*	*0*	*298,316*	*(69)*	*298,248*
of which: stage 2	*20*	*740*	*3,289*	*11,558*	*4,903*	*0*	*20,510*	*(155)*	*20,357*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*2,297*	*2,297*	*(549)*	*1,748*
Other financial assets measured at amortized cost	13,409	676	313	7,460	274	586	22,718	(155)	22,563
of which: stage 1	*13,409*	*676*	*313*	*7,235*	*272*	*0*	*21,905*	*(43)*	*21,862*
of which: stage 2	*0*	*0*	*0*	*225*	*2*	*0*	*227*	*(4)*	*223*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*586*	*586*	*(109)*	*478*
Total financial assets measured at amortized cost	155,716	226,310	73,110	112,155	17,861	2,886	588,039	(937)	587,104
On-balance sheet financial instruments									
Financial assets measured at FVOCI – debt instruments	3,889	2,702	0	76	0	0	6,667	0	6,667
Total on-balance sheet financial instruments	159,605	229,012	73,110	112,231	17,861	2,886	594,706	(937)	593,771

1 Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

Note 23 Expected credit loss measurement (continued)

Off-balance sheet positions subject to expected credit loss by rating category

USD million	31.12.18							
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Credit-impaired (defaulted)	Total carrying amount (maximum exposure to credit risk)	ECL provision
Off-balance sheet financial instruments								
Guarantees	979	6,673	3,859	5,415	1,006	215	18,147	(43)
of which: stage 1	*978*	*6,670*	*3,849*	*5,012*	*811*		*17,320*	*(7)*
of which: stage 2		*3*	*10*	*402*	*195*	*0*	*610*	*(2)*
of which: stage 3	*0*	*0*	*0*	*0*		*215*	*215*	*(34)*
Irrevocable loan commitments	2,088	11,667	6,519	6,479	4,404	55	31,212	(37)
of which: stage 1	*2,088*	*11,667*	*6,519*	*6,296*	*4,019*	*1*	*30,590*	*(32)*
of which: stage 2	*0*	*0*	*0*	*183*	*385*	*0*	*568*	*(5)*
of which: stage 3	*0*	*0*	*0*	*0*		*53*	*53*	*0*
Forward starting reverse repurchase and securities borrowing agreements	25	510	150	251	0	0	936	0
Total off-balance sheet financial instruments	3,092	18,850	10,528	12,145	5,410	270	50,295	(80)
Other credit lines								
Committed unconditionally revocable credit lines	776	10,899	5,282	11,499	8,084	93	36,633	(35)
of which: stage 1	*768*	*10,871*	*5,152*	*10,727*	*7,603*		*35,121*	*(19)*
of which: stage 2	*8*	*28*	*130*	*772*	*481*	*0*	*1,419*	*(16)*
of which: stage 3	*0*				*0*	*93*	*93*	
Irrevocable committed prolongation of existing loans	27	1,346	889	902	154	21	3,339	(1)
of which: stage 1	*27*	*1,315*	*680*	*701*	*137*	*0*	*2,860*	*(1)*
of which: stage 2	*0*	*31*	*209*	*200*	*17*	*0*	*457*	*0*
of which: stage 3	*0*	*0*	*0*			*21*	*21*	*0*
Total other credit lines	803	12,245	6,171	12,401	8,238	114	39,972	(36)

1 Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

Note 23 Expected credit loss measurement (continued)

Financial assets subject to credit risk by rating category

USD billion	31.12.17						
	Gross carrying amount per rating category						
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Credit-impaired (defaulted)	Total gross carrying amount
Financial assets measured at amortized cost							
Cash and balances at central banks	89.6	0.5	0.0				90.0
Loans and advances to banks	0.6	10.8	1.4	0.9	0.3		14.1
Receivables from securities financing transactions	24.9	37.3	17.2	10.7	1.8		92.0
Cash collateral receivables on derivative instruments	6.6	10.0	5.7	1.6	0.1		24.0
Loans and advances to customers	3.2	165.9	66.9	71.3	17.9	1.5	326.7
Other financial assets measured at amortized cost	9.4	1.1	8.9	17.1	1.0	0.3	37.8
Total financial assets measured at amortized cost	**134.4**	**225.6**	**100.1**	**101.5**	**21.1**	**1.9**	**584.7**
On-balance sheet financial instruments							
Financial assets measured at FVOCI – debt instruments	**7.0**	**1.0**		**0.1**			**8.1**
Total on-balance sheet financial instruments	**141.4**	**226.6**	**100.1**	**101.6**	**21.1**	**1.9**	**592.8**

1 Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

Off-balance sheet positions subject to expected credit loss by rating category

USD billion	31.12.17						
	Gross carrying amount per rating category						
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Credit-impaired (defaulted)	Total carrying amount (maximum exposure to credit risk)
Off-balance sheet financial instruments							
Guarantees	1.2	8.5	4.2	2.8	0.8	0.2	17.7
Irrevocable loan commitments	2.0	13.5	7.8	5.2	3.6		32.1
Forward starting reverse repurchase and securities borrowing agreements		13.0					13.0
Total off-balance sheet financial instruments	**3.2**	**34.9**	**12.0**	**8.1**	**4.4**	**0.2**	**62.8**

1 Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

Prior-period information is presented under IAS 39 requirements.

Note 23 Expected credit loss measurement (continued)

f) Credit-impaired financial instruments at amortized cost

The credit risk in the Group's portfolio is actively managed by taking collateral against exposures and by utilizing credit hedging. Collateral held against the credit-impaired loan exposure (stage 3) mainly consisted of real estate and securities. It is the Group's policy to dispose of foreclosed real estate as soon as practicable. The carrying amount of foreclosed property recorded in our balance sheet at the end of 2018 and 2017 amounted to USD 60 million and USD 61 million, respectively. The Bank seeks to liquidate collateral held in the form of financial assets expeditiously and at prices considered fair. This may require us to purchase assets for our own account, where permitted by law, pending orderly liquidation. Financial assets that are credit-impaired and related collateral held in order to mitigate potential losses are shown in the table below.

USD million	31.12.18			
	Gross carrying amount	Allowance for expected credit losses	Net carrying amount	Collateral / credit enhancements
Loans and advances to banks	3	(3)	0	0
Loans and advances to customers	2,297	(549)	1,748	1,654
of which: Private clients with mortgages	*836*	*(39)*	*796*	*796*
of which: Real estate financing	*54*	*(16)*	*38*	*30*
of which: Large corporate clients	*170*	*(82)*	*88*	*79*
of which: SME clients	*888*	*(256)*	*632*	*561*
of which: Lombard	*31*	*(17)*	*14*	*14*
Other financial assets measured at amortized cost	586	(109)	478	12
Total credit-impaired financial assets measured at amortized cost	2,886[1]	(660)[1]	2,226	1,666
Guarantees	215	(34)		84
of which: Large corporate clients	*127*	*(6)*		*79*
of which: SME clients	*77*	*(25)*		*5*
Loan commitments	53	0		8
Committed unconditionally revocable credit lines	93	0		9
Irrevocable committed prolongation of existing loans	22	0		0
Total off-balance sheet financial instruments and other credit lines	383[1]	(34)[1]		102

	31.12.17			
USD million	Gross carrying amount	Allowance for expected credit losses	Net carrying amount	Collateral / credit enhancements
Loans and advances to customers	1,104	(672)	432	210
Guarantees and loan commitments	204	(34)		5
Total credit-impaired financial assets	**1,308[2]**	**(706)[2]**	**432**	**215**

1 Upon adoption of IFRS 9 as of 1 January 2018, an instrument is classified as credit-impaired if the counterparty is defaulted, and / or the instrument is purchased or originated credit-impaired and includes credit-impaired exposures for which no loss has occurred or no allowance has been recognized (e.g., because they are expected to be fully recoverable through the collateral held). Refer to Note 1c for more information on the adoption of IFRS 9. 2 December 2017 numbers do not include exposure of USD 0.3 billion presented on the balance sheet as other assets.

Note 23 Expected credit loss measurement (continued)

g) Sensitivity analysis

As outlined in Note 1a, ECL estimates involve significant uncertainties at the time they are made.

ECL model

The models applied to determine point-in-time PD and LGD rely on market and statistical data, which have been found to correlate well with historically observed defaults in sufficiently homogeneous segments. The risk sensitivity of each of our IFRS 9 reporting segments to such factors has been summarized in Note 10.

Emerging new systematic risk factors may not be sufficiently taken into account by existing models and affect their responsiveness to a changing environment. This risk is deemed to be immaterial and monitored through regular model review processes; in particular, it is deemed to be of less importance for the large books of mortgage loans, where risk drivers tend to be stable.

Statistically derived models, which perform well on a reasonably sized and homogeneous portfolio, may show weakness in smaller-sized sub-portfolios, for which other or differently weighted factors may be more relevant criteria. Where risk experts conclude that the output of a general model is not in line with what they would have expected for a specific portfolio segment, and that this would be material for ECL, overlays would be recommended based on management judgment.

ECL estimations for segments where the PD is homogeneous, but the credit exposure is not, may prove to be inaccurate – even though all parameters were accurately predicted – as the actual amount of loss depends on the exposure of the position that defaulted. This observation is less relevant in retail-type portfolios with smaller individual exposures from mortgage loans or financings of SME, but may become important in the large corporate client portfolios in the Investment Bank and Personal & Corporate Banking.

Forward-looking scenarios

Depending on the scenario selection and related macroeconomic assumptions for the risk factors, the components of the relevant weighted average ECL change. This is particularly relevant for interest rates, which can take both directions under a given growth assumption (for example, low growth with high interest rates in a stagflation scenario, versus low growth and falling interest rates in a recession). Management will look for scenario narratives that are expected to address the risks of a credit portfolio, while at the same time meeting the requirements of IFRS 9 to avoid bias.

As forecasting models are complex due to the combination of multiple factors, simple what-if analyses by changing individual parameters do not provide reasonable information on the exposure of segments to changes in the macroeconomy. Portfolio-specific analyses based on their key risk factors would also not be additive as potential compensatory effects in other segments would be ignored. Sensitivities at Group level can only be meaningfully assessed in the context of coherent scenarios with consistently developed macroeconomic factors.

The table below indicates the potential effect of changing economic conditions on ECL for stage 1 and stage 2 positions by disclosing for each scenario (see Note 23b) and material portfolio the corresponding ECL output. The effect of applying scenarios is not linear across the portfolio, with a significant impact observed in the mortgage loan books as the potential effect of rising interest rates manifests itself in the mild downside scenario, with high unemployment rates combined with a marked correction of house prices contributing to high expected losses in the severe downside scenario.

Potential effect of changing economic conditions

	Scenarios									
	Weighted average		Baseline		Upside		Mild downside		Severe downside	
USD million, unless otherwise indicated	ECL	in % of baseline	ECL	in % of baseline	ECL	in % of baseline	ECL	in % of baseline	ECL	in % of baseline
Segmentation										
Private clients with mortgages	102	275	37	100	29	78	173	468	365	988
Real estate financing	61	150	41	100	32	79	80	198	119	293
Large corporate clients	47	133	35	100	31	89	46	130	108	308
SME clients	34	118	29	100	28	97	39	135	63	216
Other segments	115	122	95	100	83	88	135	142	171	180
Total	359	**152**	237	**100**	**204**	**86**	**473**	**200**	**826**	**349**

Note 23 Expected credit loss measurement (continued)

The forecasting horizon is limited to three years, with a model-based mean reversion of PD and LGD assumed thereafter. Changes to these timelines may have an effect on ECL; depending on the cycle, a longer or shorter forecasting horizon will lead to different annualized lifetime PD and average LGD estimations. This is currently not deemed to be material for UBS as a large share of positions, including mortgages in Switzerland, have a maturity that is within the forecasting horizon.

Scenario weights

ECL is sensitive to changing scenario weights, in particular, if narratives and parameters are selected that are not close to the baseline scenario, highlighting the non-linearity of credit losses.

As shown in the table on the previous page, the ECL for stage 1 and stage 2 positions would have been USD 237 million instead of USD 359 million if ECL had been determined solely on the baseline scenario. The weighted average ECL amounts therefore to 152% of the baseline value.

Stage allocation and SICR

The determination of what constitutes an SICR is based on management judgment as explained in Note 1a. Changing the SICR trigger will have a direct effect on ECL as more or fewer positions would be subject to lifetime ECL under any scenario.

Maturity profile

The maturity profile of the assets is an important driver for changes in ECL due to transfers to stage 2. The current maturity profile of most lending books is relatively short; hence a movement to stage 2 may have a limited effect on ECL. A significant portion of our lending to SME is documented under frame credit agreements, which allow for various forms of utilization but are unconditionally cancelable by UBS at any time. The relevant maturity for drawings under such agreements with a fixed maturity is the respective term, or maximum 12 months in stage 1. For unused credit lines and all drawings that have no fixed maturity (e.g., current accounts), UBS generally applies a 12-month maturity from the reporting date, given the credit review policies, which require either continuous monitoring of key indicators and behavioral patterns for smaller positions or an annual formal review for any other limit. The ECL for these products is sensitive to shortening or extending the maturity assumption.

Note 24 Fair value measurement

This Note provides fair value measurement information for both financial and non-financial instruments and is structured as follows:

a) Valuation principles
b) Valuation governance
c) Fair value hierarchy
d) Valuation adjustments
e) Transfers between Level 1 and Level 2
f) Level 3 instruments: valuation techniques and inputs
g) Level 3 instruments: sensitivity to changes in unobservable input assumptions
h) Level 3 instruments: movements during the period
i) Maximum exposure to credit risk for financial instruments measured at fair value
j) Financial instruments not measured at fair value

Adoption of IFRS 9

Adoption of IFRS 9 on 1 January 2018 resulted in the reclassification of certain financial assets and liabilities from amortized cost to fair value through profit or loss. This included:

– brokerage receivables and payables held in the Investment Bank and Global Wealth Management;
– auction rate securities held in Corporate Center; and
– certain loans held in the Investment Bank.

Some of those financial assets and liabilities are designated as Level 3 in the fair value hierarchy. Refer to the tables and text within this Note for more information.

An immaterial amount of financial assets were reclassified from *Financial assets at fair value held for trading* and *Financial assets at fair value not held for trading* to *Loans and advances to customers* upon adoption of IFRS 9. An immaterial amount of associated loan commitments, which were recognized as derivative liabilities as of 31 December 2017, were also derecognized from the balance sheet. No material fair value gains or losses would have been recognized in the income statement in 2018 had these instruments not been reclassified. Similarly, no material fair value gains or losses would have been recognized in *Other comprehensive income* related to debt instruments that were reclassified from *Financial assets available for sale* to *Other financial assets measured at amortized cost* upon adoption of IFRS 9.

→ **Refer to Note 1c for more information**

a) Valuation principles

Fair value is defined as the price that would be received for the sale of an asset or paid to transfer a liability in an orderly transaction between market participants in the principal market (or most advantageous market, in the absence of a principal market) as of the measurement date. In measuring fair value, the Group uses various valuation approaches and applies a hierarchy for prices and inputs that maximizes the use of observable market data, if available.

All financial and non-financial assets and liabilities measured or disclosed at fair value are categorized into one of three fair value hierarchy levels. In certain cases, the inputs used to measure fair value may fall within different levels of the fair value hierarchy. For disclosure purposes, the level in the hierarchy within which the instrument is classified in its entirety is based on the lowest level input that is significant to the position's fair value measurement:

– Level 1 – quoted prices (unadjusted) in active markets for identical assets and liabilities;
– Level 2 – valuation techniques for which all significant inputs are, or are based on, observable market data; or
– Level 3 – valuation techniques for which significant inputs are not based on observable market data.

Note 24 Fair value measurement (continued)

If available, fair values are determined using quoted prices in active markets for identical assets or liabilities. An active market is one in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing data on an ongoing basis. Assets and liabilities that are quoted and traded in an active market are valued at the currently quoted price multiplied by the number of units of the instrument held.

Where the market for a financial instrument or non-financial asset or liability is not active, fair value is established using a valuation technique, including pricing models. Valuation techniques involve the use of estimates, the extent of which depends on the complexity of the instrument and the availability of market-based data. Valuation adjustments may be made to allow for additional factors, including model, liquidity, credit and funding risks, which are not explicitly captured within the valuation technique, but which would nevertheless be considered by market participants when establishing a price. The limitations inherent in a particular valuation technique are considered in the determination of an asset or liability's classification within the fair value hierarchy.

Many cash instruments and over-the-counter (OTC) derivative contracts have bid and offer prices that can be observed in the marketplace. Bid prices reflect the highest price that a party is willing to pay for an asset. Offer prices represent the lowest price that a party is willing to accept for an asset. In general, long positions are measured at a bid price and short positions at an offer price, reflecting the prices at which the instruments could be transferred under normal market conditions. Offsetting positions in the same financial instrument are marked at the mid-price within the bid-offer spread.

Generally, the unit of account for a financial instrument is the individual instrument, and UBS applies valuation adjustments at an individual instrument level, consistent with that unit of account. However, if certain conditions are met, UBS may estimate the fair value of a portfolio of financial assets and liabilities with substantially similar and offsetting risk exposures on the basis of the net open risks.

For transactions where the valuation technique used to measure fair value requires significant inputs that are not based on observable market data, the financial instrument is initially recognized at the transaction price. This initial recognition amount may differ from the fair value obtained using the valuation technique. Any such difference is deferred and not recognized in the income statement and referred to as deferred day-1 profit or loss.

→ **Refer to Note 24d for more information**

b) Valuation governance

UBS's fair value measurement and model governance framework includes numerous controls and other procedural safeguards that are intended to maximize the quality of fair value measurements reported in the financial statements. New products and valuation techniques must be reviewed and approved by key stakeholders from risk and finance control functions. Responsibility for the ongoing measurement of financial and non-financial instruments at fair value resides with the business divisions. In carrying out their valuation responsibilities, the businesses are required to consider the availability and quality of external market data and to provide justification and rationale for their fair value estimates.

Fair value estimates are validated by risk and finance control functions, which are independent of the business divisions. Independent price verification is performed by Finance through benchmarking the business divisions' fair value estimates with observable market prices and other independent sources. Controls and a governance framework are in place and are intended to ensure the quality of third-party pricing sources where used. For instruments where valuation models are used to determine fair value, independent valuation and model control groups within Finance and Risk Control evaluate UBS's models on a regular basis, including valuation and model input parameters as well as pricing. As a result of the valuation controls employed, valuation adjustments may be made to the business divisions' estimates of fair value to align with independent market data and the relevant accounting standard.

→ **Refer to Note 24d for more information**

c) Fair value hierarchy

The table below provides the fair value hierarchy classification of financial and non-financial assets and liabilities measured at fair value. The narrative that follows describes the different product types, valuation techniques used in measuring their fair value, including significant valuation inputs and assumptions used, and the factors determining their classification within the fair value hierarchy.

Determination of fair values from quoted market prices or valuation techniques[1]

	31.12.18				31.12.17			
USD million	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value on a recurring basis								
Financial assets at fair value held for trading	88,452	13,956	1,962	104,370	111,780	15,604	2,023	129,407
of which:								
Government bills / bonds	*9,554*	*1,607*	*0*	*11,161*	*12,244*	*941*	*0*	*13,186*
Corporate and municipal bonds	*558*	*5,559*	*651*	*6,768*	*38*	*8,180*	*566*	*8,785*
Loans	*0*	*2,886*	*680*	*3,566*	*0*	*3,433*	*513*	*3,946*
Investment fund units	*6,074*	*3,200*	*442*	*9,716*	*7,409*	*1,886*	*586*	*9,881*
Asset-backed securities	*0*	*248*	*144*	*392*	*0*	*199*	*178*	*377*
Equity instruments	*72,266*	*455*	*46*	*72,768*	*81,324*	*190*	*108*	*81,623*
Financial assets for unit-linked investment contracts[2]					*10,764*	*774*	*71*	*11,609*
Derivative financial instruments	753	124,033	1,424	126,210	470	119,227	1,589	121,285
of which:								
Interest rate contracts	*0*	*36,658*	*418*	*37,076*	*1*	*45,049*	*138*	*45,188*
Credit derivative contracts	*0*	*1,444*	*476*	*1,920*	*0*	*2,325*	*564*	*2,889*
Foreign exchange contracts	*311*	*53,148*	*30*	*53,489*	*212*	*47,957*	*194*	*48,363*
Equity / index contracts	*3*	*30,905*	*496*	*31,404*	*16*	*22,099*	*693*	*22,807*
Commodity contracts	*0*	*1,768*	*2*	*1,769*	*0*	*1,772*	*0*	*1,772*
Brokerage receivables[3]	0	16,840	0	16,840				
Financial assets at fair value not held for trading[4]	35,458	42,819	4,413	82,690	23,628	35,373	1,456	60,457
of which:								
Government bills / bonds	*17,687*	*4,806*	*0*	*22,493*	*22,632*	*4,000*	*0*	*26,633*
Corporate and municipal bonds	*781*	*16,455*	*0*	*17,236*	*785*	*21,237*	*0*	*22,022*
Financial assets for unit-linked investment contracts[2]	*16,694*	*4,751*	*0*	*21,446*				
Loans	*0*	*6,380*	*1,752*	*8,132*	*0*	*9,627*	*778*	*10,405*
Securities financing transactions[5]	*0*	*9,899*	*39*	*9,937*	*0*	*121*	*177*	*298*
Auction rate securities[3]	*0*	*0*	*1,664*	*1,664*				
Investment fund units	*173*	*428*	*109*	*710*	*210*	*387*	*0*	*597*
Equity instruments[6]	*123*	*62*	*517*	*702*				
Other	*0*	*38*	*331*	*369*	*0*	*0*	*501*	*501*
Financial assets measured at fair value through other comprehensive income on a recurring basis								
Financial assets measured at fair value through other comprehensive income[4]	2,319	4,347	0	6,667	3,078	5,291	521	8,889
of which:								
Government bills / bonds	*2,171*	*69*	*0*	*2,239*	*2,804*	*136*	*0*	*2,940*
Corporate and municipal bonds	*149*	*348*	*0*	*497*	*124*	*1,087*	*9*	*1,220*
Asset-backed securities	*0*	*3,931*	*0*	*3,931*	*0*	*3,980*	*0*	*3,980*
Other[6]	*0*	*0*	*0*	*0*	*150*	*88*	*512*	*749*
Non-financial assets measured at fair value on a recurring basis								
Precious metals and other physical commodities	4,298	0	0	4,298	4,681	0	0	4,681
Non-financial assets measured at fair value on a non-recurring basis								
Other non-financial assets[7]	0	82	0	82	0	55	43	98
Total assets measured at fair value	131,280	202,077	7,800	341,156	143,636	175,550	5,631	324,818

Note 24 Fair value measurement (continued)

Determination of fair values from quoted market prices or valuation techniques (continued)[1]

	31.12.18				31.12.17			
USD million	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Financial liabilities measured at fair value on a recurring basis								
Financial liabilities at fair value held for trading	24,406	4,468	69	28,943	26,710	4,421	120	31,251
of which:								
Government bills / bonds	*2,423*	*416*	*0*	*2,839*	*5,286*	*263*	*0*	*5,549*
Corporate and municipal bonds	*126*	*3,377*	*27*	*3,530*	*51*	*3,542*	*36*	*3,629*
Investment fund units	*551*	*137*	*0*	*689*	*555*	*269*	*16*	*841*
Equity instruments	*21,306*	*537*	*42*	*21,886*	*20,817*	*345*	*68*	*21,230*
Derivative financial instruments	580	122,933	2,210	125,723	409	115,849	2,879	119,137
of which:								
Interest rate contracts	*7*	*32,511*	*226*	*32,743*	*5*	*39,184*	*191*	*39,380*
Credit derivative contracts	*0*	*2,203*	*519*	*2,722*	*0*	*3,278*	*617*	*3,895*
Foreign exchange contracts	*322*	*52,964*	*86*	*53,372*	*218*	*46,318*	*125*	*46,662*
Equity / index contracts	*1*	*33,669*	*1,371*	*35,041*	*43*	*25,445*	*1,945*	*27,433*
Commodity contracts	*0*	*1,487*	*0*	*1,487*	*0*	*1,601*	*1*	*1,602*
Financial liabilities designated at fair value on a recurring basis								
Brokerage payables designated at fair value[3]	0	38,420	0	38,420				
Debt issued designated at fair value	0	46,074	10,957	57,031	0	39,616	11,166	50,782
Other financial liabilities designated at fair value	0	32,569	1,025	33,594	0	14,651	1,991	16,643
of which:								
Amounts due under unit-linked investment contracts	*0*	*21,679*	*0*	*21,679*	*0*	*11,821*	*0*	*11,821*
Securities financing transactions[5]	*0*	*9,461*	*0*	*9,461*	*0*	*382*	*4*	*385*
Over-the-counter debt instruments	*0*	*1,427*	*1,023*	*2,450*	*0*	*2,447*	*1,980*	*4,427*
Non-financial liabilities measured at fair value on a non-recurring basis								
Other non-financial liabilities	0	0	0	0	0	1	0	1
Total liabilities measured at fair value	24,986	244,465	14,260	283,711	27,119	174,538	16,157	217,813

1 Bifurcated embedded derivatives are presented on the same balance sheet lines as their host contracts and are not included in this table. The fair value of these derivatives was not material for the periods presented. 2 Financial assets for unit-linked investment contracts were reclassified from Financial assets at fair value held for trading to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 3 Comparative-period information is not disclosed for financial assets and liabilities that were measured at amortized cost prior to the adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 4 As of 31 December 2018, USD 23 billion of Financial assets at fair value not held for trading and USD 6 billion of Financial assets measured at fair value through other comprehensive income are expected to be recovered or settled after 12 months. As of 31 December 2017, USD 24 billion of Financial assets at fair value not held for trading and USD 7 billion of Financial assets measured at fair value through other comprehensive income were expected to be recovered or settled after 12 months. 5 The increases in Securities financing transactions primarily relate to the reclassification of certain balances from amortized cost to fair value through profit or loss upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 6 Upon adoption of IFRS 9 on 1 January 2018, equity instruments that were formerly classified as available for sale under IAS 39 were reclassified to Financial assets at fair value not held for trading. Refer to Note 1c for more information. 7 Other non-financial assets primarily consist of properties and other non-current assets held for sale, which are measured at the lower of their net carrying amount or fair value less costs to sell.

Valuation techniques

Valuation techniques are used to value positions for which a market price is not available from market sources. This includes certain less liquid debt and equity instruments, certain exchange-traded derivatives and all derivatives transacted in the OTC market. UBS uses widely recognized valuation techniques for determining the fair value of financial and non-financial instruments that are not actively traded and quoted. The most frequently applied valuation techniques include discounted value of expected cash flows, relative value and option pricing methodologies.

Discounted value of expected cash flows is a valuation technique that measures fair value using estimated expected future cash flows from assets or liabilities and then discounts these cash flows using a discount rate or discount margin that reflects the credit and / or funding spreads required by the market for instruments with similar risk and liquidity profiles to produce a present value. When using such valuation techniques, expected future cash flows are estimated using an observed or implied market price for the future cash flows or by using industry standard cash flow projection models. The discount factors within the calculation are generated using industry standard yield curve modeling techniques and models.

Relative value models measure fair value based on the market prices of equivalent or comparable assets or liabilities, making adjustments for differences between the characteristics of the observed instrument and the instrument being valued.

Option pricing models incorporate assumptions regarding the behavior of future price movements of an underlying referenced asset or assets to generate a probability-weighted future expected payoff for the option. The resulting probability-weighted expected payoff is then discounted using discount factors generated from industry standard yield curve modeling techniques and models. The option pricing model may be implemented using a closed-form analytical formula or other mathematical techniques (e.g., binomial tree or Monte Carlo simulation).

Where available, valuation techniques use market-observable assumptions and inputs. If such data is not available, inputs may be derived by reference to similar assets in active markets, from recent prices for comparable transactions or from other observable market data. In such cases, the inputs selected are based on historical experience and practice for similar or analogous instruments, derivation of input levels based on similar products with observable price levels and knowledge of current market conditions and valuation approaches.

For more complex instruments and instruments not traded in an active market, fair values may be estimated using a combination of observed transaction prices, consensus pricing services and relevant quotes. Consideration is given to the nature of the quotes (e.g., indicative or firm) and the relationship of recently evidenced market activity to the prices provided by consensus pricing services. UBS also uses internally developed models, which are typically based on valuation methods and techniques recognized as standard within the industry.

Assumptions and inputs used in valuation techniques include benchmark interest rate curves, credit and funding spreads used in estimating discount rates, bond and equity prices, equity index prices, foreign exchange rates, levels of market volatility and correlation. Refer to Note 24f for more information. The discount curves used by the Group incorporate the funding and credit characteristics of the instruments to which they are applied.

Financial instruments excluding derivatives: product description, valuation and classification in the fair value hierarchy

Government bills and bonds

Product description: government bills and bonds include fixed-rate, floating-rate and inflation-linked bills and bonds issued by sovereign governments.

Valuation: these instruments are generally valued using prices obtained directly from the market. Instruments that cannot be priced directly using active-market data are valued using discounted cash flow valuation techniques that incorporate market data for similar government instruments.

Fair value hierarchy: government bills and bonds are generally traded in active markets with prices that can be obtained directly from these markets, resulting in classification as Level 1, while the remaining positions are classified as Level 2.

Corporate and municipal bonds

Product description: corporate bonds include senior, junior and subordinated debt issued by corporate entities. Municipal bonds are issued by state and local governments. While most instruments are standard fixed- or floating-rate securities, some may have more complex coupon or embedded option features.

Valuation: corporate and municipal bonds are generally valued using prices obtained directly from the market for the security, or similar securities, adjusted for seniority, maturity and liquidity. When prices are not available, instruments are valued using discounted cash flow valuation techniques incorporating the credit spread of the issuer or similar issuers. For convertible bonds where no directly comparable price is available, issuances may be priced using a convertible bond model.

Fair value hierarchy: corporate and municipal bonds are generally classified as Level 1 or Level 2 depending on the depth of trading activity behind price sources. Level 3 instruments have no suitable pricing information available and also cannot be referenced to other securities issued by the same issuer. Therefore, such instruments are measured based on price levels for similar issuers adjusted for relative tenor and issuer quality.

Traded loans and loans designated at fair value

Product description: these instruments include fixed-rate loans, corporate loans, recently originated commercial real estate loans and contingent lending transactions.

Note 24 Fair value measurement (continued)

Valuation: loans are valued directly using market prices that reflect recent transactions or quoted dealer prices, where available. Where no market price data is available, loans are valued by relative value benchmarking using pricing derived from debt instruments in comparable entities or different products in the same entity, or by using a credit default swap valuation technique, which requires inputs for credit spreads, credit recovery rates and interest rates. Recently originated commercial real estate loans are measured using a securitization approach based on rating agency guidelines. The valuation of the contingent lending transactions is dependent on actuarial mortality levels and actuarial life insurance policy lapse rates. Mortality and lapse rate assumptions are based on external actuarial estimations for large homogeneous pools, and contingencies are derived from a range relative to the actuarially expected amount.

Fair value hierarchy: instruments with suitably deep and liquid pricing information are classified as Level 2, while any positions requiring the use of valuation techniques, or for which the price sources have insufficient trading depth, are classified as Level 3.

Investment fund units

Product description: investment fund units are pools of assets, generally equity instruments and bonds, broken down to redeemable units.

Valuation: investment fund units are predominantly exchange-traded, with readily available quoted prices in liquid markets. Where market prices are not available, fair value may be measured using net asset values (NAV), taking into account any restrictions imposed upon redemption.

Fair value hierarchy: listed units are classified as Level 1, provided there is sufficient trading activity to justify active-market classification, while other positions are classified as Level 2. Positions for which NAV are not available or that are not redeemable at the measurement date or shortly thereafter are classified as Level 3.

Asset-backed securities

Product description: asset-backed securities (ABS) include residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), collateralized debt obligations (CDO) and other ABS and are instruments generally issued through the process of securitization of underlying interest-bearing assets.

Valuation: for liquid securities, the valuation process will use trade and price data, updated for movements in market levels between the time of trading and the time of valuation. Less liquid instruments are measured using discounted expected cash flows incorporating price data for instruments or indices with similar risk profiles. Inputs to discounted expected cash flow techniques include asset prepayment rates, discount margin or discount yields and asset default and recovery rates.

Fair value hierarchy: CDO, RMBS, CMBS and other ABS are generally classified as Level 2. However, if significant inputs are unobservable, or if market or fundamental data is not available, they are classified as Level 3.

Auction rate securities

Product description: there are two types of auction rate securities (ARS): auction preferred securities (APS) and auction rate certificates (ARC). ARC are issued by municipalities and are used by investors as tax-exempt alternatives to money market instruments. Interest rates for these instruments are reset through a periodic Dutch auction. APS are similar to ARC with the primary difference being that they are issued from closed-end funds.

Valuation: ARS are valued using market prices that reflect recent transactions after applying an adjustment for trade size or quoted dealer prices, where available.

Fair value hierarchy: suitably deep and liquid pricing information is generally not available for ARS securities. As a result, these securities are classified as Level 3.

Equity instruments

Product description: equity instruments include stocks and shares, private equity positions and units held in hedge funds.

Valuation: listed equity instruments are generally valued using prices obtained directly from the market. Unlisted equity holdings, including private equity positions, are initially marked at their transaction price and are revalued when reliable evidence of price movement becomes available or when the position is deemed to be impaired. Fair value for units held in hedge funds is measured based on their published NAV, taking into account any restrictions imposed upon redemption.

Fair value hierarchy: the majority of equity securities are actively traded on public stock exchanges where quoted prices are readily and regularly available, resulting in Level 1 classification. Units held in hedge funds are classified as Level 2, except for positions for which published NAV are not available or that are not redeemable at the measurement date or shortly thereafter, in which case such positions are classified as Level 3.

Financial assets for unit-linked investment contracts

Product description: unit-linked investment contracts allow investors to invest in a pool of assets through issued investment units.

Valuation: the majority of assets are listed on exchanges and fair values are determined using quoted prices.

Fair value hierarchy: most assets are classified as Level 1 if actively traded, or Level 2 if trading is not active. However, instruments for which prices are not readily available are classified as Level 3.

Securities financing transactions

Product description: securities financing transactions include (reverse) repurchase agreements (securities purchased under resale agreements and securities sold under repurchase agreements) that are managed on a fair value basis.

Valuation: These instruments are valued using discounted expected cash flow techniques. The discount rate applied is based on funding curves that are relevant to the collateral eligibility terms for the contract in question.

Fair value hierarchy: Collateral funding curves for these instruments are generally observable and, as a result, these positions are classified as Level 2. Where the collateral terms are non-standard the funding curve may be considered unobservable and classified Level 3.

Brokerage receivables and payables

Product description: brokerage receivables and payables include callable, on-demand balances, including long cash credits, short cash debits, margin debit balances and short sale proceeds.

Valuation: fair value is determined based on the value of the underlying balances.

Fair value hierarchy: due to their on-demand nature, these receivables and payables are designated as Level 2.

Financial liabilities designated at fair value

Product description: debt instruments, primarily comprised of equity-, rates- and credit-linked issued notes, which are held at fair value under the fair value option. These instruments are tailored specifically to the holder's risk or investment appetite with structured coupons or payoffs.

Valuation: the risk management and the valuation approaches for these instruments are closely aligned with the equivalent derivatives business and the underlying risk, and the valuation techniques used for this component are the same as the relevant valuation techniques described below. For example, equity-linked notes should be referenced to equity / index contracts and credit-linked notes should be referenced to credit derivative contacts.

Fair value hierarchy: observability is closely aligned with the equivalent derivatives business and the underlying risk.

→ **Refer to Notes 19 and 22 for information on debt issued designated at fair value and other financial liabilities designated at fair value**

→ **Refer to Note 24d for more information on own credit adjustments related to financial liabilities designated at fair value**

Amounts due under unit-linked investment contracts

Product description: the financial liability represents the amounts due to unit holders.

Valuation: the fair values of investment contract liabilities are determined by reference to the fair value of the corresponding assets.

Fair value hierarchy: the liabilities themselves are not actively traded, but are mainly referenced to instruments that are actively traded and are therefore classified as Level 2.

Derivative instruments: product description, valuation and classification in the fair value hierarchy

The curves used for discounting expected cash flows in the valuation of collateralized derivatives reflect the funding terms associated with the relevant collateral arrangement for the instrument being valued. These collateral arrangements differ across counterparties with respect to the eligible currency and interest terms of the collateral. The majority of collateralized derivatives are measured using a discount curve that is based on funding rates derived from overnight interest in the cheapest eligible currency for the respective counterparty collateral agreement.

Uncollateralized and partially collateralized derivatives are discounted using the LIBOR (or equivalent) curve for the currency of the instrument. As described in Note 24d, the fair value of uncollateralized and partially collateralized derivatives is then adjusted by CVA, DVA and FVA as applicable, to reflect an estimation of the effect of counterparty credit risk, UBS's own credit risk and funding costs and benefits.

Interest rate contracts

Product description: interest rate swap contracts include interest rate swaps, basis swaps, cross-currency swaps, inflation swaps and interest rate forwards, often referred to as forward rate agreements (FRA). Interest rate option contracts include caps and floors, swaptions, swaps with complex payoff profiles and other more complex interest rate options.

Valuation: interest rate swap contracts are valued by estimating future interest cash flows and discounting those cash flows using a rate that reflects the appropriate funding rate for the position being measured. The yield curves used to estimate future index levels and discount rates are generated using market standard yield curve models using interest rates associated with current market activity. The key inputs to the models are interest rate swap rates, FRA rates, short-term interest rate futures prices, basis swap spreads and inflation swap rates. Interest rate option contracts are valued using various market standard option models, using inputs that include interest rate yield curves, inflation curves, volatilities and correlations. The volatility and correlation inputs within the models are implied from market data based on market-observed prices for standard option instruments trading within the market. Option models used to value more exotic products have a number of model parameter inputs that require calibration to enable the exotic model to price standard option instruments to the price levels observed in the market. When the maturity of the interest rate swap or option contract exceeds the term for which standard market quotes are observable for a significant input parameter, the contracts are valued by extrapolation from the last observable point using standard assumptions or by reference to another observable comparable input parameter to represent a suitable proxy for that portion of the term.

Note 24 Fair value measurement (continued)

Fair value hierarchy: the majority of interest rate swaps are classified as Level 2 as the standard market contracts that form the inputs for yield curve models are generally traded in active and observable markets. Options are generally treated as Level 2 as the calibration process enables the model output to be validated to active-market levels. Models calibrated in this way are then used to revalue the portfolio of both standard options and more exotic products. In most cases, there are active and observable markets for the standard market instruments that form the inputs for yield curve models as well as the financial instruments from which volatility and correlation inputs are derived. Exotic options for which appropriate volatility or correlation input levels cannot be implied from observable market data are classified as Level 3. Interest rate swap or option contracts are classified as Level 3 when the term exceeds standard market-observable quotes.

Credit derivative contracts

Product description: a credit derivative is a financial instrument that transfers credit risk related to a single underlying entity, a portfolio of underlying entities or a pool of securitized referenced assets. Credit derivative products include credit default swaps (CDS) on single names, indices and securitized products, plus first to default swaps and certain total return swaps.

Valuation: credit derivative contracts are valued using industry standard models based primarily on market credit spreads, upfront pricing points and implied recovery rates. Where a derivative credit spread is not directly available, it may be derived from the price of the reference cash bond. Asset-backed credit derivatives are valued using a similar valuation technique to the underlying security with an adjustment to reflect the funding differences between cash and synthetic form. Inputs include prepayment rates, default rates, loss severity, discount margin / rate.

Fair value hierarchy classification: single-entity and portfolio credit derivative contracts are classified as Level 2 when credit spreads and recovery rates are determined from actively traded observable market data. Where the underlying reference name(s) are not actively traded and the correlation cannot be directly mapped to actively traded tranche instruments, these contracts are classified as Level 3. Asset-backed credit derivatives follow the characteristics of the underlying security and are therefore distributed across Level 2 and Level 3.

Foreign exchange contracts

Product description: this includes open spot and forward foreign exchange (FX) contracts and OTC FX option contracts. OTC FX option contracts include standard call and put options, options with multiple exercise dates, path-dependent options, options with averaging features, options with discontinuous payoff characteristics, options on a number of underlying FX rates and multi-dimensional FX option contracts, which have a dependency on multiple FX pairs.

Valuation: open spot FX contracts are valued using the FX spot rate observed in the market. Forward FX contracts are valued using the FX spot rate adjusted for forward pricing points observed from standard market-based sources. OTC FX option contracts are valued using market standard option valuation models. The models used for shorter-dated options (i.e., maturities of five years or less) tend to be different than those used for longer-dated options because the models needed for longer-dated OTC FX contracts require additional consideration of interest rate and FX rate interdependency. Inputs to the option valuation models include spot FX rates, FX forward points, FX volatilities, interest rate yield curves, interest rate volatilities and correlations. The inputs for volatility and correlation are implied through the calibration of observed prices for standard option contracts trading within the market. The valuation for multi-dimensional FX options uses a multi-local volatility model, which is calibrated to the observed FX volatilities for all relevant FX pairs.

Fair value hierarchy: the markets for both FX spot and FX forward pricing points are both actively traded and observable and therefore such FX contracts are generally classified as Level 2. A significant proportion of OTC FX option contracts are classified as Level 2 as inputs are derived mostly from standard market contracts traded in active and observable markets. OTC FX option contracts classified as Level 3 include multi-dimensional FX options and long-dated FX exotic option contracts where there is no active market from which to derive volatility or correlation inputs.

Equity / index contracts

Product description: equity / index contracts are equity forward contracts and equity option contracts. Equity option contracts include market standard single or basket stock or index call and put options as well as equity option contracts with more complex features.

Valuation: equity forward contracts have a single stock or index underlying and are valued using market standard models. The key inputs to the models are stock prices, estimated dividend rates and equity funding rates (which are implied from prices of forward contracts observed in the market). Estimated cash flows are then discounted using market standard discounted cash flow models using a rate that reflects the appropriate funding rate for that portion of the portfolio. When no market data is available for the instrument maturity, they are valued by extrapolation of available data, use of historical dividend data, or use of data for a related equity. Equity option contracts are valued using market standard models that estimate the equity forward level as described for equity forward contracts and incorporate inputs for stock volatility and for correlation between stocks within a basket. The probability-weighted expected option payoff generated is then discounted using market standard discounted cash flow models applying a rate that reflects the appropriate funding rate for that portion of the portfolio. When volatility, forward or correlation inputs are not available, they are valued using extrapolation of available data, historical dividend, correlation or volatility data, or the equivalent data for a related equity.

Fair value hierarchy: as inputs are derived mostly from standard market contracts traded in active and observable markets, a significant proportion of equity forward contracts are classified as Level 2. Equity option positions for which inputs are derived from standard market contracts traded in active and observable markets are also classified as Level 2. Level 3 positions are those for which volatility, forward or correlation inputs are not observable.

Commodity contracts

Product description: commodity derivative contracts include forward, swap and option contracts on individual commodities and on commodity indices.

Valuation: commodity forward and swap contracts are measured using market standard models that use market forward levels on standard instruments. Commodity option contracts are measured using market standard option models that estimate the commodity forward level as described for commodity forward and swap contracts, incorporating inputs for the volatility of the underlying index or commodity. For commodity options on baskets of commodities or bespoke commodity indices, the valuation technique also incorporates inputs for the correlation between different commodities or commodity indices.

Fair value hierarchy: individual commodity contracts are typically classified as Level 2 because active forward and volatility market data is available.

→ **Refer to Note 11 for more information on derivative instruments**

d) Valuation adjustments

The output of a valuation technique is always an estimate of a fair value that cannot be measured with complete certainty. As a result, valuations are adjusted, where appropriate and when such factors would be considered by market participants in estimating fair value, to reflect close-out costs, credit exposure, model-driven valuation uncertainty, funding costs and benefits, trading restrictions and other factors. Valuation adjustments are an important component of fair value for assets and liabilities that are measured using valuation techniques. Such adjustments are applied to reflect uncertainties within the fair value measurement process, to adjust for an identified model simplification or to incorporate an aspect of fair value that requires an overall portfolio assessment rather than an evaluation based on an individual instrument level characteristic.

Deferred day-1 profit or loss reserves

For new transactions where the valuation technique used to measure fair value requires significant inputs that are not based on observable market data, the financial instrument is initially recognized at the transaction price. The transaction price may differ from the fair value obtained using a valuation technique, where any such difference is deferred and not initially recognized in the income statement. These day-1 profit or loss reserves are reflected, where appropriate, as valuation adjustments.

Deferred day-1 profit or loss related to financial instruments other than financial assets measured at fair value through other comprehensive income is released into *Other net income from fair value changes on financial instruments* when pricing of equivalent products or the underlying parameters become observable or when the transaction is closed out.

Deferred day-1 profit or loss related to financial assets measured at fair value through other comprehensive income is released into *Other comprehensive income* when pricing of equivalent products or the underlying parameters become observable and is released into *Other income* when the assets are sold.

In the second quarter of 2018, a day-1 profit or loss reserve release of USD 196 million was recognized in the income statement related to long-dated UBS-issued structured notes, which are reported within *Debt issued designated at fair value* on the balance sheet. The day-1 profit or loss reserve release was driven by increased observability of the own credit adjustment (OCA) curve used to value these positions following the issuance of a 30-year senior unsecured bond in the second quarter of 2018.

The table on the next page summarizes the changes in deferred day-1 profit or loss reserves during the respective period.

Note 24 Fair value measurement (continued)

Deferred day-1 profit or loss reserves

USD million	2018	2017	2016
Reserve balance at the beginning of the year	338	365	420
Profit / (loss) deferred on new transactions	341	247	257
(Profit) / loss recognized in the income statement	(417)	(279)	(293)
(Profit) / loss recognized in other comprehensive income			(23)
Foreign currency translation	(6)	6	4
Reserve balance at the end of the year	255	338	365

Own credit

In addition to considering the valuation of the derivative risk component, the valuation of financial liabilities designated at fair value also requires consideration of the funded component and specifically the own credit component of fair value. Own credit risk is reflected in the valuation of UBS's fair value option liabilities where this component is considered relevant for valuation purposes by UBS's counterparties and other market participants. However, own credit risk is not reflected in the valuation of UBS's liabilities that are fully collateralized or for other obligations for which it is established market practice not to include an own credit component.

Changes in the fair value of financial liabilities designated at fair value through profit or loss related to own credit are recognized in *Other comprehensive income* directly within *Retained earnings*. As the Group does not hedge changes in own credit arising on financial liabilities designated at fair value, presenting own credit within *Other comprehensive income* does not create or increase an accounting mismatch in the income statement. The unrealized and any realized own credit recognized in *Other comprehensive income* will not be reclassified to the income statement in future periods.

Own credit is estimated using an OCA curve, which incorporates observable market data, including market-observed secondary prices for UBS senior debt, UBS credit default swap (CDS) spreads and senior debt curves of peers. The table below summarizes the effects of own credit adjustments related to financial liabilities designated at fair value. The change in unrealized own credit consists of changes in fair value that are attributable to the change in UBS's credit spreads, as well as the effect of changes in fair values attributable to factors other than credit spreads, such as redemptions, effects from time decay and changes in interest and other market rates. Realized own credit is recognized when an instrument with an associated unrealized own credit adjustment is repurchased prior to the contractual maturity date. Life-to-date amounts reflect the cumulative unrealized change since initial recognition.

In June 2018, UBS AG issued a 30-year senior unsecured bond as part of its ongoing funding requirements. The market-observable secondary prices for this bond have been incorporated into the OCA curve construction, resulting in a widening of the curve at the long end. An own credit gain of USD 253 million was recognized in *Other comprehensive income* in the second quarter of 2018, mainly reflecting this OCA curve change.

→ **Refer to Note 19 for more information on debt issued designated at fair value**

Own credit adjustments on financial liabilities designated at fair value

	For the year ended		
	Included in Other comprehensive income		
USD million	31.12.18	31.12.17	31.12.16
Recognized during the year:			
Realized gain / (loss)	(3)	22	18
Unrealized gain / (loss)	519	(337)	(152)
Total gain / (loss), before tax	517	(315)	(134)

	As of		
USD million	31.12.18	31.12.17	31.12.16
Recognized on the balance sheet as of the end of the year:			
Unrealized life-to-date gain / (loss)	320	(200)	139

Credit valuation adjustments

In order to measure the fair value of OTC derivative instruments, including funded derivative instruments that are classified as *Financial assets at fair value not held for trading,* credit valuation adjustments (CVA) are necessary to reflect the credit risk of the counterparty inherent in these instruments. This amount represents the estimated fair value of protection required to hedge the counterparty credit risk of such instruments. A CVA is determined for each counterparty, considering all exposures to that counterparty, and is dependent on the expected future value of exposures, default probabilities and recovery rates, applicable collateral or netting arrangements, break clauses and other contractual factors.

Funding valuation adjustments

Funding valuation adjustments (FVA) reflect the costs and benefits of funding associated with uncollateralized and partially collateralized derivative receivables and payables and are calculated as the valuation effect from moving the discounting of the uncollateralized derivative cash flows from LIBOR to OCA using the CVA framework.

An FVA is also applied to collateralized derivative assets in cases where the collateral cannot be sold or repledged.

Debit valuation adjustments

A debit valuation adjustment (DVA) is estimated to incorporate own credit in the valuation of derivatives, effectively consistent with the CVA framework. A DVA is determined for each counterparty, considering all exposures with that counterparty and taking into account collateral netting agreements, expected future mark-to-market movements and UBS's credit default spreads.

Other valuation adjustments

Instruments that are measured as part of a portfolio of combined long and short positions are valued at mid-market levels to ensure consistent valuation of the long- and short-component risks. A liquidity valuation adjustment is then made to the overall net long or short exposure to move the fair value to bid or offer as appropriate, reflecting current levels of market liquidity. The bid-offer spreads used in the calculation of this valuation adjustment are obtained from market transactions and other relevant sources and are updated periodically.

Uncertainties associated with the use of model-based valuations are incorporated into the measurement of fair value through the use of model reserves. These reserves reflect the amounts that the Group estimates should be deducted from valuations produced directly by models to incorporate uncertainties in the relevant modeling assumptions, in the model and market inputs used, or in the calibration of the model output to adjust for known model deficiencies. In arriving at these estimates, the Group considers a range of market practices, including how it believes market participants would assess these uncertainties. Model reserves are reassessed periodically in light of data from market transactions, consensus pricing services and other relevant sources.

In the second quarter of 2018, a USD 65 million expense was recognized in the income statement reflecting the model valuation adjustment recorded to capture the spread between OCA and LIBOR volatility affecting the valuation of certain structured note issuances.

Valuation adjustments on financial instruments

	As of	
Life-to-date gain / (loss), USD million	31.12.18	31.12.17
Credit valuation adjustments[1]	(90)	(116)
Funding valuation adjustments	(85)	(51)
Debit valuation adjustments	1	2
Other valuation adjustments	(716)	(733)
of which: liquidity	*(388)*	*(477)*
of which: model uncertainty	*(327)*	*(256)*

1 Amounts do not include reserves against defaulted counterparties.

Note 24 Fair value measurement (continued)

e) Transfers between Level 1 and Level 2

The amounts provided below reflect transfers between Level 1 and Level 2 for instruments that were held for the entire reporting period.

Assets totaling approximately USD 0.6 billion, which were mainly comprised of financial assets held for trading, predominantly investment fund units as well as corporate and municipal bonds, were transferred from Level 2 to Level 1 during 2018, generally resulting from increased levels of trading activity observed within the market. Transfers of financial liabilities from Level 2 to Level 1 during 2018 were not significant.

Assets totaling approximately USD 0.7 billion, which were mainly comprised of financial assets held for trading, predominantly investment fund units and equity instruments, were transferred from Level 1 to Level 2 during 2018, generally resulting from diminished levels of trading activity observed within the market. Transfers of financial liabilities from Level 1 to Level 2 during 2018 were not significant.

f) Level 3 instruments: valuation techniques and inputs

The table below presents material Level 3 assets and liabilities together with the valuation techniques used to measure fair value, the significant inputs used in a given valuation technique that are considered unobservable and a range of values for those unobservable inputs. Several inputs disclosed in prior periods are not disclosed in the table below because they are not considered significant to the respective valuation technique as of 31 December 2018.

The range of values represents the highest- and lowest-level input used in the valuation techniques. Therefore, the range does not reflect the level of uncertainty regarding a particular input, but rather the different underlying characteristics of the relevant assets and liabilities. The ranges will therefore vary from period to period and parameter to parameter based on characteristics of the instruments held at each balance sheet date. Further, the ranges of unobservable inputs may differ across other financial institutions, reflecting the diversity of the products in each firm's inventory.

Valuation techniques and inputs used in the fair value measurement of Level 3 assets and liabilities

	Fair value						Range of inputs						
	Assets		Liabilities				31.12.18			31.12.17			
USD billion	31.12.18	31.12.17	31.12.18	31.12.17	Valuation technique(s)	Significant unobservable input(s)[1]	low	high	weighted average[2]	low	high	weighted average[2]	unit[1]
Financial assets and liabilities at fair value held for trading and Financial assets at fair value not held for trading[3]													
Corporate and municipal bonds	*0.7*	*0.6*	*0.0*	*0.0*	Relative value to market comparable	Bond price equivalent	0	134	89	0	133	92	points
Traded loans, loans designated at fair value, loan commitments and guarantees	*2.7*	*1.7*	*0.0*	*0.0*	Relative value to market comparable	Loan price equivalent	0	100	99	50	102	98	points
					Discounted expected cash flows	Credit spread	301	513		23	124		basis points
					Market comparable and securitization model	Discount margin	1	14	2	0	14	2	%
Auction rate securities[4]	*1.7*		*0.0*		Relative value to market comparable	Bond price equivalent	79	99	89				points
Investment fund units[5]	*0.6*	*0.7*	*0.0*	*0.0*	Relative value to market comparable	Net asset value							
Equity instruments[5]	*0.6*	*0.5*	*0.0*	*0.1*	Relative value to market comparable	Price							
Debt issued designated at fair value[6]			*11.0*	*11.2*									
Other financial liabilities designated at fair value[6]			*1.0*	*2.0*									
Derivative financial instruments													
Interest rate contracts	*0.4*	*0.1*	*0.2*	*0.2*	Option model	Volatility of interest rates[7]	50	81		28	70		basis points
Credit derivative contracts	*0.5*	*0.6*	*0.5*	*0.6*	Discounted expected cash flows	Credit spreads	4	545		6	550		basis points
						Bond price equivalent	3	99		2	102		points
Equity / index contracts	*0.5*	*0.7*	*1.4*	*1.9*	Option model	Equity dividend yields	0	12		0	13		%
						Volatility of equity stocks, equity and other indices	4	93		0	172		%
						Equity-to-FX correlation	(39)	67		(39)	70		%
						Equity-to-equity correlation	(50)	97		(50)	97		%

1 The ranges of significant unobservable inputs are represented in points, percentages and basis points. Points are a percentage of par (e.g., 100 points would be 100% of par). 2 Weighted averages are provided for non-derivative financial instruments and were calculated by weighting inputs based on the fair values of the respective instruments. Weighted averages are not provided for inputs related to derivative contracts as this would not be meaningful. 3 Comparative-period information includes equity instruments that were formerly classified as available for sale under IAS 39 and have been reclassified to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 4 Comparative-period information is not disclosed for financial assets and liabilities that were measured at amortized cost prior to the adoption of IFRS 9. Refer to Note 1c for more information. 5 The range of inputs is not disclosed as there is a dispersion of values given the diverse nature of the investments. 6 Valuation techniques, significant unobservable inputs and the respective input ranges for Debt issued designated at fair value and Other financial liabilities designated at fair value, which are primarily comprised of over-the-counter debt instruments, are the same as the equivalent derivative or structured financing instruments presented elsewhere in this table. 7 Effective in 2018, the range of inputs reported for this significant unobservable input is based on normal volatility and the unit has been updated to basis points. Log-normal volatility with the unit as points was reported previously. Prior-period information has been restated to reflect this change in presentation.

Note 24 Fair value measurement (continued)

Significant unobservable inputs in Level 3 positions

This section discusses the significant unobservable inputs used in the valuation of Level 3 instruments and assesses the potential effect that a change in each unobservable input in isolation may have on a fair value measurement, including information to facilitate an understanding of factors that give rise to the input ranges shown. Relationships between observable and unobservable inputs have not been included in the summary below.

Bond price equivalent

Where market prices are not available for a bond, fair value is measured by comparison with observable pricing data from similar instruments. Factors considered when selecting comparable instruments include credit quality, maturity and industry of the issuer. Fair value may be measured either by a direct price comparison or by conversion of an instrument price into a yield (either as an outright yield or as a spread to LIBOR). Bond prices are expressed as points of the nominal, where 100 represents a fair value equal to the nominal value (i.e., par).

For corporate and municipal bonds, the range represents the range of prices from reference issuances used in determining fair value. Bonds priced at 0 are distressed to the point that no recovery is expected, while prices significantly in excess of 100 or par relate to inflation-linked or structured issuances that pay a coupon in excess of the market benchmark as of the measurement date.

For credit derivatives, the bond price range represents the range of prices used for reference instruments that are typically converted to an equivalent yield or credit spread as part of the valuation process.

Loan price equivalent

Where market prices are not available for a traded loan, fair value is measured by comparison with observable pricing data for similar instruments. Factors considered when selecting comparable instruments include industry segment, collateral quality, maturity and issuer-specific covenants. Fair value may be measured either by a direct price comparison or by conversion of an instrument price into a yield. The range represents the range of prices derived from reference issuances of a similar credit quality used in measuring fair value for loans classified as Level 3. Loans priced at 0 are distressed to the point that no recovery is expected, while a current price of 100 represents a loan that is expected to be repaid in full.

Credit spread

Valuation models for many credit derivatives require an input for the credit spread, which is a reflection of the credit quality of the associated referenced underlying. The credit spread of a particular security is quoted in relation to the yield on a benchmark security or reference rate, typically either US Treasury or LIBOR, and is generally expressed in terms of basis points. An increase / (decrease) in credit spread will increase / (decrease) the value of credit protection offered by CDS and other credit derivative products. The income statement effect from such changes depends on the nature and direction of the positions held. Credit spreads may be negative where the asset is more creditworthy than the benchmark against which the spread is calculated. A wider credit spread represents decreasing creditworthiness. The range represents a diverse set of underlyings, with the lower end of the range representing credits of the highest quality (e.g., approximating the risk of LIBOR) and the upper end of the range representing greater levels of credit risk.

Discount margin (DM)

The DM spread represents the discount rates used to present value cash flows of an asset to reflect the market return required for uncertainty in the estimated cash flows. DM spreads are a rate or rates applied on top of a floating index (e.g., LIBOR) to discount expected cash flows. Generally, a decrease / (increase) in the DM in isolation would result in a higher / (lower) fair value.

The high end of the range relates to securities that are priced low within the market relative to the expected cash flow schedule. This indicates that the market is pricing an increased risk of credit loss into the security that is greater than what is being captured by the expected cash flow generation process. The low ends of the ranges are typical of funding rates on better-quality instruments.

Funding spread

Structured financing transactions are valued using synthetic funding curves that best represent the assets that are pledged as collateral for the transactions. They are not representative of where UBS can fund itself on an unsecured basis, but provide an estimate of where UBS can source and deploy secured funding with counterparties for a given type of collateral. The funding spreads are expressed in terms of basis points over or under LIBOR, and if funding spreads widen, this increases the effect of discounting.

A small proportion of structured debt instruments and non-structured fixed-rate bonds within financial liabilities designated at fair value had an exposure to funding spreads that was longer in duration than the actively traded market.

Volatility

Volatility measures the variability of future prices for a particular instrument and is generally expressed as a percentage, where a higher number reflects a more volatile instrument for which future price movements are more likely to occur. The minimum level of volatility is 0% and there is no theoretical maximum. Volatility is a key input into option models, where it is used to derive a probability-based distribution of future prices for the underlying instrument. The effect of volatility on individual positions within the portfolio is driven primarily by whether the option contract is a long or short position. In most cases, the fair value of an option increases as a result of an increase in volatility and is reduced by a decrease in volatility. Generally, volatility used in the measurement of fair value is derived from active-market option prices (referred to as implied volatility). A key feature of implied volatility is the volatility "smile" or "skew," which represents the effect of pricing options of different option strikes at different implied volatility levels.

The volatility of interest rates reflects the range of unobservable volatilities across different currencies and related underlying interest rate levels. Volatilities of low interest rates tend to be much higher than volatilities of high interest rates. In addition, different currencies may have significantly different implied volatilities. The volatility of equity stocks, equity and other indices reflects the range of underlying stock volatilities.

Correlation

Correlation measures the interrelationship between the movements of two variables. It is expressed as a percentage between –100% and +100%, where +100% represents perfectly correlated variables (meaning a movement of one variable is associated with a movement of the other variable in the same direction) and –100% implies the variables are inversely correlated (meaning a movement of one variable is associated with a movement of the other variable in the opposite direction). The effect of correlation on the measurement of fair value depends on the specific terms of the instruments being valued, reflecting the range of different payoff features within such instruments.

Equity-to-FX correlation is important for equity options based on a currency different than the currency of the underlying stock. Equity-to-equity correlation is particularly important for complex options that incorporate, in some manner, different equities in the projected payoff.

Equity dividend yields

The derivation of a forward price for an individual stock or index is important for measuring fair value for forward or swap contracts and for measuring fair value using option pricing models. The relationship between the current stock price and the forward price is based on a combination of expected future dividend levels and payment timings, and, to a lesser extent, the relevant funding rates applicable to the stock in question. Dividend yields are generally expressed as an annualized percentage of the share price with the lowest limit of 0% representing a stock that is not expected to pay any dividend. The dividend yield and timing represents the most significant parameter in determining fair value for instruments that are sensitive to an equity forward price.

Note 24 Fair value measurement (continued)

g) Level 3 instruments: sensitivity to changes in unobservable input assumptions

The table below summarizes those financial assets and liabilities classified as Level 3 for which a change in one or more of the unobservable inputs to reflect reasonably possible alternative assumptions would change fair value significantly, and the estimated effect thereof.

The table shown presents the favorable and unfavorable effects for each class of financial assets and liabilities for which the potential change in fair value is considered significant. The sensitivity data presented represent an estimation of valuation uncertainty based on reasonably possible alternative values for Level 3 inputs at the balance sheet date and do not represent the estimated effect of stress scenarios. Typically, these financial assets and liabilities are sensitive to a combination of inputs from Levels 1–3. Although well-defined interdependencies may exist between Levels 1–2 and Level 3 parameters (e.g., between interest rates, which are generally Level 1 or Level 2, and prepayments, which are generally Level 3), these have not been incorporated in the table. Further, direct interrelationships between the Level 3 parameters discussed below are not a significant element of the valuation uncertainty.

Sensitivity data are estimated using a number of techniques, including the estimation of price dispersion among different market participants, variation in modeling approaches and reasonably possible changes to assumptions used within the fair value measurement process. The sensitivity ranges are not always symmetrical around the fair values as the inputs used in valuations are not always precisely in the middle of the favorable and unfavorable range.

Sensitivity data are determined at a product or parameter level and then aggregated assuming no diversification benefit. The calculated sensitivity is applied to both the outright position and any related Level 3 hedge. The main interdependencies across different Level 3 products to a single unobservable input parameter have been included in the basis of netting exposures within the calculation. Aggregation without allowing for diversification involves the simple summation of individual results with the total sensitivity, therefore representing the effect of all unobservable inputs that, if moved to a reasonably possible favorable or unfavorable level at the same time, would result in a significant change in the valuation. Diversification would incorporate estimated correlations across different sensitivity results and, as such, would result in an overall sensitivity that would be less than the sum of the individual component sensitivities. The Group believes that, while there are diversification benefits within the portfolios representing these sensitivity numbers, they are not significant to this analysis.

Sensitivity of fair value measurements to changes in unobservable input assumptions

	31.12.18		31.12.17	
USD million	Favorable changes	Unfavorable changes	Favorable changes	Unfavorable changes
Traded loans, loans designated at fair value, loan commitments and guarantees	99	(44)	81	(12)
Securities financing transactions	17	(11)	35	(35)
Auction rate securities[1]	81	(81)		
Asset-backed securities	27	(23)	19	(15)
Equity instruments	155	(94)	81	(54)
Interest rate derivative contracts, net	8	(39)	13	(27)
Credit derivative contracts, net	33	(37)	66	(102)
Foreign exchange derivative contracts, net	10	(5)	12	(6)
Equity / index derivative contracts, net	213	(225)	195	(198)
Other	19	(19)	13	(13)
Total	661	(578)	515	(462)

1 Comparative-period information as of 31 December 2017 is not disclosed for financial assets that were measured at amortized cost prior to the adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information.

h) Level 3 instruments: movements during the period

Significant changes in Level 3 instruments

The table on the following pages presents additional information about Level 3 assets and liabilities measured at fair value on a recurring basis. Level 3 assets and liabilities may be hedged with instruments classified as Level 1 or Level 2 in the fair value hierarchy and, as a result, realized and unrealized gains and losses included in the table may not include the effect of related hedging activity. Furthermore, the realized and unrealized gains and losses presented within the table are not limited solely to those arising from Level 3 inputs, as valuations are generally derived from both observable and unobservable parameters.

Assets and liabilities transferred into or out of Level 3 are presented as if those assets or liabilities had been transferred at the beginning of the year.

Upon adoption of IFRS 9 on 1 January 2018, certain financial assets and liabilities were newly classified at fair value through profit or loss and were designated as Level 3 in the fair value hierarchy. These financial instruments are presented in the table on the following pages, including the associated effect upon adoption. This includes auction rate securities held in Corporate Center and certain loans held in the Investment Bank.

In addition to various financial assets and liabilities being newly classified at fair value through profit or loss, certain equity investments and investment fund units measured at fair value through other comprehensive income were reclassified to *Financial assets at fair value not held for trading* under the revised IFRS 9 classification and measurement rules, which resulted in an opening balance reclassification between reporting lines in the table on the following pages.

Assets transferred into and out of Level 3 totaled USD 1.4 billion and USD 0.4 billion, respectively. Transfers into Level 3 were primarily comprised of corporate and municipal bonds, reflecting decreased observability of the respective bond price equivalent. Transfers out of Level 3 were primarily comprised of equity / index contracts resulting from increased observability of the respective equity volatility inputs.

Liabilities transferred into and out of Level 3 totaled USD 2.5 billion and USD 4.8 billion, respectively. Transfers into Level 3 were primarily comprised of rates-linked and equity-linked issued debt instruments, reflecting decreased observability of the respective rates volatility and equity volatility inputs. Transfers out of Level 3 were primarily comprised of rates-linked fixed-rate and equity-linked issued debt instruments resulting from changes in the observability of the OCA curve and equity volatility inputs used to determine the fair value of these instruments. In the second quarter of 2018, USD 2.9 billion of UBS-issued structured notes, which are reported within *Debt issued designated at fair value* on the balance sheet, were transferred from Level 3 to Level 2 in the fair value hierarchy, reflecting increased observability of the OCA curve used to value these notes.

Note 24 Fair value measurement (continued)

Movements of Level 3 instruments

USD billion	**Balance as of 31 December 2016**	Total gains / (losses) included in comprehensive income: Net gains / (losses) included in income[1]	Total gains / (losses) included in comprehensive income: *of which: related to Level 3 instruments held at the end of the reporting period*	Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	Foreign currency translation
Financial assets at fair value held for trading	**1.7**	**(0.1)**	***0.0***	**0.7**	**(3.9)**	**2.7**	**0.0**	**1.0**	**(0.2)**	**0.1**
of which:										
Corporate and municipal bonds	*0.6*	*0.1*	*0.1*	*0.5*	*(0.7)*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*
Loans	*0.7*	*(0.1)*	*(0.1)*	*0.1*	*(2.8)*	*2.7*	*0.0*	*0.0*	*(0.1)*	*0.0*
Investment fund units	*0.1*	*(0.1)*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.6*	*0.0*	*0.0*
Other	*0.3*	*0.0*	*0.0*	*0.2*	*(0.3)*	*0.0*	*0.0*	*0.2*	*0.0*	*0.0*
Financial assets at fair value not held for trading	**2.0**	**0.2**	***0.2***	**0.0**	**0.0**	**0.4**	**(1.3)**	**0.1**	**(0.1)**	**0.1**
of which:										
Loans	*1.2*	*0.2*	*0.2*	*0.0*	*0.0*	*0.1*	*(0.7)*	*0.0*	*(0.1)*	*0.0*
Auction rate securities[3]										
Equity instruments[4]										
Other	*0.9*	*(0.1)*	*(0.1)*	*0.0*	*0.0*	*0.3*	*(0.6)*	*0.1*	*0.0*	*0.0*
Financial assets measured at fair value through other comprehensive income	**0.5**	**0.0**	***0.0***	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**
Derivative financial instruments – assets	**2.5**	**(0.3)**	***(0.4)***	**0.0**	**0.0**	**1.0**	**(1.2)**	**0.4**	**(0.9)**	**0.1**
of which:										
Interest rate contracts	*0.3*	*0.0*	*(0.1)*	*0.0*	*0.0*	*0.0*	*(0.1)*	*0.1*	*(0.1)*	*0.0*
Credit derivative contracts	*1.3*	*(0.2)*	*(0.2)*	*0.0*	*0.0*	*0.0*	*(0.3)*	*0.0*	*(0.4)*	*0.1*
Equity / index contracts	*0.7*	*(0.1)*	*(0.1)*	*0.0*	*0.0*	*0.9*	*(0.7)*	*0.3*	*(0.4)*	*0.0*
Other	*0.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*(0.1)*	*0.0*	*0.0*	*0.0*
Derivative financial instruments – liabilities	**3.9**	**0.3**	***0.1***	**0.0**	**0.0**	**0.7**	**(1.4)**	**0.5**	**(1.4)**	**0.2**
of which:										
Credit derivative contracts	*1.5*	*0.0*	*(0.2)*	*0.0*	*0.0*	*0.1*	*(0.4)*	*0.2*	*(0.8)*	*0.1*
Equity / index contracts	*1.8*	*0.3*	*0.3*	*0.0*	*0.0*	*0.6*	*(0.6)*	*0.2*	*(0.5)*	*0.1*
Other	*0.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*(0.4)*	*0.1*	*(0.1)*	*0.1*
Debt issued designated at fair value	**9.5**	**1.4**	***0.9***	**0.0**	**0.0**	**5.3**	**(5.0)**	**1.2**	**(1.7)**	**0.4**
Other financial liabilities designated at fair value	**1.3**	**0.0**	***0.0***	**0.0**	**0.0**	**1.5**	**(0.8)**	**0.1**	**(0.2)**	**0.1**

1 Net gains / (losses) included in comprehensive income are comprised of Net interest income, Other net income from fair value changes on financial instruments and Other income. 2 Total Level 3 assets as of 31 December 2018 were USD 7.8 billion (31 December 2017: USD 5.6 billion). Total Level 3 liabilities as of 31 December 2018 were USD 14.3 billion (31 December 2017: USD 16.2 billion). 3 Comparative-period information is not disclosed for items that were measured at amortized cost prior to the adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 4 Upon adoption of IFRS 9 on 1 January 2018, equity instruments that were formerly classified as available for sale under IAS 39 were reclassified to Financial assets at fair value not held for trading. Refer to Note 1c for more information.

Note 24 Fair value measurement (continued)

Balance as of 31 December 2017	Reclassifications and remeasurements upon adoption of IFRS 9	Balance as of 1 January 2018	Total gains / (losses) included in comprehensive income: Net gains / (losses) included in income[1]	*of which: related to Level 3 instruments held at the end of the reporting period*	Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	Foreign currency translation	Balance as of 31 December 2018[2]
2.0	0.4	2.4	(0.2)	*(0.2)*	2.1	(7.1)	4.2	0.0	0.7	(0.2)	0.0	2.0
0.6		*0.6*	*0.0*	*0.0*	*0.6*	*(0.9)*	*0.0*	*0.0*	*0.5*	*0.0*	*0.0*	*0.7*
0.5	*0.4*	*0.9*	*0.1*	*0.0*	*0.9*	*(5.6)*	*4.2*	*0.0*	*0.1*	*0.0*	*0.0*	*0.7*
0.6		*0.6*	*(0.1)*	*(0.1)*	*0.2*	*(0.3)*	*0.0*	*0.0*	*0.1*	*(0.1)*	*0.0*	*0.4*
0.4		*0.4*	*(0.1)*	*(0.1)*	*0.4*	*(0.4)*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.2*
1.5	3.0	4.4	0.0	*0.0*	1.7	(1.9)	0.0	0.0	0.1	(0.1)	0.1	4.4
0.8	*0.6*	*1.4*	*(0.2)*	*(0.2)*	*1.5*	*(1.0)*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*1.8*
	1.9	*1.9*	*0.1*	*0.1*	*0.0*	*(0.4)*	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*	*1.7*
	0.4	*0.4*	*0.1*	*0.1*	*0.2*	*(0.2)*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.5*
0.7	*0.1*	*0.8*	*0.0*	*0.0*	*0.0*	*(0.4)*	*0.0*	*0.0*	*0.0*	*(0.1)*	*0.0*	*0.5*
0.5	(0.5)											
1.6		1.6	0.0	*0.0*	0.0	0.0	1.0	(1.5)	0.5	(0.1)	0.0	1.4
0.1		*0.1*	*0.1*	*0.1*	*0.0*	*0.0*	*0.0*	*(0.1)*	*0.3*	*0.0*	*0.0*	*0.4*
0.6		*0.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.3*	*(0.4)*	*0.0*	*0.0*	*0.0*	*0.5*
0.7		*0.7*	*0.0*	*0.0*	*0.0*	*0.0*	*0.8*	*(1.0)*	*0.1*	*(0.1)*	*0.0*	*0.5*
0.2		*0.2*	*(0.1)*	*(0.1)*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
2.9	0.0	2.9	(0.3)	*(0.2)*	0.0	0.0	1.3	(1.5)	0.3	(0.5)	0.0	2.2
0.6		*0.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*	*(0.2)*	*0.1*	*0.0*	*0.0*	*0.5*
2.0		*2.0*	*(0.3)*	*(0.2)*	*0.0*	*0.0*	*1.2*	*(1.2)*	*0.3*	*(0.5)*	*0.0*	*1.4*
0.3	*0.0*	*0.3*	*0.0*	*0.1*	*0.0*	*0.0*	*0.0*	*(0.1)*	*0.0*	*0.0*	*0.0*	*0.3*
11.2		11.2	0.5	*0.0*	0.0	0.0	5.8	(4.3)	2.2	(4.3)	(0.2)	11.0
2.0		2.0	0.0	*0.0*	0.0	0.0	1.1	(2.0)	0.0	0.0	0.0	1.0

Note 24 Fair value measurement (continued)

i) Maximum exposure to credit risk for financial instruments measured at fair value

The tables below provide the Group's maximum exposure to credit risk for financial instruments measured at fair value and the respective collateral and other credit enhancements mitigating credit risk for these classes of financial instruments.

The maximum exposure to credit risk includes the carrying amounts of financial instruments recognized on the balance sheet subject to credit risk and the notional amounts for off-balance sheet arrangements. Where information is available, collateral is presented at fair value. For other collateral, such as real estate, a reasonable alternative value is used. Credit enhancements, such as credit derivative contracts and guarantees, are included at their notional amounts. Both are capped at the maximum exposure to credit risk for which they serve as security. The "Risk management and control" section of this report describes management's view of credit risk and the related exposures, which can differ in certain respects from the requirements of IFRS.

Maximum exposure to credit risk

	31.12.18								
		Collateral				Credit enhancements			Exposure to credit risk after collateral and credit enhancements
USD billion	Maximum exposure to credit risk	Cash collateral received	Collateralized by securities	Secured by real estate	Other collateral[1]	Netting	Credit derivative contracts	Guarantees	
Financial assets measured at fair value on the balance sheet									
Financial assets at fair value held for trading – debt instruments[2,3]	21.9								21.9
Derivative financial instruments[4]	126.2		4.1			110.8			11.4
Brokerage receivables	16.8	0.0	16.5						0.3
Financial assets at fair value not held for trading – debt instruments[6]	59.8		16.7		0.1				43.1
Total financial assets measured at fair value	224.8	0.0	37.3	0.0	0.1	110.8	0.0	0.0	76.6
Guarantees[7]	1.6							0.2	1.4
Loan commitments[7]	3.5				2.4		0.2	0.1	0.7
Forward starting transactions, reverse repurchase and securities borrowing agreements	8.1		8.1						0.0
Total maximum exposure to credit risk not reflected on the balance sheet	13.3	0.0	8.1	0.0	2.4	0.0	0.2	0.4	2.1

	31.12.17								
		Collateral				Credit enhancements			Exposure to credit risk after collateral and credit enhancements
USD billion	Maximum exposure to credit risk	Cash collateral received	Collateralized by securities	Secured by real estate	Other collateral[1]	Netting	Credit derivative contracts	Guarantees	
Financial assets measured at fair value on the balance sheet									
Financial assets at fair value held for trading – debt instruments[2,5]	26.3								26.3
Derivative financial instruments[4]	121.3		4.1			102.8			14.4
Financial assets at fair value not held for trading – debt instruments[3,6]	59.9		10.1						49.8
Total financial assets measured at fair value	**207.4**	**0.0**	**14.1**	**0.0**	**0.0**	**102.8**	**0.0**	**0.0**	**90.5**
Guarantees[7]	1.7								1.7
Loan commitments[7]	8.0				3.9		1.0	0.2	2.8
Total maximum exposure to credit risk not reflected on the balance sheet	**9.6**	**0.0**	**0.0**	**0.0**	**3.9**	**0.0**	**1.0**	**0.2**	**4.5**

1 Includes but is not limited to life insurance contracts, inventory, accounts receivable, mortgage loans, patents and copyrights. 2 These positions are generally managed under the market risk framework. For the purpose of this disclosure, collateral and credit enhancements were not considered. 3 Does not include investment fund units. 4 The amount shown in the "Netting" column represents the netting potential not recognized on the balance sheet. Refer to Note 25 for more information. 5 Does not include debt instruments held for unit-linked investment contracts and investment fund units. 6 Financial assets at fair value not held for trading collateralized by securities consisted of structured loans and reverse repurchase and securities borrowing agreements. 7 The amount shown in the "Guarantees" column largely relates to sub-participations. Refer to Note 34 for more information.

j) Financial instruments not measured at fair value

The table below provides the estimated fair values of financial instruments not measured at fair value.

Financial instruments not measured at fair value

	31.12.18					31.12.17				
	Carrying value	Fair value				Carrying value	Fair value			
USD billion	Total	Total	Level 1	Level 2	Level 3	Total	Total	Level 1	Level 2	Level 3
Assets[1]										
Cash and balances at central banks	108.4	108.4	108.4	0.0	0.0	90.0	90.0	90.0	0.0	0.0
Loans and advances to banks	16.9	16.9	16.3	0.6	0.0	14.1	14.1	13.4	0.7	0.0
Receivables from securities financing transactions	95.3	95.4	0.0	91.9	3.4	92.0	92.0	0.0	89.4	2.5
Cash collateral receivables on derivative instruments	23.6	23.6	0.0	23.6	0.0	24.0	24.0	0.0	24.0	0.0
Loans and advances to customers	320.4	320.9	0.0	171.2	149.7	326.7	328.2	0.0	181.2	147.0
Other financial assets measured at amortized cost[2]	22.6	22.4	8.4	10.7	3.3	37.8	37.7	6.5	30.2	1.0
Liabilities										
Amounts due to banks	11.0	11.0	8.9	1.9	0.2	7.7	7.7	6.6	1.1	0.0
Payables from securities financing transactions	10.3	10.3	0.0	10.3	0.0	17.5	17.5	0.0	17.5	0.0
Cash collateral payables on derivative instruments	28.9	28.9	0.0	28.9	0.0	31.0	31.0	0.0	31.0	0.0
Customer deposits	419.8	419.9	0.0	419.8	0.1	419.6	419.6	0.0	419.6	0.0
Debt issued measured at amortized cost	132.3	135.0	0.0	133.6	1.4	143.2	147.2	0.0	142.7	4.5
Other financial liabilities measured at amortized cost[2]	6.9	6.9	0.0	6.8	0.1	37.2	37.2	0.0	37.2	0.0

1 As of 31 December 2018, USD 0 billion of Loans and advances to banks, USD 1 billion of Receivables from securities financing transactions, USD 139 billion of Loans and advances to customers and USD 15 billion of Other financial assets measured at amortized cost are expected to be recovered or settled after 12 months. As of 31 December 2017, USD 0 billion of Loans and advances to banks, USD 2 billion of Receivables from securities financing transactions, USD 137 billion of Loans and advances to customers and USD 7 billion of Other financial assets measured at amortized cost were expected to be recovered or settled after 12 months. 2 Upon adoption of IFRS 9 on 1 January 2018, prime brokerage receivables and payables were reclassified from amortized cost to fair value through profit or loss. Refer to Note 1c for more information.

The fair values included in the table above were calculated for disclosure purposes only. The valuation techniques and assumptions described below relate only to the fair value of UBS's financial instruments not measured at fair value. Other institutions may use different methods and assumptions for their fair value estimation, and therefore such fair value disclosures cannot necessarily be compared from one financial institution to another. The following principles were applied when determining fair value estimates for financial instruments not measured at fair value:

– For financial instruments with remaining maturities greater than three months, the fair value was determined from quoted market prices, if available.
– Where quoted market prices were not available, the fair values were estimated by discounting contractual cash flows using current market interest rates or appropriate yield curves for instruments with similar credit risk and maturity. These estimates generally include adjustments for counterparty credit risk or UBS's own credit.
– For short-term financial instruments with remaining maturities of three months or less, the carrying amount, which is net of credit loss allowances, is generally considered a reasonable estimate of fair value. The following financial instruments not measured at fair value had remaining maturities of three months or less as of 31 December 2018: 100% of cash and balances at central banks, 96% of loans and advances to banks, 89% of receivables from securities financing transactions, 100% of cash collateral receivables on derivative instruments, 48% of loans and advances to customers, 26% of other financial assets measured at amortized cost, 81% of amounts due to banks, 97% of payables from securities financing transactions, 100% of cash collateral payables on derivative instruments, 97% of customer deposits, 7% of debt issued measured at amortized cost and 100% of other financial liabilities measured at amortized cost.
– The fair value estimates for repurchase and reverse repurchase agreements with variable and fixed interest rates, for all maturities, include the valuation of the interest rate component of these instruments. Credit and debit valuation adjustments have not been included in the valuation given the short-term nature of these instruments.

Note 25 Offsetting financial assets and financial liabilities

UBS enters into netting agreements with counterparties to manage the credit risks associated primarily with repurchase and reverse repurchase transactions, securities borrowing and lending, over-the-counter derivatives and exchange-traded derivatives. These netting agreements and similar arrangements generally enable the counterparties to set off liabilities against available assets received in the ordinary course of business and / or in the event that the counterparty to the transaction is unable to fulfill its contractual obligations. The right of setoff is a legal right to settle or otherwise eliminate all or a portion of an amount due by applying an amount receivable from the same counterparty against it, thus reducing credit exposure.

The table below provides a summary of financial assets subject to offsetting, enforceable master netting arrangements and similar agreements, as well as financial collateral received to mitigate credit exposures for these financial assets. The gross financial assets of the Group that are subject to offsetting, enforceable netting arrangements and similar agreements are reconciled to the net amounts presented within the associated balance sheet line, after giving effect to financial liabilities with the same counterparties that have been offset on the balance sheet and other financial assets not subject to an enforceable netting arrangement or similar agreement. Further, related amounts for financial liabilities and collateral received that are not offset on the balance sheet are shown to arrive at financial assets after consideration of netting potential.

The Group engages in a variety of counterparty credit mitigation strategies in addition to netting and collateral arrangements. Therefore, the net amounts presented in the tables on this and on the next page do not purport to represent their actual credit exposure.

Financial assets subject to offsetting, enforceable master netting arrangements and similar agreements

	Assets subject to netting arrangements						Assets not subject to netting arrangements[5]	Total assets	
	Netting recognized on the balance sheet			Netting potential not recognized on the balance sheet[4]					
As of 31.12.18, USD billion	Gross assets before netting	Netting with gross liabilities[3]	Net assets recognized on the balance sheet	Financial liabilities	Collateral received	Assets after consideration of netting potential	Assets recognized on the balance sheet	Total assets after consideration of netting potential	Total assets recognized on the balance sheet
Receivables from securities financing transactions[1]	88.5	(13.0)	75.5	(4.4)	(71.2)	0.0	19.8	19.8	95.3
Derivative financial instruments	124.3	(4.3)	120.0	(90.8)	(24.0)	5.2	6.2	11.4	126.2
Cash collateral receivables on derivative instruments[2]	24.6	(2.3)	22.3	(13.5)	(1.0)	7.8	1.3	9.1	23.6
Financial assets at fair value not held for trading[1]	85.4	(77.5)	7.8	(1.4)	(6.4)	0.0	74.9	74.9	82.7
of which: reverse repurchase agreements	*85.3*	*(77.5)*	*7.8*	*(1.4)*	*(6.4)*	*0.0*	*2.1*	*2.1*	*9.9*
Total assets	322.9	(97.2)	225.7	(110.0)	(102.6)	13.0	102.2	115.2	327.9
As of 31.12.17, USD billion									
Receivables from securities financing transactions[1]	147.9	(78.8)	69.1	(7.7)	(61.4)	0.0	22.8	22.8	92.0
Derivative financial instruments	117.2	(2.1)	115.1	(85.6)	(21.3)	8.2	6.2	14.4	121.3
Cash collateral receivables on derivative instruments[2]	22.2	(1.1)	21.1	(12.0)	(0.8)	8.3	2.9	11.2	24.0
Financial assets at fair value not held for trading[1]	0.4	0.0	0.4	0.0	(0.2)	0.2	60.0	60.3	60.5
Total assets	**287.8**	**(82.0)**	**205.8**	**(105.4)**	**(83.7)**	**16.8**	**91.9**	**108.7**	**297.7**

1 Certain reverse repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 as of 1 January 2018. This has resulted in an increase in amounts presented on the line "Financial assets at fair value not held for trading" and a decrease in amounts presented on the line "Receivables from securities financing transactions." Refer to Note 1c for more information. 2 The net amount of Cash collateral receivables on derivative instruments recognized on the balance sheet includes certain OTC derivatives that are net settled on a daily basis either legally or in substance under IAS 32 principles and exchange-traded derivatives that are economically settled on a daily basis. 3 The logic of the table results in amounts presented in the "Netting with gross liabilities" column corresponding directly to the amounts presented in the "Netting with gross assets" column in the liabilities table presented on the following page. Netting in this column for reverse repurchase agreements presented within the lines "Receivables from securities financing transactions" and "Financial assets at fair value not held for trading" taken together corresponds to the amounts presented for repurchase agreements in the "Payables from securities financing transactions" and "Other financial liabilities designated at fair value" lines in the liabilities table presented on the following page. 4 For the purpose of this disclosure, the amounts of financial instruments and cash collateral presented have been capped by the relevant netting agreement so as not to exceed the net amount of financial assets presented on the balance sheet; i.e., over-collateralization, where it exists, is not reflected in the table. 5 Includes assets not subject to enforceable netting arrangements and other out-of-scope items.

Note 25 Offsetting financial assets and financial liabilities (continued)

The table below provides a summary of financial liabilities subject to offsetting, enforceable master netting arrangements and similar agreements, as well as financial collateral pledged to mitigate credit exposures for these financial liabilities. The gross financial liabilities of UBS that are subject to offsetting, enforceable netting arrangements and similar agreements are reconciled to the net amounts presented within the associated balance sheet line, after giving effect to financial assets with the same counterparties that have been offset on the balance sheet and other financial liabilities not subject to an enforceable netting arrangement or similar agreement. Further, related amounts for financial assets and collateral pledged that are not offset on the balance sheet are shown to arrive at financial liabilities after consideration of netting potential.

Financial liabilities subject to offsetting, enforceable master netting arrangements and similar agreements

	Liabilities subject to netting arrangements						Liabilities not subject to netting arrangements[5]	Total liabilities	
	Netting recognized on the balance sheet			Netting potential not recognized on the balance sheet[4]					
As of 31.12.18, USD billion	Gross liabilities before netting	Netting with gross assets[3]	Net liabilities recognized on the balance sheet	Financial assets	Collateral pledged	Liabilities after consideration of netting potential	Liabilities recognized on the balance sheet	Total liabilities after consideration of netting potential	Total liabilities recognized on the balance sheet
Payables from securities financing transactions[1]	20.6	(12.4)	8.3	(3.6)	(4.7)	0.0	2.0	2.0	10.3
Derivative financial instruments	124.1	(4.3)	119.8	(90.8)	(20.9)	8.1	5.9	14.0	125.7
Cash collateral payables on derivative instruments[2]	29.0	(2.3)	26.7	(14.2)	(1.2)	11.3	2.2	13.5	28.9
Other financial liabilities designated at fair value[1]	86.6	(78.2)	8.4	(2.1)	(5.9)	0.4	25.2	25.6	33.6
of which: repurchase agreements	*86.1*	*(78.2)*	*7.9*	*(2.1)*	*(5.9)*	*0.0*	*1.6*	*1.6*	*9.5*
Total liabilities	260.4	(97.2)	163.2	(110.7)	(32.6)	19.8	35.4	55.2	198.5
As of 31.12.17, USD billion									
Payables from securities financing transactions[1]	92.5	(78.8)	13.7	(7.7)	(6.0)	0.0	3.8	3.8	17.5
Derivative financial instruments	114.3	(2.1)	112.2	(85.6)	(15.4)	11.2	6.9	18.1	119.1
Cash collateral payables on derivative instruments[2]	30.2	(1.1)	29.2	(16.7)	(1.2)	11.3	1.9	13.1	31.0
Other financial liabilities designated at fair value[1]	1.9	0.0	1.9	0.0	(0.1)	1.8	14.7	16.5	16.6
Total liabilities	**239.0**	**(82.0)**	**157.0**	**(110.0)**	**(22.7)**	**24.3**	**27.3**	**51.6**	**184.3**

1 Certain repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 as of 1 January 2018. This has resulted in an increase in amounts presented on the line "Other financial liabilities designated at fair value" and a decrease in amounts presented on the line "Payables from securities financing transactions." Refer to Note 1c for more information. 2 The net amount of Cash collateral payables on derivative instruments recognized on the balance sheet includes certain exchange-traded derivatives that are net settled on a daily basis either legally or in substance under IAS 32 principles and exchange-traded derivatives that are economically settled on a daily basis. 3 The logic of the table results in amounts presented in the "Netting with gross assets" column corresponding to the amounts presented in the "Netting with gross liabilities" column in the assets table presented on the previous page. Netting in this column for repurchase agreements presented within the lines "Payables from securities financing transactions" and "Other financial liabilities designated at fair value" taken together corresponds to the amounts presented for reverse repurchase agreements in the "Receivables from securities financing transactions" and "Financial assets at fair value not held for trading" lines in the assets table presented on the previous page. 4 For the purpose of this disclosure, the amounts of financial instruments and cash collateral presented have been capped by the relevant netting agreement so as not to exceed the net amount of financial liabilities presented on the balance sheet; i.e., over-collateralization, where it exists, is not reflected in the table. 5 Includes liabilities not subject to enforceable netting arrangements and other out-of-scope items.

Note 26 Restricted and transferred financial assets

This Note provides information on restricted financial assets (Note 26a), transfers of financial assets (Note 26b and 26c) and financial assets that are received as collateral with the right to resell or repledge these assets (Note 26d).

a) Restricted financial assets

Restricted financial assets consist of assets pledged as collateral against an existing liability or contingent liability and other assets that are otherwise explicitly restricted such that they cannot be used to secure funding.

Financial assets are mainly pledged as collateral in securities lending transactions, in repurchase transactions, against loans from Swiss mortgage institutions and in connection with the issuance of covered bonds. The Group generally enters into repurchase and securities lending arrangements under standard market agreements. For securities lending, the cash received as collateral may be more or less than the fair value of the securities loaned, depending on the nature of the transaction. For repurchase agreements, the fair value of the collateral sold under an agreement to repurchase is generally in excess of the cash borrowed. Pledged mortgage loans serve as collateral for existing liabilities against Swiss central mortgage institutions and for existing covered bond issuances of USD 12,516 million as of 31 December 2018 (31 December 2017: USD 12,779 million).

Other restricted financial assets include assets protected under client asset segregation rules, assets held by the Group's insurance entities to back related liabilities to the policy holders, assets held in certain jurisdictions to comply with explicit minimum local asset maintenance requirements and assets held in consolidated bankruptcy remote entities such as certain investment funds and other structured entities. The carrying value of the liabilities associated with these other restricted financial assets is generally equal to the carrying value of the assets, with the exception of assets held to comply with local asset maintenance requirements, for which the associated liabilities are greater.

Restricted financial assets

USD million	31.12.18	31.12.17
Financial assets pledged as collateral		
Financial assets at fair value held for trading	43,292	47,414
of which: assets pledged as collateral that may be sold or repledged by counterparties	*32,121*	*36,277*
Loans and advances to customers[1]	18,804	18,087
Financial assets at fair value not held for trading	0	174
Total financial assets pledged as collateral[2]	62,096	65,676
Other restricted financial assets		
Loans and advances to banks	5,140	3,364
Financial assets at fair value held for trading[3]	3,589	12,591
Cash collateral receivables on derivative instruments	3,205	3,921
Loans and advances to customers	935	1,289
Financial assets at fair value not held for trading[3]	23,514	2,669
Financial assets measured at fair value through other comprehensive income	171	253
Other	203	97
Total other restricted financial assets	36,758	24,183
Total financial assets pledged and other restricted financial assets	98,854	89,859

1 All related to mortgage loans that serve as collateral for existing liabilities against Swiss central mortgage institutions and for existing covered bond issuances. Of these pledged mortgage loans, approximately USD 3.2 billion for 31 December 2018 (31 December 2017: approximately USD 2.2 billion) could be withdrawn or used for future liabilities or covered bond issuances without breaching existing collateral requirements. 2 Does not include assets placed with central banks related to undrawn credit lines and for payment, clearing and settlement purposes (31 December 2018: USD 0.3 billion; 31 December 2017: USD 2.6 billion). 3 Financial assets for unit-linked investment contracts were reclassified from Financial assets at fair value held for trading to Financial assets at fair value not held for trading upon adoption of IFRS 9 as of 1 January 2018. Refer to Note 1c for more information.

In addition to restrictions on financial assets, UBS Group AG and its subsidiaries are, in certain cases, subject to regulatory requirements that affect the transfer of dividends and capital within the Group. Supervisory authorities also may require entities to measure capital and leverage ratios on a stressed basis, such as the Federal Reserve Board's Comprehensive Capital Analysis and Review (CCAR) process, which affects UBS Americas Holding LLC, and may limit the ability of the intermediate holding company sub-group to make distributions of capital based on the results of those tests. In June 2018, the Federal Reserve Board released the 2018 CCAR results and did not object to UBS Americas Holding LLC's capital plan.

Certain regulated subsidiaries are required to maintain capital and / or liquidity to comply with local regulations and may be subject to prudential limitations by regulators that limit the amount of funds that they can distribute or otherwise transfer. Supervisory authorities generally have discretion to impose higher requirements or to otherwise limit the activities of subsidiaries.

Non-regulated subsidiaries are generally not subject to such requirements and transfer restrictions. However, restrictions can also be the result of different legal, regulatory, contractual, entity- or country-specific arrangements and / or requirements.

→ **Refer to "Financial and regulatory key figures for our significant regulated subsidiaries and sub-groups" in the "Significant regulated subsidiary and sub-group information" section of this report for financial information on significant regulated subsidiaries of the Group**

b) Transferred financial assets that are not derecognized in their entirety

The table below presents information for financial assets that have been transferred but are subject to continued recognition in full, as well as recognized liabilities associated with those transferred assets.

Transferred financial assets subject to continued recognition in full

USD million	31.12.18		31.12.17	
	Carrying value of transferred assets	Carrying value of associated liabilities recognized on balance sheet	Carrying value of transferred assets	Carrying value of associated liabilities recognized on balance sheet
Financial assets at fair value held for trading that may be sold or repledged by counterparties	32,121	4,674	36,277	13,277
relating to securities lending and repurchase agreements in exchange for cash received	*4,726*	*4,674*	*13,485*	*13,277*
relating to securities lending agreements in exchange for securities received	*26,234*	*0*	*21,684*	*0*
relating to other financial asset transfers	*1,161*	*0*	*1,109*	*0*
Financial assets at fair value not held for trading that may be sold or repledged by counterparties	0	0	174	173
Total financial assets transferred	32,121	4,674	36,451	13,450

Transactions in which financial assets are transferred, but continue to be recognized in their entirety on UBS's balance sheet include securities lending and repurchase agreements as well as other financial asset transfers. Repurchase and securities lending arrangements are, for the most part, conducted under standard market agreements and are undertaken with counterparties subject to UBS's normal credit risk control processes.

→ **Refer to Note 1a item 3e for more information on repurchase and securities lending agreements**

As of 31 December 2018, approximately 14% of the transferred financial assets were assets held for trading transferred in exchange for cash, in which case the associated recognized liability represents the amount to be repaid to counterparties. For securities lending and repurchase agreements, a haircut between 0% and 15% is generally applied to the transferred assets, which results in associated liabilities having a carrying value below the carrying value of the transferred assets. The counterparties to the associated liabilities presented in the table above have full recourse to UBS.

In securities lending arrangements entered into in exchange for the receipt of other securities as collateral, neither the securities received nor the obligation to return them are recognized on UBS's balance sheet, as the risks and rewards of ownership are not transferred to UBS. In cases where such financial assets received are subsequently sold or repledged in another transaction, this is not considered to be a transfer of financial assets.

Other financial asset transfers primarily include securities transferred to collateralize derivative transactions, for which the carrying value of associated liabilities is not provided in the table above because those replacement values are managed on a portfolio basis across counterparties and product types, and therefore there is no direct relationship between the specific collateral pledged and the associated liability.

Transferred financial assets that are not subject to derecognition in full, but remain on the balance sheet to the extent of the Group's continuing involvement, were not material as of 31 December 2018 and as of 31 December 2017.

Note 26 Restricted and transferred financial assets (continued)

c) Transferred financial assets that are derecognized in their entirety with continuing involvement

Continuing involvement in a transferred and fully derecognized financial asset may result from contractual provisions in the transfer agreement or from a separate agreement with the counterparty or a third party entered into in connection with the transfer.

Purchased and retained interests in securitization vehicles

In cases where UBS has transferred assets into a securitization vehicle and retained or purchased interests therein, UBS has a continuing involvement in those transferred assets.

As of 31 December 2018, the majority of the retained continuing involvement related to securitization positions held as financial assets at fair value held for trading, primarily collateralized debt obligations, US commercial mortgage-backed securities and residential mortgage-backed securities. The fair value and carrying amount of UBS's continuing involvement related to these purchased and retained interests was USD 6 million as of 31 December 2018, and UBS recognized gains of USD 3 million in 2018 related to these positions. As of 31 December 2018, life-to-date losses of USD 1,198 million were recorded related to the positions held as of 31 December 2018.

As of 31 December 2017, the fair value and carrying amount of UBS's continuing involvement related to purchased and retained interests in securitization vehicles was USD 8 million, and UBS recognized gains of USD 4 million in 2017 related to these positions. As of 31 December 2017, life-to-date losses of USD 1,200 million were recorded related to the positions held as of 31 December 2017.

The maximum exposure to loss related to purchased and retained interests in securitization structures was USD 10 million as of 31 December 2018, compared with USD 15 million as of 31 December 2017.

Undiscounted cash outflows of USD 4 million may be payable to the transferee in future periods as a consequence of holding the purchased and retained interests. The earliest period in which payment may be required is less than one month.

d) Off-balance sheet assets received

The table below presents assets received from third parties that can be sold or repledged, that are not recognized on the balance sheet, but that are held as collateral, including amounts that have been sold or repledged.

Off-balance sheet assets received

USD million	31.12.18	31.12.17
Fair value of assets received that can be sold or repledged	483,688	481,265
received as collateral under reverse repurchase, securities borrowing and lending arrangements, derivative and other transactions[1]	*473,302*	*474,420*
received in unsecured borrowings	*10,385*	*6,845*
Thereof sold or repledged[2]	356,745	346,243
in connection with financing activities	*315,402*	*300,880*
to satisfy commitments under short sale transactions	*28,943*	*31,251*
in connection with derivative and other transactions[1]	*12,400*	*14,112*

1 Includes securities received as initial margin from its clients that UBS is required to remit to central counterparties, brokers and deposit banks through its exchange-traded derivative clearing and execution services.
2 Does not include off-balance sheet securities (31 December 2018: USD 24.5 billion; 31 December 2017: USD 28.8 billion) placed with central banks related to undrawn credit lines and for payment, clearing and settlement purposes for which there are no associated liabilities or contingent liabilities.

Note 27 Maturity analysis of financial liabilities

The contractual maturities for non-derivative and non-trading financial liabilities as of 31 December 2018 are based on the earliest date on which UBS could be contractually required to pay. The total amounts that contractually mature in each time band are also shown for 31 December 2017. Derivative positions and trading liabilities, predominantly made up of short sale transactions, are assigned to the column *Due within 1 month,* as this provides a conservative reflection of the nature of these trading activities. The contractual maturities may extend over significantly longer periods.

Maturity analysis of financial liabilities

	31.12.18					
USD billion	Due within 1 month	Due between 1 and 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years	Total
Financial liabilities recognized on balance sheet[1]						
Amounts due to banks	7.9	1.0	1.6	0.5	0.0	11.0
Payables from securities financing transactions	9.5	0.6	0.3		0.0	10.4
Cash collateral payables on derivative instruments	28.9					28.9
Customer deposits	395.8	13.1	7.0	4.4	0.0	420.4
Debt issued measured at amortized cost[2]	4.6	6.3	39.9	57.6	37.8	146.2
Other financial liabilities measured at amortized cost	5.6					5.6
Total financial liabilities measured at amortized cost	452.4	21.0	48.8	62.6	37.8	622.6
Financial liabilities at fair value held for trading[3,4]	28.9					28.9
Derivative financial instruments[3]	125.7					125.7
Brokerage payables designated at fair value	38.4					38.4
Debt issued designated at fair value[5]	15.7	18.1	10.2	7.4	8.0	59.4
Other financial liabilities designated at fair value	30.0	0.4	1.1	1.2	1.0	33.7
Total financial liabilities measured at fair value through profit or loss	238.8	18.5	11.3	8.6	9.0	286.2
Total	691.2	39.5	60.1	71.2	46.8	908.8
Guarantees, commitments and forward starting transactions[6]						
Loan commitments[7]	34.1	0.3	0.3	0.0		34.7
Guarantees[7]	19.8					19.8
Forward starting transactions						
Reverse repurchase agreements[7]	9.0		0.0			9.0
Securities borrowing agreements	0.0					0.0
Total	62.9	0.3	0.4	0.0	0.0	63.6
	31.12.17					
Financial liabilities recognized on balance sheet[1]						
Amounts due to banks	6.3	0.4	1.0	0.1	0.0	7.7
Payables from securities financing transactions	13.9	3.1	0.6	0.0	0.0	17.7
Cash collateral payables on derivative instruments	31.0					31.0
Customer deposits	403.2	10.5	5.3	0.7	0.1	419.7
Debt issued measured at amortized cost[2]	4.2	15.4	46.4	52.1	39.1	157.1
Other financial liabilities measured at amortized cost	36.0					36.0
Total financial liabilities measured at amortized cost	494.6	29.4	53.3	52.9	39.2	669.3
Financial liabilities at fair value held for trading[3,4]	31.3					31.3
Derivative financial instruments[3]	119.1					119.1
Debt issued designated at fair value[5]	18.3	10.0	10.3	7.7	6.2	52.6
Other financial liabilities designated at fair value	12.4	0.6	1.5	1.4	1.0	17.0
Total financial liabilities measured at fair value through profit or loss	181.1	10.6	11.9	9.1	7.3	219.9
Total	**675.7**	**40.0**	**65.1**	**61.9**	**46.4**	**889.2**
Guarantees, commitments and forward starting transactions[6]						
Loan commitments[7]	39.2	0.2	0.2	0.1		39.7
Guarantees[7]	19.3	0.0				19.3
Forward starting transactions						
Reverse repurchase agreements[7]	13.0					13.0
Securities borrowing agreements	0.0					0.0
Total	**71.5**	**0.2**	**0.2**	**0.1**	**0.0**	**72.0**

1 Except for financial liabilities at fair value held for trading and derivative financial instruments (see footnote 3), the amounts presented generally represent undiscounted cash flows of future interest and principal payments. 2 The time bucket Due after 5 years includes perpetual loss-absorbing additional tier 1 capital instruments. 3 Carrying value is fair value. Management believes that this best represents the cash flows that would have to be paid if these positions had to be settled or closed out. Refer to Note 28 for undiscounted cash flows of derivatives designated in hedge accounting relationships. 4 Contractual maturities of financial liabilities at fair value held for trading are: USD 28.3 billion due within one month (2017: USD 30.3 billion), USD 0.6 billion due between one month and one year (2017: USD 0.8 billion) and USD 0 billion due between 1 and 5 years (2017: USD 0.1 billion). 5 Future interest payments on variable-rate liabilities are determined by reference to the applicable interest rate prevailing as of the reporting date. Future principal payments that are variable are determined by reference to the conditions existing at the reporting date. 6 Comprises the maximum irrevocable amount of guarantees, commitments and forward starting transactions. 7 Loan commitments measured at fair value of USD 3.5 billion, guarantees measured at fair value of USD 1.6 billion and forward starting reverse repurchase agreements measured at fair value of USD 8.1 billion are under the time bucket Due within 1 month.

Note 28 Hedge accounting

Derivatives transacted for hedging purposes

The Group enters into derivative transactions for the purpose of hedging risks inherent in assets, liabilities and forecast transactions. The accounting treatment of hedge transactions varies according to the nature of the instrument hedged and whether the hedge qualifies as such for accounting purposes.

Derivative transactions that qualify and are designated as hedges for accounting purposes are described under the corresponding risk category headings in this Note (interest rate risk hedge accounting and structural foreign exchange risk hedge accounting). In addition, UBS designates certain non-derivative financial assets and liabilities as hedging instruments in structural foreign exchange risk hedge accounting, as described under the corresponding risk category headings of this Note.

The Group has also executed various hedging strategies utilizing derivatives for which hedge accounting has not been applied. These economic hedges include interest rate swaps and other interest rate derivatives (e.g., futures) for day-to-day economic interest rate risk management purposes. In addition, the Group has used equity futures, options and, to a lesser extent, swaps in a variety of equity trading strategies to offset underlying equity and equity volatility exposure. The Group has also entered into credit default swaps that provide economic hedges for credit risk exposures (refer to "Credit derivatives" in Note 11). The Group's accounting policies for derivatives designated and accounted for as hedging instruments or economic hedges that do not qualify for hedge accounting are described in Note 1a item 3j, where terms used in the following sections are explained.

Interest rate risk hedge accounting

Fair value hedges: interest rate risk related to debt instruments

The Group issues various long-term, fixed-rate debt instruments measured at amortized cost, such as senior unsecured debt, covered bonds and subordinated debt, that are exposed to changes in fair value due to movements in market interest rates. Interest rate swaps are used as fair value hedges to protect against changes in the fair value of the issued debt.

Fair value hedges of interest rate risk related to debt instruments involve swapping fixed cash flows associated with the debt issued to floating cash flows by entering into interest rate swaps that receive fixed and pay floating cash flows. The variable future cash flows are based on the following benchmark rates: USD LIBOR, CHF LIBOR, EURIBOR, GBP LIBOR, AUD LIBOR, JPY LIBOR and SGD LIBOR.

The issued debt and interest rate swaps are designated in a fair value hedge relationship. The notional of the designated hedging instrument matches the notional of the hedged item.

The hedged risk is determined as the change in the fair value of the debt issued arising solely from changes in the designated benchmark interest rate (e.g., one-month or three-month LIBOR). Such change is usually the largest component of the overall change in the fair value of the hedged position in transaction currency.

Hedge effectiveness is assessed by comparing changes in the fair value of the debt issued attributable to changes in the designated benchmark interest rate with the changes in the fair value of the interest rate swaps.

Hedge ineffectiveness can arise from different curves used for the discounting of the hedging instruments and the hedged items, or from mismatches of critical terms between fixed-term lending products and hedging interest rate swaps.

Hedging instruments and hedged items

USD million	31.12.18	31.12.17
Hedging instruments: interest rate swaps		
Nominal amount[1]	63,816	
Carrying amount		
Derivative financial assets	27	49
Derivative financial liabilities	1	2
Hedged items: debt issued measured at amortized cost		
Carrying amount[1]	63,785	
of which: accumulated amount of fair value hedge adjustment	*(298)*	

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

Hedge ineffectiveness

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Changes in fair value of hedging instruments[1]	(341)	(16)	166
Changes in fair value of hedged items[1]	329	(4)	(170)
Net gains / (losses) related to hedge ineffectiveness recognized in Other net income from fair value changes on financial instruments	(11)	(20)	(4)

1 For prior periods, the amounts included offsetting accrued interest, which did not have any effect on net gains / (losses) related to hedge ineffectiveness.

Profile of the timing of the nominal amount of the hedging instrument

USD billion	Due within 1 month	Due between 1 and 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years	Total
Interest rate swaps			4	43	17	64

Note 28 Hedge accounting (continued)

Fair value hedges: portfolio interest rate risk related to loans

The Group has a portfolio of long-term fixed-rate mortgage loans in CHF that are measured at amortized cost and exposed to changes in the fair value attributable to movements in market interest rates. Interest rate swaps that pay a fixed rate of interest and receive a floating rate of interest are used as fair value hedges to protect against changes in the fair value of the originated loans.

The portfolio of mortgage loans and interest rate swaps are designated in a fair value hedge relationship. The notional of the designated hedging instrument matches the notional of the hedged item.

The hedging strategy involves an open portfolio of hedged items, i.e., mortgage loans. Both the hedged items and the hedging instruments are adjusted on a monthly basis to reflect changes in size and the maturity profile of the hedged portfolio. The existing hedging relationship is discontinued and a new one is designated. Changes in the portfolio are driven by new loans originated or existing loans repaid.

The hedged risk is determined as the change in the fair value of the loans arising solely from changes in the designated benchmark interest rate (e.g., one-month or three-month LIBOR). Such change is usually the largest component of the overall change in the fair value of the hedged position in transaction currency.

Hedge effectiveness is assessed by comparing changes in the fair value of the hedged portfolio of loans attributable to changes in the designated benchmark interest rate with the changes in the fair value of the interest rate swaps.

Hedge ineffectiveness can arise from different curves used for the discounting of the hedging instruments and the hedged items, or from mismatches of critical terms between fixed-term lending products and hedging interest rate swaps.

Hedging instruments and hedged items

USD million	31.12.18	31.12.17
Hedging instruments: interest rate swaps		
Nominal amount[1]	10,318	
Carrying amount		
Derivative financial assets	0	0
Derivative financial liabilities	31	33
Hedged items: loans and advances to customers		
Carrying amount[1]	10,299	
of which: accumulated amount of fair value hedge adjustment on the portfolio that was subject to hedge accounting[2]	*200*	
of which: accumulated amount of fair value hedge adjustment, subject to amortization attributable to the portion of the portfolio that ceased to be part of hedge accounting[2]	*89*	

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively. 2 Amounts presented within Other financial assets measured at amortized cost and Other financial liabilities measured at amortized cost.

Hedge ineffectiveness

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Changes in fair value of hedging instruments[1]	(22)	(10)	(132)
Changes in fair value of hedged items[1]	16	3	119
Net gains / (losses) related to hedge ineffectiveness recognized in Other net income from fair value changes on financial instruments	(6)	(7)	(13)

1 For prior periods, the amounts included offsetting accrued interest, which had no effect on net gains / (losses) related to hedge ineffectiveness.

Note 28 Hedge accounting (continued)

Cash flow hedges of forecast transactions

The Group is exposed to variability in future interest cash flows on non-trading financial assets and liabilities that bear interest at variable rates or are expected to be refinanced or reinvested in the future, due to movements in future market rates. The amounts and timing of future cash flows, representing both principal and interest flows, are projected on the basis of contractual terms and other relevant factors, including estimates of prepayments and defaults. The aggregate principal balances and interest cash flows across all portfolios over time form the basis for identifying the non-trading interest rate risk of the Group, which is hedged with interest rate swaps, the maximum maturity of which is 10 years.

The group of forecast cash flows and interest rate swaps are designated in cash flow hedge relationships. The notional of the designated hedging instrument matches the notional of the hedged item for newly transacted swaps. For swaps that are re-designated, the ratio of the designation is determined based on the swap sensitivity.

The hedging strategy involves designation of each interest rate swap in a separate hedge relationship against a group of hedged items that share the same risk. The hedged items giving rise to the hedged cash flows are fungible and could be substituted for each other over the lifetime of the hedge. Cash flow forecasts and risk exposures are monitored and adjusted on an ongoing basis, and consequently hedging instruments are added or taken out of the program accordingly.

The hedged risk is determined as the variability of future cash flows arising solely from changes in the designated benchmark interest rate, i.e., overnight index swap rate / one-month or three-month LIBOR. Hedge effectiveness is assessed by comparing changes in the fair value of the hedged cash flows attributable to changes in the designated benchmark interest rate with the changes in the fair value of the interest rate swaps.

Hedge ineffectiveness can arise from differences in the reference index of the hedging instruments and hedged items, or from inception of the hedge relationship after the trade date of the hedging derivative.

Hedging instruments

USD million	31.12.18	31.12.17
Hedging instruments: interest rate swaps		
Nominal amount[1]	70,149	
Carrying amount		
Derivative financial assets	24	31
Derivative financial liabilities	1	2

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

Hedge ineffectiveness

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Changes in fair value of hedging instruments[1]	97		
Changes in fair value of hedged items	(73)		
Effective portion of changes in fair value of hedging instruments recognized as Other comprehensive income	(42)	45	234
Ineffectiveness recognized as Other net income from fair value changes on financial instruments	25	8	11

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

Other comprehensive income recognized directly in equity related to cash flow hedges

USD million	2018	2017	2016
Balance at the beginning of the year	360	955	1,635
Effective portion of changes in fair value of hedging instruments recognized in OCI	(42)	45	234
Amount reclassified to Net interest income when the hedged item affected net profit / (loss)	(294)	(843)	(1,094)
of which: reclassified to interest income on amortized-cost instruments[1]	*(293)*		
of which: reclassified to interest income on FVTPL instruments[1]	*(1)*		
Translation effects recognized directly in retained earnings	18	39	4
Income tax related to cash flow hedges	67	163	176
Balance at the end of the year	109	360	955
of which: related to hedging relationships for which hedge accounting continues to be applied[1,2]	*74*		
of which: related to hedging relationships for which hedge accounting is no longer applied[1,2]	*73*		

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively. 2 Amounts are disclosed on a pre-tax basis.

Note 28 Hedge accounting (continued)

Structural foreign exchange risk hedge accounting

Hedges of net investments in foreign operations

The Group applies hedge accounting for certain net investments in foreign operations. For this purpose, foreign exchange (FX) derivatives, mainly FX forwards and FX swaps, as well as non-derivative financial assets or liabilities are used and designated as hedging instruments. The notional of the designated hedging instrument matches the notional of the hedged item.

Based on UBS's risk management strategy, the hedges are adjusted on at least a monthly basis to reflect the changes in the hedged position.

The hedged risk is determined as the change in the carrying amount of net assets of foreign operations arising solely from changes in spot foreign exchange rates. Consequently, the Group only designates the spot element of the FX forwards as hedging instruments. Changes in the fair value of the hedging instruments attributable to changes in forward points and the effect of discounting are not part of a hedge accounting designation. These amounts, therefore, do not form part of the effectiveness assessment and are recognized directly in profit or loss.

The effective portion of gains and losses of these FX swaps, i.e., the spot element, is transferred directly to OCI to offset foreign currency translation (FCT) gains and losses on the net investments in foreign branches and subsidiaries. As such, these FX swaps hedge the structural FX exposure, resulting in the accumulation of FCT at the level of individual foreign branches and subsidiaries, which make up the total FCT OCI of the Group.

When UBS designates as hedging instruments certain non-derivative foreign currency financial assets and liabilities of foreign branches or subsidiaries, the FX translation difference recorded in FCT OCI of the non-derivative hedging instrument of one foreign entity offsets the structural FX exposure of another foreign entity. Therefore, the aggregated FCT OCI of the Group is unchanged from this hedge designation.

Due to the fact that only the spot element of hedging instruments is designated in hedging relationships, ineffectiveness is unlikely unless the hedged net assets fall below the designated hedged amount. The exceptions are hedges where the hedging currency is not the same as the currency of the foreign operation, where the currency basis may cause ineffectiveness.

As of 31 December 2017, the notional amount of hedging instruments exceeded the underlying hedged structural FX exposures, due to the fact that non-US dollar structural FX exposures were hedged against the US dollar first and then against Swiss francs, the former functional currency of the parent entity. As of 31 December 2018 all structural FX exposures are hedged directly against the US dollar.

Hedging instruments

USD million	31.12.18	31.12.17
Hedging instruments: derivative financial instruments		
Nominal amount	11,537	13,374
Carrying amount		
Derivative financial assets	56	80
Derivative financial liabilities	48	133
Hedging instruments: non-derivative foreign currency assets and liabilities		
Nominal amount	229	2,969
Carrying amount[1]		
Receivables from securities financing transactions	115	
Payables from securities financing transactions	115	

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

Hedge ineffectiveness

	For the year ended
USD million	31.12.18
Changes in fair value of hedging instruments[1]	205
Changes in fair value of hedged items[1]	(205)
Effective portion of changes in fair value of hedging instruments recognized in Foreign currency translation OCI[1]	181
Ineffectiveness recognized as Other net income from fair value changes on financial instruments[1]	24

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

Note 28 Hedge accounting (continued)

Foreign currency translation reserve

USD million	31.12.18	31.12.17	31.12.16
Foreign currency translation reserve	3,924	4,466	2,901
of which: effective portion of changes in fair value of hedging instruments related to investment in subsidiaries	*777*		
of which: for which hedge accounting continues to be applied[1]	*521*		
of which: for which hedge accounting is no longer applied[1]	*255*		
Effective portion of changes in fair value of hedging instruments reclassified to Other income upon disposal of investment for the year ended[1]	2		

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

Undiscounted cash flows

The table below provides undiscounted cash flow information for derivative instruments designated in hedge accounting relationships.

Derivatives designated in hedge accounting relationships (undiscounted cash flows)

USD billion	On demand	Due within 1 month	Due between 1 and 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years	Total
Interest rate swaps[1]							
FX swaps / forwards							
Cash inflows	0	9	2	0	0	0	11
Cash outflows	0	9	2	0	0	0	11
Net cash flows	0	0	0	0	0	0	0

1 Undiscounted cash inflows and cash outflows of interest rate swaps as of 31 December 2018 were not material as the majority of interest rate swaps designated in hedge accounting relationships are legally settled on a daily basis.

Note 29 Pension and other post-employment benefit plans

The table below provides a breakdown of expenses related to pension and other post-employment benefit plans recognized in the income statement within *Personnel expenses*.

Income statement – expenses related to pension and other post-employment benefit plans

USD million	31.12.18	31.12.17	31.12.16
Net periodic expenses for defined benefit plans	188	481	440
of which: related to major pension plans[1]	*186*	*460*	*417*
of which: Swiss plan[2]	*153*	*414*	*386*
of which: UK plan	*11*	*15*	*(2)*
of which: US and German plans	*22*	*31*	*34*
of which: related to post-employment medical insurance plans[3]	*(11)*	*3*	*4*
of which: UK plan	*1*	*1*	*1*
of which: US plans	*(12)*	*2*	*3*
of which: related to remaining plans and other expenses[4]	*13*	*17*	*19*
Expenses for defined contribution plans[5]	268	243	238
of which: UK plans	*80*	*72*	*78*
of which: US plan	*127*	*110*	*107*
of which: remaining plans	*61*	*61*	*53*
Total pension and other post-employment benefit plan expenses[6]	457	723	678

1 Refer to Note 29a for more information. 2 Changes to the Swiss pension plan in 2018 resulted in a pre-tax gain of USD 241 million related to past service. Refer to Note 29a for more information on these changes. 3 Refer to Note 29b for more information. 4 Other expenses include differences between actual and estimated performance award accruals. 5 Refer to Note 29c for more information. 6 Refer to Note 6.

The table below provides a breakdown of amounts recognized in *Other comprehensive income* for defined benefit plans.

Other comprehensive income – gains / (losses) on defined benefit plans

USD million	31.12.18	31.12.17	31.12.16
Major pension plans[1]	(230)	253	(842)
of which: Swiss plan	*(352)*	*(79)*	*(94)*
of which: UK plan	*130*	*304*	*(623)*
of which: US and German plans	*(8)*	*28*	*(126)*
Post-employment medical insurance plans[2]	7	1	(13)
of which: UK plan	*3*	*1*	*(5)*
of which: US plans	*4*	*0*	*(7)*
Remaining plans	3	31	(26)
Gains / (losses) recognized in other comprehensive income, before tax	(220)	286	(880)
Tax (expense) / benefit relating to defined benefit plans recognized in other comprehensive income	276	11	51
Gains / (losses) recognized in other comprehensive income, net of tax[3]	56	296	(829)

1 Refer to Note 29a for more information. 2 Refer to Note 29b for more information. 3 Refer to the "Statement of comprehensive income."

Note 29 Pension and other post-employment benefit plans (continued)

UBS recognizes assets and liabilities with respect to defined benefit plans within *Other non-financial assets* and *Other non-financial liabilities*.

As of 31 December 2018 and 31 December 2017, the Swiss pension plan was in a surplus situation. However, a surplus is only recognized on the balance sheet to the extent that it does not exceed the estimated future economic benefit. Since the estimated future economic benefit was zero as of 31 December 2018 and 31 December 2017, no net defined benefit pension asset was recognized on the balance sheet.

The table below provides a breakdown of liabilities recognized on the balance sheet within *Other non-financial liabilities* related to defined benefit plans.

Balance sheet – net defined benefit pension and post-employment liability

USD million	31.12.18	31.12.17
Major pension plans[1]	671	825
of which: Swiss plan	*0*	*0*
of which: UK plan	*160*	*275*
of which: US and German plans[2]	*511*	*550*
Post-employment medical insurance plans[3]	62	88
of which: UK plan	*22*	*27*
of which: US plans	*40*	*61*
Remaining plans	42	36
Total net defined benefit pension and post-employment liability[4]	775	949

1 Refer to Note 29a for more information. 2 Of the total liability recognized as of 31 December 2018, USD 137 million related to US plans and USD 374 million related to German plans (31 December 2017: USD 153 million and USD 398 million, respectively). 3 Refer to Note 29b for more information. 4 Refer to Note 22.

Note 29 Pension and other post-employment benefit plans (continued)

a) Defined benefit pension plans

UBS has established defined benefit pension plans for its employees in various jurisdictions, with the major plans located in Switzerland, the UK, the US and Germany.

The overall investment policy and strategy for UBS's defined benefit pension plans is guided by the objective of achieving an investment return that, together with contributions, ensures that there will be sufficient assets to pay pension benefits as they fall due while also mitigating various risks. For the plans with assets, i.e. funded plans, the investment strategies are managed under local laws and regulations in each jurisdiction. The asset allocation is determined by the governance body with reference to the current and expected economic and market conditions and in consideration of specific asset class risk in the risk profile. Within this framework, UBS ensures that the fiduciaries consider how the asset investment strategy correlates with the maturity profile of the plan liabilities and the respective potential effect on the funded status of the plans, including potential short-term liquidity requirements.

The defined benefit obligations (DBOs) for all of UBS's defined benefit pension plans are directly affected by changes in yields of high-quality corporate bonds quoted in an active market in the currency of the respective pension plan, as the applicable discount rate used to determine the DBO is based on these yields. For the funded plans, the pension assets are invested in a diversified portfolio of financial assets, including real estate, bonds, investment funds and cash, across geographic regions, to ensure a balance of risk and return. Under IFRS, volatility arises in each pension plan's net asset / liability position because the fair value of the plan's financial assets is not fully correlated to movements in the value of the plan's DBO. Specific asset-liability matching strategies for each pension plan are independently determined by the responsible governance body. The net asset / liability volatility for each plan is dependent on the specific financial assets chosen by each plan's governance body. For certain pension plans, a liability-driven investment approach is applied to a portion of the plan assets to reduce potential volatility.

Swiss pension plan

The Swiss pension plan covers employees of UBS AG and employees of companies having close economic or financial ties with UBS AG, and exceeds the minimum benefit requirements under Swiss pension law.

Contributions to the pension plan are paid by both the employer and the employees. The Swiss pension plan allows employees to choose the level of contributions paid by them. Employee contributions are calculated as a percentage of the contributory salary and are deducted monthly. The percentages deducted from salary depend on age and choice of contribution category and vary between 1% and 13.5% of contributory base salary and between 0% and 9% of contributory variable compensation. Depending on the age of the employee, UBS pays a contribution that ranges between 6.5% and 27.5% of contributory base salary and between 3.6% and 9% of contributory variable compensation. UBS also pays risk contributions that are used to finance benefits paid out in the event of death and disability, as well as to finance bridging pensions.

The plan benefits include retirement, disability and survivor benefits. The pension plan offers to members at the normal retirement age of 64 a choice between a lifetime pension with or without full restitution and a partial or full lump sum payment. Members can draw early retirement benefits starting from the age of 58. Employees have the opportunity to make additional purchases of benefits to fund early retirement benefits (Plan 58+).

The pension amount payable is a result of the conversion rate applied on the accumulated balance of the individual plan participant's pension account at the retirement date. The accumulated balance of each individual plan participant's pension account is based on credited vested benefits transferred from previous employers, purchases of benefits, and the employee and employer contributions that have been made to the pension account of each individual plan participant, as well as the interest accrued on the accumulated balance. The interest rate accrued is defined annually by the Pension Foundation Board.

Although the Swiss pension plan is based on a defined contribution promise under Swiss pension law, it is accounted for as a defined benefit plan under IFRS, primarily because of the obligation to accrue interest on the pension accounts and the payment of lifetime pension benefits.

The Swiss pension plan is governed by a Pension Foundation Board. The responsibilities of this board are defined by Swiss pension law and by the plan rules. An actuarial valuation under Swiss pension law is performed regularly. According to Swiss pension law, a temporary limited underfunding is permitted. However, should an underfunded situation occur, the Pension Foundation Board is required to take the necessary measures to ensure that full funding can be expected to be restored within a maximum period of 10 years. If a Swiss pension plan were to become significantly underfunded on a Swiss pension law basis, additional employer and employee contributions could be required. In this situation, the risk is shared between employer and employees, and the employer is not legally obliged to cover more than 50% of the additional contributions required. As of 31 December 2018, the Swiss pension plan had a technical funding ratio under Swiss pension law of 124.2% (31 December 2017: 131.9%).

The investment strategy of the Swiss plan is implemented on the basis of a multi-level investment and risk management process and complies with Swiss pension law, including the rules and regulations relating to diversification of plan assets. These rules, among others, specify restrictions on the composition of plan assets; e.g., there is a limit of 50% for investments in equities. The investment strategy of the Swiss plan is aligned with the defined risk budget set out by the Pension Foundation Board. The risk budget is determined on the basis of regularly performed asset and liability management analyses. In order to implement the risk budget, the Swiss plan may use direct investments, investment funds and derivatives. To mitigate foreign currency risk, a specific currency hedging strategy is in place. The Pension Foundation Board strives for a medium- and long-term balance between assets and liabilities.

As of 31 December 2018, the Swiss pension plan was in a surplus situation on an IFRS measurement basis, as the fair value of plan assets exceeded the DBO by USD 3,274 million (31 December 2017: surplus of USD 3,237 million). However, a surplus is only recognized on the balance sheet to the extent that it does not exceed the estimated future economic benefit, which equals the difference between the present value of the estimated future net service cost and the present value of the estimated future employer contributions. The maximum future economic benefit is highly variable based on changes in the discount rate. As of both 31 December 2018 and 31 December 2017, the estimated future economic benefit was zero and hence no net defined benefit asset was recognized on the balance sheet. As of 31 December 2018, the difference between the pension plan surplus and the estimated future economic benefit, i.e., the asset ceiling effect, was USD 3,274 million (31 December 2017: USD 3,237 million).

Changes to the Swiss pension plan

As a result of the effects of continuing low and in some cases negative interest rates, diminished investment return expectations and increasing life expectancy, the pension fund of UBS in Switzerland and UBS agreed to measures that have taken effect from the start of 2019 to support the long-term financial stability of the Swiss pension fund. As a result, the conversion rate was lowered, the regular retirement age was increased to 65, employee contributions were increased to vary between 2.5% and 13.5% of the contributory base salary, and savings contributions start from age 20 instead of the previous starting age of 25. Pensions already in payment on 1 January 2019 were not affected by these measures.

To mitigate the effects of the reduction of the conversion rate on future pensions, UBS will make a payment to employees' retirement assets in the Swiss pension fund of up to USD 734 million in three installments in 2020, 2021 and 2022.

In accordance with IFRS, these measures led to a reduction in the pension obligation recognized by UBS, resulting in a pre-tax gain of USD 241 million in 2018. In addition, 2018 service costs were lower by USD 59 million due to the decrease in benefits. These effects were recognized as a reduction in *Personnel expenses* within the income statement across the business divisions and Corporate Center, with a corresponding effect in *Other comprehensive income*, as the Swiss pension plan was in a surplus situation that could not be recognized due to the IFRS asset ceiling restriction. If the Swiss pension plan remains in an asset ceiling position, the three annual payments, adjusted for expected forfeitures, are expected to reduce total equity by approximately USD 210 million per year over the installment period, with no effect on the income statement.

The employer contributions expected to be made to the Swiss pension plan in 2019 are estimated to be USD 454 million.

Non-Swiss pension plans

UBS locations outside of Switzerland established various defined benefit pension plans in accordance with local regulations and practices. The non-Swiss locations with major defined benefit pension plans are the UK, the US and Germany. Defined benefit pension plans in other locations are not material to the financial results of UBS and hence not separately disclosed.

The non-Swiss plans provide benefits in the event of retirement, death or disability. The level of benefits provided depends on the specific rate of benefit accrual and the level of employee compensation. UBS's general principle is to ensure that the plans are adequately funded on the basis of actuarial valuations. Local pension regulations and tax requirements are the primary drivers for determining when contributions are required.

UK pension plan

The UK plan is a career-average revalued earnings scheme, and benefits increase automatically based on UK price inflation. The normal retirement age for participants in the UK plan is 60. Since 2000, the UK plan has been closed to new entrants and, since 2013, pension plan participants are no longer accruing benefits for current or future service. Employees instead participate in the UK defined contribution plan.

The governance responsibility for the UK plan lies jointly with the Pension Trustee Board, which is required under local pension laws, and UBS. The employer contributions to the pension fund reflect agreed-upon deficit funding contributions, which are determined on the basis of the most recent actuarial valuation using assumptions agreed by the Pension Trustee Board and UBS. In the event of underfunding, UBS and the Pension Trustee Board must agree on a deficit recovery plan within statutory deadlines. In 2018 and 2017, UBS did not make any deficit funding contributions.

Note 29 Pension and other post-employment benefit plans (continued)

The plan assets are invested in a diversified portfolio of financial assets. A liability-driven investment approach is applied, as a portion of the plan assets is invested in inflation-indexed bonds that provide a partial hedge against price inflation. If price inflation increases, the DBO is likely to increase by more than the change in the fair value of plan assets, which would result in an increase in the net defined benefit liability. Plan rules and local pension legislation cap the level of inflationary increase that can be applied to plan benefits.

As the plan is obligated to provide guaranteed lifetime pension benefits to plan participants upon retirement, increases in life expectancy will result in an increase in the plan's liabilities. The sensitivity to changes in life expectancy is particularly high in the UK plan as the pension benefits are indexed to price inflation.

As of 31 December 2018, the UK plan was in a deficit situation on an IFRS measurement basis as the DBO exceeded the fair value of plan assets by USD 160 million (31 December 2017: deficit of USD 275 million).

Following the most recent triennial statutory actuarial valuation as of 30 June 2017, UBS agreed to minimum cash contributions of USD 26 million in 2019 and USD 13 million in 2020. Total contributions expected to be made to the UK defined benefit pension plan in 2019 are estimated at USD 128 million, subject to regular funding reviews during the year.

In addition, UBS and the Pension Trustee Board have entered into an arrangement whereby a collateral pool was established to provide security for the pension fund, effective 31 January 2019, at a value of USD 574 million. The collateral pool includes corporate bonds and government-related debt instruments. The Pension Trustee Board and UBS may agree adjustments to the collateral pool value in the future. The arrangement provides the Pension Trustee Board dedicated access to a pool of assets in the event of UBS's insolvency or not paying a required deficit funding contribution.

Following a UK High Court ruling requiring pension trustees to equalize benefits for men and women in relation to guaranteed minimum pensions (GMP), UBS recorded an increase of USD 4 million in the DBO, resulting in a corresponding loss recognized in the income statement in 2018.

US pension plans

There are two distinct major defined benefit pension plans in the US, both with a normal retirement age of 65. Since 1998 and 2001, respectively, the plans have been closed to new entrants, who instead can participate in defined contribution plans.

One of the major defined benefit pension plans is a contribution-based plan in which each participant accrues a percentage of salary in a pension account. The pension account is credited annually with interest based on a rate that is linked to the average yield on one-year US government bonds. For the other major defined benefit pension plan, retirement benefits accrue based on the career-average earnings of each individual plan participant. Former employees with vested benefits have the option to take a lump sum payment or a lifetime annuity commencing early or at retirement age.

As required under local state pension laws, both plans have fiduciaries who, together with UBS, are responsible for the governance of the plans. UBS regularly reviews the contribution strategy for these plans, considering local statutory funding rules and the cost of any premiums that must be paid to the Pension Benefit Guaranty Corporation for having an underfunded plan. In 2018, the contributions made by UBS were USD 42 million (2017: USD 92 million).

The plan assets for both plans are invested in a diversified portfolio of financial assets. Each pension plan's fiduciaries are responsible for the investment decisions with respect to the plan assets. Both US plans apply a liability-driven investment approach to support the volatility management in the net asset / liability position. Derivative instruments may also be employed to manage volatility.

The employer contributions expected to be made to the US defined benefit pension plans in 2019 are estimated at USD 9 million.

German pension plans

There are two different defined benefit pension plans in Germany, and both are contribution-based plans. No plan assets are set aside to fund these plans, and benefits are paid directly by UBS. The normal retirement age for the participants in the German plans is 65. Within the larger of the two plans, each participant accrues a percentage of salary in a pension account. The accumulated account balance of the plan participant is credited on an annual basis with guaranteed interest at a rate of 5%. In the other plan, amounts are accrued annually based on employee elections. For this plan, the accumulated account balance is credited on an annual basis with a guaranteed interest rate of 6% for amounts accrued before 2010, of 4% for amounts accrued from 2010 to 2017 and of 0.9% for amounts accrued after 2017. Both plans are regulated under German pension law, under which the responsibility to pay pension benefits when they are due rests entirely with UBS. For these plans, a portion of the pension payments is directly increased in line with price inflation.

The benefits expected to be paid by UBS to the participants of the German plans in 2019 are estimated at USD 11 million.

Financial information by plan

The tables on the following pages provide an analysis of the movement in the net asset / liability recognized on the balance sheet for defined benefit pension plans, as well as an analysis of amounts recognized in net profit and in *Other comprehensive income*.

Note 29 Pension and other post-employment benefit plans (continued)

Defined benefit pension plans

USD million	Swiss plan		UK plan		US and German plans		Total	
	2018	2017	2018	2017	2018	2017	2018	2017
Defined benefit obligation at the beginning of the year	23,419	22,465	3,744	3,639	1,816	1,725	28,978	27,830
Current service cost	405	456	0	0	7	9	413	465
Interest expense	151	166	93	102	55	63	299	331
Plan participant contributions	218	208	0	0	0	0	218	208
Remeasurements	(242)	301	(266)	(88)	(69)	82	(577)	295
of which: actuarial (gains) / losses due to changes in demographic assumptions	*0*	*6*	*(18)*	*(82)*	*(5)*	*(5)*	*(23)*	*(81)*
of which: actuarial (gains) / losses due to changes in financial assumptions	*(639)*	*141*	*(257)*	*44*	*(69)*	*86*	*(964)*	*271*
of which: experience (gains) / losses[1]	*397*	*154*	*8*	*(50)*	*5*	*2*	*410*	*105*
Past service cost related to plan amendments	(241)	0	4	0	0	0	(237)	0
Curtailments	(20)	(50)	0	0	0	0	(20)	(50)
Benefit payments	(954)	(1,121)	(202)	(256)	(112)	(109)	(1,268)	(1,487)
Other movements	0	(8)	0	0	0	0	0	(8)
Foreign currency translation	(170)	1,001	(181)	347	(18)	47	(369)	1,395
Defined benefit obligation at the end of the year	22,566	23,419	3,192	3,744	1,679	1,816	27,437	28,978
of which: amounts owed to active members	*10,452*	*10,741*	*146*	*180*	*226*	*255*	*10,823*	*11,176*
of which: amounts owed to deferred members	*0*	*0*	*1,434*	*1,930*	*606*	*645*	*2,040*	*2,575*
of which: amounts owed to retirees	*12,114*	*12,678*	*1,612*	*1,634*	*847*	*916*	*14,574*	*15,228*
Fair value of plan assets at the beginning of the year	26,656	24,184	3,469	3,120	1,265	1,124	31,390	28,428
Return on plan assets excluding amounts included in interest income	(523)	1,640	(136)	215	(77)	110	(736)	1,965
Interest income	177	181	86	88	44	44	306	313
Employer contributions	505	485	0	0	51	100	556	585
Plan participant contributions	218	208	0	0	0	0	218	208
Benefit payments	(954)	(1,121)	(202)	(256)	(112)	(109)	(1,268)	(1,487)
Administration expenses, taxes and premiums paid	(11)	(10)	0	0	(3)	(4)	(14)	(15)
Foreign currency translation	(228)	1,090	(185)	302	0	0	(412)	1,392
Fair value of plan assets at the end of the year	25,839	26,656	3,032	3,469	1,168	1,265	30,039	31,390
Asset ceiling effect at the beginning of the year	3,237	1,718	0	0	0	0	3,237	1,718
Interest expense on asset ceiling effect	23	13	0	0	0	0	23	13
Asset ceiling effect excluding interest expense and foreign currency translation on asset ceiling effect	71	1,417	0	0	0	0	71	1,417
Foreign currency translation	(58)	89	0	0	0	0	(58)	89
Asset ceiling effect at the end of the year	3,274	3,237	0	0	0	0	3,274	3,237
Net defined benefit asset / (liability)	0	0	(160)	(275)	(511)	(550)	(671)	(825)

Movement in the net asset / (liability) recognized on the balance sheet

	Swiss plan 2018	Swiss plan 2017	UK plan 2018	UK plan 2017	US and German plans 2018	US and German plans 2017	Total 2018	Total 2017
Net asset / (liability) recognized on the balance sheet at the beginning of the year	0	0	(275)	(519)	(550)	(601)	(825)	(1,120)
Net periodic expenses recognized in net profit	(153)	(414)	(11)	(15)	(22)	(31)	(186)	(460)
Gains / (losses) recognized in other comprehensive income	(352)	(79)	130	304	(8)	28	(230)	253
Employer contributions	505	485	0	0	51	100	556	585
Other movements	0	8	0	0	0	0	0	8
Foreign currency translation	0	0	(4)	(45)	18	(47)	14	(91)
Net asset / (liability) recognized on the balance sheet at the end of the year	0	0	(160)	(275)	(511)	(550)	(671)	(825)

Funded and unfunded plans

	Swiss plan 2018	Swiss plan 2017	UK plan 2018	UK plan 2017	US and German plans 2018	US and German plans 2017	Total 2018	Total 2017
Defined benefit obligation from funded plans	22,566	23,419	3,192	3,744	1,219	1,324	26,976	28,487
Defined benefit obligation from unfunded plans	0	0	0	0	460	492	460	492
Plan assets	25,839	26,656	3,032	3,469	1,168	1,265	30,039	31,390
Surplus / (deficit)	3,274	3,237	(160)	(275)	(511)	(550)	2,603	2,412
Asset ceiling effect	3,274	3,237	0	0	0	0	3,274	3,237
Net defined benefit asset / (liability)	0	0	(160)	(275)	(511)	(550)	(671)	(825)

1 Experience (gains) / losses are a component of actuarial remeasurements of the defined benefit obligation that reflect the effects of differences between the previous actuarial assumptions and what has actually occurred.

Note 29 Pension and other post-employment benefit plans (continued)

Analysis of amounts recognized in net profit

USD million	Swiss plan		UK plan		US and German plans		Total	
For the year ended	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
Current service cost	405	456	0	0	7	9	413	465
Interest expense related to defined benefit obligation	151	166	93	102	55	63	299	331
Interest income related to plan assets	(177)	(181)	(86)	(88)	(44)	(44)	(306)	(313)
Interest expense on asset ceiling effect	23	13	0	0	0	0	23	13
Administration expenses, taxes and premiums paid	11	10	0	0	3	4	14	15
Past service cost related to plan amendments	(241)	0	4	0	0	0	(237)	0
Curtailments	(20)	(50)	0	0	0	0	(20)	(50)
Net periodic expenses recognized in net profit	153	414	11	15	22	31	186	460

Analysis of amounts recognized in other comprehensive income (OCI)

USD million	Swiss plan		UK plan		US and German plans		Total	
For the year ended	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
Remeasurement of defined benefit obligation	242	(301)	266	88	69	(82)	577	(295)
Return on plan assets excluding amounts included in interest income	(523)	1,640	(136)	215	(77)	110	(736)	1,965
Asset ceiling effect excluding interest expense and foreign currency translation on asset ceiling effect	(71)	(1,417)	0	0	0	0	(71)	(1,417)
Total gains / (losses) recognized in other comprehensive income, before tax	(352)	(79)	130	304	(8)	28	(230)	253

The table below provides information on the duration of the DBO and the timing for expected benefit payments.

	Swiss plan		UK plan		US and German plans[1]	
	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
Duration of the defined benefit obligation (in years)	14.5	15.1	19.5	20.0	9.8	10.6
Maturity analysis of benefits expected to be paid						
USD million						
Benefits expected to be paid within 12 months	1,153	1,149	82	83	108	108
Benefits expected to be paid between 1 and 3 years	2,356	2,294	187	182	216	217
Benefits expected to be paid between 3 and 6 years	3,554	3,455	345	337	336	330
Benefits expected to be paid between 6 and 11 years	5,643	5,564	701	717	566	572
Benefits expected to be paid between 11 and 16 years	5,142	5,109	770	806	494	514
Benefits expected to be paid in more than 16 years	16,792	17,190	3,927	4,325	798	887

1 The duration of the defined benefit obligation represents a weighted average across US and German plans.

Actuarial assumptions

The measurement of each pension plan's DBO considers different actuarial assumptions. Changes in those assumptions lead to volatility in the DBO. The following significant actuarial assumptions are applied:

– Discount rate: the discount rate is based on the yield of high-quality corporate bonds quoted in an active market in the currency of the respective pension plan. Consequently, a decrease in the yield of high-quality corporate bonds increases the DBO. Conversely, an increase in the yield of high-quality corporate bonds decreases the DBO.
– Rate of salary increase: an increase in the salary of plan participants generally increases the DBO, specifically for the Swiss and German plans. For the UK plan, as the plan is closed for future service, UBS employees no longer accrue future service benefits and thus salary increases have no effect on the DBO. For the US plans, only a small percentage of the total population continues to accrue benefits for future service and therefore the effect of a salary increase on the DBO is minimal.
– Rate of pension increase: for the Swiss plan, there is no automatic indexing of pensions. Any increase would be decided by the Pension Foundation Board. For the US plans, there is also no automatic indexing of pensions. For the UK plan, pensions are automatically indexed to price inflation as per plan rules and local pension legislation. The German plans are also automatically indexed and a portion of the pensions are directly increased by price inflation. An increase in price inflation in the UK or Germany increases the respective plan's DBO.
– Rate of interest credit on retirement savings: the Swiss plan and one of the US plans have retirement saving balances that are increased annually by an interest credit rate. For each of these plans, an increase in the interest credit rate increases the plan's DBO.
– Life expectancy: most of UBS's defined benefit pension plans are obligated to provide guaranteed lifetime pension benefits. The DBO for all plans is calculated using an underlying best estimate of the life expectancy of plan participants. An increase in the life expectancy of plan participants increases the plan's DBO.

The actuarial assumptions used for the pension plans are based on the economic conditions prevailing in the jurisdiction in which they are offered.

→ **Refer to Note 1a item 7 for a description of the accounting policy for defined benefit pension plans**

Changes in actuarial assumptions

UBS regularly reviews the actuarial assumptions used in calculating its DBO to determine their continuing relevance.

Swiss pension plan

In 2018, a net gain of USD 242 million was recognized in *Other comprehensive income* (OCI) related to the remeasurement of the DBO. This was primarily due to a market-driven increase in the discount rate, which resulted in an OCI gain of USD 776 million. This effect was partially offset by experience losses of USD 397 million, reflecting differences between the previous actuarial assumptions and what actually occurred, and market-driven changes to the assumed rate of interest credit on retirement savings, which resulted in a loss of USD 124 million. Changes in other assumptions were not significant.

In 2017, a net loss of USD 301 million was recognized in OCI related to the remeasurement of the DBO. This was primarily due to a market-driven decrease in the discount rate, which resulted in an OCI loss of USD 165 million, as well as experience losses of USD 154 million. These effects were partially offset by market-driven changes to the assumed rate of interest credit on retirement savings, which resulted in a gain of USD 26 million. Changes in other assumptions were not significant.

UK pension plan

In 2018, a net gain of USD 266 million was recognized in OCI related to the remeasurement of the DBO for the UK plan. This was primarily due to a market-driven increase in the discount rate, which resulted in an OCI gain of USD 219 million, as well as changes in the pension increase assumption, which resulted in an OCI gain of USD 37 million.

In 2017, a net gain of USD 88 million was recognized in OCI related to the remeasurement of the DBO for the UK plan. This was primarily driven by changes in the life expectancy assumption, which resulted in a gain of USD 82 million. In addition, market-driven changes in the inflation rate assumption resulted in a gain of USD 60 million and experience gains were USD 50 million. These gains were partly offset by a market-driven decrease in the discount rate, which resulted in a loss of USD 102 million.

US and German pension plans

In 2018, a net gain of USD 69 million was recognized in OCI related to the remeasurement of the DBO for the US and German plans, compared with a net loss of USD 82 million in 2017. OCI gains and losses in both years were primarily driven by market-driven movements in discount rates.

Note 29 Pension and other post-employment benefit plans (continued)

The tables below show the significant actuarial assumptions used in calculating the DBO at the end of the year.

Significant actuarial assumptions used

	Swiss plan		UK plan		US and German plans[1]	
In %	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
Discount rate	0.92	0.67	2.90	2.55	3.69	3.14
Rate of salary increase	1.50	1.30	0.00	0.00	2.81	2.83
Rate of pension increase	0.00	0.00	3.10	3.11	1.50	1.50
Rate of interest credit on retirement savings	0.92	0.67	0.00	0.00	3.70	2.56

1 Represents weighted average assumptions across US and German plans.

Mortality tables and life expectancies for major plans

		Life expectancy at age 65 for a male member currently			
		aged 65		aged 45	
Country	Mortality table	31.12.18	31.12.17	31.12.18	31.12.17
Switzerland	BVG 2015 G with CMI 2016 projections	21.6	21.6	23.1	23.0
UK	S2PA with CMI 2017 projections[1]	23.4	23.4	24.6	24.6
USA	RP2014 WCHA with MP2018 projection scale[2]	22.8	22.8	24.3	24.4
Germany	Dr. K. Heubeck 2018 G[3]	20.5	20.3	23.3	22.9

		Life expectancy at age 65 for a female member currently			
		aged 65		aged 45	
Country	Mortality table	31.12.18	31.12.17	31.12.18	31.12.17
Switzerland	BVG 2015 G with CMI 2016 projections	23.5	23.4	25.0	24.9
UK	S2PA with CMI 2017 projections[1]	25.2	25.2	26.5	26.5
USA	RP2014 WCHA with MP2018 projection scale[2]	24.4	24.4	26.0	26.0
Germany	Dr. K. Heubeck 2018 G[3]	24.1	24.3	26.3	26.8

1 In 2017, the mortality table S2PA with CMI 2016 projections was used. 2 In 2017, the mortality table RP2014 WCHA with MP2017 projection scale was used. 3 In 2017, the mortality table Dr. K. Heubeck 2005 G was used.

Sensitivity analysis of significant actuarial assumptions

The table below presents a sensitivity analysis for each significant actuarial assumption, showing how the DBO would have been affected by changes in the relevant actuarial assumption that were reasonably possible at the balance sheet date. Unforeseen circumstances may arise, which could result in variations that are outside the range of alternatives deemed reasonably possible. Caution should be used in extrapolating the sensitivities below on the DBO as the sensitivities may not be linear.

Sensitivity analysis of significant actuarial assumptions[1]

Increase / (decrease) in defined benefit obligation	Swiss plan		UK plan		US and German plans	
USD million	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
Discount rate						
Increase by 50 basis points	(1,327)	(1,470)	(292)	(350)	(77)	(90)
Decrease by 50 basis points	1,503	1,669	333	401	84	98
Rate of salary increase						
Increase by 50 basis points	68	86	–[2]	–[2]	1	1
Decrease by 50 basis points	(65)	(82)	–[2]	–[2]	(1)	(1)
Rate of pension increase						
Increase by 50 basis points	1,090	1,212	260	380	6	7
Decrease by 50 basis points	–[3]	–[3]	(262)	(336)	(6)	(7)
Rate of interest credit on retirement savings						
Increase by 50 basis points	231	267	–[4]	–[4]	9	9
Decrease by 50 basis points	(219)	(253)	–[4]	–[4]	(9)	(9)
Life expectancy						
Increase in longevity by one additional year	751	827	122	143	42	48

1 The sensitivity analyses are based on a change in one assumption while holding all other assumptions constant, so that interdependencies between the assumptions are excluded. 2 As the plan is closed for future service, a change in assumption is not applicable. 3 As the assumed rate of pension increase was 0% as of 31 December 2018 and as of 31 December 2017, a downward change in assumption is not applicable. 4 As the UK plan does not provide interest credits on retirement savings, a change in assumption is not applicable.

Note 29 Pension and other post-employment benefit plans (continued)

Fair value of plan assets

The tables below provide information on the composition and fair value of plan assets of the Swiss, the UK and the US pension plans.

Composition and fair value of plan assets

Swiss plan

	31.12.18				31.12.17			
	Fair value			Plan asset allocation %	Fair value			Plan asset allocation %
USD million	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
Cash and cash equivalents	137	0	137	1	120	0	120	0
Real estate / property								
Domestic	0	2,963	2,963	11	0	2,859	2,859	11
Investment funds								
Equity								
Domestic	628	0	628	2	667	0	667	3
Foreign	5,721	1,515	7,237	28	7,507	1,331	8,838	33
Bonds[1]								
Domestic, AAA to BBB–	2,570	0	2,570	10	2,279	0	2,279	9
Foreign, AAA to BBB–	6,194	0	6,194	24	6,375	0	6,375	24
Foreign, below BBB–	892	0	892	3	577	0	577	2
Real estate								
Foreign	0	11	11	0	0	23	23	0
Other	518	4,142	4,659	18	861	4,044	4,905	18
Other investments	531	18	549	2	0	12	12	0
Total fair value of plan assets	17,190	8,649	25,839	100	18,386	8,270	26,656	100

	31.12.18	31.12.17
Total fair value of plan assets	25,839	26,656
of which:[2]		
Bank accounts at UBS	*132*	*120*
UBS debt instruments	*13*	*3*
UBS shares	*25*	*34*
Securities lent to UBS[3]	*1,567*	*2,030*
Property occupied by UBS	*88*	*85*
Derivative financial instruments, counterparty UBS[3]	*34*	*23*

1 The bond credit ratings are primarily based on Standard & Poor's credit ratings. Ratings AAA to BBB– and below BBB– represent investment grade and non-investment grade ratings, respectively. In cases where credit ratings from other rating agencies were used, these were converted to the equivalent rating in Standard & Poor's rating classification. 2 Bank accounts at UBS encompass accounts in the name of the Swiss pension fund. The other positions disclosed in the table encompass both direct investments in UBS instruments and indirect investments, i.e., those made through funds that the pension fund invests in. 3 Securities lent to UBS and derivative financial instruments are presented gross of any collateral. Securities lent to UBS were fully covered by collateral as of 31 December 2018 and 31 December 2017. Net of collateral, derivative financial instruments amounted to USD 10 million as of 31 December 2018 (31 December 2017: USD 12 million).

Note 29 Pension and other post-employment benefit plans (continued)

Composition and fair value of plan assets (continued)

UK plan

	31.12.18				31.12.17			
	Fair value			Plan asset allocation %	Fair value			Plan asset allocation %
USD million	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
Cash and cash equivalents	143	0	143	5	163	0	163	5
Bonds[1]								
Domestic, AAA to BBB–	1,604	0	1,604	53	1,709	0	1,709	49
Domestic, below BBB–	0	0	0	0	1	0	1	0
Investment funds								
Equity								
Domestic	26	0	26	1	31	0	31	1
Foreign	658	0	658	22	1,046	0	1,046	30
Bonds[1]								
Domestic, AAA to BBB–	587	93	680	22	641	83	724	21
Domestic, below BBB–	15	0	15	0	21	0	21	1
Foreign, AAA to BBB–	258	0	258	9	147	0	147	4
Foreign, below BBB–	51	0	51	2	57	0	57	2
Real estate								
Domestic	102	28	131	4	103	28	131	4
Other	0	0	0	0	(4)	5	1	0
Asset-backed securities	21	2	22	1	0	0	0	0
Other investments[2]	(565)	9	(556)	(18)	(575)	11	(563)	(16)
Total fair value of plan assets	2,900	132	3,032	100	3,341	127	3,469	100

1 The bond credit ratings are primarily based on Standard & Poor's credit ratings. Ratings AAA to BBB– and below BBB– represent investment grade and non-investment grade ratings, respectively. In cases where credit ratings from other rating agencies were used, these were converted to the equivalent rating in Standard & Poor's rating classification. 2 Mainly relates to repurchase arrangements on UK treasury bonds.

Note 29 Pension and other post-employment benefit plans (continued)

Composition and fair value of plan assets (continued)

US plans

	31.12.18				31.12.17			
	Fair value			Plan asset allocation %	Fair value			Plan asset allocation %
USD million	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
Cash and cash equivalents	27	0	27	2	76	0	76	6
Bonds[1]								
Domestic, AAA to BBB–	462	0	462	40	200	0	200	16
Domestic, below BBB–	2	0	2	0	10	0	10	1
Foreign, AAA to BBB–	92	0	92	8	46	0	46	4
Foreign, below BBB–	3	0	3	0	1	0	1	0
Investment funds								
Equity								
Domestic	143	0	143	12	298	0	298	24
Foreign	157	0	157	13	277	0	277	22
Bonds[1]								
Domestic, AAA to BBB–	104	0	104	9	216	0	216	17
Domestic, below BBB–	23	0	23	2	20	0	20	2
Foreign, AAA to BBB–	56	0	56	5	47	0	47	4
Foreign, below BBB–	6	0	6	1	5	0	5	0
Real estate								
Domestic	0	13	13	1	0	13	13	1
Other	64	0	64	5	21	0	21	2
Insurance contracts	0	17	17	1	0	18	18	1
Asset-backed securities	0	0	0	0	15	0	15	1
Other investments	0	0	0	0	4	0	4	0
Total fair value of plan assets	1,139	29	1,168	100	1,235	31	1,265	100

1 The bond credit ratings are primarily based on Standard & Poor's credit ratings. Ratings AAA to BBB– and below BBB– represent investment grade and non-investment grade ratings, respectively. In cases where credit ratings from other rating agencies were used, these were converted to the equivalent rating in Standard & Poor's rating classification.

Note 29 Pension and other post-employment benefit plans (continued)

b) Post-employment medical insurance plans

In the US and the UK, UBS offers post-employment medical insurance benefits that contribute to the health care coverage of certain employees and their beneficiaries after retirement. The UK post-employment medical insurance plan is closed to new entrants. In the US, retiree medical premiums are subsidized for eligible participants who retired before 2014.

These plans are not prefunded. In the US, the retirees also contribute to the cost of the post-employment medical benefits.

In 2018, UBS announced changes to one of the US post-employment medical insurance plans that replaced the UBS retiree medical subsidy with a new subsidy to purchase medical coverage through a private Medicare exchange. This change reduced the post-employment benefit obligation by USD 14 million, resulting in a corresponding gain recognized in the income statement in 2018.

The benefits expected to be paid by UBS to the post-employment medical insurance plans in 2019 are estimated at USD 5 million.

The table below provides an analysis of the movement in the net asset / liability recognized on the balance sheet for post-employment medical insurance plans, as well as an analysis of amounts recognized in net profit and in *Other comprehensive income*.

Post-employment medical insurance plans

USD million	UK plan		US plans		Total	
	2018	2017	2018	2017	2018	2017
Post-employment benefit obligation at the beginning of the year	27	26	61	64	88	90
Current service cost	0	0	0	0	0	0
Interest expense	1	1	2	2	3	3
Plan participant contributions	0	0	3	3	3	3
Remeasurements	(3)	(1)	(4)	0	(7)	(1)
of which: actuarial (gains) / losses due to changes in demographic assumptions	*0*	*0*	*0*	*0*	*0*	*(1)*
of which: actuarial (gains) / losses due to changes in financial assumptions	*(1)*	*(1)*	*(4)*	*2*	*(5)*	*2*
of which: experience (gains) / losses[1]	*(2)*	*0*	*0*	*(2)*	*(2)*	*(2)*
Past service cost related to plan amendments	0	0	(14)	0	(14)	0
Benefit payments[2]	(1)	(1)	(7)	(8)	(9)	(9)
Foreign currency translation	(1)	2	0	0	(1)	2
Post-employment benefit obligation at the end of the year	22	27	40	61	62	88
of which: amounts owed to active members	*6*	*6*	*0*	*0*	*6*	*6*
of which: amounts owed to deferred members	*0*	*0*	*0*	*0*	*0*	*0*
of which: amounts owed to retirees	*17*	*21*	*40*	*61*	*56*	*81*
Fair value of plan assets at the end of the year	0	0	0	0	0	0
Net post-employment benefit asset / (liability)	(22)	(27)	(40)	(61)	(62)	(88)
Analysis of amounts recognized in net profit						
Current service cost	0	0	0	0	0	0
Interest expense related to post-employment benefit obligation	1	1	2	2	3	3
Past service cost related to plan amendments	0	0	(14)	0	(14)	0
Net periodic expenses	1	1	(12)	2	(11)	3
Analysis of amounts recognized in other comprehensive income (OCI)						
Remeasurement of post-employment benefit obligation	3	1	4	0	7	1
Total gains / (losses) recognized in other comprehensive income, before tax	3	1	4	0	7	1

1 Experience (gains) / losses are a component of actuarial remeasurements of the post-employment benefit obligation that reflect the effects of differences between the previous actuarial assumptions and what has actually occurred. 2 Benefit payments are funded by employer contributions and plan participant contributions.

Note 29 Pension and other post-employment benefit plans (continued)

Actuarial assumptions

The measurement of each medical insurance plan's post-employment benefit obligation considers different actuarial assumptions. Changes in assumptions lead to volatility in the post-employment benefit obligation. The following significant actuarial assumptions are applied:

– Discount rate: discount rates used for post-employment medical insurance plans are the same as those used for defined benefit pension plans. A decrease in the yield of high-quality corporate bonds increases the post-employment benefit obligation. Conversely, an increase in the yield of high-quality corporate bonds decreases the post-employment benefit obligation.
– Average health care cost trend rate: an increase in health care costs generally increases the post-employment benefit obligation.
– Life expectancy: as some plan participants have lifetime benefits under these plans, an increase in life expectancy increases the post-employment benefit obligation.

UBS regularly reviews the actuarial assumptions used in calculating its post-employment benefit obligations to determine their continuing relevance. Significant actuarial assumptions used to determine post-employment benefit obligations at the end of the year were:

Significant actuarial assumptions used[1]

	UK plan		US plans[2]	
In %	31.12.18	31.12.17	31.12.18	31.12.17
Discount rate	2.90	2.55	4.20	3.54
Average health care cost trend rate – initial	5.10	5.10	7.79	7.99
Average health care cost trend rate – ultimate	5.10	5.10	4.50	4.50

1 The assumptions for life expectancies are provided within Note 29a.   2 Represents weighted average assumptions across US plans.

Sensitivity analysis of significant actuarial assumptions

The table below presents a sensitivity analysis for each significant actuarial assumption showing how the post-employment benefit obligation would have been affected by changes in the relevant actuarial assumption that were reasonably possible at the balance sheet date. Unforeseen circumstances may arise, which could result in variations that are outside the range of alternatives deemed reasonably possible. Caution should be used in extrapolating the sensitivities below on the post-employment benefit obligation, as the sensitivities may not be linear.

Sensitivity analysis of significant actuarial assumptions[1]

Increase / (decrease) in post-employment benefit obligation	UK plan		US plans	
USD million	31.12.18	31.12.17	31.12.18	31.12.17
Discount rate				
Increase by 50 basis points	(1)	(2)	(2)	(3)
Decrease by 50 basis points	1	2	2	3
Average health care cost trend rate				
Increase by 100 basis points	3	4	1	1
Decrease by 100 basis points	(3)	(3)	0	(1)
Life expectancy				
Increase in longevity by one additional year	2	2	2	4

1 The sensitivity analyses are based on a change in one assumption while holding all other assumptions constant, so that interdependencies between the assumptions are excluded.

c) Defined contribution plans

UBS sponsors a number of defined contribution plans in locations outside Switzerland. The locations with significant defined contribution plans are the US and the UK. Certain plans allow employees to make contributions and earn matching or other contributions from UBS. Employer contributions to defined contribution plans are recognized as an expense, which, for the years ended 31 December 2018, 2017 and 2016, amounted to USD 268 million, USD 243 million and USD 238 million, respectively.

Note 29 Pension and other post-employment benefit plans (continued)

d) Related-party disclosure

UBS is the principal provider of banking services for the pension fund of UBS in Switzerland. In this capacity, UBS is engaged to execute most of the pension fund's banking activities. These activities can include, but are not limited to, trading, securities lending and borrowing and derivative transactions. The non-Swiss UBS pension funds do not have a similar banking relationship with UBS.

Also, UBS leases certain properties that are owned by the Swiss pension fund. As of 31 December 2018, the minimum commitment toward the Swiss pension fund under the related leases was approximately USD 17 million (31 December 2017: USD 5 million).

→ **Refer to the "Composition and fair value of plan assets" table in Note 29a for more information on fair value of investments in UBS instruments held by the Swiss pension fund**

The following amounts have been received or paid by UBS from and to the pension and other post-employment benefit plans located in Switzerland, the UK and the US in respect of these banking activities and arrangements.

Related-party disclosure

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Received by UBS			
Fees	35	36	36
Paid by UBS			
Rent	4	5	5
Dividends, capital repayments and interest	10	10	14

The transaction volumes in UBS shares and UBS debt instruments and the balances of UBS shares held as of 31 December were:

Transaction volumes – UBS shares and UBS debt instruments

	For the year ended	
	31.12.18	31.12.17
Financial instruments bought by pension funds		
UBS shares (in thousands of shares)	889	905
UBS debt instruments (par values, USD million)	13	2
Financial instruments sold by pension funds or matured		
UBS shares (in thousands of shares)	547	2,897
UBS debt instruments (par values, USD million)	3	4

UBS shares held by pension and other post-employment benefit plans

	31.12.18	31.12.17
Number of shares (in thousands of shares)	16,712	16,370
Fair value (USD million)	207	301

Note 30 Employee benefits: variable compensation

a) Plans offered

The Group has several share-based and other compensation plans that align the interests of Group Executive Board (GEB) members and other employees with the interests of investors. These compensation plans are also designed to meet regulatory requirements. The most significant compensation plans are described below.

→ **Refer to Note 1a item 6 for a description of the accounting policy related to share-based and other deferred compensation plans**

Mandatory deferred compensation plans

Equity Ownership Plan (EOP)

The EOP is a mandatory deferred share-based compensation plan for all employees with total annual compensation greater than USD / CHF 300,000.

EOP awards granted to GEB members and certain other employees will only vest if both Group and business division performance conditions are met. For all awards granted for the performance year 2017 (awarded in early 2018) and before, the Group performance condition is based on the average adjusted return on tangible equity (RoTE) excluding deferred tax assets over the performance period. Starting with the EOP awards granted in 2019 for the performance year 2018, the Group performance condition is based on the average reported return on common equity tier 1 capital (RoCET1). Business division performance is measured on the basis of their average adjusted return on attributed equity (RoAE). For Corporate Center employees, it is measured on the basis of the average operating businesses' adjusted RoAE.

Certain awards, such as replacement awards issued outside the normal performance year cycle, may take the form of deferred cash under the EOP plan rules.

Notional shares represent a promise to receive UBS shares at vesting and do not carry voting rights during the vesting period. Notional shares granted prior to February 2014 have no rights to dividends, whereas awards granted since February 2014 carry a dividend equivalent that may be paid in notional shares or cash and that vests on the same terms and conditions as the awards. However, starting with awards granted for the performance year 2017, European Banking Authority guidelines do not permit individuals who are deemed to be Material Risk Takers (MRTs) to receive dividend or interest payments on instruments awarded as deferred variable remuneration. Where dividend payments are not permitted, the grant price of the EOP award is adjusted for the expected dividend yield over the vesting period to reflect the fair value of the non-dividend-bearing award.

Awards are settled by delivering UBS shares at vesting, except in jurisdictions where this is not permitted for legal or tax reasons. EOP awards generally vest in equal installments after two and three years following grant (for GEB members, generally after three, four and five years). The awards are generally forfeitable upon, among other circumstances, voluntary termination of employment with UBS.

Deferred Contingent Capital Plan (DCCP)

The DCCP is a mandatory deferred compensation plan for all employees with total annual compensation greater than USD / CHF 300,000.

DCCP awards granted up to January 2015 represent a right to receive a cash payment at vesting. For awards granted since February 2015, DCCP takes the form of notional additional tier 1 (AT1) capital instruments, which at the discretion of UBS can be settled in either a cash payment or a perpetual, marketable AT1 capital instrument. DCCP awards vest in full after five years, and up to seven years for UK senior management functions, unless there is a trigger event.

Awards are forfeited if a viability event occurs, that is, if FINMA notifies the firm in writing that the DCCP awards must be written down to prevent an insolvency, bankruptcy or failure of UBS, or if UBS receives a commitment of extraordinary support from the public sector that is necessary to prevent such an event. Additionally, they are written down if the Group's common equity tier 1 capital ratio falls below 10% for GEB members and below 7% for all other employees. As an additional performance condition, GEB members forfeit 20% of their award for each loss-making year during the vesting period.

For awards granted up to January 2015, interest on the awards is paid annually, provided that UBS achieved an adjusted profit before tax in the preceding year. For awards granted since February 2015, interest payments are discretionary. Where interest payments are not permitted, such as for MRTs, the DCCP award reflects the fair value of the granted non-interest-bearing award.

The awards are generally forfeitable upon, among other circumstances, voluntary termination of employment with UBS.

Note 30 Employee benefits: variable compensation (continued)

Asset Management EOP

In order to align deferred compensation of certain Asset Management employees with the performance of the investment funds they manage, awards are granted to such employees in the form of cash-settled notional investment funds. The amount delivered depends on the value of the underlying investment funds at the time of vesting. The awards are generally forfeitable upon, among other circumstances, voluntary termination of employment with UBS.

Financial advisor variable compensation

In line with market practice for US wealth management businesses, the compensation for US financial advisors in Global Wealth Management is comprised of production payout and deferred compensation awards. Production payout is primarily based on compensable revenue and is paid monthly.

Financial advisors may also qualify for deferred compensation awards, which generally vest over a six-year period. The awards are based on strategic performance measures, including production, length of service with the firm and net new business. Production payout rates and deferred compensation awards may be reduced for, among other things, errors, negligence or carelessness, or a failure to comply with the firm's rules, standards, practices and policies or applicable laws and regulations.

Strategic objective awards

Strategic objective awards are deferred compensation awards based on strategic performance measures, including production, length of service with the firm and net new business. These awards are granted in the form of both deferred share-based and deferred cash-based awards, with a vesting period of up to six years.

Through performance year 2016, strategic objective awards were partly granted under the PartnerPlus deferred cash plan. In addition to such granted awards (UBS company contributions), participants were allowed to voluntarily contribute additional amounts otherwise payable as production payout up to a certain percentage, which vested upon contribution. Company contributions and voluntary contributions were credited with interest in accordance with the terms of the plan. Rather than being credited with interest, a participant could elect to have voluntary contributions, along with vested company contributions, credited with notional earnings based on the performance of various mutual funds. Company contributions and interest on both company and voluntary contributions ratably vest in 20% installments six to 10 years following grant date. Company contributions and interest on notional earnings on both company and voluntary contributions are forfeitable under certain circumstances.

GrowthPlus

GrowthPlus is a compensation plan for selected financial advisors whose revenue production and length of service exceed defined thresholds from 2010 through 2017. Awards were granted in 2010, 2011, 2015 and 2018. The awards are cash-based and are distributed over seven years, with the exception of 2018 awards, which are distributed over five years.

Other compensation plans

Equity Plus Plan (Equity Plus)

Equity Plus is a voluntary share-based compensation plan that provides eligible employees with the opportunity to purchase UBS shares at market value and receive one notional share for every three shares purchased, up to a maximum annual limit. Share purchases may be made annually from the performance award and / or monthly through deductions from salary. If the shares purchased are held until three years from the start of the associated plan year and, in general, if the employee remains employed by UBS, the notional shares vest. For notional shares granted since April 2014, employees are entitled to receive a dividend equivalent, which may be paid in notional shares and / or cash.

Role-based allowances (RBAs)

Certain employees of legal entities regulated in the EU may receive an RBA in addition to their base salary. This allowance reflects the market value of a specific role and is fixed, non-forfeitable compensation. Unlike salary, an RBA is paid only as long as the employee is in such a role. RBAs consist of a cash portion and, where applicable, a blocked UBS share award. Such shares will be unblocked in equal installments after two and three years. The compensation expense is recognized in the year of grant.

Discontinued deferred compensation plans

The following plans have been discontinued. Expenses related to these plans were fully recognized in the income statement in periods prior to 2018. Any remaining outstanding options and stock appreciation rights under these awards will expire during 2019.

Senior Executive Equity Ownership Plan (SEEOP)

Up to February 2012, GEB members and selected senior executives received a portion of their mandatory deferral in UBS shares or notional shares, which vested in equal installments over a five-year vesting period and were forfeitable if certain conditions had not been met. The employee's business division or the Group as a whole had to be profitable in the financial year preceding scheduled vesting. Awards granted under SEEOP were settled by delivering UBS shares at vesting. No SEEOP awards have been granted since 2012.

Senior Executive Stock Option Plan (SESOP)

Up to February 2008, GEB members and selected senior executives were granted UBS options with a strike price set at 110% of the market value of a UBS share on the grant date. These awards vested in full following a three-year vesting period and generally expired 10 years from the grant date. No SESOP awards have been granted since 2008.

Long-Term Deferred Retention Senior Incentive Scheme (LTDRSIS)

Awards under the LTDRSIS were granted to employees in Australia up to and including 2014 and represented a profit share amount based on the profitability of the Australian business. Awards vested after three years and included an arrangement that allowed for unpaid installments to be reduced if the business recorded a loss for the calendar year preceding vesting. The awards were generally forfeitable upon voluntary termination of employment with UBS.

Key Employee Stock Appreciation Rights Plan (KESAP) and Key Employee Stock Option Plan (KESOP)

Until 2009, certain key and high-potential employees were granted discretionary share-settled stock appreciation rights (SARs) or options on UBS shares with a strike price not less than the market value of a UBS share on the date of grant. A SAR gives employees the right to receive a number of UBS shares equal to the value of any market price increase of a UBS share between the grant date and the exercise date. One option entitles the holder to acquire one registered UBS share at the option's strike price. SARs and options are settled by delivering UBS shares, except in jurisdictions where this is not permitted for legal reasons. No options or SARs awards have been granted since 2009.

Share delivery obligations

Share delivery obligations related to employee share-based compensation awards were 146 million shares as of 31 December 2018 (31 December 2017: 166 million shares). Share delivery obligations are calculated on the basis of unvested notional share awards, options and stock appreciation rights, taking applicable performance conditions into account.

As of 31 December 2018, UBS held 118 million treasury shares (31 December 2017: 132 million) that were available to satisfy share delivery obligations. Treasury shares held are delivered to employees at exercise or vesting. However, share delivery obligations related to certain options and stock appreciation rights can also be satisfied by shares issued out of conditional capital. As of 31 December 2018, the number of UBS Group AG shares that could have been issued out of conditional capital for this purpose was 125 million (31 December 2017: 128 million).

Note 30 Employee benefits: variable compensation (continued)

b) Effect on the income statement

Effect on the income statement for the financial year and future periods

The table below provides information on compensation expenses related to total variable compensation, including financial advisor variable compensation, that were recognized in the financial year ended 31 December 2018, as well as expenses that were deferred and will be recognized in the income statement for 2019 and later. The majority of expenses deferred to 2019 and later that are related to the performance year 2018 relates to awards granted in March 2019. The total compensation expense for unvested share-based awards granted up to 31 December 2018 will be recognized in future periods over a weighted average period of 2.3 years.

Variable compensation including financial advisor variable compensation

	Expenses recognized in 2018			Expenses deferred to 2019 and later		
USD million	Related to the performance year 2018	Related to prior performance years	Total	Related to the performance year 2018	Related to prior performance years	Total
Non-deferred cash	2,089	(32)	2,057	0	0	0
Deferred compensation awards	373	565	938	585	653	1,238
of which: Equity Ownership Plan	*217*	*309*	*526*	*325*	*244*	*570*
of which: Deferred Contingent Capital Plan	*131*	*226*	*357*	*238*	*382*	*620*
of which: Asset Management EOP	*25*	*28*	*53*	*22*	*26*	*48*
of which: Other performance awards	*0*	*2*	*2*	*0*	*1*	*1*
Total variable compensation – performance awards	**2,461**	**534**	**2,995**	**585**	**653**	**1,238**
Replacement payments	7	64	72	60	41	102
Forfeiture credits	0	(136)	(136)	0	0	0
Severance payments	123	0	123	0	0	0
Retention plan and other payments	33	33	66	24	33	57
Deferred Contingent Capital Plan: interest expense	0	119	119	96	195	291
Total variable compensation – other	**162**	**80**	**243**	**180**	**269**	**450**
Financial advisor variable compensation	3,233	237	3,470	128	639	767
of which: non-deferred cash	*3,089*	*0*	*3,089*	*0*	*0*	*0*
of which: deferred share-based awards	*51*	*44*	*95*	*52*	*131*	*183*
of which: deferred cash-based awards	*93*	*193*	*286*	*76*	*507*	*584*
Compensation commitments with recruited financial advisors[1]	33	551	584	357	1,883	2,240
Total financial advisor variable compensation	**3,266**	**789**	**4,054**	**484**	**2,522**	**3,006**
Total variable compensation including FA variable compensation	**5,889**	**1,403**	**7,292**[2]	**1,250**	**3,444**	**4,694**

1 Reflects expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. Amounts reflected as deferred expenses represent the maximum deferred exposure as of the balance sheet date. 2 Includes USD 634 million in expenses related to share-based compensation (performance awards: USD 526 million; other variable compensation: USD 12 million; financial advisor compensation: USD 95 million). A further USD 49 million in expenses related to share-based compensation was recognized within other Note 6 expense categories (Salaries: USD 15 million, related to role-based allowances; Social security: USD 8 million; Other personnel expenses: USD 26 million, related to the Equity Plus Plan). Total personnel expenses related to share-based equity-settled compensation excluding social security were USD 676 million.

Note 30 Employee benefits: variable compensation (continued)

Variable compensation including financial advisor variable compensation (continued)

	Expenses recognized in 2017			Expenses deferred to 2018 and later		
USD million	Related to the performance year 2017	Related to prior performance years	Total	Related to the performance year 2017	Related to prior performance years	Total
Non-deferred cash	2,088	(25)	2,062	0	0	0
Deferred compensation awards	399	689	1,088	594	697	1,291
of which: Equity Ownership Plan	*239*	*344*	*583*	*329*	*291*	*620*
of which: Deferred Contingent Capital Plan	*135*	*310*	*444*	*238*	*376*	*614*
of which: Asset Management EOP	*25*	*32*	*57*	*27*	*27*	*54*
of which: Other performance awards	*0*	*4*	*4*	*0*	*3*	*3*
Total variable compensation – performance awards	**2,487**	**664**	**3,151**	**594**	**697**	**1,291**
Replacement payments	13	59	72	86	44	130
Forfeiture credits	0	(107)	(107)	0	0	0
Severance payments	113	0	113	0	0	0
Retention plan and other payments	25	38	63	30	33	63
Deferred Contingent Capital Plan: interest expense	0	111	111	80	222	301
Total variable compensation – other	**151**	**101**	**252**	**196**	**298**	**494**
Financial advisor variable compensation	3,050	260	3,310	156	795	951
of which: non-deferred cash	*2,891*	*0*	*2,891*	*0*	*0*	*0*
of which: deferred share-based awards	*54*	*48*	*102*	*70*	*121*	*191*
of which: deferred cash-based awards	*104*	*212*	*316*	*86*	*674*	*760*
Compensation commitments with recruited financial advisors[1]	31	723	754	369	2,058	2,428
Total financial advisor variable compensation	**3,080**	**984**	**4,064**	**526**	**2,853**	**3,379**
Total variable compensation including FA variable compensation	**5,718**	**1,749**	**7,467[2]**	**1,316**	**3,848**	**5,164**

1 Reflects expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. Amounts reflected as deferred expenses represent the maximum deferred exposure as of the balance sheet date. 2 Includes USD 711 million in expenses related to share-based compensation (performance awards: USD 583 million; other variable compensation: USD 26 million; financial advisor compensation: USD 102 million). A further USD 101 million in expenses related to share-based compensation was recognized within other Note 6 expense categories (Salaries: USD 25 million, related to role-based allowances; Social security: USD 51 million; Other personnel expenses: USD 25 million, related to the Equity Plus Plan). Total personnel expenses related to share-based equity-settled compensation excluding social security were USD 735 million.

Note 30 Employee benefits: variable compensation (continued)

Variable compensation including financial advisor variable compensation (continued)

	Expenses recognized in 2016			Expenses deferred to 2017 and later		
USD million	Related to the performance year 2016	Related to prior performance years	Total	Related to the performance year 2016	Related to prior performance years	Total
Non-deferred cash	1,842	(43)	1,799	0	0	0
Deferred compensation awards	379	835	1,215	677	841	1,518
of which: Equity Ownership Plan	*217*	*491*	*708*	*511*	*349*	*861*
of which: Deferred Contingent Capital Plan	*136*	*299*	*435*	*132*	*460*	*593*
of which: Asset Management EOP	*26*	*39*	*66*	*34*	*26*	*60*
of which: Other performance awards	*0*	*6*	*6*	*0*	*5*	*5*
Total variable compensation – performance awards	**2,221**	**792**	**3,013**	**677**	**841**	**1,518**
Replacement payments	25	62	87	40	30	70
Forfeiture credits	0	(74)	(74)	0	0	0
Severance payments	220	0	220	0	0	0
Retention plan and other payments	26	50	76	23	26	50
Deferred Contingent Capital Plan: interest expense	0	115	115	96	239	335
Total variable compensation – other	**272**	**153**	**425**	**159**	**296**	**455**
Financial advisor variable compensation	2,682	250	2,931	194	877	1,071
of which: non-deferred cash	*2,534*	*0*	*2,534*	*0*	*0*	*0*
of which: deferred share-based awards	*34*	*49*	*82*	*57*	*117*	*174*
of which: deferred cash-based awards	*114*	*201*	*315*	*137*	*760*	*897*
Compensation commitments with recruited financial advisors[1]	43	765	808	596	2,084	2,679
Total financial advisor variable compensation	**2,725**	**1,015**	**3,740**	**790**	**2,961**	**3,750**
Total variable compensation including FA variable compensation	**5,218**	**1,960**	**7,178**[2]	**1,626**	**4,097**	**5,723**

1 Reflects expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. Amounts reflected as deferred expenses represent the maximum deferred exposure as of the balance sheet date. 2 Includes USD 831 million in expenses related to share-based compensation (performance awards: USD 708 million; other variable compensation: USD 41 million; financial advisor compensation: USD 82 million). A further USD 90 million in expenses related to share-based compensation was recognized within other Note 6 expense categories (Salaries: USD 39 million, related to role-based allowances; Social security: USD 27 million; Other personnel expenses: USD 24 million, related to the Equity Plus Plan). Total personnel expenses related to share-based equity-settled compensation excluding social security were USD 872 million.

Note 30 Employee benefits: variable compensation (continued)

c) Outstanding share-based compensation awards

Share and performance share awards

Movements in outstanding share-based awards under the EOP during 2018 and 2017 are provided in the table below.

Movements in outstanding share and performance share awards granted under the EOP

	Number of shares 2018	Weighted average grant date fair value (USD)	Number of shares 2017	Weighted average grant date fair value (USD)
Outstanding, at the beginning of the year	162,835,713	15	165,626,088	16
Shares awarded during the year	58,329,398	17	63,872,651	15
Distributions during the year	(67,696,099)	15	(58,756,089)	16
Forfeited during the year	(6,623,984)	16	(7,906,936)	15
Outstanding, at the end of the year	146,845,027	16	162,835,713	15
of which: shares vested for accounting purposes	*66,850,562*		*74,883,139*	

The total carrying amount of the liability related to cash-settled share-based awards as of 31 December 2018 and 31 December 2017 was USD 39 million and USD 56 million, respectively.

Option awards

No option awards have been granted since 2009. The table below provides information on movements in outstanding option awards during 2018 and 2017. As these awards are Swiss franc-denominated, weighted average exercise prices are presented in Swiss francs.

Movements in outstanding option awards

	Number of options 2018	Weighted average exercise price (CHF)	Number of options 2017	Weighted average exercise price (CHF)
Outstanding, at the beginning of the year	32,583,168	25	55,913,291	39
Exercised during the year[1]	(1,813,583)	12	(1,632,319)	12
Forfeited during the year	(19,752)	23	(38,995)	27
Expired unexercised	(24,182,241)	29	(21,658,809)	61
Outstanding, at the end of the year	6,567,592	14	32,583,168	25
Exercisable, at the end of the year	6,567,592	14	32,583,168	25

1 The weighted average share price upon option exercise was CHF 16.22 in 2018 (2017: CHF 16.73), resulting in an intrinsic value of CHF 7 million of options exercised during 2018 (2017: CHF 8 million).

The table below provides additional information about options outstanding as of 31 December 2018.

	Options outstanding			
Range of exercise prices	Number of options outstanding	Weighted average exercise price (CHF)	Aggregate intrinsic value (CHF million)	Weighted average remaining contractual term (years)
CHF				
10.21–15.00	3,294,894	10.27	6.5	0.2
15.01–25.00	3,272,698	16.95	0.0	0.6
10.21–25.00	**6,567,592**		**6.5**	

Note 30 Employee benefits: variable compensation (continued)

SAR awards

No SAR awards have been granted since 2009. The table below provides information on movements in outstanding SAR awards during 2018 and 2017. As these awards are Swiss franc-denominated, weighted average exercise prices are presented in Swiss francs.

Movements in outstanding SAR awards

	Number of SARs 2018	Weighted average exercise price (CHF)	Number of SARs 2017	Weighted average exercise price (CHF)
Outstanding, at the beginning of the year	8,513,415	12	10,807,315	12
Exercised during the year[1]	(2,490,146)	11	(2,212,700)	11
Forfeited during the year	(11,000)	13	(23,000)	11
Expired unexercised	(46,500)	12	(58,200)	13
Outstanding, at the end of the year	5,965,769	12	8,513,415	12
Exercisable, at the end of the year	5,965,769	12	8,513,415	12

1 The weighted average share price upon exercise of SARs was CHF 16.15 in 2018 (2017: CHF 16.70), resulting in an intrinsic value of CHF 12 million of SARs exercised during 2018 (2017: CHF 12 million).

The table below provides additional information about SARs outstanding as of 31 December 2018.

	SARs outstanding			
Range of exercise prices	Number of SARs outstanding	Weighted average exercise price (CHF)	Aggregate intrinsic value (CHF million)	Weighted average remaining contractual term (years)
CHF				
11.12–12.50	5,633,269	11.34	5.1	0.2
12.51–15.00	2,500	14.85	0.0	0.4
15.01–17.50	42,000	16.80	0.0	0.4
17.51–20.00	288,000	19.25	0.0	0.7
11.12–20.00	**5,965,769**		**5.1**	

d) Valuation

UBS share awards

UBS measures compensation expense based on the average market price of the UBS share on the grant date as quoted on the SIX Swiss Exchange, taking into consideration post-vesting sale and hedge restrictions, non-vesting conditions and market conditions, where applicable. The fair value of the share awards subject to post-vesting sale and hedge restrictions is discounted on the basis of the duration of the post-vesting restriction and is referenced to the cost of purchasing an at-the-money European put option for the term of the transfer restriction. The weighted average discount for share and performance share awards granted during 2018 was approximately 18.0% (2017: 20.2%) of the market price of the UBS share. The grant date fair value of notional shares without dividend entitlements also includes a deduction for the present value of future expected dividends to be paid between the grant date and distribution.

UBS options and SARs awards

The fair values of options and SARs have been determined using a standard closed-formula option valuation model. The expected term of each instrument is calculated on the basis of historical employee exercise behavior patterns, taking into account the share price, strike price, vesting period and the contractual life of the instrument. The term structure of volatility is derived from the implied volatilities of traded options on UBS shares in combination with the observed long-term historical share price volatility. Expected future dividends are derived from traded UBS options or from the historical dividend pattern.

Note 31 Interests in subsidiaries and other entities

a) Interests in subsidiaries

UBS defines its significant subsidiaries as those entities that, either individually or in aggregate, contribute significantly to the Group's financial position or results of operations, based on a number of criteria, including the subsidiaries' equity and their contribution to the Group's total assets and profit or loss before tax, in accordance with the requirements set by IFRS 12, Swiss regulations and the rules of the US Securities and Exchange Commission (SEC).

Individually significant subsidiaries

The two tables below list the Group's individually significant subsidiaries as of 31 December 2018. Unless otherwise stated, the subsidiaries listed below have share capital consisting solely of ordinary shares that are held fully by the Group, and the proportion of ownership interest held is equal to the voting rights held by the Group.

The country where the respective registered office is located is also the principal place of business. UBS AG operates through a global network of branches and a significant proportion of its business activity is conducted outside Switzerland in the UK, US, Singapore, Hong Kong and other countries. UBS Europe SE has branches and offices in a number of EU member states, including Germany, Italy, Luxembourg, Spain and Austria. Share capital is provided in the currency of the legally registered office.

Subsidiaries of UBS Group AG as of 31 December 2018

Company	Registered office	Share capital in million		Equity interest accumulated in %
UBS AG	Zurich and Basel, Switzerland	CHF	385.8	100.0
UBS Business Solutions AG[1]	Zurich, Switzerland	CHF	1.0	100.0
UBS Group Funding (Switzerland) AG	Zurich, Switzerland	CHF	0.1	100.0

1 UBS Business Solutions AG holds subsidiaries in Poland, China and India.

Individually significant subsidiaries of UBS AG as of 31 December 2018[1]

Company	Registered office	Primary business division	Share capital in million		Equity interest accumulated in %
UBS Americas Holding LLC	Wilmington, Delaware, USA	Corporate Center	USD	2,250.0[2]	100.0
UBS Asset Management AG	Zurich, Switzerland	Asset Management	CHF	43.2	100.0
UBS Bank USA	Salt Lake City, Utah, USA	Global Wealth Management	USD	0.0	100.0
UBS Europe SE	Frankfurt, Germany	Global Wealth Management	EUR	446.0	100.0
UBS Financial Services Inc.	Wilmington, Delaware, USA	Global Wealth Management	USD	0.0	100.0
UBS Limited	London, United Kingdom	Investment Bank	GBP	226.6	100.0
UBS Securities LLC	Wilmington, Delaware, USA	Investment Bank	USD	1,283.1[3]	100.0
UBS Switzerland AG	Zurich, Switzerland	Personal & Corporate Banking	CHF	10.0	100.0

1 Includes direct and indirect subsidiaries of UBS AG. 2 Comprised of common share capital of USD 1,000 and non-voting preferred share capital of USD 2,250,000,000. 3 Comprised of common share capital of USD 100,000 and non-voting preferred share capital of USD 1,283,000,000.

Note 31 Interests in subsidiaries and other entities (continued)

Other subsidiaries

The table below lists other direct and indirect subsidiaries of UBS AG that are not individually significant but that contribute to the Group's total assets and aggregated profit before tax thresholds and are thereby disclosed in accordance with the requirements set by the SEC.

Other subsidiaries of UBS AG as of 31 December 2018

Company	Registered office	Primary business division	Share capital in million		Equity interest accumulated in %
UBS Americas Inc.	Wilmington, Delaware, USA	Corporate Center	USD	0.0	100.0
UBS Asset Management (Hong Kong) Limited	Hong Kong, Hong Kong	Asset Management	HKD	254.0	100.0
UBS Asset Management (Japan) Ltd	Tokyo, Japan	Asset Management	JPY	2,200.0	100.0
UBS Business Solutions US LLC	Wilmington, Delaware, USA	Corporate Center	USD	0.0	100.0
UBS Credit Corp.	Wilmington, Delaware, USA	Global Wealth Management	USD	0.0	100.0
UBS (France) S.A.	Paris, France	Global Wealth Management	EUR	133.0	100.0
UBS Fund Advisor, L.L.C.	Wilmington, Delaware, USA	Global Wealth Management	USD	0.0	100.0
UBS Fund Management (Luxembourg) S.A.	Luxembourg, Luxembourg	Asset Management	EUR	13.0	100.0
UBS Fund Management (Switzerland) AG	Basel, Switzerland	Asset Management	CHF	1.0	100.0
UBS (Monaco) S.A.	Monte Carlo, Monaco	Global Wealth Management	EUR	49.2	100.0
UBS Realty Investors LLC	Boston, Massachusetts, USA	Asset Management	USD	9.0	100.0
UBS Securities (Thailand) Ltd	Bangkok, Thailand	Investment Bank	THB	500.0	100.0
UBS Securities Australia Ltd	Sydney, Australia	Investment Bank	AUD	0.3[1]	100.0
UBS Securities Japan Co., Ltd.	Tokyo, Japan	Investment Bank	JPY	32,100.0	100.0
UBS Securities Pte. Ltd.	Singapore, Singapore	Investment Bank	SGD	420.4	100.0
UBS Asset Management Life Ltd	London, United Kingdom	Asset Management	GBP	15.0	100.0

1 Includes a nominal amount relating to redeemable preference shares.

Consolidated structured entities

UBS consolidates a structured entity (SE) if it has power over the relevant activities of the entity, exposure to variable returns and the ability to use its power to affect its returns. Consolidated SEs include certain investment funds, securitization vehicles and client investment vehicles. UBS has no individually significant subsidiaries that are SEs.

Investment fund SEs are generally consolidated when the Group's aggregate exposure combined with its decision-making rights indicate the ability to use such power in a principal capacity. Typically the Group will have decision-making rights as fund manager, earning a management fee, and will provide seed capital at the inception of the fund or hold a significant percentage of the fund units. Where other investors do not have the substantive ability to remove UBS as decision maker, the Group is deemed to have control and therefore consolidates the fund.

Securitization SEs are generally consolidated when the Group holds a significant percentage of the asset-backed securities issued by the SE and has the power to remove without cause the servicer of the asset portfolio.

Client investment SEs are generally consolidated when the Group has a substantive liquidation right over the SE or a decision right over the assets held by the SE and has exposure to variable returns through derivatives traded with the SE or holding notes issued by the SE.

In 2018 and 2017, the Group did not enter into any contractual obligation that could require the Group to provide financial support to consolidated SEs. In addition, the Group did not provide support, financial or otherwise, to a consolidated SE when the Group was not contractually obligated to do so, nor has the Group an intention to do so in the future. Further, the Group did not provide support, financial or otherwise, to a previously unconsolidated SE that resulted in the Group controlling the SE during the reporting period.

Note 31 Interests in subsidiaries and other entities (continued)

b) Interests in associates and joint ventures

As of 31 December 2018 and 2017, no associate or joint venture was individually material to the Group. In addition, there were no significant restrictions on the ability of associates or joint ventures to transfer funds to UBS Group AG or its subsidiaries in the form of cash dividends or to repay loans or advances made. There were no quoted market prices for any associates or joint ventures of the Group.

UBS Securities China is no longer recognized as an investment in associate as of 31 December 2018 as this entity was consolidated following an increase in stake from 24.99% to 51% and UBS acquiring control in December 2018.

→ **Refer to Note 32 for more information**

In November 2018, SIX and Worldline entered into a strategic partnership in the cards business under which SIX transferred its existing cards business to Worldline and received a 27% stake in Worldline. UBS recognized a gain of USD 460 million in the income statement, proportional to UBS's 17.31% equity ownership in SIX.

Investments in associates and joint ventures

USD million	2018	2017
Carrying amount at the beginning of the year	1,045	947
Additions	3	3
Disposals[1]	(431)	0
Reclassifications[2]	(21)	0
Share of comprehensive income	529	100
of which: share of net profit[3]	*529*	*76*
of which: share of other comprehensive income[4]	*1*	*24*
Dividends received	(42)	(53)
Impairment		(7)
Foreign currency translation	16	55
Carrying amount at the end of the year	1,099	1,045
of which: associates	*1,066*	*1,014*
of which: UBS Securities China[1]		*412*
of which: SIX Group AG, Zurich[5]	*952*	*476*
of which: other associates	*114*	*127*
of which: joint ventures	*33*	*30*

1 In December 2018, UBS increased its shareholding in UBS Securities China from 24.99% to 51%, acquiring control of the entity in accordance with IFRS 10, Consolidated Financial Statements. Upon acquisition of control, UBS derecognized its former investment in associate. Refer to Note 32 for more information. 2 Reflects reclassifications to Properties and other non-current assets held for sale. 3 For 2018, consists of USD 511 million from associates, of which USD 460 million reflected a valuation gain on the equity ownership in SIX related to the sale of SIX Payment Services to Worldline, and USD 18 million from joint ventures. For 2017, consists of USD 61 million from associates and USD 15 million from joint ventures. 4 For 2018, the total of USD 1 million is from associates. For 2017, consists of USD 24 million from associates and negative USD 1 million from joint ventures. 5 In 2018, UBS AG's equity interest amounts to 17.31%. UBS AG is represented on the Board of Directors.

Note 31 Interests in subsidiaries and other entities (continued)

c) Interests in unconsolidated structured entities

During 2018, the Group sponsored the creation of various SEs and interacted with a number of non-sponsored SEs, including securitization vehicles, client vehicles as well as certain investment funds, that UBS did not consolidate as of 31 December 2018 because it did not control these entities.

The table below presents the Group's interests in and maximum exposure to loss from unconsolidated SEs as well as the total assets held by the SEs in which UBS had an interest as of year-end, except for investment funds sponsored by third parties, for which the carrying value of UBS's interest as of year-end has been disclosed.

Interests in unconsolidated structured entities

	31.12.18				
USD million, except where indicated	Securitization vehicles	Client vehicles	Investment funds	Total	Maximum exposure to loss[1]
Financial assets at fair value held for trading	420	174	7,297	7,890	7,890
Derivative financial instruments	8	35	1	44	44
Loans and advances to customers			179	179	179
Financial assets at fair value not held for trading	87	48[2]	166[3]	302	1,878
Financial assets measured at fair value through other comprehensive income		3,931		3,931	3,931
Other financial assets measured at amortized cost	312	25[2]		337	1,423
Total assets	826[4]	4,212	7,643	12,682	
Derivative financial instruments	3[5]	123	32	158	3
Total liabilities	3	123	32	158	
Assets held by the unconsolidated structured entities in which UBS had an interest (USD billion)	63[6]	69[7]	385[8]		

	31.12.17				
USD million, except where indicated	Securitization vehicles	Client vehicles	Investment funds	Total	Maximum exposure to loss[1]
Financial assets at fair value held for trading	373	316	6,302	6,991	6,991
Derivative financial instruments	22	70	23	114	114
Loans and advances to customers			100	100	100
Financial assets at fair value not held for trading	86	68[2]	108	262	1,826
Financial assets measured at fair value through other comprehensive income		3,965	46[3]	4,011	4,011
Other financial assets measured at amortized cost	299	30[2]		328	1,443
Total assets	779[4]	4,449	6,578	11,806	
Derivative financial instruments	21[5]	54	208	283	14
Total liabilities	21	54	208	283	
Assets held by the unconsolidated structured entities in which UBS had an interest (USD billion)[9]	58[6]	80[7]	422[8]		

1 For the purpose of this disclosure, maximum exposure to loss amounts do not consider the risk-reducing effects of collateral or other credit enhancements. 2 Represents the carrying value of loan commitments. The maximum exposure to loss for these instruments is equal to the notional amount. 3 Upon adoption of IFRS 9 on 1 January 2018, investment fund units that were formerly classified as available for sale under IAS 39 were reclassified to Financial assets at fair value not held for trading. Refer to Note 1c for more information. 4 As of 31 December 2018, USD 0.6 billion of the USD 0.8 billion (31 December 2017: USD 0.7 billion of the USD 0.8 billion) was held in Corporate Center – Non-core and Legacy Portfolio. 5 Comprised of credit default swap liabilities and other swap liabilities. The maximum exposure to loss for credit default swap liabilities is equal to the sum of the negative carrying value and the notional amount. For other swap liabilities, no maximum exposure to loss is reported. 6 Represents the principal amount outstanding. 7 Represents the market value of total assets. 8 Represents the net asset value of the investment funds sponsored by UBS and the carrying value of UBS's interests in the investment funds not sponsored by UBS. 9 In 2018 UBS has refined the methodology applied to identify significant interests in the scope of disclosure under IFRS 12, Disclosure of Interests in Other Entities. This change has been applied prospectively as the effect on interests disclosed was not material in prior periods. Had this methodology been applied in 2017, the interests in unconsolidated structured entities at 31 December 2017 would have been USD 0.3 million and USD 0.2 million lower for securitization vehicles and client vehicles, respectively. Assets held by the unconsolidated structured entities in which UBS had an interest at 31 December 2017 would have been USD 26 billion lower for securitization vehicles and USD 22 billion lower for client vehicles.

The Group retains or purchases interests in unconsolidated SEs in the form of direct investments, financing, guarantees, letters of credit, derivatives and through management contracts.

The Group's maximum exposure to loss is generally equal to the carrying value of the Group's interest in the SE, with the exception of guarantees, letters of credit and credit derivatives, for which the contract's notional amount, adjusted for losses already incurred, represents the maximum loss that the Group is exposed to. In addition, the current fair value of derivative swap instruments with a positive replacement value only, such as total return swaps, is presented as the maximum exposure to loss. Risk exposure for these swap instruments could change over time with market movements.

The maximum exposure to loss disclosed in the table on the previous page does not reflect the Group's risk management activities, including effects from financial instruments that may be used to economically hedge the risks inherent in the unconsolidated SE or the risk-reducing effects of collateral or other credit enhancements.

In 2018 and 2017, the Group did not provide support, financial or otherwise, to an unconsolidated SE when not contractually obligated to do so, nor has the Group an intention to do so in the future.

In 2018 and 2017, income and expenses from interests in unconsolidated SEs primarily resulted from mark-to-market movements recognized in other net income from fair value changes on financial instruments, which have generally been hedged with other financial instruments, as well as fee and commission income received from UBS-sponsored funds.

Interests in securitization vehicles

As of 31 December 2018 and 31 December 2017, the Group held interests, both retained and acquired, in various securitization vehicles, a majority of which are held within Corporate Center – Non-core and Legacy Portfolio. The Investment Bank also retained interests in securitization vehicles related to financing, underwriting, secondary market and derivative trading activities. In some cases the Group may be required to absorb losses from an unconsolidated SE before other parties because the Group's interest is subordinated to others in the ownership structure.

An overview of the Group's interests in unconsolidated securitization vehicles and the relative ranking and external credit rating of those interests is presented in the table on the following pages. The numbers outlined in this table may differ from the securitization positions presented in the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors,* for the following reasons: (i) exclusion from the table on the following pages of synthetic securitizations transacted with entities that are not SEs and transactions in which the Group did not have an interest because it did not absorb any risk, (ii) a different measurement basis in certain cases (e.g., IFRS carrying value within the table above compared with net exposure amount at default for Pillar 3 disclosures) and (iii) different classification of vehicles viewed as sponsored by the Group versus sponsored by third parties.

→ **Refer to Note 1a item 1 for more information on the Group's accounting policies regarding consolidation and sponsorship of securitization vehicles and other structured entities**

→ **Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors* for more information**

Interests in client vehicles

As of 31 December 2018 and 31 December 2017, the Group retained interests in client vehicles sponsored by UBS and third parties that relate to financing and derivative activities, and to hedge structured product offerings. Included within these investments are securities guaranteed by US government agencies.

Interests in investment funds

The Group holds interests in a number of investment funds, primarily resulting from seed investments or in order to hedge structured product offerings. In addition to the interests disclosed in the table on the previous page, the Group manages the assets of various pooled investment funds and receives fees that are based, in whole or part, on the net asset value of the fund and / or the performance of the fund. The specific fee structure is determined on the basis of various market factors and considers the nature of the fund and the jurisdiction of incorporation, as well as fee schedules negotiated with clients. These fee contracts represent an interest in the fund as they align the Group's exposure with investors, providing a variable return that is based on the performance of the entity. Depending on the structure of the fund, these fees may be collected directly from the fund assets and / or from the investors. Any amounts due are collected on a regular basis and are generally backed by the assets of the fund. The Group did not have any material exposure to loss from these interests as of 31 December 2018 or as of 31 December 2017.

Note 31 Interests in subsidiaries and other entities (continued)

Interests in unconsolidated securitization vehicles[1]

	31.12.18				
USD million, except where indicated	Residential mortgage-backed securities	Commercial mortgage-backed securities	Other asset-backed securities[2]	Re-securitization[3]	Total
Sponsored by UBS					
Interests in senior tranches	87	196		8	291
of which: rated investment grade		*196*			*196*
of which: rated sub-investment grade	*87*			*8*	*95*
of which: not rated		*0*			*0*
Interests in mezzanine tranches		13			13
of which: rated investment grade		*12*			*12*
of which: not rated		*0*			*0*
Interests in junior tranches	8	1			9
of which: not rated	*8*	*1*			*9*
Total	95	210		8	313
of which: financial assets at fair value held for trading	*8*	*210*		*8*	*226*
of which: financial assets at fair value not held for trading	*87*				*87*
Total assets held by the vehicles in which UBS had an interest (USD billion)	0	24		1	25
Not sponsored by UBS					
Interests in senior tranches	1	33	25	126	185
of which: rated investment grade	*1*	*33*	*0*	*126*	*160*
of which: not rated		*0*	*25*		*25*
Interests in mezzanine tranches	1	7			8
of which: rated investment grade		*2*			*2*
of which: rated sub-investment grade	*1*				*1*
of which: defaulted	*0*				*0*
of which: not rated	*0*	*5*			*5*
Interests in junior tranches	1				1
of which: rated sub-investment grade	*1*				*1*
of which: defaulted	*0*				*0*
Total	3	41	25	126	194
of which: financial assets at fair value held for trading	*3*	*41*	*25*	*126*	*194*
Total assets held by the vehicles in which UBS had an interest (USD billion)	2	12	22	1	37

Note 31 Interests in subsidiaries and other entities (continued)

Interests in unconsolidated securitization vehicles (continued)[1]

	31.12.17				
USD million, except where indicated	Residential mortgage-backed securities	Commercial mortgage-backed securities	Other asset-backed securities[2]	Re-securitization[3]	Total
Sponsored by UBS					
Interests in senior tranches	86	24	0	11	121
of which: rated investment grade	*0*	*24*	*0*		*24*
of which: rated sub-investment grade	*86*				*86*
of which: defaulted				*11*	*11*
Interests in junior tranches		9			9
of which: rated investment grade		*9*			*9*
Total	86	33	0	11	130
of which: financial assets at fair value held for trading		*33*	*0*	*11*	*44*
of which: financial assets at fair value not held for trading	*86*				*86*
Total assets held by the vehicles in which UBS had an interest (USD billion)	1	10	0	1	12
Not sponsored by UBS					
Interests in senior tranches	77	7	169	66	319
of which: rated investment grade	*77*	*7*	*169*	*66*	*319*
Interests in mezzanine tranches	9	1			9
of which: rated investment grade		*1*			*1*
of which: defaulted	*9*				*9*
Interests in junior tranches	1				1
of which: rated sub-investment grade	*1*				*1*
Tranche information not available	0				0
of which: rated investment grade	*0*				*0*
of which: not rated	*0*				*0*
Total	87	7	169	66	330
of which: financial assets at fair value held for trading	*87*	*7*	*169*	*66*	*330*
Total assets held by the vehicles in which UBS had an interest (USD billion)[4]	19	5	20	0	44

1 This table excludes receivables and derivative transactions with securitization vehicles. 2 Includes credit card, auto and student loan structures. 3 Includes collateralized debt obligations. 4 In 2018 UBS has refined the methodology applied to identify significant interests in the scope of disclosure under IFRS 12, Disclosure of Interests in Other Entities. This change has been applied prospectively as the effect on interests disclosed was not material in prior periods. Had this methodology been applied in 2017, the interests in unconsolidated securitization vehicles at 31 December 2017 would have been USD 0.3 million lower and the assets held by these unconsolidated securitization vehicles would have been USD 26 billion lower.

Note 31 Interests in subsidiaries and other entities (continued)

Sponsored unconsolidated structured entities in which UBS did not have an interest

For several sponsored SEs, no interest was held by the Group at year-end. However, during the respective reporting period the Group transferred assets, provided services and held instruments that did not qualify as an interest in these sponsored SEs, and accordingly earned income or incurred expenses from these entities. The table below presents the income earned and expenses incurred directly from these entities during the year as well as corresponding asset information. The table does not include income earned and expenses incurred from risk management activities, including income and expenses from financial instruments used to economically hedge instruments transacted with the unconsolidated SEs.

The majority of the fee income arose from investment funds that are sponsored and administrated by the Group, but managed by third parties. As the Group does not provide any active management services, UBS was not exposed to risk from the performance of these entities and was therefore deemed not to have an interest in them. In certain structures, the fees receivable may be collected directly from the investors and have therefore not been included in the table below.

The Group also recorded other net income from fair value changes on financial instruments from mark-to-market movements arising primarily from derivatives, such as interest rate and currency swaps as well as credit derivatives, through which the Group purchases protection, and financial liabilities designated at fair value, which do not qualify as interests because the Group does not absorb variability from the performance of the entity. Total income reported does not reflect economic hedges or other mitigating effects from the Group's risk management activities.

During 2018, UBS and third parties transferred assets of USD 1 billion and USD 1 billion, respectively, into sponsored securitization vehicles created in the year (2017: USD 2 billion and USD 8 billion, respectively). UBS and third parties also transferred assets of USD 2 billion and USD 0 billion, respectively, into sponsored client vehicles created in the year (2017: USD 3 billion and USD 1 billion, respectively). For sponsored investment funds, transfers arose during the period as investors invested and redeemed positions, thereby changing the overall size of the funds, which, when combined with market movements, resulted in a total closing net asset value of USD 18 billion (31 December 2017: USD 15 billion).

Sponsored unconsolidated structured entities in which UBS did not have an interest at year-end[1]

	As of or for the year ended			
	31.12.18			
USD million, except where indicated	Securitization vehicles	Client vehicles	Investment funds	Total
Net interest income	0	(6)	1	(5)
Net fee and commission income		16	39	54
Other net income from fair value changes on financial instruments	0	8	20	29
Total income	1	18	60	78
Asset information (USD billion)	2[2]	2[3]	18[4]	

	As of or for the year ended			
	31.12.17			
USD million, except where indicated	Securitization vehicles	Client vehicles	Investment funds	Total
Net interest income	2	(9)	0	(7)
Net fee and commission income			41	41
Other net income from fair value changes on financial instruments	(8)	(50)	2	(56)
Total income	(6)	(59)	43	(22)
Asset information (USD billion)	10[2]	4[3]	15[4]	

1 For the year ended 31 December 2018, no profit attributable to non-controlling interests was excluded from the table (31 December 2017: USD 73 million). 2 Represents the amount of assets transferred to the respective securitization vehicles. 3 Represents the amount of assets transferred to the respective client vehicles. Information in the comparative period has been restated. Asset information as of 31 December 2017 has decreased by USD 3 billion as a result. 4 Represents the total net asset value of the respective investment funds.

Note 32 Changes in organization and acquisitions and disposals of subsidiaries and businesses

Changes in Group structure and organization

UBS Business Solutions AG

In 2015, UBS Business Solutions AG was established as a direct subsidiary of UBS Group AG to act as the Group service company and UBS transferred the ownership of the majority of its existing service subsidiaries outside the US to UBS Business Solutions AG. In 2017, shared services functions in Switzerland and the UK were transferred from UBS AG to UBS Business Solutions AG. In 2017, UBS also completed the transfer of the shared services employees in the US to its US service company, UBS Business Solutions US LLC, a wholly owned subsidiary of UBS Americas Holding LLC.

UBS Group Funding (Switzerland) AG

UBS established UBS Group Funding (Switzerland) AG in 2016 as a wholly owned direct subsidiary of UBS Group AG, to issue loss-absorbing additional tier 1 (AT1) capital instruments and total loss-absorbing capacity (TLAC)-eligible senior unsecured debt, which are guaranteed by UBS Group AG. In 2017, UBS transferred the then outstanding TLAC-eligible senior unsecured debt to UBS Group Funding (Switzerland) AG as the issuer. In May 2018, UBS substituted UBS Group AG where it was the issuer of outstanding AT1 capital instruments with UBS Group Funding (Switzerland) AG. Following the substitution, the relevant AT1 capital instruments are guaranteed by UBS Group AG, and investors' seniority of claim against UBS Group AG remains unchanged.

UBS Europe SE

In 2016, UBS merged its Wealth Management subsidiaries in Italy, Luxembourg (including its branches in Austria, Denmark and Sweden), the Netherlands and Spain into UBS Deutschland AG, which was renamed to UBS Europe SE, in order to establish UBS's new European legal entity, which is headquartered in Frankfurt, Germany.

The previously announced combined UK business transfer and cross-border merger of UBS Limited into UBS Europe SE took place on 1 March 2019.

Transfer of assets and liabilities from UBS Limited to UBS AG, London Branch

In the fourth quarter of 2018, clients and other counterparties of UBS Limited who can be serviced by UBS AG, London Branch were generally migrated to UBS AG, London Branch. Transactions affecting the businesses that were transferred which occurred on or after the transfer date were recorded in UBS AG, London Branch.

UBS Asset Management AG

In 2016, UBS transferred the majority of the operating subsidiaries of Asset Management to UBS Asset Management AG.

Increase of stake in and consolidation of UBS Securities China

In December 2018, UBS increased its shareholding in UBS Securities China from 24.99% to 51%, acquiring control of the entity in accordance with IFRS 10, *Consolidated Financial Statements*. Upon acquisition of control, UBS remeasured its former 24.99% holding at fair value, resulting in a pre-tax loss of USD 270 million, recognized in *Other income*. In addition, a net foreign currency translation gain of USD 46 million was recognized upon derecognition of the former investment in associate, also in *Other income*.

The cost of acquisition of the additional 26.01% stake was USD 125 million. Upon consolidation, UBS recognized USD 102 million of goodwill and USD 278 million of other net assets. In addition, a non-controlling interest of USD 136 million has been recognized.

Acquisitions

In October 2018, UBS acquired certain assets and liabilities from Nordea's Luxembourg-based private banking business for a consideration of approximately EUR 120 million. As a result of the transaction, UBS recognized a total of EUR 1.1 billion of loans (mortgages, Lombard loans, overdrafts), EUR 1.3 billion of cash and EUR 2.4 billion of deposits, as well as approximately EUR 75 million of intangible assets and approximately EUR 50 million of goodwill, recognized in Global Wealth Management. In addition, UBS reported an increase of approximately EUR 9.5 billion in client assets, of which approximately EUR 6.1 billion count as invested assets.

Sales and disposals of subsidiaries and businesses

In 2018, 2017 and 2016, no significant subsidiaries were removed from the scope of consolidation as a result of sales or disposals.

In the third quarter of 2018, UBS completed the sale of Widder Hotel, resulting in a pre-tax gain on sale of subsidiaries and businesses of USD 25 million and a pre-tax gain on sale of real estate of USD 31 million.

In 2017, UBS completed the sale of Asset Management's fund administration servicing units in Luxembourg and Switzerland to Northern Trust, resulting in a pre-tax gain on sale of USD 153 million. Also in 2017, UBS completed the sale of a life insurance subsidiary within Global Wealth Management. A loss on sale of USD 24 million was recognized in 2016 relating to this transaction.

Note 33 Operating leases and finance leases

Information on lease contracts classified as operating leases where UBS is the lessee is provided in Note 33a and information on finance leases where UBS acts as a lessor is provided in Note 33b.

a) Operating lease commitments

As of 31 December 2018, UBS was obligated under a number of non-cancelable operating leases for premises and equipment used primarily for banking purposes. The significant premises leases usually include renewal options and escalation clauses in line with general office rental market conditions, as well as rent adjustments based on price indices. However, the lease agreements do not contain contingent rent payment clauses and purchase options, nor do they impose any restrictions on UBS's ability to pay dividends, engage in debt financing transactions or enter into further lease agreements.

→ **Refer to Note 1d for more information on the expected effects of adoption of IFRS 16, *Leases*, effective 1 January 2019**

USD million	31.12.18
Expenses for operating leases to be recognized in:	
2019	684
2020	647
2021	543
2022	489
2023	449
2024 and thereafter	1,877
Subtotal commitments for minimum payments under operating leases	4,688
Less: Sublease rental income commitments	250
Net commitments for minimum payments under operating leases	4,438

USD million	31.12.18	31.12.17	31.12.16
Gross operating lease expense recognized in the income statement	766	739	757
Sublease rental income	52	68	79
Net operating lease expense recognized in the income statement	714	671	678

b) Finance lease receivables

UBS leases a variety of assets to third parties under finance leases, such as commercial vehicles, production lines, medical equipment, construction equipment and aircraft. At the end of the respective lease term, assets may be sold to third parties or further leased. Lessees may participate in any sales proceeds achieved. Lease expenses cover the cost of the assets less their residual value as well as financing costs.

As of 31 December 2018, unguaranteed residual values of USD 156 million had been accrued, and the ECL stage 3 allowance for uncollectible minimum lease payments receivable amounted to USD 7 million. No contingent rents were received in 2018. Amounts in the table below are disclosed on a gross basis. The finance lease receivable in Note 17a of USD 1,091 million is presented net of expected credit loss allowances.

Lease receivables

USD million	31.12.18		
	Total minimum lease payments	Unearned finance income	Present value
2019	359	22	337
2020–2023	703	35	669
Thereafter	103	2	102
Total	1,166	58	1,107

Note 34 Guarantees, commitments and forward starting transactions

The table below shows the maximum irrevocable amount of guarantees, commitments and forward starting transactions.

USD million	31.12.18				31.12.17			
	Gross		Sub-partici-pations	Net	Gross		Sub-partici-pations	Net
	Measured at fair value	Not measured at fair value			Measured at fair value	Not measured at fair value		
Total guarantees	1,639	18,146	(2,803)	16,982	1,662	17,680	(2,942)	16,400
Loan commitments	3,535	31,212	(647)	34,099	7,954	32,125	(1,102)	38,977
Forward starting transactions[1]								
Reverse repurchase agreements	8,117	925				13,011		
Securities borrowing agreements		12				24		
Repurchase agreements	7,926	400				8,399		

1 Cash to be paid in the future by either UBS or the counterparty. Certain reverse repurchase agreements and repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 as of 1 January 2018. Refer to Note 1c for more information.

Note 35 Related parties

UBS defines related parties as associates (entities that are significantly influenced by UBS), joint ventures (entities in which UBS shares control with another party), post-employment benefit plans for UBS employees, key management personnel, close family members of key management personnel and entities that are, directly or indirectly, controlled or jointly controlled by key management personnel or their close family members. Key management personnel is defined as members of the Board of Directors (BoD) and Group Executive Board (GEB).

a) Remuneration of key management personnel

The Chairman of the BoD has a specific management employment contract and receives pension benefits upon retirement. Total remuneration of the Chairman of the Board of Directors and all GEB members is included in the table below.

Remuneration of key management personnel

USD million, except where indicated	31.12.18	31.12.17	31.12.16
Base salaries and other cash payments[1]	27	25	25
Incentive awards – cash[2]	15	15	11
Annual incentive award under DCCP	22	22	22
Employer's contributions to retirement benefit plans	3	3	3
Benefits in kind, fringe benefits (at market value)	2	2	2
Equity-based compensation[3]	40	40	42
Total	109	106	105
Total (CHF million)[4]	107	106	104

1 Includes role-based allowances in line with market practice in response to regulatory requirements. 2 The cash portion may also include blocked shares in line with regulatory requirements. 3 Expenses for shares granted are calculated at grant date of the respective award and allocated over the vesting period of generally 5 years. Refer to Note 30 for more information. In 2018, 2017 and 2016, equity-based compensation was entirely comprised of EOP awards. 4 Swiss franc amounts disclosed represent the respective US dollar amounts translated at the applicable performance award currency exchange rates (2018: CHF / USD 0.98; 2017: CHF / USD 1.00; 2016: CHF / USD 0.99).

The independent members of the BoD do not have employment or service contracts with UBS, and thus are not entitled to benefits upon termination of their service on the BoD. Payments to these individuals for their services as external board members amounted to USD 7.6 million (CHF 7.4 million) in 2018, USD 7.1 million (CHF 7.1 million) in 2017 and USD 7.2 million (CHF 7.2 million) in 2016.

b) Equity holdings of key management personnel

Equity holdings of key management personnel

	31.12.18	31.12.17
Number of stock options from equity participation plans held by non-independent members of the BoD and the GEB members[1]	0	398,867
Number of shares held by members of the BoD, GEB and parties closely linked to them[2]	5,954,967	3,709,539

1 Refer to Note 30 for more information. 2 Excludes shares granted under variable compensation plans with forfeiture provisions.

Of the share totals above, 95,597 shares were held by close family members of key management personnel on 31 December 2018 and 31 December 2017. No shares were held by entities that are directly or indirectly controlled or jointly controlled by key management personnel or their close family members on 31 December 2018 and 31 December 2017. Refer to Note 30 for more information. As of 31 December 2018, no member of the BoD or GEB was the beneficial owner of more than 1% of UBS Group AG's shares.

Note 35 Related parties (continued)

c) Loans, advances and mortgages to key management personnel

The non-independent members of the BoD and GEB members are granted loans, fixed advances and mortgages in the ordinary course of business on substantially the same terms and conditions that are available to other employees, including interest rates and collateral, and neither involve more than the normal risk of collectibility nor contain any other unfavorable features for the firm. Independent BoD members are granted loans and mortgages in the ordinary course of business at general market conditions.

Movements in the loan, advances and mortgage balances are as follows.

Loans, advances and mortgages to key management personnel[1]

USD million, except where indicated	2018	2017
Balance at the beginning of the year	42	42
Additions	15	2
Reductions	(22)	(1)
Balance at the end of the year[2]	**34**	**42**
Balance at the end of the year (CHF million)[2, 3]	**34**	**41**

1 All loans are secured loans. 2 Excludes unused uncommitted credit facilities for one GEB member of USD 3,000,000 (CHF 2,949,690) as of 31 December 2018 and for two GEB members and one BoD member of USD 5,330,670 (CHF 5,196,294) as of 31 December 2017. 3 Swiss franc amounts disclosed represent the respective US dollar amounts translated at the relevant year-end closing exchange rate.

d) Other related-party transactions with entities controlled by key management personnel

In 2018 and 2017, UBS did not enter into transactions with entities that are directly or indirectly controlled or jointly controlled by UBS's key management personnel or their close family members and as of 31 December 2018, 31 December 2017 and 31 December 2016, there were no outstanding balances related to such transactions. Furthermore, in 2018 and 2017, entities controlled by key management personnel did not sell any goods or provide any services to UBS, and therefore did not receive any fees from UBS. UBS also did not provide services to such entities in 2018 and 2017, and therefore also received no fees.

Note 35 Related parties (continued)

e) Transactions with associates and joint ventures

Loans to and outstanding receivables from associates and joint ventures

USD million	2018	2017
Carrying value at the beginning of the year	565	464
Additions	276	83
Reductions	(13)	(3)
Foreign currency translation	0	21
Carrying value at the end of the year	829	565
of which: unsecured loans	*818*	*554*

Other transactions with associates and joint ventures

	As of or for the year ended	
USD million	31.12.18	31.12.17
Payments to associates and joint ventures for goods and services received	177	180
Fees received for services provided to associates and joint ventures	4	2
Commitments and contingent liabilities to associates and joint ventures	4	4

→ **Refer to Note 31 for an overview of investments in associates and joint ventures**

Note 36 Invested assets and net new money

Invested assets

Invested assets include all client assets managed by or deposited with UBS for investment purposes. Invested assets include managed fund assets, managed institutional assets, discretionary and advisory wealth management portfolios, fiduciary deposits, time deposits, savings accounts and wealth management securities or brokerage accounts. All assets held for purely transactional purposes and custody-only assets, including corporate client assets held for cash management and transactional purposes, are excluded from invested assets as the Group only administers the assets and does not offer advice on how the assets should be invested. Also excluded are non-bankable assets (e.g., art collections) and deposits from third-party banks for funding or trading purposes.

Discretionary assets are defined as client assets that UBS decides how to invest. Other invested assets are those where the client ultimately decides how the assets are invested. When a single product is created in one business division and sold in another, it is counted in both the business division that manages the investment and the one that distributes it. This results in double counting within UBS total invested assets, as both business divisions are independently providing a service to their respective clients, and both add value and generate revenue.

Net new money

Net new money in a reporting period is the amount of invested assets that are entrusted to UBS by new and existing clients, less those withdrawn by existing clients and clients who terminated their relationship with UBS.

Net new money is calculated using the direct method, under which inflows and outflows to / from invested assets are determined at the client level based on transactions. Interest and dividend income from invested assets are not counted as net new money inflows. Market and currency movements as well as fees, commissions and interest on loans charged are excluded from net new money, as are the effects resulting from any acquisition or divestment of a UBS subsidiary or business. Reclassifications between invested assets and custody-only assets as a result of a change in the service level delivered are generally treated as net new money flows; however, where such change in service level directly results from a new externally imposed regulation, the one-time net effect of the implementation is reported as an asset reclassification without net new money impact.

The Investment Bank does not track invested assets and net new money. However, when a client is transferred from the Investment Bank to another business division, this produces net new money even though client assets were already with UBS. There were no such transfers between the Investment Bank and other business divisions in 2018 and 2017.

Invested assets and net new money

	As of or for the year ended	
USD billion	31.12.18	31.12.17
Fund assets managed by UBS	342	339
Discretionary assets	999	1,052
Other invested assets	1,760	1,871
Total invested assets[1]	3,101	3,262
of which: double counts	*213*	*209*
Net new money[1]	59	106

1 Includes double counts.

Development of invested assets

USD billion	2018	2017
Total invested assets at the beginning of the year[1]	3,262	2,761
Net new money	59	106
Market movements[2]	(180)	322
Foreign currency translation	(35)	77
Other effects	(5)	(3)
of which: acquisitions / (divestments)	*7*	*4*
Total invested assets at the end of the year[1]	3,101	3,262

1 Includes double counts. 2 Includes interest and dividend income.

Note 37 Currency translation rates

The following table shows the rates of the main currencies used to translate the financial information of UBS's operations with a functional currency other than the US dollar into US dollars.

	Closing exchange rate		Average rate[1]		
	As of		For the year ended		
	31.12.18	31.12.17	31.12.18	31.12.17	31.12.16
1 CHF	1.02	1.03	1.02	1.02	1.01
1 EUR	1.15	1.20	1.18	1.14	1.10
1 GBP	1.28	1.35	1.33	1.30	1.34
100 JPY	0.91	0.89	0.91	0.89	0.92

1 Monthly income statement items of operations with a functional currency other than the US dollar are translated with month-end rates into US dollars. Disclosed average rates for a year represent an average of 12 month-end rates, weighted according to the income and expense volumes of all operations of the Group with the same functional currency for each month. Weighted average rates for individual business divisions may deviate from the weighted average rates for the Group.

Note 38 Events after the reporting period

Events subsequent to the publication of the unaudited fourth quarter 2018 report

The 2018 results and the balance sheet as of 31 December 2018 differ from those presented in the unaudited fourth quarter 2018 report published on 22 January 2019 as a result of events adjusted for after the balance sheet date. Provisions for litigation, regulatory and similar matters increased, which reduced 2018 operating profit before tax and 2018 net profit attributable to shareholders each by USD 382 million. As a result, basic earnings per share decreased by USD 0.10 and diluted earnings per share decreased by USD 0.09.

→ **Refer to Note 21 for more information on provisions for litigation, regulatory and similar matters**

Note 39 Main differences between IFRS and Swiss GAAP

The consolidated financial statements of UBS Group AG are prepared in accordance with International Financial Reporting Standards (IFRS). The Swiss Financial Market Supervisory Authority (FINMA) requires financial groups that present their financial statements under IFRS to provide a narrative explanation of the main differences between IFRS and Swiss GAAP (FINMA Circular 2015 / 1 and the Banking Ordinance). Included in this Note are the significant differences in the recognition and measurement between IFRS and the provisions of the Banking Ordinance and the guidelines of FINMA governing true and fair view financial statement reporting pursuant to article 25 through article 42 of the Banking Ordinance.

1. Consolidation

Under IFRS, all entities that are controlled by the holding entity are consolidated.

Under Swiss GAAP, controlled entities that are deemed immaterial to the Group or that are held temporarily only are exempt from consolidation, but instead are recorded as participations accounted for under the equity method of accounting or as financial investments measured at the lower of cost or market value.

2. Classification and measurement of financial assets

Under IFRS, financial assets are classified as measured at amortized cost, fair value through other comprehensive income (FVOCI) or fair value through profit or loss (FVTPL). Whereas all equity instruments are accounted for at FVTPL by UBS, the classification and measurement of debt instruments depends on the nature of the business model within which the asset is held and the characteristics of the contractual cash flows of the asset.

Under Swiss GAAP, debt instruments are generally measured at amortized cost. The classification and measurement of financial assets in the form of securities depend on the nature of the asset: debt instruments that are not held to maturity (available for sale), as well as equity instruments with no permanent holding intent, are classified as *Financial investments* and measured at the lower of (amortized) cost or market value. Market value adjustments up to the original cost amount and realized gains or losses upon disposal of the investment are recorded in the income statement as *Other income from ordinary activities*. Equity instruments with a permanent holding intent are classified as participations in *Non-consolidated investments in subsidiaries and other participations* and measured at cost less impairment.

Impairment losses are recorded in the income statement as *Impairment of investments in non-consolidated subsidiaries and other participations.* Reversals of impairments up to the original cost amount as well as realized gains or losses upon disposal of the investment are recorded as *Extraordinary income / Extraordinary expenses* in the income statement.

Note 39 Main differences between IFRS and Swiss GAAP (continued)

3. Fair value option applied to financial liabilities

Under IFRS, UBS applies the fair value option to certain financial liabilities not held for trading. Instruments for which the fair value option is applied are accounted for at FVTPL. The amount of change in the fair value that is attributable to changes in UBS's own credit is presented in *Other comprehensive income* directly within *Retained earnings*. The fair value option is applied primarily to issued structured debt instruments; certain non-structured debt instruments; certain payables under repurchase agreements and cash collateral on securities lending agreements; amounts due under unit-linked investment contracts; brokerage payables; and certain loan commitments.

Under Swiss GAAP, the fair value option can only be applied to structured debt instruments that consist of a debt host contract and one or more embedded derivatives that do not relate to own equity. Furthermore, unrealized changes in fair value attributable to changes in UBS's own credit are not recognized, whereas realized own credit is recognized in *Net trading income*.

4. Allowances and provisions for credit losses

Under IFRS, allowances and provisions for credit losses are estimated based on an expected credit loss model. Expected credit losses (ECL) are recognized for financial assets measured at amortized cost, financial assets measured at FVOCI, fee and lease receivables, financial guarantees, loan commitments and certain other credit facilities. Maximum 12-month ECL are recognized from initial recognition of instruments in stage 1. Lifetime ECL are recognized for instruments in stage 2 if a significant increase in credit risk is detected subsequent to the instrument's initial recognition. Lifetime ECL are also recognized for credit-impaired financial instruments, referred to as instruments in stage 3. Determination of whether an instrument is credit impaired is based on the occurrence of one or more loss events.

Under Swiss GAAP, a claim is impaired and an allowance or provision for credit losses is recognized when objective evidence demonstrates that a loss event has occurred after the initial recognition and that the loss event has an effect on future cash flows that can be reliably estimated (incurred loss approach). UBS considers a claim to be impaired if it will be unable to collect all amounts due on it based on the original contractual terms as a result of credit deterioration of the issuer or counterparty. Impairment under the incurred loss approach is in line with ECL for credit-impaired claims in stage 3 under IFRS. A claim can be a loan or receivable or other debt instrument held to maturity carried at amortized cost, a debt instrument available for sale carried at the lower of amortized cost or market value, or a commitment, such as a letter of credit, a guarantee or a similar instrument.

An allowance for credit losses is reported as a decrease in the carrying value of a financial asset. For an off-balance sheet item, such as a commitment, a provision for credit loss is reported in *Provisions*. Changes to allowances and provisions for credit losses are recognized in *Credit loss (expense) / recovery*.

5. Hedge accounting

Under IFRS, when cash flow hedge accounting is applied, the fair value gain or loss on the effective portion of the derivative designated as a cash flow hedge is recognized in equity. When fair value hedge accounting is applied, the fair value gains or losses of the derivative and the hedged item are recognized in the income statement.

Under Swiss GAAP, the effective portion of the fair value change of the derivative instrument designated as a cash flow or as fair value hedge is deferred on the balance sheet as *Other assets* or *Other liabilities*. The carrying value of the hedged item designated in fair value hedges is not adjusted for fair value changes attributable to the hedged risk.

6. Goodwill and intangible assets

Under IFRS, goodwill acquired in a business combination is not amortized but tested annually for impairment. Intangible assets with an indefinite useful life are also not amortized but tested annually for impairment.

Under Swiss GAAP, goodwill and intangible assets with indefinite useful lives are amortized over a period not exceeding five years, unless a longer useful life, which may not exceed 10 years, can be justified. In addition, these assets are tested annually for impairment.

7. Pension and other post-employment benefit plans

Swiss GAAP permits the use of IFRS or Swiss accounting standards for pension and other post-employment benefit plans, with the election made on a plan-by-plan basis.

UBS has elected to apply IFRS (IAS 19) for the non-Swiss defined benefit plans in UBS AG standalone financial statements and Swiss GAAP (FER 16) for the Swiss pension plan in the UBS AG and the UBS Switzerland AG standalone financial statements. The requirements of Swiss GAAP are better aligned with the specific nature of Swiss pension plans, which are hybrid in that they combine elements of defined contribution and defined benefit plans, but are treated as defined benefit plans under IFRS. Key differences between Swiss GAAP and IFRS include the treatment of dynamic elements, such as future salary increases and future interest credits on retirement savings, which are not considered under the static method used in accordance with Swiss GAAP. Also, the discount rate used to determine the defined benefit obligation in accordance with IFRS is based on the yield of high-quality corporate bonds of the market in the respective pension plan country. The discount rate used in accordance with Swiss GAAP (i.e., the technical interest rate) is determined by the Pension Foundation Board based on the expected returns of the Board's investment strategy.

For defined benefit plans, IFRS requires the full defined benefit obligation net of the plan assets to be recorded on the balance sheet, with changes resulting from remeasurements recognized directly in equity. However, for non-Swiss defined benefit plans for which IFRS accounting is elected, changes due to remeasurements are recognized in the income statement of UBS AG standalone under Swiss GAAP.

Swiss GAAP requires that employer contributions to the pension fund are recognized as personnel expenses in the income statement. Further, Swiss GAAP requires an assessment as to whether, based on the financial statements of the pension fund prepared in accordance with Swiss accounting standards (FER 26), an economic benefit to, or obligation of, the employer arises from the pension fund which is recognized in the balance sheet when conditions are met. Conditions for recording a pension asset or liability would be met if, for example, an employer contribution reserve is available or the employer is required to contribute to the reduction of a pension deficit (on an FER 26 basis).

8. Netting of replacement values

Under IFRS, replacement values and related cash collateral are reported on a gross basis unless the restrictive IFRS netting requirements are met: i) existence of master netting agreements and related collateral arrangements that are unconditional and legally enforceable, both in the normal course of business and in the event of default, bankruptcy or insolvency of UBS and its counterparties; and ii) UBS's intention to either settle on a net basis or to realize the asset and settle the liability simultaneously.

Under Swiss GAAP, replacement values and related cash collateral are generally reported on a net basis, provided the master netting and the related collateral agreements are legally enforceable in the event of default, bankruptcy or insolvency of UBS's counterparties.

9. Negative interest

Under IFRS, negative interest income arising on a financial asset does not meet the definition of interest income and, therefore, negative interest on financial assets and negative interest on financial liabilities are presented within interest expense and interest income, respectively.

Under Swiss GAAP, negative interest on financial assets is presented within interest income and negative interest on financial liabilities is presented within interest expense.

10. Extraordinary income and expense

Certain non-recurring and non-operating income and expense items, such as realized gains or losses from the disposal of participations, fixed and intangible assets, as well as reversals of impairments of participations and fixed assets, are classified as extraordinary items under Swiss GAAP. This distinction is not available under IFRS. ▲

UBS AG consolidated financial information

This section contains a comparison of selected financial and capital information between UBS Group AG consolidated and UBS AG consolidated. Information for UBS AG consolidated does not differ materially from UBS Group AG on a consolidated basis.

Comparison UBS Group AG consolidated versus UBS AG consolidated

The accounting policies applied under International Financial Reporting Standards (IFRS) to both UBS Group AG and UBS AG consolidated financial statements are identical. However, there are certain scope and presentation differences as noted below:

- Assets, liabilities, operating income, operating expenses and operating profit before tax relating to UBS Group AG and its directly held subsidiaries, including UBS Business Solutions AG, are reflected in the consolidated financial statements of UBS Group AG but not of UBS AG. UBS AG's assets, liabilities, operating income and operating expenses related to transactions with UBS Group AG and its directly held subsidiaries, including UBS Business Solutions AG and other shared services subsidiaries, are not subject to elimination in the UBS AG consolidated financial statements, but are eliminated in the UBS Group AG consolidated financial statements. UBS Business Solutions AG and other shared services subsidiaries of UBS Group AG charge other legal entities within the UBS AG consolidation scope for services provided, including a markup on costs incurred.
- UBS Group AG consolidated equity was USD 0.7 billion higher compared to the equity of UBS AG consolidated as of 31 December 2018, mainly driven by higher dividends paid by UBS AG to UBS Group AG compared with the dividend distributions of UBS Group AG, as well as higher retained earnings in the UBS Group AG consolidated financial statements, largely related to the aforementioned markup charged by shared services subsidiaries of UBS Group AG to other legal entities in the UBS AG scope of consolidation. UBS Group AG is also the grantor of the majority of the compensation plans of the Group and recognizes share premium for equity-settled awards granted, largely offset by the treasury shares held to hedge the related share delivery obligation and those acquired as part of our share repurchase program. These effects were partly offset by additional share premium recognized at the UBS AG consolidated level related to the establishment of UBS Group AG and UBS Business Solutions AG, a wholly owned subsidiary of UBS Group AG.
- Going concern capital of UBS AG consolidated was USD 3.9 billion lower than going concern capital of UBS Group AG consolidated as of 31 December 2018, reflecting lower additional tier 1 (AT1) capital of USD 4.4 billion partly offset by higher common equity tier 1 (CET1) capital of USD 0.5 billion.
- CET1 capital of UBS AG consolidated was USD 0.5 billion higher than that of UBS Group AG consolidated as of 31 December 2018. The main drivers are differences in equity, in deductions for compensation-related regulatory capital components and in dividend accruals.
- Going concern loss-absorbing AT1 capital of UBS AG consolidated was USD 4.4 billion lower than that of UBS Group AG consolidated as of 31 December 2018, reflecting Deferred Contingent Capital Plan awards and AT1 capital notes. These AT1 capital notes were issued by UBS Group Funding (Switzerland) AG, a direct subsidiary of UBS Group AG, after the implementation of the new Swiss SRB framework, and only qualify as gone concern loss-absorbing capacity at the UBS AG consolidated level.

UBS AG consolidated key figures

	As of or for the year ended		
USD million, except where indicated	31.12.18	31.12.17	31.12.16
Results			
Operating income	30,642	30,044	28,831
Operating expenses	25,184	24,969	24,643
Operating profit / (loss) before tax	5,458	5,076	4,188
Net profit / (loss) attributable to shareholders	4,107	758	3,351
Profitability and growth[1]			
Return on equity (%)[2]	7.9	1.4	6.0
Return on tangible equity (%)[3]	9.2	1.8	7.0
Return on common equity tier 1 capital (%)[4]	11.9	2.3	10.2
Return on risk-weighted assets, gross (%)[5]	12.0	12.8	13.1
Return on leverage ratio denominator, gross (%)[5]	3.4	3.4	3.2
Cost / income ratio (%)[6]	81.9	82.7	85.4
Net profit growth (%)[7]	441.9	(77.4)	(48.5)
Resources			
Total assets	958,055	940,020	919,236
Equity attributable to shareholders	52,256	51,987	52,957
Common equity tier 1 capital[8]	34,608	34,100	31,879
Risk-weighted assets[8]	262,840	242,725	219,330
Common equity tier 1 capital ratio (%)[8]	13.2	14.0	14.5
Going concern capital ratio (%)[8]	16.1	15.6	16.3
Total loss-absorbing capacity ratio (%)[8]	31.3	31.4	29.6
Leverage ratio denominator[8]	904,458	910,133	855,718
Common equity tier 1 leverage ratio (%)[8]	3.83	3.75	3.73
Going concern leverage ratio (%)[8]	4.7	4.2	4.2
Total loss-absorbing capacity leverage ratio (%)[8]	9.1	8.4	7.6
Other			
Invested assets (USD billion)[9]	3,101	3,262	2,761
Personnel (full-time equivalents)[10]	47,643	46,009	56,208

1 Refer to the "Performance targets and measurement" section of this report for more information on our performance targets. 2 Calculated as net profit attributable to shareholders / average equity attributable to shareholders. 3 Calculated as net profit attributable to shareholders before amortization and impairment of goodwill and intangible assets / average equity attributable to shareholders less average goodwill and intangible assets. 4 Calculated as net profit attributable to shareholders before amortization and impairment of goodwill and intangible assets / average common equity tier 1 capital. 5 Calculated as operating income before credit loss expense or recovery / average risk-weighted assets and average leverage ratio denominator, respectively. 6 Calculated as operating expenses / operating income before credit loss expense or recovery. 7 Calculated as change in net profit attributable to shareholders from continuing operations between current and comparison periods / net profit attributable to shareholders from continuing operations of comparison period. 8 Based on the Swiss systemically relevant bank framework as of 1 January 2020. Refer to the "Capital management" section of this report for more information. 9 Includes invested assets for Global Wealth Management, Asset Management and Personal & Corporate Banking. 10 As of 31 December 2018, the breakdown of personnel by business division and Corporate Center unit was: Global Wealth Management: 23,554; Personal & Corporate Banking: 5,100; Asset Management: 2,273; Investment Bank: 4,928; Corporate Center – Services: 11,576; Corporate Center – Group ALM: 169; Corporate Center – Non-core and Legacy Portfolio: 44.

Comparison UBS Group AG consolidated versus UBS AG consolidated

	As of or for the year ended 31.12.18			As of or for the year ended 31.12.17		
USD million, except where indicated	UBS Group AG (consolidated)	UBS AG (consolidated)	Difference (absolute)	UBS Group AG (consolidated)	UBS AG (consolidated)	Difference (absolute)
Income statement						
Operating income	30,213	30,642	(429)	29,622	30,044	(422)
Operating expenses	24,222	25,184	(962)	24,272	24,969	(697)
Operating profit / (loss) before tax	5,991	5,458	533	5,351	5,076	275
of which: Global Wealth Management	*3,628*	*3,586*	*42*	*3,571*	*3,522*	*49*
of which: Personal & Corporate Banking	*1,912*	*1,914*	*(2)*	*1,607*	*1,609*	*(2)*
of which: Asset Management	*451*	*450*	*1*	*587*	*587*	*0*
of which: Investment Bank	*1,649*	*1,604*	*45*	*1,267*	*1,216*	*51*
of which: Corporate Center	*(1,649)*	*(2,096)*	*447*	*(1,682)*	*(1,858)*	*176*
of which: Services	*(806)*	*(1,221)*	*415*	*(935)*	*(1,139)*	*204*
of which: Group ALM	*(693)*	*(723)*	*30*	*(336)*	*(308)*	*(28)*
of which: Non-core and Legacy Portfolio	*(150)*	*(152)*	*2*	*(411)*	*(410)*	*(1)*
Net profit / (loss)	4,522	4,113	409	1,046	834	212
of which: net profit / (loss) attributable to shareholders	*4,516*	*4,107*	*409*	*969*	*758*	*211*
of which: net profit / (loss) attributable to preferred noteholders					*73*	*(73)*
of which: net profit / (loss) attributable to non-controlling interests	*7*	*7*	*0*	*77*	*4*	*73*
Statement of comprehensive income						
Other comprehensive income	(292)	(147)	(145)	1,068	1,044	24
of which: attributable to shareholders	*(290)*	*(145)*	*(145)*	*818*	*794*	*24*
of which: attributable to preferred noteholders					*247*	*(247)*
of which: attributable to non-controlling interests	*(1)*	*(1)*	*0*	*250*	*2*	*247*
Total comprehensive income	4,231	3,967	264	2,113	1,878	235
of which: attributable to shareholders	*4,225*	*3,961*	*264*	*1,787*	*1,552*	*235*
of which: attributable to preferred noteholders					*320*	*(320)*
of which: attributable to non-controlling interests	*5*	*5*	*0*	*326*	*6*	*320*
Balance sheet						
Total assets	958,489	958,055	434	939,279	940,020	(740)
Total liabilities	905,386	905,624	(238)	886,725	887,974	(1,249)
Total equity	53,103	52,432	671	52,554	52,046	508
of which: equity attributable to shareholders	*52,928*	*52,256*	*671*	*52,495*	*51,987*	*508*
of which: equity attributable to non-controlling interests	*176*	*176*	*0*	*59*	*59*	*0*
Capital information						
Common equity tier 1 capital	34,119	34,608	(489)	33,516	34,100	(584)
Going concern capital	46,279	42,413	3,865	42,995	37,861	5,134
Risk-weighted assets	263,747	262,840	907	243,636	242,725	911
Common equity tier 1 capital ratio (%)	12.9	13.2	(0.2)	13.8	14.0	(0.3)
Going concern capital ratio (%)	17.5	16.1	1.4	17.6	15.6	2.0
Total loss-absorbing capacity ratio (%)	31.7	31.3	0.5	33.0	31.4	1.6
Leverage ratio denominator	904,598	904,458	140	909,032	910,133	(1,101)
Common equity tier 1 leverage ratio (%)	3.77	3.83	(0.05)	3.69	3.75	(0.06)
Going concern leverage ratio (%)	5.1	4.7	0.4	4.7	4.2	0.6
Total loss-absorbing capacity leverage ratio (%)	9.3	9.1	0.2	8.8	8.4	0.5

Management's report on internal control over financial reporting

Management's responsibility for internal control over financial reporting

The Board of Directors and management of UBS AG are responsible for establishing and maintaining adequate internal control over financial reporting. UBS AG's internal control over financial reporting is designed to provide reasonable assurance regarding the preparation and fair presentation of published financial statements in accordance with IFRS as issued by the IASB.

UBS AG's internal control over financial reporting includes those policies and procedures that:

– pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect transactions and dispositions of assets;
– provide reasonable assurance that transactions are recorded as necessary to permit preparation and fair presentation of financial statements, and that receipts and expenditures of the company are being made only in accordance with authorizations of UBS AG management; and
– provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management's assessment of internal control over financial reporting as of 31 December 2018

UBS AG management has assessed the effectiveness of UBS AG's internal control over financial reporting as of 31 December 2018 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control – Integrated Framework (2013 Framework). Based on this assessment, management believes that, as of 31 December 2018, UBS AG's internal control over financial reporting was effective.

The effectiveness of UBS AG's internal control over financial reporting as of 31 December 2018 has been audited by Ernst & Young Ltd, UBS AG's independent registered public accounting firm, as stated in their report appearing on page 505, which expresses an unqualified opinion on the effectiveness of UBS AG's internal control over financial reporting as of 31 December 2018.

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Building a better working world

Ernst & Young Ltd
Aeschengraben 9
P.O. Box
CH-4002 Basel

Phone +41 58 286 86 86
Fax +41 58 286 86 00
www.ey.com/ch

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of UBS AG

Opinion on Internal Control over Financial Reporting

We have audited UBS AG and subsidiaries' internal control over financial reporting as of 31 December 2018, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (the COSO criteria). In our opinion, UBS AG and subsidiaries maintained, in all material respects, effective internal control over financial reporting as of 31 December 2018, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated balance sheets of UBS AG and subsidiaries as of 31 December 2018, 31 December 2017 and 1 January 2017, the related consolidated income statements, statements of comprehensive income, changes in equity and cash flows for each of the three years in the period ended 31 December 2018, and the related notes and our report dated 14 March 2019 expresses an unqualified opinion thereon.

Basis for Opinion

UBS AG's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on UBS AG's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Ernst & Young Ltd

Ernst & Young Ltd

Basel, 14 March 2019

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Ernst & Young Ltd
Aeschengraben 9
P.O. Box
CH-4002 Basel

Phone +41 58 286 86 86
Fax +41 58 286 86 00
www.ey.com/ch

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of UBS AG

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of UBS AG and subsidiaries ("the Company") as of 31 December 2018, 31 December 2017 and 1 January 2017, the related consolidated income statements, statements of comprehensive income, changes in equity and cash flows, for each of the three years in the period ended 31 December 2018, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the consolidated financial position of UBS AG and subsidiaries as of 31 December 2018, 31 December 2017 and 1 January 2017, and the consolidated results of their operations and their cash flows for each of the three years in the period ended 31 December 2018, in conformity with International Financial Reporting Standards, as issued by the International Accounting Standards Board.

Adoption of IFRS 9 *Financial Instruments*

As discussed in Note 1 to the consolidated financial statements, the Company changed its method of accounting for the classification, measurement and impairment of financial instruments in 2018 due to the adoption of IFRS 9 *Financial Instruments*.

Changes to functional and presentation currencies

As discussed in Note 1 to the consolidated financial statements, the functional currencies of UBS AG's Head office in Switzerland changed from Swiss francs to U.S. dollars and UBS AG's London Branch changed from British pounds to U.S. dollars in compliance with the requirements of IAS 21 *The Effects of Changes in Foreign Exchange Rates*. The Company elected to change the presentation currency of UBS AG's consolidated financial statements from Swiss francs to U.S. dollars to align with these functional currency changes.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), UBS AG and subsidiaries' internal control over financial reporting as of 31 December 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated 14 March 2019, expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's Board of Directors. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Ernst & Young Ltd

Ernst & Young Ltd

We have served as the Company's auditor since 1998.

Basel, 14 March 2019

UBS AG consolidated financial statements

Primary financial statements

Audited |

Income statement

		For the year ended		
USD million	Note	31.12.18	31.12.17	31.12.16
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	3	10,121	10,437	10,375
Interest expense from financial instruments measured at amortized cost	3	(6,494)	(5,468)	(5,002)
Interest income from financial instruments measured at fair value through profit or loss	3	6,974	4,056	3,579
Interest expense from financial instruments measured at fair value through profit or loss	3	(4,653)	(2,418)	(2,495)
Net interest income	3	5,949	6,607	6,457
Other net income from fair value changes on financial instruments	3	5,977	5,067	5,018
Credit loss (expense) / recovery	23	(117)	(131)	(38)
Fee and commission income	4	19,632	19,390	18,425
Fee and commission expense	4	(1,703)	(1,840)	(1,781)
Net fee and commission income	4	17,930	17,550	16,644
Other income	5	905	952	749
Total operating income		30,642	30,044	28,831
Personnel expenses	6	13,992	14,952	15,782
General and administrative expenses	7	10,075	9,001	7,776
Depreciation and impairment of property, equipment and software	15	1,052	945	992
Amortization and impairment of intangible assets	16	65	71	93
Total operating expenses		25,184	24,969	24,643
Operating profit / (loss) before tax		5,458	5,076	4,188
Tax expense / (benefit)	8	1,345	4,242	753
Net profit / (loss)		4,113	834	3,435
Net profit / (loss) attributable to preferred noteholders			73	80
Net profit / (loss) attributable to non-controlling interests		7	4	4
Net profit / (loss) attributable to shareholders		4,107	758	3,351

Statement of comprehensive income

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Comprehensive income attributable to shareholders			
Net profit / (loss)	4,107	758	3,351
Other comprehensive income that may be reclassified to the income statement			
Foreign currency translation			
Foreign currency translation movements related to net assets of foreign operations, before tax	(701)	1,553	(835)
Effective portion of changes in fair value of hedging instruments designated as net investment hedges, before tax	181	(55)	356
Foreign currency translation differences on foreign operations reclassified to the income statement	4	32	77
Effective portion of changes in fair value of hedging instruments designated as net investment hedges reclassified to the income statement	2	(6)	(5)
Income tax relating to foreign currency translations, including the effect of net investment hedges	(2)	(2)	2
Subtotal foreign currency translation, net of tax	(515)	1,522	(404)
Financial assets measured at fair value through other comprehensive income			
Net unrealized gains / (losses), before tax	(56)	96	261
Impairment charges reclassified to the income statement from equity	0	15	5
Realized gains reclassified to the income statement from equity	0	(209)	(376)
Realized losses reclassified to the income statement from equity	0	14	26
Income tax relating to net unrealized gains / (losses)	12	(6)	26
Subtotal financial assets measured at fair value through other comprehensive income, net of tax	(45)	(91)	(58)
Cash flow hedges of interest rate risk			
Effective portion of changes in fair value of derivative instruments designated as cash flow hedges, before tax	(42)	45	234
Net (gains) / losses reclassified to the income statement from equity	(294)	(843)	(1,094)
Income tax relating to cash flow hedges	67	163	176
Subtotal cash flow hedges, net of tax	(269)	(635)	(684)
Total other comprehensive income that may be reclassified to the income statement, net of tax	(829)	797	(1,146)
Other comprehensive income that will not be reclassified to the income statement			
Defined benefit plans			
Gains / (losses) on defined benefit plans, before tax	(70)	308	(880)
Income tax relating to defined benefit plans	245	6	51
Subtotal defined benefit plans, net of tax	175	314	(829)
Own credit on financial liabilities designated at fair value			
Gains / (losses) from own credit on financial liabilities designated at fair value, before tax	517	(315)	(134)
Income tax relating to own credit on financial liabilities designated at fair value	(8)	(2)	4
Subtotal own credit on financial liabilities designated at fair value, net of tax	509	(317)	(130)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	684	(3)	(959)
Total other comprehensive income	(145)	794	(2,105)
Total comprehensive income attributable to shareholders	3,961	1,552	1,246

Table continues on the next page.

Statement of comprehensive income (continued)

Table continued from previous page.

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Comprehensive income attributable to preferred noteholders			
Net profit / (loss)	0	73	80
Other comprehensive income that will not be reclassified to the income statement			
Foreign currency translation movements, before tax	0	247	(21)
Income tax relating to foreign currency translation movements	0	0	0
Subtotal foreign currency translation, net of tax	0	247	(21)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	0	247	(21)
Total comprehensive income attributable to preferred noteholders	0	320	59
Comprehensive income attributable to non-controlling interests			
Net profit / (loss)	7	4	4
Other comprehensive income that will not be reclassified to the income statement			
Foreign currency translation movements, before tax	(1)	2	(1)
Income tax relating to foreign currency translation movements	0	0	0
Subtotal foreign currency translation, net of tax	(1)	2	(1)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	(1)	2	(1)
Total comprehensive income attributable to non-controlling interests	5	6	3
Total comprehensive income			
Net profit / (loss)	4,113	834	3,435
Other comprehensive income	(147)	1,044	(2,127)
of which: other comprehensive income that may be reclassified to the income statement	*(829)*	*797*	*(1,146)*
of which: other comprehensive income that will not be reclassified to the income statement	*682*	*247*	*(981)*
Total comprehensive income	3,967	1,878	1,308

Balance sheet

USD million	Note	31.12.18	31.12.17	1.1.17
Assets				
Cash and balances at central banks		108,370	90,045	105,883
Loans and advances to banks	10	16,642	14,047	12,896
Receivables from securities financing transactions	10, 25	95,349	91,951	79,936
Cash collateral receivables on derivative instruments	10, 25	23,603	24,040	26,198
Loans and advances to customers	10	321,482	328,952	300,678
Other financial assets measured at amortized cost	10, 17a	22,637	37,890	27,130
Total financial assets measured at amortized cost		588,084	586,925	552,721
Financial assets at fair value held for trading	12, 24	104,513	129,509	90,501
of which: assets pledged as collateral that may be sold or repledged by counterparties		*32,121*	*36,277*	*29,731*
Derivative financial instruments	11, 24, 25	126,212	121,286	155,642
Brokerage receivables	24	16,840		
Financial assets at fair value not held for trading	13, 24	82,387	60,070	63,888
Total financial assets measured at fair value through profit or loss		329,953	310,865	310,031
Financial assets measured at fair value through other comprehensive income	14, 24	6,667	8,889	15,402
Investments in associates	31b	1,099	1,045	947
Property, equipment and software	15	8,479	8,191	8,152
Goodwill and intangible assets	16	6,647	6,563	6,442
Deferred tax assets	8	10,066	9,993	13,147
Other non-financial assets	17b	7,062	7,548	12,395
Total assets		958,055	940,020	919,236
Liabilities				
Amounts due to banks	18a	10,962	7,728	10,459
Payables from securities financing transactions	25	10,296	17,485	9,266
Cash collateral payables on derivative instruments	25	28,906	31,029	34,852
Customer deposits	18a	421,986	423,058	418,129
Funding from UBS Group AG and its subsidiaries	18b	41,202	35,648	24,201
Debt issued measured at amortized cost	20	91,245	107,458	77,617
Other financial liabilities measured at amortized cost	22a	7,576	38,092	38,361
Total financial liabilities measured at amortized cost		612,174	660,498	612,884
Financial liabilities at fair value held for trading	12, 24	28,949	31,251	22,426
Derivative financial instruments	11, 24, 25	125,723	119,138	151,121
Brokerage payables designated at fair value	24	38,420		
Debt issued designated at fair value	19, 24	57,031	50,782	49,057
Other financial liabilities designated at fair value	22b, 24	33,594	16,643	14,122
Total financial liabilities measured at fair value through profit or loss		283,717	217,814	236,727
Provisions	21a	3,457	3,164	4,097
Other non-financial liabilities	22c	6,275	6,499	11,902
Total liabilities		905,624	887,974	865,610
Equity				
Share capital		338	338	338
Share premium		24,655	24,633	27,154
Retained earnings		23,317	22,189	21,480
Other comprehensive income recognized directly in equity, net of tax		3,946	4,828	3,985
Equity attributable to shareholders		52,256	51,987	52,957
Equity attributable to preferred noteholders				631
Equity attributable to non-controlling interests		176	59	39
Total equity		52,432	52,046	53,627
Total liabilities and equity		958,055	940,020	919,236

Statement of changes in equity

USD million	Share capital	Share premium	Retained earnings
Balance as of 1 January 2016	**338**	**27,126**	**22,664**
Issuance of share capital			
Premium on shares issued and warrants exercised		4	
Tax (expense) / benefit		26	
Dividends			(3,589)
Preferred notes			
Translation effects recognized directly in retained earnings			13
New consolidations / (deconsolidations) and other increases / (decreases)		(2)	
Total comprehensive income for the year			2,392
of which: net profit / (loss)			*3,351*
of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax			
of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans			*(829)*
of which: OCI that will not be reclassified to the income statement, net of tax – own credit			*(130)*
of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation			
Balance as of 31 December 2016	**338**	**27,154**	**21,480**
Issuance of share capital			
Premium on shares issued and warrants exercised		6	
Tax (expense) / benefit		16	
Dividends		(2,219)	
Preferred notes			
Translation effects recognized directly in retained earnings			(46)
New consolidations / (deconsolidations) and other increases / (decreases)		(324)	
Total comprehensive income for the year			755
of which: net profit / (loss)			*758*
of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax			
of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans			*314*
of which: OCI that will not be reclassified to the income statement, net of tax – own credit			*(317)*
of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation			
Balance as of 31 December 2017	338	24,633	22,189

Other comprehensive income recognized directly in equity, net of tax[1]	*of which: foreign currency translation*	*of which: financial assets at fair value through other comprehensive income*	*of which: cash flow hedges*	Total equity attributable to shareholders	Preferred noteholders	Non-controlling interests	Total equity
5,144	*3,337*	*171*	*1,635*	**55,272**	**1,951**	**41**	**57,264**
				0			0
				4			4
				26			26
				(3,589)	(80)	(5)	(3,674)
				0	(1,299)		(1,299)
(13)		*(17)*	*4*	0			0
				(2)		0	(2)
(1,146)	*(404)*	*(58)*	*(684)*	1,246	59	3	1,308
				3,351	*80*	*4*	*3,435*
(1,146)	*(404)*	*(58)*	*(684)*	*(1,146)*			*(1,146)*
				(829)			*(829)*
				(130)			*(130)*
				0	*(21)*	*(1)*	*(22)*
3,985	*2,933*	*96*	*955*	**52,957**	**631**	**39**	**53,627**
				0			0
				6			6
				16			16
				(2,219)	(73)	(4)	(2,297)
				0	(878)		(878)
46		*7*	*39*	0			0
				(324)		18	(306)
797	*1,522*	*(91)*	*(635)*	1,552	320	6	1,878
				758	*73*	*4*	*834*
797	*1,522*	*(91)*	*(635)*	*797*			*797*
				314			*314*
				(317)			*(317)*
				0	*247*	*2*	*250*
4,828	*4,455*	*13*	*360*	51,987	0	59	52,046

Statement of changes in equity (continued)

USD million	Share capital	Share premium	Retained earnings
Balance as of 31 December 2017	**338**	**24,633**	**22,189**
Effect of adoption of IFRS 9			(518)
Effect of adoption of IFRS 15			(25)
Balance as of 1 January 2018 after the adoption of IFRS 9 and IFRS 15	**338**	**24,633**	**21,646**
Issuance of share capital			
Premium on shares issued and warrants exercised		34	
Tax (expense) / benefit		(5)	
Dividends			(3,098)
Translation effects recognized directly in retained earnings			(21)
New consolidations / (deconsolidations) and other increases / (decreases)		(7)	
Total comprehensive income for the year			4,790
of which: net profit / (loss)			*4,107*
of which: other comprehensive income (OCI) that may be reclassified to the income statement, net of tax			
of which: OCI that will not be reclassified to the income statement, net of tax – defined benefit plans			*175*
of which: OCI that will not be reclassified to the income statement, net of tax – own credit			*509*
of which: OCI that will not be reclassified to the income statement, net of tax – foreign currency translation			
Balance as of 31 December 2018	338	24,655	23,317

1 Excludes defined benefit plans and own credit that are recorded directly in Retained earnings.

Other comprehensive income recognized directly in equity, net of tax[1]	*of which: foreign currency translation*	*of which: financial assets at fair value through other comprehensive income*	*of which: cash flow hedges*	Total equity attributable to shareholders	Preferred noteholders	Non-controlling interests	Total equity
4,828	4,455	13	360	51,987	0	59	52,046
(74)		(74)		(591)			(591)
				(25)			(25)
4,754	4,455	(61)	360	51,370	0	59	51,429
				0			0
				34			34
				(5)			(5)
				(3,098)		(10)	(3,108)
21		3	18				0
				(7)		122	115
(829)	(515)	(45)	(269)	3,961	0	5	3,967
				4,107		7	4,113
(829)	(515)	(45)	(269)	(829)			(829)
				175			175
				509			509
				0		(1)	(1)
3,946	3,940	(103)	109	52,256	0	176	52,432

UBS AG shares issued

As of 31 December 2018, shares issued by UBS AG totaled 3,858,408,466 (31 December 2017: 3,858,408,466 shares) and were entirely held by UBS Group AG.

Conditional share capital

Conditional capital up to a maximum number of 380,000,000 shares was available as of 31 December 2018 for conversion rights and warrants granted in connection with the issuance of bonds or similar financial instruments.

Statement of cash flows[1]

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Cash flow from / (used in) operating activities			
Net profit / (loss)	4,113	834	3,435
Non-cash items included in net profit and other adjustments:			
Depreciation and impairment of property, equipment and software	1,052	945	992
Amortization and impairment of intangible assets	65	71	93
Credit loss expense / (recovery)	117	131	38
Share of net profits of associates / joint ventures and impairment of associates	(528)	(69)	(109)
Deferred tax expense / (benefit)	374	3,398	(35)
Net loss / (gain) from investing activities	(49)	(198)	(1,223)
Net loss / (gain) from financing activities	(4,829)	2,763	9,627
Other net adjustments	(1,092)	(1,077)	384
Net change in operating assets and liabilities:			
Loans and advances to banks / amounts due to banks	3,504	(3,236)	(1,289)
Securities financing transactions	(11,230)	(111)	945
Cash collateral on derivative instruments	(1,449)	(2,454)	(4,182)
Loans and advances to customers	(4,152)	(15,661)	3,736
Customer deposits	7,931	(12,073)	33,402
Financial assets and liabilities at FV held for trading and derivative financial instruments	11,093	(23,560)	8,453
Brokerage receivables and payables	11,432		
Financial assets at fair value not held for trading, other financial assets and liabilities	10,902	(1,801)	(77,035)
Provisions, other non-financial assets and liabilities	1,377	(29)	4,236
Income taxes paid, net of refunds	(888)	(1,021)	(638)
Net cash flow from / (used in) operating activities	27,744	(53,147)	(19,172)
Cash flow from / (used in) investing activities			
Purchase of subsidiaries, associates and intangible assets	(287)	(106)	(27)
Disposal of subsidiaries, associates and intangible assets[2]	137	339	95
Purchase of property, equipment and software	(1,473)	(1,532)	(1,782)
Disposal of property, equipment and software	114	210	182
Purchase of financial assets measured at fair value through other comprehensive income	(1,999)	(8,626)	(7,022)
Disposal and redemption of financial assets measured at fair value through other comprehensive income	1,361	15,250	54,433
Net (purchase) / redemption of debt securities measured at amortized cost	(3,770)		
Net (purchase) / redemption of financial assets held to maturity		(91)	(9,224)
Net cash flow from / (used in) investing activities	(5,918)	5,444	36,655

Table continues on the next page.

Statement of cash flows (continued)

Table continued from previous page.

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Cash flow from / (used in) financing activities			
Net short-term debt issued / (repaid)	(12,245)	24,500	5,474
Distributions paid on UBS AG shares	(3,098)	(2,219)	(3,589)
Issuance of long-term debt, including debt issued designated at fair value	54,726	40,270	19,786
Repayment of long-term debt, including debt issued designated at fair value	(44,344)	(45,187)	(33,902)
Funding from UBS Group AG and its subsidiaries	5,956	11,180	13,917
Dividends paid and repayments of preferred notes		(782)	(1,382)
Net changes in non-controlling interests	(31)	(5)	(5)
Net cash flow from / (used in) financing activities	963	27,758	299
Total cash flow			
Cash and cash equivalents at the beginning of the year	104,787	118,984	102,797
Net cash flow from / (used in) operating, investing and financing activities	22,789	(19,944)	17,783
Effects of exchange rate differences on cash and cash equivalents	(1,722)	5,749	(1,596)
Cash and cash equivalents at the end of the year[3]	125,853	104,787	118,984
of which: cash and balances at central banks	108,268	89,968	105,832
of which: loans and advances to banks	15,452	12,726	11,719
of which: money market paper[4]	2,133	2,093	1,433
Additional information			
Net cash flow from / (used in) operating activities includes:			
Interest received in cash	7,720	7,635	7,907
Interest paid in cash	4,719	3,977	3,581
Dividends on equity investments, investment funds and associates received in cash[5]	2,322	1,828	1,618

1 Upon adoption of IFRS 9 on 1 January 2018, cash flows from certain financial assets previously classified as available-for-sale assets have been reclassified from investing to operating activities as the assets are accounted for at fair value through profit or loss effective 1 January 2018. Refer to Note 1c for more information. 2 Includes dividends received from associates. 3 USD 5,245 million, USD 2,497 million and USD 2,615 million of cash and cash equivalents (mainly reflected in Loans and advances to banks) were restricted as of 31 December 2018, 31 December 2017 and 31 December 2016, respectively. Refer to Note 26 for more information. 4 Money market paper is included in the balance sheet under Financial assets at fair value held for trading (31 December 2018: USD 366 million; 31 December 2017: USD 135 million; 31 December 2016: USD 74 million), Financial assets measured at fair value through other comprehensive income (31 December 2018: USD 8 million; 31 December 2017: USD 17 million; 31 December 2016: USD 416 million), Financial assets at fair value not held for trading and Other financial assets measured at amortized cost (31 December 2018: USD 1,760 million; 31 December 2017: USD 1,941 million; 31 December 2016: USD 942 million). 5 Includes dividends received from associates (2018: USD 42 million; 2017: USD 53 million; 2016: USD 50 million) reported within Cash flow from / (used in) investing activities.

Changes in liabilities arising from financing activities

USD million	Debt issued measured at amortized cost	*of which: short-term*	*of which: long-term*	Debt issued designated at fair value	Over-the-counter (OTC) debt instruments[2]	Funding from UBS Group AG and its subsidiaries[3]	Total
Balance as of 1 January 2017	77,617	*25,720*	*51,897*	49,057	4,581	24,201	155,456
Cash flows	25,631	*24,500*	*1,131*	(5,625)	(422)	11,180	30,765
Non-cash changes	4,210	*2,050*	*2,159*	7,350	269	267	12,095
of which: foreign currency translation	*4,523*	*2,050*	*2,473*	*3,085*	*173*	*399*	*8,180*
of which: fair value changes				*4,265*	*95*		*4,360*
of which: other	*(313)*	*0*	*(314)[1]*	*0*		*(133)[1]*	*(446)*
Balance as of 31 December 2017	107,458	*52,270*	*55,187*	50,782	4,428	35,648	198,316
Cash flows	(13,358)	*(12,245)*	*(1,113)*	13,332	(1,838)	5,956	4,092
Non-cash changes	(2,855)	*(1,000)*	*(1,854)*	(7,083)	(140)	(402)	(10,481)
of which: foreign currency translation	*(2,624)*	*(1,000)*	*(1,623)*	*309*	*(59)*	*(289)*	*(2,663)*
of which: fair value changes	*0*		*0*	*(7,392)*	*(82)*		*(7,475)*
of which: other	*(231)*		*(231)[1]*			*(113)[1]*	*(344)*
Balance as of 31 December 2018	91,245	*39,025*	*52,220*	57,031	2,450	41,202	191,928

1 Includes the effect of fair value hedges on long-term debt issued. Refer to Note 1a item j and Note 20 for more information. 2 Included in balance sheet line Other financial liabilities designated at fair value. 3 Represents Group-internal funding obtained from UBS Group AG and UBS Group Funding (Switzerland) AG that is reported in the balance sheet line Due to customers.

Notes to the UBS AG consolidated financial statements

Note 1 Summary of significant accounting policies

The following table provides an overview of information included in this Note.

Accounting policies applicable prior to 1 January 2018

The accounting policies described in Note 1a have been applied consistently in all years presented unless otherwise stated in Note 1b. In addition, effective from 1 January 2018, the Group applies IFRS 9, *Financial Instruments*, which substantially changes the accounting for financial assets, and IFRS 15, *Revenue from Contracts with Customers,* which affects UBS AG's revenue recognition, measurement and presentation.

Within Note 1a, policies for prior periods that differ from those applied to the financial year ended 31 December 2018 are identified with a **Comparative policy I** signpost. A triangle symbol – ▲ – indicates the end of these comparative policy sections.

Note 1 Summary of significant accounting policies (continued)

a) Significant accounting policies

This Note describes the significant accounting policies applied in the preparation of the consolidated financial statements (the "Financial Statements") of UBS AG and its subsidiaries ("UBS"). On 14 March 2019, the Financial Statements were authorized for issue by the Board of Directors.

Basis of accounting

The Financial Statements have been prepared in accordance with International Financial Reporting Standards (IFRS), as issued by the International Accounting Standards Board (IASB), and are presented in US dollars (USD), which is also the functional currency of UBS AG's Head Office, UBS AG's London Branch and UBS AG's US-based operations.

Disclosures provided in the "Risk, treasury and capital management" section of this report that are marked as audited form an integral part of the Financial Statements. These disclosures relate to requirements under IFRS 7, *Financial Instruments: Disclosures,* and IAS 1, *Presentation of Financial Statements,* and are not repeated in this section.

The accounting policies described in this Note have been applied consistently in all years presented unless otherwise stated in Note 1b. In addition, effective from 1 January 2018, UBS AG applies IFRS 9, *Financial Instruments*, which substantially changes the accounting for financial assets, and IFRS 15, *Revenue from Contracts with Customers,* which affects the Group's revenue recognition, measurement and presentation. Within this note, policies for prior periods that differ from those applied to the financial year ended 31 December 2018 are identified as "Comparative policy."

Critical accounting estimates and judgments

Preparation of these Financial Statements under IFRS requires management to apply judgment and make estimates and assumptions that affect reported amounts of assets, liabilities, income and expenses and disclosure of contingent assets and liabilities, and may involve significant uncertainty at the time they are made. Such estimates and assumptions are based on the best available information. UBS AG regularly reassesses the estimates and assumptions, which encompass historical experience, expectations of the future and other pertinent factors, to determine their continuing relevance based on current conditions, updating them as necessary. Changes in those estimates and assumptions may have a significant effect on the Financial Statements. Further, actual results may differ significantly from UBS AG's estimates, which could result in significant losses to UBS AG, beyond what was anticipated or provided for.

The following areas contain estimation uncertainty or require critical judgment and have a significant effect on the amounts recognized in the Financial Statements:
- fair value of financial instruments (refer to item 3f in this Note and to Note 24)
- allowances and provisions for expected credit losses (refer to item 3g in this Note and to Note 23)
- assessment of the business model and certain contractual features when classifying financial instruments (refer to item 3b in this Note)
- pension and other post-employment benefit plans (refer to item 7 in this Note and to Note 29)
- income taxes (refer to item 8 in this Note and to Note 8)
- goodwill (refer to item 11 in this Note and to Note 16)
- provisions and contingent liabilities (refer to item 12 in this Note and to Note 21)
- consolidation of structured entities (refer to item 1 in this Note and to Note 31)
- determination of the functional currency and assessing the earliest date from which it is practical to perform a restatement following a change in presentational currency (refer to item 13 in this Note and to Note 1b)

1) Consolidation

a. Consolidation principles

The Financial Statements comprise the financial statements of UBS AG and its subsidiaries, presented as a single economic entity, whereby intercompany transactions and balances have been eliminated. UBS AG consolidates all entities that it controls, including controlled structured entities (SEs), which is the case when it has (i) power over the relevant activities of the entity; (ii) exposure to an entity's variable returns; and (iii) the ability to use its power to affect its own returns.

Where an entity is governed by voting rights, control is generally indicated by a direct shareholding of more than one-half of the voting rights.

In other cases, the assessment of control is more complex and requires greater use of judgment. Where UBS AG has an interest in an entity that exposes it to variability, UBS AG considers whether it has power over the relevant activities of the entity that allows it to affect the variability of its returns. Consideration is given to all facts and circumstances to determine whether UBS AG has power over another entity; that is, the current ability to direct the relevant activities of an entity when decisions about those activities need to be made. Factors such as the purpose and design of the entity, rights held through contractual arrangements (such as call rights, put rights or liquidation rights) as well as potential decision-making rights are all considered in this assessment. Where UBS AG has power over the relevant activities, a further assessment is made to determine whether, through that power, it has the ability to affect its own returns by assessing whether power is held in a principal or agent capacity. Consideration is given to: (i) the scope of decision-making authority; (ii) rights held by other parties, including removal or other participating rights; and (iii) exposure to variability, including remuneration, relative to total variability of the entity as well as whether that exposure is different from that of other investors. If, after review of these factors, UBS AG concludes that it can exercise its power to affect its own returns, the entity is consolidated.

Subsidiaries, including SEs, are consolidated from the date when control is obtained and are deconsolidated from the date when control ceases. Control, or the lack thereof, is reassessed if facts and circumstances indicate that there is a change to one or more of the elements required to establish that control is present.

→ **Refer to Note 31 for more information**

b. Structured entities

UBS AG sponsors the formation of SEs and interacts with non-sponsored SEs for a variety of reasons, including allowing clients to obtain or be exposed to particular risk profiles, to provide funding or to sell or purchase credit risk. An SE is an entity that has been designed so that voting or similar rights are not the dominant factor in deciding who controls the entity. Such entities generally have a narrow and well-defined objective and include those historically referred to as special-purpose entities, as well as some investment funds. UBS AG assesses whether an entity is an SE by considering the nature of the activities of the entity as well as the substance of voting or similar rights afforded to other parties, including investors and independent boards or directors. UBS AG considers rights such as the ability to liquidate the entity or remove the decision maker to be similar to voting rights when the holder has the substantive ability to exercise such rights without cause. In the absence of such rights or in cases where the existence of such rights cannot be fully established, the entity is considered to be an SE.

The classes of SEs with which UBS AG is involved include:

- *Securitization structured entities* are established to issue securities to investors that are backed by assets held by the SE and whereby (i) significant credit risk associated with the securitized exposures has been transferred to third parties and (ii) there is more than one risk position or tranche issued by the securitization vehicle in line with the Basel III securitization definition. All securitization entities are classified as SEs.
- *Client investment structured entities* are established predominantly for clients to invest in specific assets or risk exposures through purchasing notes issued by the SE, predominantly on a fixed-term basis. The SE may source assets via a transfer from UBS AG or through an external market transaction. In some cases, UBS AG may enter into derivatives with the SE to either align the cash flows of the entity with the investor's intended investment objective or to introduce other desired risk exposures. In certain cases, UBS AG may have interests in a third-party-sponsored SE to hedge specific risks or participate in asset-backed financing.
- *Investment fund structured entities* have a collective investment objective, are managed by an investment manager and are either passively managed, so that any decision making does not have a substantive effect on variability, or are actively managed, and investors or their governing bodies do not have substantive voting or similar rights. UBS AG creates and sponsors a large number of funds in which it may have an interest through the receipt of variable management fees and / or a direct investment. In addition, UBS AG has interests in a number of funds created and sponsored by third parties, including exchange-traded funds and hedge funds, to hedge issued structured products.

When UBS AG does not consolidate an SE, but has an interest in an SE or has sponsored an SE, disclosures are provided on the nature of these interests and sponsorship activities.

Critical accounting estimates and judgments

Each individual entity is assessed for consolidation in line with the aforementioned consolidation principles. The assessment of control can be complex and requires the use of significant judgment. As the nature and extent of UBS AG's involvement are unique to each entity, there is no uniform consolidation outcome by entity. Certain entities within a class may be consolidated while others may not. When carrying out the consolidation assessment, judgment is exercised considering all the relevant facts and circumstances, including the nature and activities of the investee, as well as the substance of voting and similar rights.

→ **Refer to Note 31 for more information**

Note 1 Summary of significant accounting policies (continued)

2) Segment reporting

Prior to the first quarter 2018, UBS AG's businesses were organized globally into five business divisions: Wealth Management, Wealth Management Americas, Personal & Corporate Banking, Asset Management and the Investment Bank, all of which were supported by Corporate Center. The five business divisions qualified as reportable segments for the purpose of segment reporting and, together with Corporate Center, reflected the management structure of UBS. AG Corporate Center – Non-core and Legacy Portfolio was managed and reported as a separate reportable unit within Corporate Center. Financial information about the five business divisions and Corporate Center (with its units: Services, Group Asset and Liability Management (Group ALM), Non-core and Legacy Portfolio) was presented separately in internal reporting to management.

Effective from the first quarter of 2018, UBS AG combined its Wealth Management and Wealth Management Americas business divisions into a single Global Wealth Management business division. Global Wealth Management is managed on an integrated basis, with a single set of performance targets and an integrated operating plan and management structure. Consistent with this, the operating results of Global Wealth Management are presented and assessed on an integrated basis in internal management reports. Consequently, from 2018, Global Wealth Management qualifies as an operating and reportable segment for the purposes of segment reporting and is presented in these Financial Statements alongside Personal & Corporate Banking, Asset Management, the Investment Bank and Corporate Center (with its units Services, Group ALM and Non-core and Legacy Portfolio). Following the change in the composition of UBS AG's operating segments and corresponding reportable segments, previously reported segment information has been restated. This change has no material effect on the former segments, including recognized goodwill.

→ **Refer to item 11 in this Note and Note 16 for more information**

UBS AG's internal accounting policies, which include management accounting policies and service level agreements, determine the revenues and expenses directly attributable to each reportable segment. Transactions between the reportable segments are carried out at internally agreed rates and are reflected in the operating results of the reportable segments. Revenue-sharing agreements are used to allocate external client revenues to reportable segments where several reportable segments are involved in the value creation chain. Commissions are credited to the reportable segments based on the corresponding client relationship. Total intersegment revenues for UBS AG are immaterial, as the majority of the revenues are allocated across the segments by means of revenue-sharing agreements. Interest income earned from managing UBS AG's consolidated equity is allocated to the reportable segments based on average attributed equity and currency composition. Assets and liabilities of the reportable segments are funded through and invested with Corporate Center – Group ALM, and the net interest margin is reflected in the results of each reportable segment.

Segment assets are based on a third-party view and do not include intercompany balances. This view is in line with internal reporting to management. Certain assets managed centrally by Corporate Center – Services and Corporate Center – Group ALM may be allocated to other segments on a basis different to that on which the corresponding costs or revenues are allocated. For example, certain assets that are reported in Corporate Center – Services or Corporate Center – Group ALM may be retained on the balance sheet of these components of Corporate Center, notwithstanding that the costs or revenues associated with these assets may be entirely or partly allocated to the operating segments. Similarly, certain assets are reported in the business divisions, whereas the corresponding costs or revenues are entirely or partly allocated to Corporate Center – Services and Corporate Center – Group ALM.

Non-current assets disclosed for segment reporting purposes represent assets that are expected to be recovered more than 12 months after the reporting date, excluding financial instruments, deferred tax assets and post-employment benefits.

→ **Refer to Notes 1b and 2 for more information**

3) Financial instruments

a. Recognition

UBS AG recognizes financial instruments when it becomes a party to the contractual provisions of the instrument. UBS AG applies settlement date accounting to all regular way purchases and sales of financial instruments.

In transactions in which UBS AG acts as a transferee, to the extent that the transfer of a financial asset does not qualify for derecognition by the transferor, UBS AG does not recognize the transferred instrument as its asset.

UBS AG also acts in a fiduciary capacity, which results in the holding or placing of assets on behalf of individuals, trusts, retirement benefit plans and other institutions. Unless the recognition criteria are satisfied, these assets are not recognized on UBS AG's balance sheet. Consequently, the related income is excluded from these Financial Statements.

Client cash balances associated with derivatives clearing and execution services are not recognized on the balance sheet if, through contractual agreement, regulation or practice, UBS AG neither obtains benefits from nor controls the client cash balances.

b. Classification, measurement and presentation

All financial instruments are initially measured at fair value. In the case of financial instruments subsequently measured at amortized cost or fair value through other comprehensive income (FVOCI), the initial fair value is adjusted for directly attributable transaction costs.

Policy applicable from 1 January 2018[1]

On initial recognition, financial assets are classified as measured at amortized cost, FVOCI, or fair value through profit or loss (FVTPL).

A debt instrument is measured at amortized cost if it meets the following conditions:

– it is held within a business model that has an objective to hold financial assets to collect contractual cash flows; and
– the contractual terms of the financial asset result in cash flows that are solely payments of principal and interest (SPPI) on the principal amount outstanding.

A debt instrument is measured at FVOCI if it meets both of the following conditions:

– it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and
– the contractual terms of the financial asset result in cash flows that are SPPI on the principal amount outstanding.

All other financial assets are measured at FVTPL and consist of held for trading assets, assets mandatorily measured on a fair value basis and derivatives, except to the extent that they are designated in a hedging relationship, in which case the IAS 39 hedge accounting requirements continue to apply.

Business model assessment

UBS AG determines the nature of the business model, for example if the objective is to hold the financial asset and collect the contractual cash flows, by considering the way in which the financial assets are managed to achieve a particular business objective as determined by management.

Financial assets that are held for trading or managed on a fair value basis are measured at FVTPL insofar as the associated business model is neither to hold the financial assets to collect contractual cash flows nor to hold to collect contractual cash flows and sell.

UBS AG originates loans to hold to maturity and to sell or sub-participate to other parties, resulting in a transfer of substantially all the risks and rewards, and derecognition of the loan or portions of it. UBS AG considers the activities of lending to hold and lending to sell or sub-participate as two separate business models, with financial assets within the former considered to be within a business model that has an objective to hold the assets to collect contractual cash flows, and those within the latter included in a trading portfolio. In certain cases, it may not be possible on origination to identify whether loans or portions of loans will be sold or sub-participated and certain loans may be managed on a fair value basis through, for instance, using credit derivatives. These financial assets are mandatorily measured at FVTPL.

Critical accounting estimates and judgments

UBS AG exercises judgment in determining the appropriate level at which to assess its business models. In general, the assessment is performed at the product level, e.g., retail and commercial mortgages. In other cases, the assessment is carried out at a more granular level, e.g., loan portfolios by region, and, if required, further disaggregation is performed by business strategy. A detailed assessment is carried out considering how the financial assets are evaluated and reported to UBS AG's key management, the risks that affect the performance of the business and the way that management is compensated. In addition, UBS AG exercises judgment in determining the effect of sales of financial instruments on the business model assessment. In particular, an assessment is made on whether and the extent to which sales are consistent with the objective of the business model.

Contractual cash flow characteristics

In assessing whether the contractual cash flows are SPPI, UBS AG considers whether the contractual terms of the financial asset contain a term that could change the timing or amount of contractual cash flows arising over the life of the instrument, which could affect whether the instrument is considered to meet the SPPI criterion.

For example, UBS AG holds portfolios of private mortgage contracts and corporate loans in Personal & Corporate Banking that commonly contain clauses that provide for two-way compensation if prepayment occurs. The amount of compensation paid by or to UBS AG reflects the effect of changes in market interest rates. UBS AG has determined that the inclusion of the change in market interest rates in the compensation amount is reasonable for the early termination of the contract, and therefore results in contractual cash flows that are SPPI.

Critical accounting estimates and judgments

UBS AG applies judgment when considering whether certain contractual features, such as interest rate reset frequency or non-recourse features, significantly affect future cash flows and whether compensation paid or received on early termination of lending arrangements results in cash flows that are not SPPI. A thorough analysis of all relevant facts and circumstances is assessed before concluding whether contractual cash flows of the financial instrument are consistent with payments representing principal and interest.

After initial recognition, UBS AG classifies, measures and presents its financial assets and liabilities in accordance with IFRS 9, as described in the table on the following pages.

1 The accounting policy in this section applies from 1 January 2018, the effective date of IFRS 9. For the details of transition effects refer to Note 1c.

Note 1 Summary of significant accounting policies (continued)

Classification, measurement and presentation of financial instruments from 1 January 2018

<table>
<tr><th colspan="2">Financial assets classification</th><th>Significant items included</th><th>Measurement and presentation</th></tr>
<tr><td colspan="2">Measured at amortized cost</td><td>A debt financial asset is measured at amortized cost if:
– it is held in a business model that has an objective to hold assets to collect contractual cash flows; and
– the contractual terms give rise to cash flows that are SPPI.

This classification includes:
– cash and balances at central banks
– loans and advances to banks
– cash collateral receivables on securities borrowed
– receivables on reverse repurchase agreements
– cash collateral receivables on derivative instruments
– residential and commercial mortgages
– corporate loans
– secured loans, including Lombard loans, and unsecured loans
– loans to financial advisors
– debt securities held as high-quality liquid assets (HQLA)
– fee and lease receivables.</td><td>Measured at amortized cost using the effective interest rate (EIR) method less allowances for expected credit losses (ECL) (refer to items 3c and 3g in this Note for more information).

The following items are recognized in the income statement:
– interest income, which is accounted for in accordance with item 3c in this Note
– ECL and reversals
– foreign exchange translation gains and losses.

Upfront fees and direct costs relating to loan origination, refinancing or restructuring as well as to loan commitments – when it is probable that UBS AG will enter into a specific lending relationship – are deferred and amortized over the life of the loan using the EIR method.

When the financial asset at amortized cost is derecognized, the gain or loss is recognized in the income statement.

Amounts arising from exchange-traded derivatives (ETD) and certain over-the-counter (OTC) derivatives cleared through central clearing counterparties that are either considered to be daily settled or in substance net settled on a daily basis (refer to items 3d and 3i in this Note) are presented within Cash collateral receivables on derivative instruments.</td></tr>
<tr><td>Measured at FVOCI</td><td>Debt instruments measured at FVOCI</td><td>A debt financial asset is measured at FVOCI if:
– it is held in a business model whose objective is achieved by both holding assets to collect contractual cash flows and selling the assets; and
– the contractual terms give rise to cash flows that are SPPI.

This classification primarily includes debt securities and certain asset-backed securities held as HQLA for which the contractual cash flows meet the SPPI criterion.</td><td>Measured at fair value with unrealized gains and losses reported in Other comprehensive income, net of applicable income taxes, until such investments are derecognized (when sold, collected or otherwise disposed). Upon derecognition, any accumulated balances in Other comprehensive income are reclassified to the income statement and reported within Other income.

The following items are recognized in the income statement:
– interest income, which is accounted for in accordance with item 3c in this Note
– ECL and reversals
– foreign exchange translation gains and losses.

The amounts recognized in the income statement are determined on the same basis as for financial assets measured at amortized cost.</td></tr>
</table>

Note 1 Summary of significant accounting policies (continued)

Classification, measurement and presentation of financial instruments from 1 January 2018 (continued)

<table>
<tr><th colspan="2">Financial assets classification</th><th>Significant items included</th><th>Measurement and presentation</th></tr>
<tr><td rowspan="2">Measured at FVTPL</td><td>Held for trading</td><td>Financial assets held for trading include:
– all derivatives with a positive replacement value, except those that are designated and effective hedging instruments; and
– other financial assets acquired principally for the purpose of selling or repurchasing in the near term, or that are part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit taking. Included in this category are debt instruments (including those in the form of securities, money market paper and traded corporate and bank loans) and equity instruments.</td><td rowspan="2">Measured at fair value with changes recognized in profit or loss.

Changes in fair value, initial transaction costs and gains and losses realized on disposal or redemption are recognized in Other net income from fair value changes on financial instruments, except interest and dividend income on instruments other than derivatives (refer to item 3c in this Note for more information), interest on derivatives designated as hedging instruments in certain types of hedge accounting relationships and forward points on certain short- and long-duration foreign exchange contracts, which are reported in Net interest income.

Derivative assets (including derivatives that are designated and effective hedging instruments) are generally presented as Derivative financial instruments, except those exchange-traded and OTC-cleared derivatives that are considered to be settled on a daily basis or in substance net settled on a daily basis, which are presented within Cash collateral receivables on derivative instruments.

The presentation of fair value changes on derivatives that are designated and effective as hedging instruments depends on the type of hedge relationship (refer to item 3j in this Note for more information).

Financial assets held for trading (other than derivatives) are presented as Financial assets at fair value held for trading.

Other financial assets mandatorily measured at fair value through profit or loss are presented as Financial assets at fair value not held for trading, except for brokerage receivables, which are presented as a separate line item on UBS AG's balance sheet.</td></tr>
<tr><td>Mandatorily measured at FVTPL – Other</td><td>A financial asset is mandatorily measured at FVTPL if:
– it is not held in a business model whose objective is to hold assets to collect contractual cash flows or to hold them to collect contractual cash flows and sell; and / or
– the contractual terms give rise to cash flows that are not SPPI; and / or
– it is not held for trading.

The following financial assets are mandatorily measured at FVTPL:
– certain structured loans, certain commercial loans, receivables under reverse repurchase and cash collateral on securities borrowing agreements that are managed on a fair value basis;
– loans managed on a fair value basis and hedged with credit derivatives;
– certain debt securities held as HQLA and managed on a fair value basis;
– certain investment fund holdings and assets held to hedge delivery obligations related to cash-settled employee compensation plans. These assets represent holdings in investment funds, whereby the contractual cash flows do not meet the SPPI criterion because the entry and exit price is based on the fair value of the fund's assets;
– brokerage receivables, for which contractual cash flows do not meet the SPPI criterion because the aggregate balance is accounted for as a single unit of account, with interest being calculated on the individual components;
– auction rate securities, for which contractual cash flows do not meet the SPPI criterion because interest may be reset at rates that contain leverage;
– equity instruments; and
– assets held under unit-linked investment contracts.</td></tr>
</table>

Note 1 Summary of significant accounting policies (continued)

Classification, measurement and presentation of financial instruments from 1 January 2018 (continued)

Financial liabilities classification		Significant items included	Measurement and presentation
Measured at amortized cost		This classification includes: – demand and time deposits; – retail savings / deposits; – amounts payable under repurchase agreements; – cash collateral on securities lent; – non-structured fixed-rate bonds; – subordinated debt; – certificates of deposit and covered bonds; – obligations against funding from UBS Group AG and its subsidiaries ; and – cash collateral payables on derivative instruments.	Measured at amortized cost using the EIR method. Upfront fees and direct costs relating to the issuance or origination of the liability are deferred and amortized over the life of the liability using the EIR method. When the financial liability at amortized cost is derecognized, the gain or loss is recognized in the income statement. Amortized cost liabilities are presented on the balance sheet primarily as *Amounts due to banks, Customer deposits, Payables from securities financing transactions, Debt issued measured at amortized cost* and *Funding from UBS Group AG and its subsidiaries.* Amounts arising from ETD and certain OTC derivatives cleared through central clearing counterparties that are either considered to be daily settled or in substance net settled on a daily basis (refer to items 3d and 3i in this Note for more information) are presented within *Cash collateral payables on derivative instruments.*
Measured at fair value through profit or loss	Held for trading	Financial liabilities held for trading include: – all derivatives with a negative replacement value (including certain loan commitments), except those that are designated and effective hedging instruments; and – obligations to deliver financial instruments, such as debt and equity instruments, that UBS AG has sold to third parties, but does not own (short positions).	Measurement of financial liabilities classified at FVTPL follows the same principles as for financial assets classified at FVTPL, except that the amount of change in the fair value of the financial liability that is attributable to changes in UBS AG's own credit risk is presented in OCI. Financial liabilities measured at FVTPL are presented as *Financial liabilities at fair value held for trading* and *Other financial liabilities designated at fair value,* respectively, except for brokerage payables and debt issued, which are presented separately on UBS AG's balance sheet. Derivative liabilities (including derivatives that are designated and effective hedging instruments) are generally presented as *Derivative financial instruments,* except those exchange-traded and OTC-cleared derivatives that are considered to be settled on a daily basis or in substance net settled on a daily basis, which are presented within *Cash collateral payables on derivative instruments.* Bifurcated embedded derivatives are measured at fair value, but are presented on the same balance sheet line as the host contract measured at amortized cost. Derivatives that are designated and effective as hedging instruments are also measured at fair value. The presentation of fair value changes differs depending on the type of hedge relationship (refer to item 3j in this Note for more information).
	Designated at FVTPL	UBS AG designates at FVTPL the following financial liabilities: – issued hybrid debt instruments that primarily include equity-linked, credit-linked and rates-linked bonds or notes – issued debt instruments managed on a fair value basis – certain payables under repurchase agreements and cash collateral on securities lending agreements that are managed in conjunction with associated reverse repurchase agreements and cash collateral on securities borrowed (from 1 January 2018) – amounts due under unit-linked investment contracts whose cash flows are linked to financial assets measured at FVTPL and eliminate an accounting mismatch (from 1 January 2018) – brokerage payables, which arise in conjunction with brokerage receivables and are measured at FVTPL to achieve measurement consistency (from 1 January 2018).	

Note 1 Summary of significant accounting policies (continued)

Comparative policy | *Policy applicable prior to 1 January 2018*
Prior to 1 January 2018, on initial recognition, UBS AG classified, measured and presented its financial assets and liabilities in accordance with IAS 39, *Financial Instruments: Recognition and Measurement*. Classification, measurement and presentation requirements in respect of financial liabilities have been substantially retained by IFRS 9 and are detailed in the table "Classification, measurement and presentation of financial instruments from 1 January 2018." The following table sets out details of classification, measurement and presentation of financial assets prior to 1 January 2018.

Classification, measurement and presentation of financial assets prior to 1 January 2018

Financial assets classification	Significant items included	Measurement and presentation[1]
Held for trading	Financial assets held for trading include: – all derivatives with a positive replacement value, except those that are designated and effective hedging instruments; and – any other financial asset acquired principally for the purpose of selling or repurchasing in the near term, or part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short-term profit taking. Included in this category are debt instruments (including those in the form of securities, money market paper and traded corporate and bank loans), equity instruments, and assets held under unit-linked investment contracts.	Measured at fair value with changes recognized in profit or loss. Changes in fair value, initial transaction costs and gains and losses realized on disposal or redemption are recognized in *Other net income from fair value changes on financial instruments,* except interest and dividend income on instruments other than derivatives (refer to item 3c in this Note), interest on derivatives designated as hedging instruments in certain types of hedge accounting relationships and forward points on certain short duration foreign exchange contracts, which are reported in *Net interest income.* Derivative assets are generally presented as *Derivative financial instruments.* Bifurcated embedded derivatives are measured at fair value, but presented on the same balance sheet line as the host contract measured at amortized cost. The presentation of fair value changes on derivatives that are designated and effective hedging instruments differs depending on the type of hedge relationship (refer to item 3j in this Note for more information). Financial assets held for trading (other than derivatives) are presented as *Financial assets at fair value held for trading.* Financial assets designated at fair value through profit or loss are presented as *Financial assets at fair value not held for trading.*
Designated at fair value through profit or loss	A financial asset may be designated at fair value through profit or loss only upon initial recognition and this designation is irrevocable. The fair value option can be applied only if one of the following criteria is met: – the financial instrument is a hybrid instrument that includes a substantive embedded derivative; – the financial instrument is part of a portfolio that is risk managed on a fair value basis and reported to senior management on that basis; or – the application of the fair value option eliminates or significantly reduces an accounting mismatch that would otherwise arise. UBS AG designated at fair value through profit or loss the following financial assets: – certain structured loans, reverse repurchase and securities borrowing agreements that are managed on a fair value basis; – loans that are hedged predominantly with credit derivatives. These instruments are designated at fair value to eliminate an accounting mismatch; – certain debt securities held as high-quality liquid assets (HQLA) and managed by Corporate Center – Group ALM on a fair value basis; and – assets held to hedge delivery obligations related to cash-settled employee compensation plans. These assets are designated at fair value in order to eliminate an accounting mismatch that would otherwise arise as a result of the liability being measured on a fair value basis.	

1 Presentation categories in this table reflect retrospective amendments to UBS AG's balance sheet presentation carried out upon transition to IFRS 9 to facilitate comparability. For a detailed description of line items presented in UBS AG's financial statements on or before the year ended 31 December 2017, refer to item 4 within Note 1c.

Note 1 Summary of significant accounting policies (continued)

Classification, measurement and presentation of financial assets prior to 1 January 2018 (continued)

Financial assets classification	Significant items included	Measurement and presentation
Loans and receivables (amortized cost)	Non-derivative financial assets with fixed or determinable payments that are not quoted in an active market and are not assets for which UBS AG may not recover substantially all of its initial net investment for reasons other than credit deterioration. This classification includes: – cash and balances with central banks – cash collateral receivables on derivative instruments – residential and commercial mortgages – secured loans, including reverse repurchase agreements, receivables under stock borrowing and Lombard loans, and unsecured loans – certain securities held within Corporate Center – Non-core and Legacy Portfolio – trade and lease receivables.	Measured at amortized cost using the effective interest rate method less allowances for credit losses (refer to items 3c and 3g in this Note). Upfront fees and direct costs relating to loan origination, refinancing or restructuring as well as to loan commitments are deferred and amortized over the life of the loan using the effective interest rate method. Loans and receivables are presented on the balance sheet primarily as *Cash and balances with central banks, Loans and advances to banks, Loans and advances to customers*, *Receivables from securities financing transactions* and *Cash collateral receivables on derivative instruments.* Amounts arising from exchange-traded derivatives (ETD) and certain over-the-counter (OTC) derivatives cleared through central clearing counterparties that are either considered to be daily settled or qualify for netting (refer to items 3d and 3i in this Note) are presented within *Cash collateral receivables on derivative instruments.*
Available for sale	Financial assets classified as available for sale are non-derivative financial assets that are not classified as held for trading, designated at fair value through profit or loss, or loans and receivables. This classification mainly includes debt securities held as HQLA and managed by Corporate Center – Group ALM, certain asset-backed securities managed by Corporate Center – Group ALM, investment fund holdings and strategic and commercial equity investments.	Measured at fair value with unrealized gains and losses reported in *Other comprehensive income,* net of applicable income taxes, until such investments are sold, collected or otherwise disposed of, or until any such investment is determined to be impaired (refer to item 3g in this Note). Upon disposal, any accumulated balances in *Other comprehensive income* are reclassified to the income statement and reported within *Other income.* Interest and dividend income are recognized in the income statement in accordance with item 3c in this Note. Refer to item 13 in this Note for information on the treatment of foreign exchange translation gains and losses.
Held to maturity	Non-derivative financial assets with fixed or determinable payments and fixed maturities for which UBS AG has the positive intention and ability to hold to maturity. This classification mainly includes debt securities held as HQLA and managed by Corporate Center – Group ALM.	Measured at amortized cost using the effective interest rate method less allowances for credit losses (refer to items 3c and 3g in this Note).

c. Interest income and expense

Interest income and expense are recognized in the income statement applying the effective interest rate (EIR) method. When calculating the EIR for financial instruments (other than credit-impaired financial instruments), UBS AG estimates future cash flows considering all contractual terms of the instrument, but not expected credit losses.

In determining interest income and expense, the EIR is applied to the gross carrying amount of the financial asset (unless the asset is credit-impaired) or the amortized cost of a financial liability (prior to 1 January 2018: amortized cost of a financial asset or financial liability). However, when a financial asset becomes credit-impaired after initial recognition, interest income is determined by applying the EIR to the amortized cost of the instrument, which represents the gross carrying amount adjusted for any credit loss allowance. Furthermore, for financial assets that were credit-impaired on initial recognition, interest is determined by applying a credit-adjusted EIR to the amortized cost of the instrument.

Upfront fees, including loan commitment fees where a loan is expected to be issued, and direct costs are included within the initial measurement of a financial instrument measured at amortized cost or FVOCI (prior to 1 January 2018: financial asset classified as available for sale). Such fees and costs are therefore recognized over the expected life of the instrument as part of its EIR.

Fees related to loan commitments where no loan is expected to be issued, as well as loan syndication fees where UBS AG does not retain a portion of the syndicated loan or where UBS AG does retain a portion of the syndicated loan at the same effective yield for comparable risk as other participants, are included in *Net fee and commission income*.

→ **Please refer to item 4 in this Note for more information**

Presentation of interest in the income statement

Effective from 1 January 2018, interest income or expense on financial instruments measured at amortized cost and financial assets measured at FVOCI (prior to 1 January 2018: financial assets classified as available for sale) are presented separately within *Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income* and *Interest expense from financial instruments measured at amortized cost*.

UBS AG also presents interest income and expense on financial instruments (excluding derivatives) measured at FVTPL including forward points on certain short- and long-duration foreign exchange contracts and dividends separately in *Interest income* (or *expense*) *from financial instruments measured at fair value through profit or loss*. Furthermore, interest income and expense on derivatives designated as hedging instruments in effective hedge relationships are presented consistently with the interest income and expense of the respective hedged item.

Interest income on financial assets, excluding derivatives, is included in *Interest income* when positive and in *Interest expense* when negative, because negative interest income arising on a financial asset does not meet the definition of revenue. Similarly, interest expense on financial liabilities, excluding derivatives, is included in *Interest expense*, except when interest rates are negative, in which case it is included in *Interest income*.

→ **Refer to item 3j in this Note and Note 3 for more information**

d. Derecognition

Financial assets

UBS AG derecognizes a financial asset, or a portion of a financial asset, from its balance sheet where the contractual rights to cash flows from the asset have expired, or have been transferred, usually by sale, thus exposing the purchaser to either substantially all the risks and rewards of the asset or a significant part of the risks and rewards combined with a practical ability to sell or pledge the asset.

A financial asset is considered to have been transferred when UBS AG (i) transfers the contractual rights to receive the cash flows of the financial asset or (ii) retains the contractual rights to receive the cash flows of that asset, but assumes a contractual obligation to pay the cash flows to one or more entities.

Where financial assets have been pledged as collateral or in similar arrangements, they are considered to have been transferred if the counterparty has received the contractual right to the cash flows of the pledged assets, as may be evidenced, for example, by the counterparty's right to sell or repledge the assets. Where the counterparty to the pledged financial assets has not received the contractual right to the cash flows, UBS AG does not consider this to be a transfer for the purposes of derecognition.

Note 1 Summary of significant accounting policies (continued)

In transactions where substantially all of the risks and rewards of ownership of a financial asset are neither retained nor transferred, UBS AG derecognizes the financial asset if control over the asset is surrendered, and the rights and obligations retained following the transfer are recognized separately as assets and liabilities, respectively. In transfers where control over the financial asset is retained, UBS AG continues to recognize the asset to the extent of its continuing involvement, determined by the extent to which it is exposed to changes in the value of the transferred asset following the transfer.

Certain over-the-counter (OTC) derivative contracts and most exchange-traded futures and options contracts cleared through central clearing counterparties are considered to be settled on a daily basis through the daily margining process, as the payment or receipt of the variation margin represents legal or economic settlement of a derivative contract, which results in derecognition of the associated positive and negative replacement values.

→ **Refer to Note 25 for more information**

Financial liabilities

UBS AG derecognizes a financial liability from its balance sheet when it is extinguished; i.e., when the obligation specified in the contract is discharged, canceled or expires. When an existing financial liability is exchanged for a new one from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification results in derecognition of the original liability and the recognition of a new liability with any difference in the respective carrying amounts being recognized in the income statement.

e. Securities borrowing / lending and repurchase / reverse repurchase transactions

Securities borrowing / lending and repurchase / reverse repurchase transactions are generally entered into on a collateralized basis. In such transactions, UBS AG typically borrows or lends equity and debt securities in exchange for securities or cash collateral.

These transactions are treated as collateralized financing transactions where the securities transferred / received are not derecognized or recognized on the balance sheet. Securities transferred / received with the right to resell or repledge are disclosed separately.

In reverse repurchase and securities borrowing agreements, the cash delivered is derecognized and a corresponding receivable, including accrued interest, is recorded in the balance sheet line *Receivables from securities financing transactions* (prior to 1 January 2018: *Reverse repurchase agreements* and *Cash collateral on securities borrowed),* representing UBS AG's right to receive the cash. Similarly, in repurchase and securities lending agreements, the cash received is recognized and a corresponding obligation, including accrued interest, is recorded in *Payables from securities financing transactions* (prior to 1 January 2018: *Repurchase agreements* and *Cash collateral on securities lent*). Additionally, the sale of securities that is settled by delivering securities received in reverse repurchase or securities borrowing transactions triggers the recognition of a trading liability.

Repurchase and reverse repurchase transactions with the same counterparty, maturity, currency and central securities depository are generally presented net, subject to meeting the netting requirements described in item 3i of this Note.

→ **Refer to Notes 26 and 25 for more information**

f. Fair value of financial instruments

UBS AG accounts for a significant portion of its assets and liabilities at fair value. Fair value is the price on the measurement date that would be received for the sale of an asset or paid to transfer a liability in an orderly transaction between market participants in the principal market, or in the most advantageous market in the absence of a principal market.

All financial instruments measured at fair value are categorized into one of three fair value hierarchy levels. Level 1 financial instruments are those for which fair values can be derived from quoted prices in active markets. Level 2 financial instruments are those for which fair values must be derived using valuation techniques for which all significant inputs are, or are based on, observable market data. Level 3 financial instruments are those for which fair values can only be derived on the basis of valuation techniques for which significant inputs are not based on observable market data.

Critical accounting estimates and judgments

The use of valuation techniques, modeling assumptions and estimates of unobservable market inputs require significant judgment and could affect the amount of gain or loss recorded for a particular position. Valuation techniques that rely more heavily on unobservable inputs require a higher level of judgment to calculate a fair value than those entirely based on observable inputs.

Valuation techniques, including models, that are used to determine fair values are periodically reviewed and validated by qualified personnel, independent of those who created them. Models are calibrated to ensure that outputs reflect observable market data, to the extent possible. Also, UBS AG prioritizes the use of observable inputs, when available, over unobservable inputs. Judgment is required in selecting appropriate models as well as inputs for which observable data is less readily or not available.

UBS AG's governance framework over fair value measurement is described in Note 24b.

The level of subjectivity and the degree of management judgment involved in the development of estimates and the selection of assumptions are more significant for instruments valued using specialized and sophisticated models and where some or all of the parameter inputs are less observable (Level 3 instruments) and may require adjustment to reflect factors that market participants would consider in estimating fair value, such as close-out costs, credit exposure, model-driven valuation uncertainty, funding costs and benefits, trading restrictions and other factors, which are presented in Note 24d. UBS AG provides a sensitivity analysis of the estimated effects arising from changing significant unobservable inputs in Level 3 financial instruments to reasonably possible alternative assumptions within Note 24g.

→ **Refer to Note 24 for more information**

g. Allowances and provisions for expected credit losses

Policy applicable from 1 January 2018[1]

Expected credit losses (ECL) are recognized for financial assets measured at amortized cost, financial assets measured at FVOCI, fee and lease receivables, financial guarantees and loan commitments. ECL are also recognized on the undrawn portion of revolving revocable credit lines, which include UBS AG's credit card limits and master credit facilities, which are customary in the Swiss market for corporate and commercial clients. UBS AG refers to both as "other credit lines," with clients allowed to draw down on-demand balances (with the Swiss master credit facilities also allowing for term products) and which can be terminated by UBS AG at any time. Though these other credit lines are revocable, UBS AG is exposed to credit risk because the client has the ability to draw down funds before UBS AG can take credit risk mitigation actions.

Recognition of expected credit losses

ECL represent the difference between contractual cash flows and those UBS AG expects to receive, discounted at the EIR. For loan commitments and other credit facilities in scope of ECL, expected cash shortfalls are determined by considering expected future drawdowns.

ECL are recognized on the following basis:

- Maximum 12-month ECL are recognized from initial recognition, reflecting the portion of lifetime cash shortfalls that would result if a default occurs in the 12 months after the reporting date, weighted by the risk of a default occurring. Instruments in this category are referred to as instruments in stage 1. For instruments with a remaining maturity of less than 12 months, ECL are determined for this shorter period.
- Lifetime ECL are recognized if a significant increase in credit risk (SICR) is detected subsequent to the instrument's initial recognition, reflecting lifetime cash shortfalls that would result from all possible default events over the expected life of a financial instrument, weighted by the risk of a default occurring. Instruments in this category are referred to as instruments in stage 2. Where an SICR is no longer observed, the instrument will move back to stage 1.
- Lifetime ECL are always recognized for credit-impaired financial instruments, referred to as instruments in stage 3. The IFRS 9 determination of whether an instrument is credit-impaired is based on the occurrence of one or more loss events, with lifetime ECL generally derived by estimating expected cash flows based on a chosen recovery strategy. Credit-impaired exposures may include positions for which no loss has occurred or no allowance has been recognized, for example, because they are expected to be fully recoverable through the collateral held.
- Changes in lifetime ECL since initial recognition are also recognized for assets that are purchased or originated credit-impaired (POCI). POCI financial assets are initially recognized at fair value, with interest income subsequently being recognized based on a credit-adjusted EIR. POCI financial instruments include those that are newly recognized following a substantial restructuring and remain a separate category until derecognition.

UBS AG does not apply the low-credit-risk practical expedient that allows a lifetime ECL for lease or fee receivables to be recognized irrespective of whether a significant increase in credit risk has occurred. Instead, UBS AG has incorporated lease and fee receivables into the standard ECL calculation.

1 The accounting policy in this section applies from 1 January 2018, the effective date of IFRS 9. For the details of transition effects refer to Note 1c.

Note 1 Summary of significant accounting policies (continued)

A write-off is made when all or part of a financial asset is deemed uncollectible or forgiven. Write-offs reduce the principal amount of a claim and are charged against previously established allowances for credit losses. Recoveries, in part or in full, of amounts previously written off are generally credited to *Credit loss (expense) / recovery*. Write-offs and partial write-offs represent derecognition / partial derecognition events.

ECL are recognized in profit or loss with a corresponding ECL allowance reported as a decrease in the carrying value of financial assets measured at amortized cost on the balance sheet. For financial assets measured at fair value through OCI, the carrying value is not reduced, but an accumulated amount is recognized in OCI. For off-balance sheet financial instruments and other credit lines, provisions for ECL are reported in *Provisions*. ECL are recognized within the income statement in *Credit loss (expense) / recovery.*

Default and credit impairment

UBS AG applies a single definition of default for classifying assets and determining the probability of default of its obligors for risk modeling purposes. The definition of default is based on quantitative and qualitative criteria. A counterparty is classified as defaulted at the latest when material payments of interest, principal or fees are overdue for more than 90 days, or more than 180 days for certain exposures in relation to loans to private and commercial clients in Personal & Corporate Banking, and to private clients of Global Wealth Management Region Switzerland. UBS AG does not consider the general 90-day presumption for default recognition appropriate for these latter portfolios based on an analysis of the cure rates, which demonstrated that strict application of the 90-day criterion would not accurately reflect the inherent credit risk. Counterparties are also classified as defaulted when bankruptcy, insolvency proceedings or enforced liquidation have commenced; obligations have been restructured on preferential terms (forbearance); or there is other evidence that payment obligations will not be fully met without recourse to collateral. The latter may be the case even if, to date, all contractual payments have been made when due. If a counterparty is defaulted, generally all claims against the counterparty are treated as defaulted.

An instrument is classified as credit-impaired if the counterparty is defaulted, and / or the instrument is identified as POCI. An instrument is POCI if it has been purchased with a material discount to its carrying amount following a risk event of the issuer or originated with a defaulted counterparty. Once a financial asset is classified as defaulted / credit-impaired (except when it is POCI), it is reported as a stage 3 instrument and remains as such unless all past due amounts have been rectified, additional payments have been made on time, the position is not classified as credit-restructured, and there is general evidence of credit recovery. A three-month probation period is applied before a transfer back to stages 1 or 2 can be triggered. However, most instruments remain in stage 3 for a longer period.

Measurement of expected credit losses

IFRS 9 ECL reflect an unbiased, probability-weighted estimate based on either loss expectations resulting from default events over a maximum 12-month period from the reporting date or over the remaining life of a financial instrument. The method used to calculate individual probability-weighted unbiased ECL is based on a combination of the following principal factors: probability of default (PD), loss given default (LGD) and exposure at default (EAD). Parameters are generally determined on an individual financial asset level. Based on the materiality of the portfolio, for credit card exposures and personal account overdrafts in Switzerland, and certain loans to financial advisors of Global Wealth Management Region Americas, a portfolio approach is applied that derives an average PD and LGD for the entire portfolio. PDs and LGDs used in the ECL calculation are point in time (PIT)-based for key portfolios and consider both current conditions and expected cyclical changes. For each instrument or group of instruments, parameter time series are generated consisting of the instruments' PD, LGD and EAD profiles considering the respective period of exposure to credit risk. For material portfolios, PD and LGD are determined for four different scenarios, whereas EAD projections are treated as scenario independent.

For the purpose of determining the ECL-relevant parameters, UBS AG leverages its Pillar 1 internal ratings-based (IRB) models that are also used in determining expected loss (EL) and risk-weighted assets under the Basel III framework and Pillar 2 stress loss models. Adjustments have been made to these models and new IFRS 9-related models have been developed that consider the complexity, structure and risk profile of relevant portfolios and take account of the fact that PDs and LGDs used in the ECL calculation are PIT-based, as opposed to the corresponding Basel III through-the-cycle (TTC) parameters. All models that are relevant for measuring expected credit losses have been subject to the existing model validation and oversight processes with the Group Model Governance Board as the highest approval authority. The assignment of internal counterparty rating grades and the determination of default probabilities for the purposes of Basel III are not affected by the IFRS 9 ECL calculation.

Probability of default (PD): The PD represents the likelihood of a default over a specified time period. A 12-month PD represents the likelihood of default determined for the next 12 months and a lifetime PD represents the probability of default over the remaining lifetime of the instrument. The lifetime PD calculation is based on a series of 12-month PIT PDs that are derived from TTC PDs and scenario forecasts. This modeling is region-, industry- and client segment-specific and considers both scenario-systematic and client-idiosyncratic information. To derive the cumulative lifetime PD per scenario, the series of 12-month PIT PDs are transformed into marginal PIT PDs, taking any assumed default events from previous periods into account.

Loss given default (LGD): The LGD represents an estimate of the loss at the time of a potential default occurring during the life of a financial instrument. The determination of the LGD takes into account expected future cash flows from collateral and other credit enhancements, or expected payouts from bankruptcy proceedings for unsecured claims and, where applicable, time to realization of collateral and the seniority of claims. The LGD is commonly expressed as a percentage of the EAD.

Exposure at default (EAD): The EAD represents an estimate of the exposure to credit risk at the time of a potential default occurring during the life of a financial instrument. It represents the cash flows outstanding at the time of default, considering expected repayments, interest payments and accruals, discounted at the EIR. Future drawdowns on facilities are considered through a credit conversion factor (CCF) that is reflective of historical drawdown and default patterns and the characteristics of the respective portfolios. IFRS 9-specific CCFs have been modeled to capture client segment- and product-specific patterns after removing Basel III standard-specific elements, i.e., conservatism and focus on a 12-month period prior to default.

Estimation of expected credit losses

Number of scenarios and estimation of scenario weights

The determination of the probability-weighted ECL requires evaluating a range of diverse and relevant future economic conditions, especially with a view to modeling the non-linear effect of assumptions about macroeconomic factors on the estimate.

To accommodate this requirement, UBS AG uses four different economic scenarios in the ECL calculation: an upside, a baseline, a mild downside and a severe downside scenario. Each scenario is represented by a specific scenario narrative, which is relevant considering the exposure of key portfolios to economic risks, and for which a set of consistent macroeconomic variables is determined. Those variables range from above-trend economic growth to severe recession. The baseline scenario is aligned to the economic and market assumptions used for UBS AG business planning purposes. An econometric model is used to provide an input into the scenario weight assessment process giving a first indication of the probability that the GDP forecast used for each scenario would materialize, if historically observed deviations of GDP growth from trend growth were representative. As such historical analyses of GDP development do not include an assessment of the underlying economic or political causes, management positions the model output into the context of current conditions and future expectations and applies material judgment in determining the final scenario weights. The determined weights constitute the probabilities that the respective set of macroeconomic conditions will occur and not that the chosen particular narratives with the related macroeconomic variables will materialize.

Macroeconomic and other factors

The range of macroeconomic, market and other factors that is modeled as part of the scenario determination is wide, and historical information is used to support the identification of the key factors. As the forecast horizon increases, the availability of information decreases and judgment increases. For cycle-sensitive PD and LGD determination purposes, UBS AG projects the relevant economic factors for a period of three years before reverting, over a specified period, to a cycle-neutral PD and LGD for longer-term projections.

Factors relevant for the ECL calculation vary by type of exposure and are determined during the credit cycle index model development process in close alignment with expert judgment. Certain variables may only be relevant for specific types of exposures, such as house price indices for mortgage loans, while other variables have key relevance in the ECL calculation for all exposures. Regional and client segment characteristics are generally taken into account, with specific focus on Switzerland and the US considering UBS AG's key ECL-relevant portfolios.

For UBS AG, the following forward-looking macroeconomic variables represent the most relevant factors in the ECL calculation:

- GDP growth rates, given their significant effect on borrowers' performance;
- house price indices, given their significant effect on mortgage collateral valuations;
- unemployment rates, given their significant effect on private clients' ability to meet contractual obligations;
- interest rates, given their significant effect on the counterparties' abilities to service their debt;
- consumer price indices, given their overall relevance for companies' performance, private clients' purchasing power and economic stability; and
- equity indices, given that they are an important factor in our corporate rating tools.

The forward-looking macroeconomic assumptions used in the ECL calculation are developed by UBS AG's economists, risk methodology personnel and credit risk officers. Assumptions and scenarios are validated and approved through a Scenario Committee and an Operating Committee, which also aim to ensure a consistent use of forward-looking information throughout UBS AG, including in the business planning process. ECL inputs are tested and reassessed for appropriateness at least each quarter and appropriate adjustments are made when needed.

Scenario generation, review process and governance

All aspects of the scenario selection, including the specific narratives, their weight for the ECL estimation, and the key macroeconomic and other factors, are subject to a formal governance and approval process.

Note 1 Summary of significant accounting policies (continued)

A team of economists, who are part of Group Risk Control, provide the basic analysis taking into account information obtained through established risk identification and assessment processes, which involve a broad range of experts, in particular, risk specialists and other in-house economists. Material risks with a high likelihood of materializing are then factored into the scenario selection process. Once narratives have been developed, key macroeconomic factors that are consistent with the severity of the case and interdependencies are determined.

The scenarios, their weight and the key macroeconomic and other factors are subject to a critical assessment by members of the Scenario Committee, where senior credit officers from the divisions and representatives from Group Risk Control are represented. Important aspects for the review are the extent to which the selected scenarios reflect the vulnerabilities of the relevant portfolios; whether their transformation into PIT PD and LGD values is in line with credit risk officers' expectations; and whether there may be pockets of exposures, where particular credit risk concerns may not be capable of being addressed systematically and require an expert-based overlay for stage allocation and ECL allowance. This also ensures a consistent use of forward-looking information throughout UBS AG and an alignment with the business planning process.

The Operating Committee is jointly chaired by the Group Controller and Chief Accounting Officer, and the Risk Chief Operating Officer and Group Chief Risk Model Officer, and is comprised of the divisional Chief Risk Officers and divisional Chief Financial Officers as well as senior Corporate Center Risk and Finance representatives. They review the proposals submitted by the Scenario Committee and approve the final selection of scenarios and factors and any expert-based overlays as they may be required to cover temporary issues, either related to specific risk elements in a portfolio, or due to identified technical deficiencies pending remediation (model updates, data quality, etc.).

The Group Model Governance Board as the highest authority under UBS's model governance framework ratifies the decisions by the Operating Committee.

ECL measurement period

The period for which lifetime ECL are determined is based on the maximum contractual period that UBS AG is exposed to credit risk, taking into account contractual extension, termination and prepayment options. For irrevocable loan commitments and financial guarantee contracts, the measurement period represents the maximum contractual period for which UBS AG has an obligation to extend credit.

Additionally, some financial instruments include both an on-demand loan and a revocable undrawn commitment, where the contractual cancelation right does not limit UBS AG's exposure to credit risk to the contractual notice period as the client has the ability to draw down funds before UBS AG can take risk-mitigating actions. In such cases, UBS AG is required to estimate the period over which it is exposed to credit risk. This applies to UBS AG's credit card limits, which do not have a defined contractual maturity date, are callable on demand and where the drawn and undrawn components are managed as one unit. The exposure arising from UBS AG's credit card limits is not significant and is managed at a portfolio level, with credit actions triggered when balances are past due. An ECL measurement period of seven years is applied for credit card limits, capped at 12 months for stage 1 balances, as a proxy for the period that UBS AG is exposed to credit risk.

Customary master credit agreements in the Swiss corporate market also include on-demand loans and revocable undrawn commitments. For smaller commercial facilities, a risk-based monitoring (RbM) approach is in place that highlights negative trends as risk events, at an individual facility level, based on a combination of continuously updated risk indicators. The risk events trigger additional credit reviews by a risk officer, allowing for informed credit decisions to be taken. Larger corporate facilities are not subject to RbM, but are reviewed at least annually through a formal credit review. UBS AG has assessed these credit risk management practices and considers both the RbM approach and formal credit review as substantive credit reviews resulting in a re-origination of the facility. Following this, a 12-month measurement period from the reporting date is used for both types of facilities as an appropriate proxy of the period over which UBS AG is exposed to credit risk, with 12 months also used as a look-back period for assessing SICR, always from the respective reporting date.

Significant increase in credit risk

Financial instruments subject to ECL are monitored on an ongoing basis. To determine whether the recognition of a maximum 12-month ECL continues to be appropriate, it is assessed whether an SICR has occurred since initial recognition of the financial instrument. The assessment criteria include both quantitative and qualitative factors. UBS AG does not make use of the expedient that no particular SICR test is required for instruments that have low credit risk at reporting date.

Primarily, UBS AG assesses changes in an instrument's risk of default on a quantitative basis by comparing the annualized forward-looking and scenario-weighted lifetime PD of an instrument determined at two different dates:

- at the reporting date; and
- at inception of the instrument.

In both cases, the respective PDs are determined for the residual lifetime of the instrument, i.e., the period between the reporting date and maturity. If, based on UBS AG's quantitative modeling, an increase exceeds a set threshold, an SICR is deemed to have occurred and the instrument is transferred to stage 2 with lifetime ECL being recognized.

The threshold applied varies depending on the original credit quality of the borrower. For instruments with lower default probabilities at inception due to good credit quality of the counterparty, the SICR threshold is set at a higher level than for instruments with higher default probabilities at inception. This implies that for instruments with initially lower default probabilities, a relatively higher deterioration in credit quality is needed to trigger an SICR than for those instruments with originally higher PDs. The SICR assessment based on PD changes is made at an individual financial asset level. A high-level overview of the SICR trigger, which is a multiple of the annualized remaining lifetime PIT PD expressed in rating downgrades that entail the same multiple of PD values, together with the corresponding ratings at origination of an instrument, is provided in the "SICR thresholds" table below. This simplified view is aligned to internal ratings as disclosed in "Internal UBS AG rating scale and mapping of external ratings" presented in "Credit risk" in the "Risk management and control" section of this report. The actual SICR thresholds applied are defined on a more granular level interpolating between the values shown in the table below.

SICR thresholds

Internal rating at origination of the instrument	Rating downgrades / SICR trigger
0–3	3
4–8	2
9–13	1

→ **Refer to the "Risk management and control" section of this report for more details on the bank's internal grading system**

Irrespective of the SICR assessment based on default probabilities, credit risk is generally deemed to have significantly increased for an instrument if the contractual payments are more than 30 days past due. For certain less material portfolios, specifically the Swiss credit card portfolio and the recruitment and retention loans to financial advisors of Global Wealth Management Region Americas, the 30-day past due criterion is used as the primary indicator of an SICR. Where instruments are transferred to stage 2 due to the 30-day past due criterion, a minimum period of six months is applied before a transfer back to stage 1 can be triggered. For instruments in Personal & Corporate Banking that are between 90 and 180 days past due but have not been reclassified to stage 3, a one-year period is applied before a transfer back to stage 1 can be triggered.

Additionally, based on individual counterparty-specific indicators, external market indicators of credit risk or general economic conditions, counterparties may be moved to a watch list, which is used as a secondary qualitative indicator for an SICR and hence for a transfer to stage 2. Exception management is further applied, allowing for individual and collective adjustments on exposures sharing the same credit risk characteristics to take account of specific situations that are not otherwise fully reflected. Instruments for which an SICR since initial recognition is determined based on criteria other than changed default probabilities or watch list items remain in stage 2 for at least six months post resolution of the stage 2 trigger event.

The overall SICR determination process does not apply to Lombard loans, securities financing transactions and certain other asset-based lending transactions, because of the risk management practices adopted, including daily monitoring processes with strict remargining requirements. If margin calls are not satisfied, a position is closed out and classified as a stage 3 position.

Credit risk officers are responsible for ensuring that the stage allocation of instruments is in line with the requirements of the standard. Identification of an SICR for accounting purposes is in some aspects different from internal credit risk management processes for loans with increased credit risk, mainly because ECL accounting requirements are instrument-specific, such that a borrower can have multiple exposures allocated to different stages, and that maturing loans in stage 2 will migrate to stage 1 upon renewal irrespective of the actual credit risk at that time. Under a risk-based approach, a holistic counterparty credit assessment and the absolute level of risk at any given date will determine what risk mitigating actions may be warranted.

→ **Refer to the "Risk management and control" section of this report for more information**

Note 1 Summary of significant accounting policies (continued)

Critical accounting estimates and judgments

The calculation of ECL requires management to apply significant judgment and make estimates and assumptions that involve significant uncertainty at the time they are made. Changes to these estimates and assumptions can result in significant changes to the timing and amount of ECL to be recognized.

Determination of a significant increase in credit risk
IFRS 9 does not include a definition of what constitutes an SICR. UBS AG's assessment of whether an SICR has occurred since initial recognition is based on reasonable and supportable forward-looking information, both qualitative and quantitative, and includes significant management judgment. More stringent criteria could significantly increase the number of instruments migrating to stage 2. An IFRS 9 Operating Committee has been established to review and challenge the SICR approach and any potential changes and determinations made in the quarter.

Scenarios, scenario weights and macroeconomic factors
ECL reflect an unbiased and probability-weighted amount, which UBS AG determines by evaluating a range of possible outcomes. Management selects forward-looking scenarios and judges the suitability of respective weights to be applied. Each of the scenarios is based on management's assumptions around future economic conditions in the form of macroeconomic, market and other factors. Changes in the scenarios and weights, the corresponding set of macroeconomic variables and the assumptions made around those variables for the forecast horizon would have a significant effect on the ECL. An IFRS 9 Scenario Committee, in addition to the Operating Committee, has been established to derive, review and challenge the selection and weights.

ECL measurement period
Lifetime ECL are generally determined based upon the contractual maturity of the transaction, which significantly affects ECL. The ECL calculation is therefore sensitive to any extension of contractual maturities triggered by business decisions, consumer behaviors and an increased number of stage 2 positions. In addition, for credit card limits and Swiss callable master credit facilities, judgment is required as UBS AG must determine the period over which it is exposed to credit risk. A seven-year period has been applied for credit card limits, capped at 12 months for stage 1 positions, and a 12-month period has been applied for master credit facilities.

Modeling and management adjustments
A number of complex models have been developed or modified to calculate ECL, with additional management adjustments required. Internal counterparty rating changes, new or revised models and changes to data may significantly affect ECL. The models are governed by UBS AG's model validation controls, which aim to ensure independent verification, and are approved by the Group Model Governance Board (GMGB). The management adjustments are approved by the IFRS 9 Operating Committee and endorsed by the GMGB.

UBS provides a sensitivity analysis of the effect of scenario selection, scenario weights and SICR trigger points on ECL measurement within Note 23g.

Comparative policy | *Policy applicable prior to 1 January 2018*
A claim is impaired and an allowance or provision for credit losses is recognized when objective evidence demonstrates that a loss event has occurred after the initial recognition and that the loss event has an effect on the future cash flows that can be reliably estimated (incurred loss approach). UBS AG considers a claim to be impaired if it will be unable to collect all amounts due on it based on the original contractual terms as a result of credit deterioration of the issuer or counterparty. A claim can be a loan or receivable carried at amortized cost, or a commitment, such as a letter of credit, a guarantee or a similar instrument.

An allowance for credit losses is reported as a decrease in the carrying value of a financial asset. For an off-balance sheet item, such as a commitment, a provision for credit loss is reported in *Provisions*. Changes to allowances and provisions for credit losses are recognized in *Credit loss (expense) / recovery*.

Critical accounting estimates and judgments

Allowances and provisions for credit losses are evaluated at both a counterparty-specific level and collectively. Judgment is used in making assumptions about the timing and amount of impairment losses.

Counterparty-specific allowances and provisions
Loans are evaluated individually for impairment if objective evidence indicates that a loan may be impaired. Individual credit exposures are evaluated on the basis of the borrower's overall financial condition, resources and payment record, the prospects of support from contractual guarantors and, where applicable, the realizable value of any collateral. The impairment loss for a loan is the excess of the carrying value of the financial asset over the estimated recoverable amount. The estimated recoverable amount is the present value, calculated using the loan's original effective interest rate, of expected future cash flows, including amounts that may result from restructuring or the liquidation of collateral. If a loan has a variable interest rate, the discount rate for calculating the recoverable amount is the current effective interest rate. Upon impairment, interest income is accrued by applying the original effective interest rate to the impaired carrying value of the loan.

All impaired loans are reviewed and analyzed at least annually. Any subsequent changes to the amounts and timing of the expected future cash flows compared with prior estimates result in a change in the allowance for credit losses and are charged or credited to *Credit loss (expense) / recovery*. An allowance for impairment is reversed only when the credit quality has improved to such an extent that there is reasonable assurance of timely collection of principal and interest in accordance with the original contractual terms of the instrument, or the equivalent value thereof. A write-off is made when all or part of a financial asset is deemed uncollectible or forgiven. Write-offs reduce the principal amount of a claim and are charged against previously established allowances for credit losses. Recoveries, in part or in full, of amounts previously written off are credited to *Credit loss (expense) / recovery*.

Collective allowances and provisions

Collective allowances and provisions are calculated for portfolios with similar credit risk characteristics, taking into account historical loss experience and current conditions. The methodology and assumptions used are reviewed regularly to reduce any differences between estimated and actual loss experience. For all of its portfolios, UBS AG also assesses whether there have been any unforeseen developments that might result in impairments that are not immediately observable at a counterparty level. To determine whether an event-driven collective allowance for credit losses is required, UBS AG considers global economic drivers to assess the most vulnerable countries and industries. As the allowance cannot be allocated to individual loans, the loans are not considered to be impaired and interest is accrued on each loan according to its contractual terms. If objective evidence becomes available that indicates that an individual financial asset is impaired, it is removed from the group of financial assets assessed for impairment on a collective basis and is assessed separately as counterparty-specific.

Impairment of financial assets classified as available for sale

At each balance sheet date, UBS AG assesses whether indicators of impairment are present. Available-for-sale debt instruments are impaired when there is objective evidence, using the same criteria described on the previous page, that, as a result of one or more events that occurred after the initial recognition of the asset, the estimated future cash flows have decreased.

Objective evidence that there has been an impairment of an available-for-sale equity instrument is a significant or prolonged decline in the fair value of the asset. UBS AG uses a rebuttable presumption that such instruments are impaired where there has been a decline in fair value of more than 20% below its original cost or fair value has been below original cost for more than six months.

To the extent a financial asset classified as available for sale is determined to be impaired, the related cumulative net unrealized loss previously recognized in *Other comprehensive income* is reclassified to the income statement within *Other income*. For equity instruments, any further loss is recognized directly in the income statement, whereas for debt instruments, any further loss is recognized in the income statement only if there is additional objective evidence of impairment. After the recognition of an impairment on a financial asset classified as available for sale, increases in the fair value of equity instruments are reported in *Other comprehensive income*. For debt instruments, such increases in the fair value, up to amortized cost in the transaction currency, are recognized in *Other income,* provided that the fair value increase is related to an event occurring after the impairment loss was recorded. Increases in excess of that amount are reported in *Other comprehensive income*. ▲

h. Restructured and modified financial assets

When payment default is expected or where default has already occurred, UBS AG may grant concessions to borrowers in financial difficulties that it would otherwise not consider in the normal course of its business, such as preferential interest rates, extension of maturity, modifying the schedule of repayments, debt / equity swap, subordination, etc. When a concession or forbearance measure is granted, each case is considered individually and the exposure is generally classified as being in default. Forbearance classification will remain until the loan is collected or written off, non-preferential conditions are granted that supersede the preferential conditions or until the counterparty has recovered and the preferential conditions no longer exceed our risk appetite.

Contractual adjustments when there is no evidence of imminent payment default, or where changes to terms and conditions are within UBS AG's usual risk appetite, are not considered to be in forbearance. Modifications represent contractual amendments that result in an alteration of future contractual cash flows and that can occur within UBS AG's normal risk appetite or as part of a credit restructuring where a counterparty is in financial difficulties.

A restructuring or modification of a financial asset could lead to a substantial change in the terms and conditions, resulting in the original financial asset being derecognized and a new financial asset being recognized. Where the modification does not result in a derecognition, any difference between the modified contractual cash flows discounted at the original EIR and the existing gross carrying value of a financial asset is recognized in profit or loss as a modification gain or loss. Further, the subsequent SICR assessment is made by comparing the risk of default at the reporting date based on the modified contractual terms of the financial asset with the risk of default at initial recognition based on the original, unmodified contractual terms of the financial asset.

Note 1 Summary of significant accounting policies (continued)

i. Netting

UBS AG nets financial assets and liabilities on its balance sheet if (i) it has the unconditional and legally enforceable right to set off the recognized amounts, both in the normal course of business and in the event of default, bankruptcy or insolvency of UBS AG and all of the counterparties, and (ii) intends either to settle on a net basis or to realize the asset and settle the liability simultaneously. Netted positions include, for example, certain derivatives and repurchase and reverse repurchase transactions with various counterparties, exchanges and clearing houses.

In assessing whether UBS AG intends to either settle on a net basis, or to realize the asset and settle the liability simultaneously, emphasis is placed on the effectiveness of operational settlement mechanics in eliminating substantially all credit and liquidity exposure between the counterparties. This condition precludes offsetting on the balance sheet for substantial amounts of UBS AG's financial assets and liabilities, even though they may be subject to enforceable netting arrangements. For OTC derivative contracts, balance sheet offsetting is generally only permitted in circumstances in which a market settlement mechanism exists via an exchange or central clearing counterparty that effectively accomplishes net settlement through a daily exchange of collateral via a cash margining process. For repurchase arrangements and securities financing transactions, balance sheet offsetting may be permitted only to the extent that the settlement mechanism eliminates, or results in insignificant, credit and liquidity risk, and processes the receivables and payables in a single settlement process or cycle.

→ **Refer to Note 25 for more information**

j. Hedge accounting

UBS AG uses derivative and non-derivative instruments to manage exposures to interest rate and foreign currency risks, including exposures arising from forecast transactions. UBS AG continues to apply hedge accounting requirements as set out in IAS 39. Qualifying instruments may be designated as hedging instruments in (i) hedges of the change in fair value of recognized assets or liabilities (fair value hedges); (ii) hedges of the variability in future cash flows attributable to a recognized asset or liability or highly probable forecast transactions (cash flow hedges); or (iii) hedges of a net investment in a foreign operation (net investment hedges).

At the time a financial instrument is designated in a hedge relationship, UBS AG formally documents the relationship between the hedging instrument(s) and hedged item(s), including the risk management objectives and strategy in undertaking the hedge transaction and the methods that will be used to assess the effectiveness of the hedging relationship. Accordingly, UBS AG assesses, both at the inception of the hedge and on an ongoing basis, whether the hedging instruments, primarily derivatives, have been "highly effective" in offsetting changes in the fair value or cash flows associated with the designated risk of the hedged items.

A hedge is considered highly effective if the following criteria are met: (i) at inception of the hedge and throughout its life, the hedge is expected to be highly effective in achieving offsetting changes in fair value or cash flows attributable to the hedged risk; and (ii) actual results of the hedge are within a range of 80–125%. In the case of hedging forecast transactions, the transaction must have a high probability of occurring and must present an exposure to variations in cash flows that could ultimately affect the reported net profit or loss. UBS AG discontinues hedge accounting when (i) it determines that a hedging instrument is not, or has ceased to be, highly effective as a hedge; (ii) the derivative expires or is sold, terminated or exercised; (iii) the hedged item matures, is sold or repaid; or (iv) forecast transactions are no longer deemed highly probable. UBS AG may also discontinue hedge accounting voluntarily.

Hedge ineffectiveness represents the amount by which the changes in the fair value of the hedging instrument differ from changes in the fair value of the hedged item attributable to the hedged risk, or the amount by which changes in the present value of future cash flows of the hedging instrument exceed changes in the present value of expected cash flows of the hedged item. Such ineffectiveness is recorded in current-period earnings in *Other net income from fair value changes on financial instruments* (prior to 1 January 2018: *Net trading income*).

Interest from derivatives designated as hedging instruments in effective fair value hedge relationships is presented within *Interest income from loans and deposits* and *Interest expense on debt issued*, within *Net interest income*. Interest from derivatives designated as hedging instruments in effective cash flow hedge relationships that is reclassified from other comprehensive income when the hedged transaction affects profit or loss is presented within *Interest income from derivative instruments designated as cash flow hedges*.

→ **Refer to Note 3 for more information**

Fair value hedges

For qualifying fair value hedges, the change in the fair value of the hedging instrument is recognized in the income statement along with the change in the fair value of the hedged item that is attributable to the hedged risk. In fair value hedges of interest rate risk, the fair value change of the hedged item attributable to the hedged risk is reflected as an adjustment to the carrying value of the hedged item. If the hedge accounting relationship is terminated for reasons other than the derecognition of the hedged item, the adjustment to the carrying value is amortized to the income statement over the remaining term to maturity of the hedged item using the effective interest rate method. For a portfolio hedge of interest rate risk, the equivalent change in fair value is reflected within *Other financial assets measured at amortized cost* or *Other financial liabilities measured at amortized cost*. If the portfolio hedge relationship is terminated for reasons other than the derecognition of the hedged item, the amount included in *Other financial assets measured at amortized cost or Other financial liabilities measured at amortized cost* is amortized to the income statement over the remaining term to maturity of the hedged items using the straight-line method.

Cash flow hedges

Fair value gains or losses associated with the effective portion of derivatives designated as cash flow hedges for cash flow repricing risk are recognized initially in *Other comprehensive income* within *Equity*. When the hedged forecast cash flows affect profit or loss, the associated gains or losses on the hedging derivatives are reclassified from *Equity* to the income statement.

If a cash flow hedge of forecast transactions is no longer considered effective, or if the hedge relationship is terminated, the cumulative gains or losses on the hedging derivatives previously reported in *Equity* remain there until the committed or forecast transactions occur and affect profit or loss. If the forecast transactions are no longer expected to occur, the deferred gains or losses are reclassified immediately to the income statement.

Hedges of net investments in foreign operations

Hedges of net investments in foreign operations are accounted for similarly to cash flow hedges. Gains or losses on the hedging instrument relating to the effective portion of the hedge are recognized directly in *Equity* (and presented in the statement of changes in equity and statement of comprehensive income under *Foreign currency translation*), while any gains or losses relating to the ineffective and / or undesignated portion (for example, the interest element of a forward contract) are recognized in the income statement. Upon disposal or partial disposal of the foreign operation, the cumulative value of any such gains or losses recognized in *Equity* associated with the entity is reclassified to *Other income*.

Economic hedges that do not qualify for hedge accounting

Derivative instruments that are transacted as economic hedges, but do not qualify for hedge accounting, are treated in the same way as derivative instruments used for trading purposes; i.e., realized and unrealized gains and losses are recognized in *Other net income from fair value changes on financial instruments* (prior to 1 January 2018: *Net trading income*), except for the forward points on certain short- and long-duration foreign exchange contracts, which are reported in *Net interest income*.

→ **Refer to Note 11 for more information**

k. Embedded derivatives

Derivatives may be embedded in other financial instruments (host contracts). For example, they could be represented by the conversion feature embedded in a convertible bond. Such hybrid instruments arise predominantly from the issuance of certain structured debt instruments. An embedded derivative is generally required to be separated from the host contract (from 1 January 2018: unless the host contract is a financial asset in scope of IFRS 9) and accounted for as a standalone derivative instrument at fair value through profit or loss if (i) the host contract is not carried at fair value with changes in fair value reported in the income statement; (ii) the economic characteristics and risks of the embedded derivative are not closely related to the economic characteristics and risks of the host contract; and (iii) the terms of the embedded derivative would meet the definition of a standalone derivative, were they contained in a separate contract.

Typically, UBS AG applies the fair value option to hybrid instruments (refer to item 3b in this Note for more information), in which case bifurcation of an embedded derivative component is not required.

Note 1 Summary of significant accounting policies (continued)

l. Financial liabilities

Financial liabilities measured at amortized cost include *Debt issued measured at amortized cost* and *Funding from UBS Group AG and its subsidiaries*. The latter includes contingent capital instruments that contain contractual provisions under which the principal amounts would be written down upon either a specified CET1 ratio breach or a determination by FINMA that a viability event has occurred. Such contractual provisions are not derivatives as the underlying is deemed to be a non-financial variable specific to a party to the contract. Where there is a legal bail-in mechanism for write-down or conversion into equity (as is the case, for instance, with senior unsecured debt issued by UBS AG that is subject to write-down or conversion under resolution authority granted to FINMA under Swiss law), such mechanism does not form part of the contractual terms and, therefore, does not affect the amortized cost accounting treatment applied to these instruments. If the debt were to be written down or converted into equity in a future period, this would result in the full or partial derecognition of the financial liabilities, with the difference between the carrying value of the debt written down or converted into equity and the fair value of any equity shares issued recognized in the income statement.

In cases where, as part of UBS AG's risk management activity, fair value hedge accounting is applied to fixed-rate debt instruments carried at amortized cost, their carrying amount is adjusted for changes in fair value related to the hedged exposure. Refer to item 3j for more information on hedge accounting.

Obligations of UBS AG arising from funding it has received from UBS Group AG or its subsidiaries, which are not within the UBS AG scope of consolidation, are presented as *Funding from UBS Group AG and its subsidiaries.*

Debt issued and subsequently repurchased in relation to market-making or other activities is treated as redeemed. A gain or loss on redemption (depending on whether the repurchase price of the bond is lower or higher than its carrying value) is recorded in *Other income*. A subsequent sale of own bonds in the market is treated as a reissuance of debt.

UBS AG uses the fair value option to designate certain issued debt instruments as financial liabilities designated at fair value through profit or loss, on the basis that such financial instruments include embedded derivatives and / or are managed on a fair value basis (refer to item 3b in this Note for more information).

m. Own credit

Changes in the fair value of financial liabilities designated at fair value through profit or loss related to own credit are recognized in *Other comprehensive income* directly within *Retained earnings* and will not be reclassified to the income statement in future periods.

n. Loan commitments

Policy applicable from 1 January 2018[1]

Loan commitments are arrangements under which clients can borrow stipulated amounts under defined terms and conditions.

Loan commitments that can be canceled at any time by UBS AG at its discretion are neither recognized on the balance sheet nor included in off-balance sheet disclosures.

Loan commitments that cannot be canceled by UBS AG once the commitments are communicated to the beneficiary or that are revocable only because of automatic cancelation upon deterioration in a borrower's creditworthiness are considered irrevocable and are classified as (i) derivative loan commitments measured at fair value through profit or loss; (ii) loan commitments designated at fair value through profit or loss; or (iii) other loan commitments.

UBS AG recognizes ECL on non-cancelable other loan commitments. In addition, UBS AG also recognizes ECL on loan commitments that can be canceled at any time if UBS AG is exposed to credit risk (refer to item g in this Note). Corresponding ECL are presented within *Provisions* on the UBS AG's balance sheet. ECL relating to these other loan commitments are recorded in the income statement in *Credit loss (expense) / recovery*.

When a client draws on a commitment, the resulting loan is presented within *Financial assets at fair value held for trading,* or within *Financial assets at fair value not held for trading* when the associated loan commitments are measured at fair value through profit or loss, and within *Loans and advances to customers* when the associated loan commitment is not measured at fair value through profit or loss.

Comparative policy | *Policy applicable prior to 1 January 2018*

When a client draws on a commitment, the resulting loan is classified as a (i) trading asset, consistent with the associated derivative loan commitment; (ii) financial asset designated at fair value through profit or loss, consistent with the loan commitment designated at fair value through profit or loss; or as a (iii) loan when the associated loan commitment is accounted for as other loan commitment. ▲

o. Financial guarantee contracts

Policy applicable from 1 January 2018[1]

Financial guarantee contracts are contracts that require the issuer to make specified payments to reimburse the holder for an incurred loss because a specified debtor fails to make payments when due in accordance with the terms of a specified debt instrument. UBS AG issues such financial guarantees to banks, financial institutions and other parties on behalf of clients to secure loans, overdrafts and other banking facilities.

1 The accounting policy in this section applies from 1 January 2018, the effective date of IFRS 9. For the details of transition effects refer to Note 1c.

Certain issued financial guarantees that are managed on a fair value basis are designated at fair value through profit or loss. Financial guarantees that are not managed on a fair value basis are initially recognized in the financial statements at fair value and are subsequently measured at the higher of:

- the amount of ECL (refer to item g in this Note); and
- the amount initially recognized less the cumulative amount of income recognized as of the reporting date.

ECL resulting from guarantees is recorded in the income statement in *Credit loss (expense) / recovery*.

Comparative policy I *Policy applicable prior to 1 January 2018*
Financial guarantees that are not managed on a fair value basis are initially recognized in the financial statements at fair value and are subsequently measured at the higher of the amount initially recognized less cumulative amortization and, to the extent a payment under the guarantee has become probable, the present value of the expected payment. Any change in the liability relating to probable expected payments resulting from guarantees is recorded in the income statement in *Credit loss (expense) / recovery*. ▲

p. Other net income from fair value changes on financial instruments

The line item *Other net income from fair value changes on financial instruments* includes fair value gains and losses on financial instruments at fair value through profit or loss but excluding interest income and expense on non-derivatives (refer to item 3c in this Note), as well as the effects at derecognition, trading gains and losses and intermediation income arising from certain client-driven Global Wealth Management and Personal & Corporate Banking financial transactions. In addition, foreign currency translation effects and income and expenses from precious metals are presented within this income statement line item.

4) Fee and commission income and expenses

Policy applicable from 1 January 2018[1]
UBS AG earns fee income from a diverse range of services it provides to its clients. Fee income can be divided into two broad categories: fees earned from services that are provided over a certain period of time, such as asset or portfolio management, custody services and certain advisory services; and fees earned from point-in-time services such as underwriting fees and brokerage fees (e.g., securities and derivative execution and clearing).

→ **Refer to Note 4 for more information, including the disaggregation of revenues**

Performance obligations satisfied over time

Fees earned from services that are provided over a certain period of time are recognized on a pro rata basis over the service period, provided the fees are not contingent on successfully meeting specified performance criteria that are beyond the control of UBS AG (see measurement below).

Costs to fulfill services over time are recorded in the income statement immediately, because such services are considered to be a series of services that are substantially the same from day to day and have the same pattern of transfer. The costs to fulfill neither generate nor enhance the resources of UBS AG that will be used to satisfy future performance obligations and cannot be distinguished between those that relate to satisfied and unsatisfied performance obligations. Therefore, these costs do not qualify to be recognized as an asset. Where costs incurred relate to contracts that include variable consideration that is constrained by factors beyond UBS AG's control (e.g., successful mergers and acquisitions (M&A) activity) or where UBS AG has a history of not recovering such costs on similar transactions, such costs are expensed immediately as incurred.

Performance obligations satisfied at a point in time

Fees earned from providing transaction-type services are recognized when the service has been completed, provided such fees are not subject to refund or another contingency beyond the control of UBS AG.

Incremental costs to fulfill services provided at a point in time are typically incurred and recorded at the same time as the performance obligation is satisfied and revenue is earned, and are therefore not recognized as an asset, e.g., brokerage. Where recovery of costs to fulfill relates to an uncompleted point-in-time service for which the satisfaction of the performance obligation in the contract is dependent upon factors beyond the control of UBS AG, such as underwriting a successful securities issuance, or where UBS AG has a history of not recovering such costs through reimbursement on similar transactions, such costs are expensed immediately as incurred.

1 The accounting policy in this section applies from 1 January 2018, the effective date of IFRS 15. For the details of transition effects refer to Note 1b.

Note 1 Summary of significant accounting policies (continued)

Measurement

Fee and commission income is measured based on consideration specified in a legally enforceable contract with a customer, excluding amounts such as taxes collected on behalf of third parties. Consideration can include both fixed and variable amounts. Variable consideration includes refunds, discounts, performance bonuses and other amounts that are contingent on the occurrence or non-occurrence of a future event. Variable consideration that is contingent on an uncertain event can only be recognized to the extent that it is highly probable that a significant reversal in the amount of cumulative revenue for a contract will not occur. This is referred to as the variable consideration constraint. UBS AG does not consider the highly probable criterion to be met where the contingency on which income is dependent is beyond the control of UBS AG. In such circumstances, UBS AG only recognizes revenue when the contingency has been resolved or an uncertain event has occurred. Examples include asset management performance-linked fees, which are only payable if the returns of a fund exceed a benchmark and are only recognized after the performance period has elapsed. Similarly, M&A advisory fees that are dependent on a successful client transaction are not recognized until the transaction on which the fees are dependent has been executed. Asset management fees (excluding performance-based fees) received on a periodic basis, typically quarterly, that are determined based on a fixed percentage of net asset value that has not been established at the reporting date, are estimated and accrued ratably over the period to the next invoice date, except during periods in which market volatility indicates there is a risk of significant reversal. Research revenues earned by the Investment Bank under commission-sharing or research payment account agreements are not recognized until the client has provided a definitive allocation of amounts between research providers, as prior to this UBS AG generally does not have an enforceable right to a specified amount of consideration.

Consideration received is allocated to the separately identifiable performance obligations in a contract. Owing to the nature of UBS's business, contracts that include multiple performance obligations are typically those that are considered to include a series of similar performance obligations fulfilled over time with the same pattern of transfer to the client, e.g., asset management. As a consequence, UBS AG is not required to apply significant judgment in allocating the consideration received across the various performance obligations. UBS AG has taken the practical expedient to not disclose information on the allocation of the transaction price to remaining performance obligations in contracts. This is because contracts are typically less than one year in duration. Where contracts have a longer duration, they are either subject to the variable consideration constraint, with fees calculated on future net asset value, which cannot be included within the transaction price for the contract, or result in revenue being recognized ratably using the output method corresponding directly to the value of the services completed to date and to which UBS would be entitled to invoice upon termination of the contract, e.g., loan commitments.

Presentation of fee and commission income and expense

Fee and commission income and expense are presented gross on the face of the income statement when UBS AG is considered to be principal in the contractual relationship with its customer and any suppliers used to fulfill such contracts. This occurs where UBS AG has control over such services and its relationship with suppliers prior to provision of the service to the client. UBS AG only considers itself to be an agent in relation to services provided by third parties, e.g., third-party execution costs for exchange-traded derivatives and fees payable to third-party research providers, where the client controls both the choice of supplier and the scope of the services to be provided. Furthermore, in order to be considered an agent UBS AG must not take responsibility for the quality of the service, transform or integrate the services into a UBS AG product. In such circumstances UBS AG is essentially acting as a payment agent for its client. When UBS AG is acting as an agent, any costs incurred are directly offset against the associated income.

Presentation of expenses in the income statement

UBS AG presents expenses primarily in line with their nature in the income statement, differentiating between expenses that are incremental and incidental to revenues, which are presented within *Total operating income*, and those that are related to personnel, general and administrative expenses, which are presented within *Total operating expenses*.

Contract assets, contract liabilities and capitalized expenses

UBS AG has applied the practical expedient of allowing for costs incurred to obtain a contract to be expensed as incurred where the amortization period for any asset recognized would be less than 12 months.

Where UBS AG provides services to clients, consideration is due immediately upon satisfaction of a point-in-time service or at the end of a prespecified period for a service performed over time; e.g., certain asset management fees are collected monthly or quarterly, through deduction from a client account, deduction from fund assets or through separate invoicing. Where receivables are recorded, they are presented within *Other financial assets measured at amortized cost*.

Contract liabilities relate to prepayments received from customers where UBS AG is yet to satisfy its performance obligation.

Contract assets are recorded when an entity's right to consideration in exchange for services transferred is conditional on something other than the passage of time, e.g., the entity's future performance.

UBS AG has not recognized any material contract assets, contract liabilities or capitalized expenses during the period and has therefore not provided a contract balances reconciliation.

Comparative policy | *Policy applicable prior to 1 January 2018*
Fees earned from services that are provided over a certain period of time are recognized ratably over the service period, with the exception of performance-linked fees or fee components with specific performance criteria. Such fees are recognized when, as of the reporting date, the performance benchmark has been met and when collectibility is reasonably assured.

Fees earned from providing transaction-type services are recognized when the service has been completed and the fee is fixed or determinable, i.e., not subject to refund or adjustment.

Fee income generated from providing a service that does not result in the recognition of a financial instrument is presented within *Net fee and commission income*. Fees generated from the acquisition, issue or disposal of a financial instrument are presented in the income statement in line with the balance sheet classification of that financial instrument. ▲

→ **Refer to Note 4 for more information**

5) Cash and cash equivalents

For the purpose of the statement of cash flows, cash and cash equivalents comprise balances with an original maturity of three months or less, including cash, money market paper and balances at central and other banks.

6) Share-based and other deferred compensation plans

Share-based compensation plans

UBS Group AG is the grantor of and maintains the obligation to settle share-based compensation plans that are awarded to employees of UBS AG. UBS AG recognizes the fair value of awards granted to its employees. These awards are generally subject to conditions that require employees to complete a specified period of service and, for performance shares, to satisfy specified performance conditions. Compensation expense is recognized, on a per-tranche basis, over the service period based on an estimate of the number of instruments expected to vest and is adjusted to reflect actual outcomes. Where the service period is shortened, for example in the case of employees affected by restructuring programs or mutually agreed termination provisions, recognition of expense is accelerated to the termination date.

Where no future service is required, such as for employees who are eligible for retirement or who have met certain age and length-of-service criteria, the services are presumed to have been received and compensation expense is recognized immediately on, or prior to, the date of grant. Such awards may remain forfeitable until the legal vesting date if certain non-vesting conditions are not met. For equity-settled awards, forfeiture events resulting from breach of a non-vesting condition do not result in an adjustment to expense.

UBS AG has no obligation to settle the awards and therefore awards of UBS Group AG shares are classified as equity-settled share-based payment transactions. Compensation expense is measured by reference to the fair value of UBS Group AG equity instruments on the date of grant adjusted, when relevant, to take into account the terms and conditions inherent in the award, including dividend rights, transfer restrictions in effect beyond the vesting date, and non-vesting conditions. Fair value is determined at the date of grant and is not remeasured unless their terms are modified such that the fair value immediately after modification exceeds the fair value immediately prior to modification. Any increase in fair value resulting from a modification is recognized as compensation expense, either over the remaining service period or, for vested awards, immediately.

→ **Refer to Note 30 for more information**

Other compensation plans

The employees of UBS AG are granted deferred compensation plans that are settled in cash or financial instruments other than UBS AG equity, the amount of which may be fixed or may vary based on the achievement of specified performance conditions or the value of specified underlying assets. Compensation expense is recognized over the period that the employee provides services to become entitled to the award. Where the service period is shortened, for example in the case of employees affected by restructuring programs or mutually agreed termination provisions, recognition of expense is accelerated to the termination date. Where no future service is required, such as for employees who are eligible for retirement or who have met certain age and length-of-service criteria, the services are presumed to have been received and compensation expense is recognized immediately on, or prior to, the date of grant. The amount recognized is based on the present value of the amount expected to be paid under the plan and is remeasured at each reporting date, so that the cumulative expense recognized equals the cash or the fair value of respective financial instruments distributed.

→ **Refer to Note 30 for more information**

Note 1 Summary of significant accounting policies (continued)

7) Pension and other post-employment benefit plans

UBS AG sponsors various post-employment benefit plans for its employees worldwide, which include defined benefit and defined contribution pension plans, and other post-employment benefits such as medical and life insurance benefits that are payable after the completion of employment.

→ **Refer to Note 29 for more information**

Defined benefit plans

UBS AG offers defined benefit pension and medical insurance benefits. Defined benefit plans specify an amount of benefit that an employee will receive, which usually depends on one or more factors, such as age, years of service and compensation. The defined benefit liability recognized on the balance sheet is the present value of the defined benefit obligation less the fair value of the plan assets at the balance sheet date, with changes resulting from remeasurements recorded immediately in *Other comprehensive income*. If the fair value of the plan assets is higher than the present value of the defined benefit obligation, the recognition of the resulting net defined benefit asset is limited to the present value of economic benefits available in the form of refunds from the plan or reductions in future contributions to the plan. UBS AG applies the projected unit credit method to determine the present value of its defined benefit obligations, the related current service cost and, where applicable, past service cost. The projected unit credit method sees each period of service as giving rise to an additional unit of benefit entitlement and measures each unit separately to build up the final obligation. These amounts, which take into account the specific features of each plan, including risk sharing between employee and employer, are calculated periodically by independent qualified actuaries.

Critical accounting estimates and judgments

The net defined benefit liability or asset at the balance sheet date and the related personnel expense depend on the expected future benefits to be provided, determined using a number of economic and demographic assumptions. A range of assumptions could be applied, and different assumptions could significantly alter the defined benefit liability or asset and pension expense recognized. The most significant assumptions include life expectancy, the discount rate, expected salary increases, pension increases and, in addition for the Swiss plan and one of the US defined benefit pension plans, interest credits on retirement savings account balances. Life expectancy is determined by reference to published mortality tables. The discount rate is determined by reference to the rates of return on high-quality fixed-income investments of appropriate currency and term at the measurement date. The assumption for salary increases reflects the long-term expectations for salary growth and takes into account historical salary development by age groups, expected inflation and expected supply and demand in the labor market. A sensitivity analysis for reasonable possible movements in each significant assumption for UBS AG's post-employment obligations is provided within Note 29.

Defined contribution plans

A defined contribution plan is a pension plan under which UBS AG pays fixed contributions into a separate entity from which post-employment and other benefits are paid. UBS AG has no legal or constructive obligation to pay further contributions if the plan does not hold sufficient assets to pay employees the benefits relating to employee service in the current and prior periods. UBS AG's contributions are expensed when the employees have rendered services in exchange for such contributions. This is generally in the year of contribution. Prepaid contributions are recognized as an asset to the extent that a cash refund or a reduction in future payments is available.

8) Income taxes

UBS AG is subject to the income tax laws of Switzerland and those of the non-Swiss jurisdictions in which UBS AG has business operations.

UBS AG's provision for income taxes is composed of current and deferred taxes. Current income taxes represent taxes to be paid or refunded for the current period or previous periods.

Deferred taxes are recognized for temporary differences between the carrying amounts and tax bases of assets and liabilities that will result in taxable or deductible amounts in future periods and are measured using the applicable tax rates and laws that have been enacted or substantively enacted by the end of the reporting period and which will be in effect when such differences are expected to reverse.

Deferred tax assets arise from a variety of sources, the most significant being: (i) tax losses that can be carried forward to be used against profits in future years; and (ii) temporary differences that will result in deductions against profits in future years. Deferred tax assets are recognized only to the extent that it is probable that sufficient taxable profits will be available against which these differences can be used. When an entity or tax group has a history of recent losses, deferred tax assets are only recognized to the extent there are sufficient taxable temporary differences or there is convincing other evidence that sufficient taxable profit will be available against which the unused tax losses can be utilized.

Deferred tax liabilities are recognized for temporary differences between the carrying amounts of assets and liabilities in the balance sheet that reflect the expectation that certain items will give rise to taxable income in future periods.

Deferred and current tax assets and liabilities are offset when (i) they arise in the same tax reporting group; (ii) they relate to the same tax authority; (iii) the legal right to offset exists; and (iv) they are intended to be settled net or realized simultaneously.

Current and deferred taxes are recognized as income tax benefit or expense in the income statement except for current and deferred taxes recognized (i) upon the acquisition of a subsidiary (for which such amounts would affect the amount of goodwill arising from the acquisition); (ii) for gains and losses on the sale of treasury shares (for which the tax effects are recognized directly in *Equity*); (iii) for unrealized gains or losses on financial instruments that are classified as FVOCI (prior to 1 January 2018: financial assets classified as available for sale); (iv) for changes in fair value of derivative instruments designated as cash flow hedges; (v) for remeasurements of defined benefit plans; or (vi) for certain foreign currency translations of foreign operations. Amounts relating to points (iii) through (vi) are recognized in *Other comprehensive income* within *Equity*.

UBS AG reflects the potential effect of uncertain tax positions using expected value (i.e., a probability-weighted approach), except where the likelihood of loss is remote (less than 5%).

Critical accounting estimates and judgments

Tax laws are complex, and judgment and interpretations about the application of such laws are required when accounting for income taxes. UBS AG considers the performance of its businesses and the accuracy of historical forecasts and other factors in evaluating the recoverability of its deferred tax assets, including the remaining tax loss carry-forward period, and its assessment of expected future taxable profits in the forecast period used for recognizing deferred tax assets. Estimating future profitability is inherently subjective and is particularly sensitive to future economic, market and other conditions, which are difficult to predict.

The level of deferred tax asset recognition is influenced by management's assessment of UBS AG's future profitability based on relevant business plan forecasts. Existing assessments are reviewed and, if necessary, revised to reflect changed circumstances. This review is conducted annually, in the fourth quarter of each year, but adjustments may be made at other times, if required. In a situation where recent losses have been incurred, convincing other evidence that there will be sufficient future profitability is required.

If profit forecast assumptions in future periods deviate from the current outlook, the value of UBS AG's deferred tax assets may be affected. Any increase or decrease in the carrying amount of deferred tax assets would primarily be recognized through the income statement but would not affect cash flows.

In addition, judgment is required to assess the expected value of uncertain tax positions that are incorporated into the estimate of income and deferred tax and the assessment of the related probabilities, including in relation to the interpretation of tax laws, the resolution of any income tax-related appeals or litigation and the assessment of the related probabilities.

→ **Refer to Note 8 for more information**

9) Investments in associates

Interests in entities where UBS AG has significant influence over the financial and operating policies of the entity, but does not have control, are classified as investments in associates and accounted for under the equity method of accounting. Typically, UBS AG has significant influence when it holds or has the ability to hold between 20% and 50% of a company's voting rights. Investments in associates are initially recognized at cost, and the carrying amount is increased or decreased after the date of acquisition to recognize the UBS AG's share of the investee's comprehensive income and any impairment losses.

The net investment in an associate is impaired if there is objective evidence of a loss event and the carrying value of the investment in the associate exceeds its recoverable amount.

→ **Refer to Note 31 for more information**

Note 1 Summary of significant accounting policies (continued)

10) Property, equipment and software

Property, equipment and software includes own-used properties, leasehold improvements, information technology hardware, externally purchased and internally generated software, as well as communication and other similar equipment. Property, equipment and software is carried at cost less accumulated depreciation and impairment losses and is reviewed at each reporting date for indication for impairment. Software development costs are capitalized only when the costs can be measured reliably and it is probable that future economic benefits will arise. Depreciation of property, equipment and software begins when they are available for use (i.e., when they are in the location and condition necessary for them to be capable of operating in the manner intended by management). Depreciation is calculated on a straight-line basis over an asset's estimated useful life. The estimated useful economic lives of UBS AG's property, equipment and software are:

- properties, excluding land: ≤ 67 years
- IT hardware and communication equipment: ≤ 7 years
- other machines and equipment: ≤ 10 years
- software: ≤ 10 years
- leasehold improvements: shorter of the lease term or the economic life of asset (typically ≤ 20 years)

→ **Refer to Note 15 for more information**

11) Goodwill and intangible assets

Goodwill represents the excess of the cost of an acquisition over the fair value of UBS AG's share of net identifiable assets of the acquired entity at the date of the acquisition. Goodwill is not amortized, but at the end of each reporting period or when indicators of impairment exist, UBS AG assesses whether there is any indication that goodwill is impaired. If such indicators exist, UBS AG is required to test the goodwill for impairment. Irrespective of whether there is any indication of impairment, UBS AG tests goodwill for impairment annually.

For the 2017 annual test, UBS AG considered the segments, as they are reported in Note 2a, as separate cash-generating units, since that was the level at which the performance of investments (and the related goodwill) was reviewed and assessed by management.

Following the integration in 2018 of the Wealth Management and Wealth Management Americas business divisions into the single reportable segment Global Wealth Management, UBS AG continued to separately monitor the goodwill previously allocated to the two former business divisions. As a consequence, for the purpose of goodwill impairment testing, the former Wealth Management and Wealth Management Americas business divisions are considered to be two separate cash-generating units referred to in Note 16 as Global Wealth Management Americas[1] and Global Wealth Management ex Americas. The remaining goodwill balances continued to be tested at the level of Asset Management and the Investment Bank, respectively, consistent with the 2017 annual test.

The impairment test is performed for each cash-generating unit to which goodwill is allocated by comparing the recoverable amount, based on its value-in-use, to the carrying amount of the respective cash-generating unit. An impairment charge is recognized in the income statement if the carrying amount exceeds the recoverable amount.

If the estimated earnings and other assumptions in future periods deviate from the current outlook, the value of UBS AG 's goodwill may become impaired in the future, giving rise to losses in the income statement. Recognition of any impairment of goodwill would reduce net profit and equity, but would not affect cash flows.

Intangible assets are comprised of separately identifiable intangible items arising from business combinations and certain purchased trademarks and similar items. Intangible assets are recognized at cost. The cost of an intangible asset acquired in a business combination is its fair value at the date of acquisition. Intangible assets with a finite useful life are amortized using the straight-line method over their estimated useful life, generally not exceeding 20 years. In rare cases, intangible assets can have an indefinite useful life, in which case they are not amortized. At each reporting date, intangible assets are reviewed for indications of impairment. If such indications exist, the intangible assets are analyzed to assess whether their carrying amount is fully recoverable. An impairment loss is recognized if the carrying amount exceeds the recoverable amount.

Critical accounting estimates and judgments

UBS AG's methodology for goodwill impairment testing is based on a model that is most sensitive to the following key assumptions: (i) forecasts of earnings available to shareholders in years one to three; (ii) changes in the discount rates; and (iii) changes in the long-term growth rate.

The key assumptions are linked to external market information, where applicable. Earnings available to shareholders are estimated on the basis of forecast results, which are part of the business plan approved by the BoD. The discount rates are determined by applying a capital asset pricing model-based approach, as well as considering quantitative and qualitative inputs from both internal and external analysts, the view of management and regional differences in risk-free rates, at the level of individual cash-generating units. Long-term growth rates are determined in a consistent manner based on nominal or real GDP growth rate forecasts, considering different regions worldwide as incorporated in the business plan approved by the BoD.

The key assumptions used to determine the recoverable amounts of each cash-generating unit are tested for sensitivity by applying reasonably possible changes to those assumptions. Refer to Note 16 for details on how the reasonably possible changes may affect the results of UBS AG's model for goodwill impairment testing.

→ **Refer to Notes 2 and 16 for more information**

1 Now including the Global Wealth Management business in Latin America, previously part of the Wealth Management business division.

12) Provisions and contingent liabilities

Provisions are liabilities of uncertain timing or amount, and are recognized when: (i) UBS AG has a present obligation as a result of a past event; (ii) it is probable that an outflow of resources will be required to settle the obligation; and (iii) a reliable estimate of the amount of the obligation can be made.

The majority of UBS AG's provisions relate to litigation, regulatory and similar matters, restructuring, employee benefits, real estate and loan commitments and guarantees.

UBS AG recognizes provisions for litigation, regulatory and similar matters when, in the opinion of management after seeking legal advice, the requirements for recognition have been met. Where these factors are otherwise satisfied, a provision may be established for claims that have not yet been asserted against UBS AG, but are nevertheless expected to be, based on UBS AG's experience with similar asserted claims.

Management may undertake restructuring activities, i.e., a planned and controlled program that materially changes either the scope of the business or the manner in which it is conducted. Restructuring provisions are recognized when a detailed and formal restructuring plan has been approved and a valid expectation has been raised that the restructuring will be carried out, either through commencement of the plan or announcements to affected employees.

Provisions are recognized for lease contracts if the unavoidable costs of a contract exceed the benefits expected to be received under it (onerous lease contracts). For example, this may occur when a significant portion of a leased property is expected to be vacant for an extended period.

Provisions for employee benefits are recognized mainly in respect of service anniversaries and sabbatical leave.

Provisions are recognized at the measurement point that represents our best estimate of the consideration required to settle the present obligation at the balance sheet date. Such estimates are based on all available information and are revised over time as more information becomes available. If the effect of the time value of money is material, provisions are discounted and measured at the present value of the expenditure expected to settle or discharge the obligation, using a rate that reflects the current market assessments of the time value of money and the risks specific to the obligation.

Provisions that are similar in nature are aggregated to form a class, while the remaining provisions, including those of less significant amounts, are disclosed under *Other provisions*. Provisions are presented separately on the balance sheet and, when they are no longer considered uncertain in timing or amount, are reclassified to other liabilities.

When all conditions required to recognize a provision are not met, a contingent liability is disclosed, unless the likelihood of an outflow of resources is remote. Contingent liabilities are also disclosed for possible obligations that arise from past events whose existence will be confirmed only by uncertain future events not wholly within the control of UBS AG. Such disclosures are not made if it is not practicable to do so.

Critical accounting estimates and judgments

Recognition of provisions often involves significant judgment in assessing the existence of an obligation that results from past events and in estimating the probability, timing and amount of any outflows of resources. This is particularly the case for litigation, regulatory and similar matters, which, due to their nature, are subject to many uncertainties making their outcome difficult to predict. Such matters may involve unique fact patterns or novel legal theories, proceedings that have not yet been initiated or are at early stages of adjudication, or as to which alleged damages have not been quantified by the claimants. Determining whether an obligation exists as a result of a past event and estimating the probability, timing and amount of any potential outflows is based on a variety of assumptions, variables, and known and unknown uncertainties.

The amount of any provision recognized is sensitive to the assumptions used and there could be a wide range of possible outcomes for any particular matter.

Statistical or other quantitative analytical tools are of limited use in determining whether to establish or determine the amount of provisions in the case of litigation, regulatory or similar matters. Furthermore, information currently available to management may be incomplete or inaccurate, increasing the risk of erroneous assumptions with regard to the future development of such matters. Management regularly reviews all the available information regarding such matters, including legal advice, which is a significant consideration, to assess whether the recognition criteria for provisions have been satisfied and to determine the timing and amount of any potential outflows.

→ **Refer to Note 21 for more information**

Note 1 Summary of significant accounting policies (continued)

13) Foreign currency translation

Transactions denominated in a foreign currency are translated into the functional currency of the reporting entity at the spot exchange rate on the date of the transaction. At the balance sheet date, all monetary assets including those at FVOCI (prior to 1 January 2018: monetary financial assets classified as available for sale) and monetary liabilities denominated in foreign currency are translated into the functional currency using the closing exchange rate. Translation differences (which for monetary financial assets at FVOCI are determined as if they were financial assets measured at amortized cost) are reported in *Other net income from fair value changes on financial instruments* (prior to 1 January 2018: *Net trading income*).

Non-monetary items measured at historical cost are translated at the exchange rate on the date of the transaction. Prior to 1 January 2018, foreign currency translation differences on non-monetary financial assets classified as available for sale were recorded directly in *Equity* until the asset was derecognized.

Upon consolidation, assets and liabilities of foreign operations (which from 1 October 2018 also include UBS AG's Swiss-based operations with Swiss franc functional currency) are translated into US dollars, UBS AG's presentation currency, at the closing exchange rate on the balance sheet date, and income and expense items and other comprehensive income are translated at the average rate for the period. The resulting foreign currency translation differences attributable to shareholders are recognized in *Foreign currency translation* within *Equity,* which forms part of *Total equity attributable to shareholders*, whereas the foreign currency translation differences attributable to non-controlling interests are included within *Equity attributable to non-controlling interests*. Share capital issued, share premium and treasury shares held are translated at the historic average rate, whereby the difference between the historic average rate and the spot rate realized upon repayment of share capital or disposal of treasury shares is reported as *Share premium*. Cumulative amounts recognized in OCI in respect of cash flow hedges and financial assets measured at FVOCI (prior to 1 January 2018: financial assets classified as available for sale) are translated at the closing exchange rate as of balance sheet dates, with any translation effects adjusted through *Retained earnings*.

When a foreign operation is disposed or partially disposed of and UBS AG no longer controls the foreign operation, the cumulative amount of foreign currency translation differences within *Total equity attributable to shareholders* and *Equity attributable to non-controlling interests* related to that foreign operation is reclassified to the income statement as part of the gain or loss on disposal. Similarly, if an investment in an associate becomes an investment in a subsidiary, the cumulative amount of foreign currency translation differences is reclassified to profit or loss. When UBS AG disposes of a portion of its interest in a subsidiary that includes a foreign operation but retains control, the related portion of the cumulative currency translation balance is reclassified to *Equity attributable to non-controlling interests*.

→ **Refer to Note 37 for more information**

Critical accounting estimates and judgments

The determination of an entity's functional currency and the trigger for a change requires management to apply significant judgment and assumptions. IAS 21, *The Effects of Changes in Foreign Exchange Rates*, requires management to consider the underlying transactions, events and conditions that are relevant to the entity when determining the appropriate functional currency and any changes. UBS AG's conclusion, in the fourth quarter of 2018, that the functional currency of UBS AG, UBS AG's Head Office in Switzerland and UBS AG's London Branch has changed was based on a detailed assessment of the primary currencies affecting and influencing the economics of each entity, considering revenue generating income streams, expenses, funding and risk management activities.

In addition, determining the earliest date from which it is practicable to perform a restatement following a voluntary change in presentational currency also requires management to apply significant judgment and make estimates and assumptions. UBS AG's decision in 2018 to change the presentation currency of its consolidated financial statements from Swiss francs to US dollars was made in line with IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors*, by assessing the earliest date from which it was practicable to perform a restatement, taking into consideration whether sufficiently reliable data was available for earlier periods and whether any assumptions on management intent or significant estimates of amounts were required. UBS AG carried out a detailed and extensive data analysis before concluding that 1 January 2004 represented the earliest date available, with the consequence that foreign currency translation gains and losses prior to 2004 have been disregarded and foreign currency translation effects first calculated from 1 January 2004 onward.

→ **Refer to Note 1b for more information**

14) Non-controlling interests and preferred noteholders

Net profit is split into *Net profit attributable to shareholders, Net profit attributable to non-controlling interest* and *Net profit attributable to preferred noteholders.* Similarly, *Equity* is split into *Equity attributable to shareholders, Equity attributable to non-controlling interests* and *Equity attributable to preferred noteholders.*

Non-controlling interests subject to option arrangements, e.g., written puts, are generally deemed to be acquired by UBS AG. As a result, the amounts allocated to non-controlling interests are reduced accordingly and a liability for the options' exercise price is recognized, with any difference between these two amounts recorded in *Share premium.*

15) Leasing

UBS AG enters into lease contracts, or contracts that include lease components, predominantly of premises and equipment, and primarily as lessee. Leases that transfer substantially all the risks and rewards, but not necessarily legal title in the underlying assets, are classified as finance leases. All other leases are classified as operating leases. UBS AG is not a lessee in any material finance leases.

Lease contracts classified as operating leases where UBS AG is the lessee include non-cancelable long-term leases of office buildings in most UBS AG locations. Operating lease rentals payable are recognized as an expense on a straight-line basis over the lease term, which commences with control of the physical use of the property. Lease incentives are treated as a reduction of rental expense and are recognized on a consistent basis over the lease term.

Where UBS AG acts as lessor under a finance lease, a receivable is recognized in *Other financial assets measured at amortized cost* at an amount equal to the present value of the aggregate of the minimum lease payments plus any unguaranteed residual value that UBS AG expects to recover at the end of the lease term. Initial direct costs are also included in the initial measurement of the lease receivable. Lease payments received during the lease term are allocated to repayment of the outstanding receivable and interest income to reflect a constant periodic rate of return on UBS AG's net investment using the interest rate implicit in the lease. UBS AG reviews the estimated unguaranteed residual value annually, and if the estimated residual value to be realized is less than the amount assumed at lease inception, a loss is recognized for the expected shortfall.

Certain arrangements do not take the legal form of a lease but convey a right to use an asset in return for a payment or series of payments. For such arrangements, UBS AG determines at the inception of the arrangement whether the fulfillment of the arrangement is dependent on the use of a specific asset or assets, and if so, the arrangement is accounted for as a lease.

→ **Refer to Note 33 for more information**

Note 1 Summary of significant accounting policies (continued)

b) Changes in accounting policies, comparability and other adjustments, excluding the effects of adoption of IFRS 9, *Financial Instruments*

1) Changes in functional and presentation currency

Change in functional currencies

As a consequence of legal entity structural changes over recent years – notably the transfer of the Personal & Corporate Banking and Global Wealth Management businesses booked in Switzerland from UBS AG to UBS Switzerland AG, and the creation of UBS Business Solutions AG, which houses a significant portion of the employees and associated costs that were previously held in UBS AG's Head Office in Switzerland and UBS AG's London Branch – a concentration of US dollar-influenced and -managed business activities now exist in UBS AG's Head Office in Switzerland and UBS AG's London Branch. In addition, from the fourth quarter of 2018, for risk management purposes UBS AG adopted the US dollar as the risk-neutral currency and has adjusted its structural risk positions accordingly. As a result of these changes, effective from 1 October 2018, the functional currency of UBS AG's Head Office in Switzerland changed prospectively from Swiss francs to US dollars and that of UBS AG's London Branch changed from British pounds to US dollars, in compliance with the requirements of IAS 21, *The Effects of Changes in Foreign Exchange Rates.*

Change in presentation currency

In 2018, the presentation currency of UBS AG's consolidated financial statements has changed from Swiss francs to US dollars to align with the functional currency changes of significant Group entities. UBS AG has restated prior periods for this voluntary presentational change in line with IAS 8, *Accounting Policies, Changes in Accounting Estimates and Errors*, from 1 January 2004. This point in time represented the earliest date from which it was practicable to perform a restatement, given the lack of sufficiently reliable data for earlier periods. As a consequence, foreign currency translation (FCT) gains or losses prior to 2004 have been disregarded, with FCT effects first calculated from 1 January 2004 onward. In addition, UBS AG has included a second comparative balance sheet as of 1 January 2017 in line with IAS 1, *Presentation of Financial Statements*.

Income and expenses as well as *Other comprehensive income* (OCI) were translated to US dollars at the respective average exchange rates prevailing for the relevant periods. Additionally, *Other income* was restated to reflect releases of FCT gains or losses from OCI to the income statement when calculated under the new US dollar presentation currency. The effect of such restatements for 2018, 2017 and 2016 was not material to the income statements of these periods.

Assets, liabilities and total equity were translated at closing exchange rates prevailing on the respective balance sheet dates, after reflection of deferred tax effects relating to the restatement. Share capital issued, share premium and treasury shares held were translated at historic average rates, whereby differences between historic average rate and closing exchange rate realized upon repayment of share capital or disposal of treasury shares were reported as *Share premium.* Cumulative amounts recognized in OCI in respect of cash flow hedges and financial assets measured at FVOCI (prior to 1 January 2018: financial assets classified as available for sale) were translated at closing exchange rate as of respective balance sheet dates, with any translation effects adjusted through *Retained earnings*.

The restated FCT balance as of 1 October 2018 included a cumulative gain of USD 767 million related to previously applied net investment hedges entered into by UBS AG's Head Office to hedge investments in foreign operations against their former Swiss franc functional currency.

Note 1 Summary of significant accounting policies (continued)

Effect of the change in UBS AG's presentation currency from Swiss francs to US dollars

	As of or for the year ended		
	31.12.17		
In million	Under a USD presentation currency (restated) (USD)	USD based on a simple translation of CHF presentation currency[1]	Under a CHF presentation currency (CHF)
Balance sheet			
Equity			
Share capital	338	396	386
Share premium	24,633	27,663	26,966
Retained earnings	22,189	29,855	29,102
Other comprehensive income recognized directly in equity, net of tax	4,828	(5,884)	(5,736)
Equity attributable to shareholders	**51,987**	**52,030**	**50,718**
Equity attributable to non-controlling interests	59	58	57
Total equity	**52,046**	**52,088**	**50,775**
Income statement			
Other income	952	956	939
Total operating income	**30,044**	**30,049**	**29,479**
Operating profit / (loss) before tax	**5,076**	**5,080**	**4,998**
Tax expense / (benefit)	4,242	4,171	4,077
Net profit / (loss)	**834**	**909**	**921**
Net profit / (loss) attributable to preferred noteholders	73	73	72
Net profit / (loss) attributable to non-controlling interests	4	4	4
Net profit / (loss) attributable to shareholders	**758**	**833**	**845**

	As of or for the year ended		
	31.12.16		
In million	Under a USD presentation currency (restated) (USD)	USD based on a simple translation of CHF presentation currency[1]	Under a CHF presentation currency (CHF)
Balance sheet			
Equity			
Share capital	338	379	386
Share premium	27,154	28,989	29,505
Retained earnings	21,480	27,771	28,265
Other comprehensive income recognized directly in equity, net of tax	3,985	(4,415)	(4,494)
Equity attributable to shareholders	**52,957**	**52,724**	**53,662**
Equity attributable to preferred noteholders	631	631	642
Equity attributable to non-controlling interests	39	39	40
Total equity	**53,627**	**53,393**	**54,343**
Income statement			
Other income	749	689	685
Total operating income	**28,831**	**28,770**	**28,421**
Operating profit / (loss) before tax	**4,188**	**4,128**	**4,069**
Tax expense / (benefit)	753	792	781
Net profit / (loss)	3,435	3,336	3,288
Net profit / (loss) attributable to preferred noteholders	80	80	78
Net profit / (loss) attributable to non-controlling interests	4	4	4
Net profit / (loss) attributable to shareholders	**3,351**	**3,252**	**3,207**

Note 1 Summary of significant accounting policies (continued)

Effect of the change in UBS AG's presentation currency from Swiss francs to US dollars (continued)

	As of or for the year ended		
	31.12.15		
In million	Under a USD presentation currency (restated) (USD)	USD based on a simple translation of CHF presentation currency[1]	Under a CHF presentation currency (CHF)
Balance sheet			
Equity			
Share capital	338	385	386
Share premium	27,126	29,429	29,477
Retained earnings	22,664	29,385	29,433
Other comprehensive income recognized directly in equity, net of tax	5,144	(4,040)	(4,047)
Equity attributable to shareholders	**55,272**	**55,157**	**55,248**
Equity attributable to preferred noteholders	1,951	1,951	1,954
Equity attributable to non-controlling interests	41	41	41
Total equity	**57,264**	**57,149**	**57,243**

1 Amounts presented in this column represent a translation of the previously published information under a Swiss franc presentation currency, translated to US dollars using a simplified approach. Assets, liabilities and equity were translated to US dollars at closing exchange rates prevailing on the respective balance sheet dates, and income and expenses were translated at the respective average rates prevailing for the relevant periods.

2) IFRS 15, *Revenue from Contracts with Customers*

Effective from 1 January 2018, UBS AG adopted IFRS 15, *Revenue from Contracts with Customers*, which replaced IAS 18, *Revenue,* and establishes principles for revenue recognition that apply to all contracts with customers except those relating to financial instruments, leases and insurance contracts. The standard requires an entity to recognize revenue as performance obligations are satisfied.

IFRS 15 specifies that variable consideration is only recognized when the related performance obligation has been satisfied and to the extent that it is highly probable that a significant reversal will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

IFRS 15 also provides guidance on when revenues and expenses should be presented on a gross or net basis and establishes a cohesive set of disclosure requirements for information on the nature, amount, timing and uncertainty of revenue and cash flows from contracts with customers.

As permitted by the transitional provisions of IFRS 15, UBS AG elected not to restate comparative figures. Instead, the cumulative effect of initially applying the standard was recognized as an adjustment to the opening balance of retained earnings. A transition adjustment of USD 28 million on a pre-tax basis and USD 25 million net of tax was posted to retained earnings to reverse income recognized prior to 1 January 2018 under IAS 18 that must be deferred under IFRS 15, either owing to the variable consideration constraint (asset management performance fees of USD 16 million) or because UBS AG does not have an enforceable right to a specified amount of consideration (commission-sharing agreements for research services of USD 11 million).

The adoption of IFRS 15 resulted in changes to UBS AG's accounting policies applicable from 1 January 2018 as set out in Note 1a.

Following the adoption of IFRS 15, fee and commission income is presented in the income statement separately from fee and commission expense.

Where UBS AG is acting as principal as defined by IFRS 15, costs of fulfilling contracts are required by IFRS 15 to be presented separately in the income statement within *Fee and commission expense.* Where UBS AG is acting as agent as defined by IFRS 15, costs of fulfilling contracts are required to be presented as a reduction in *Fee and commission income.* This resulted in a reclassification of certain brokerage fees paid in an agency capacity from *Fee and commission expense* to *Fee and commission income* from 1 January 2018, primarily relating to third-party execution costs for exchange-traded derivative transactions and fees payable to third-party research providers on behalf of clients.

Other presentation changes

In addition to the IFRS 15 changes, certain revenues presented within *Fee and commission income*, primarily distribution fees and fund management fees, have been reclassified between reporting lines in Note 4 to better reflect the nature of the revenues, with comparative-period information restated accordingly. Also, certain expenses that are incremental and incidental to revenues have been reclassified prospectively from *General and administrative expenses* to *Fee and commission expense* to improve the alignment of transaction-based costs with the associated revenue stream, primarily affecting clearing costs, client loyalty costs, and fund and custody expenses. As the effect of this reclassification was not material, prior-period information was not restated.

→ **Refer to Note 4 for more information on the nature, amount, timing and uncertainty of revenues and cash flows from contracts with customers**

3) Changes in segment reporting

Effective from the first quarter of 2018, UBS AG combined its Wealth Management and Wealth Management Americas business divisions into a single Global Wealth Management business division. Global Wealth Management is managed on an integrated basis, with a single set of performance targets and a unified operating plan and management structure. Consistent with this, the operating results of Global Wealth Management are presented and assessed on an integrated basis in internal management reports. Consequently, beginning from 2018, Global Wealth Management qualifies as an operating and reportable segment for the purposes of segment reporting and is presented alongside Personal & Corporate Banking, Asset Management, the Investment Bank, and Corporate Center (with its units Services, Group Asset and Liability Management and Non-core and Legacy Portfolio).

Note 1 Summary of significant accounting policies (continued)

4) IFRS 7, *Financial Instruments: Disclosures*

IFRS 7, *Financial Instruments: Disclosures,* was updated in line with IFRS 9, *Financial Instruments*. UBS AG adopted the revised requirements on 1 January 2018, which is the date of initial application of IFRS 9. IFRS 9 transition disclosures as set out by IFRS 7 are presented in Note 1c.

In line with amendments to IFRS 7, from 1 January 2018, UBS AG separately presents hedging gains and losses recognized during the period in the statement of comprehensive income and the amounts reclassified to the income statement. More specifically, the effective portion of changes in fair value of hedging instruments designated as net investment hedges (before tax) recognized in other comprehensive income and the amounts reclassified to the income statement, previously included within *Foreign currency translation movements, before tax* and *Foreign exchange amounts reclassified to the income statement from equity*, are now presented in *Effective portion of changes in fair value of hedging instruments designated as net investment hedges, before tax* and *Effective portion of changes in fair value of hedging instruments designated as net investment hedges reclassified to the income statement*, respectively.

Furthermore, the line *Foreign exchange amounts reclassified to the income statement from equity* was renamed to *Foreign currency translation differences on foreign operations reclassified to income statement*, and the line *Income tax relating to foreign currency translation movements* was renamed to *Income tax relating to foreign currency translations, including the effect of net investment hedges.*

In addition, while retaining hedge accounting under IAS 39, from 2018 UBS AG presents new disclosures to reflect the effects of hedge accounting on its financial statements as required by consequential amendments of IFRS 7. The enhanced disclosures are included in the "Derivatives transacted for hedging purposes" section of Note 28. Specifically, hedging disclosures now include a more extensive description of UBS AG's hedging strategies as risk management tools, and effects of hedge accounting on financial position and performance are structured in tabular format. These additional disclosures are presented prospectively from 1 January 2018.

5) Amendments to IAS 1, *Presentation of Financial Statements*

In line with amendments to IAS 1, *Presentation of Financial Statements*, from 1 January 2018, in the income statement, UBS presents interest income and interest expense, calculated using the effective interest rate method, on financial instruments measured at amortized cost and financial assets measured at fair value through other comprehensive income separately from interest income and expense on financial instruments measured at fair value through profit or loss.

→ **Refer to Note 3 for more information**

6) Change in presentation of forward points on certain long-duration foreign exchange contracts transacted as economic hedges

Effective from 1 January 2018, UBS AG refined the presentation of forward points on certain long-duration foreign exchange contracts transacted as economic hedges, transferring the forward points from *Other net income from fair value changes on financial instruments* (prior to 1 January 2018: *Net trading income*) to *Interest income from financial instruments measured at fair value through profit or loss* to align with the presentation of forward points on certain short-duration foreign exchange contracts. The amount of forward points on certain long-duration foreign exchange contracts recognized in *Interest income from financial instruments measured at fair value through profit or loss* did not have a material effect on UBS AG's financial statements and prior periods have not been restated.

7) IFRS Interpretations Committee, *Payments relating to taxes other than income tax*

During the second quarter of 2018, UBS AG refined its treatment of prepayments or overpayments in relation to uncertain tax positions outside of the scope of IAS 12, *Income Taxes*, following the IFRS Interpretation Committee's discussion on *Payments relating to taxes other than income tax*. More specifically, prepayments for uncertain tax positions that have not yet given rise to a liability are recognized as assets because UBS AG will either receive a cash rebate or a benefit through the extinguishment of a future liability. Adoption of the change did not have a material effect on UBS AG's financial statements.

c) Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9 *Financial Instruments*

1) Introduction

Effective 1 January 2018, UBS AG adopted IFRS 9, *Financial Instruments*, which replaced IAS 39, *Financial Instruments: Recognition and Measurement,* and substantially changed accounting and financial reporting in three key areas: classification and measurement of financial assets, impairment and hedge accounting. In addition, UBS AG early adopted the Amendment to IFRS 9, *Prepayment Features with Negative Compensation*, issued in October 2017, which allows UBS AG to continue to apply amortized cost accounting to Swiss private mortgages and corporate loans that provide for two-way compensation if a prepayment occurs. UBS AG has retained hedge accounting under IAS 39 as permitted and early adopted the own credit requirements of IFRS 9 during the first quarter of 2016.

As permitted by the transitional provisions of IFRS 9, UBS AG elected not to restate comparative figures. Any effect on the carrying amounts of financial assets and liabilities at the date of transition to IFRS 9 was recognized as an adjustment to opening retained earnings. The detailed effects of the adoption of IFRS 9 on 1 January 2018 are presented in this Note and the updated accounting policies for classification and measurement of financial instruments and impairment of financial assets as applied from 1 January 2018 are presented in Note 1a.

2) Transition effect

The adoption of IFRS 9 effective 1 January 2018 has resulted in a reduction to IFRS consolidated equity as of 1 January 2018 of USD 591 million. This effect is comprised of classification and measurement changes of USD 360 million on a pre-tax basis and USD 300 million net of tax, as well as effects from the implementation of impairment requirements based on an expected credit loss (ECL) methodology of USD 357 million on a pre-tax basis and USD 291 million net of tax.

→ **Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors* for more information on the effect of the IFRS 9 transition on UBS's capital adequacy**

3) Governance

The implementation of IFRS 9 has been a key strategic initiative for UBS AG implemented under the joint sponsorship of the Group Chief Financial Officer and the Group Chief Risk Officer. The incorporation of forward-looking information into the ECL calculation and the definition and assessment of what constitutes a significant increase in credit risk (SICR) are inherently subjective and involve the use of significant expert judgment. Therefore, UBS AG has developed a front-to-back governance framework over the ECL calculation process jointly owned by the Group Chief Financial Officer and the Group Chief Risk Officer and has designed controls to meet the requirements of the Sarbanes-Oxley Act. UBS AG has efficient credit risk management processes in place that continue to be applicable and aim to ensure that the effects of economic developments are appropriately considered, mitigation actions are taken where required and risk appetite is reassessed and adjusted as needed.

→ **Refer to the "Risk management and control" section of this report for more information**

4) Retrospective amendments to UBS AG's balance sheet presentation

Although the effect of IFRS 9 classification and measurement changes has been applied prospectively, UBS AG has made a series of changes to the presentation of its balance sheet to facilitate comparability, with information for periods ending before 1 January 2018 being presented in this revised structure. The primary changes include:

- IAS 39-specific asset categories, such as *Financial assets held to maturity* and *Financial assets available for sale*, have been superseded by the new categories *Financial assets measured at amortized cost* and *Financial assets measured at fair value through other comprehensive income*.
- A new line, *Financial assets at fair value not held for trading*, has been created to accommodate in particular financial assets previously designated at fair value, all of which are mandatorily classified at fair value through profit or loss under IFRS 9.
- *Other assets* and *Other liabilities* have been split into those measured at amortized cost, measured at fair value through profit or loss and other non-financial assets and liabilities.
- *Cash collateral on securities borrowed* and *Reverse repurchase agreements* have been combined into a single line, *Receivables from securities financing transactions*. Similarly, *Cash collateral on securities lent* and *Repurchase agreements* have been combined into a single line, *Payables from securities financing transactions*.
- Finance lease receivables, previously presented within *Loans*, are now presented within *Other financial assets measured at amortized cost*.
- Precious metal positions previously presented in *Trading portfolio assets* are now presented within the new line *Other non-financial assets*.
- *Financial liabilities designated at fair value* have been split into two lines: *Debt issued designated at fair value* and *Other financial liabilities designated at fair value*.
- Obligations of UBS AG from funding received from UBS Group AG or its subsidiaries, previously included within *Due to customers*, are now presented separately within *Funding from UBS Group AG and its subsidiaries.*

Note 1 Summary of significant accounting policies (continued)

The table below illustrates the revised balance sheet presentation of assets and liabilities as of 31 December 2017 in comparison with the presentation in the Annual Report 2017. The presentation of the components of equity has not changed, and therefore, for illustration purposes, total liabilities and equity are presented in a single line in the table. The table does not reflect any of the effects of adopting the classification and measurement requirements of IFRS 9, which are presented in the "*Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9*" table in this Note.

Retrospective amendments to UBS AG's balance sheet presentation as of 31 December 2017

USD million		31.12.17	31.12.17
Assets	References	Former presentation	Revised presentation
Cash and balances at central banks		90,045	90,045
Loans and advances to banks (formerly: Due from banks)		14,047	14,047
Receivables from securities financing transactions (new line)	1		91,951
Cash collateral on securities borrowed (newly included in Receivables from securities financing transactions)	1	12,714	
Reverse repurchase agreements (newly included in Receivables from securities financing transactions)	1	79,238	
Cash collateral receivables on derivative instruments		24,040	24,040
Loans and advances to customers (formerly: Loans)	2	330,038	328,952
Financial assets held to maturity (superseded)	3	9,403	
Other financial assets measured at amortized cost (new line)	2,3,7		37,890
Total financial assets measured at amortized cost			**586,925**
Financial assets at fair value held for trading (formerly: Trading portfolio assets)	4	134,190	129,509
of which: assets pledged as collateral that may be sold or repledged by counterparties		*36,277*	*36,277*
Derivative financial instruments (formerly: Positive replacement values)		121,286	121,286
Brokerage receivables (new line, formerly included within Other assets)		n/a	n/a
Financial assets at fair value not held for trading (new line)	5		60,070
Financial assets designated at fair value	5	60,070	
Total financial assets measured at fair value through profit or loss			**310,865**
Financial assets available for sale (superseded)	6	8,889	
Financial assets measured at fair value through other comprehensive income (new line)	**6**		**8,889**
Investments in associates		1,045	1,045
Property, equipment and software		8,191	8,191
Goodwill and intangible assets		6,563	6,563
Deferred tax assets		9,993	9,993
Other non-financial assets (new line)	4,7		7,548
Other assets (superseded)	7	30,268	
Total assets		940,020	**940,020**
Liabilities			
Amounts due to banks		7,728	7,728
Payables from securities financing transactions (new line)	8		17,485
Cash collateral on securities lent (newly included in Payables from securities financing transactions)	8	1,835	
Repurchase agreements (newly included in Payables from securities financing transactions)	8	15,650	
Cash collateral payables on derivative instruments		31,029	31,029
Customer deposits (formerly: Due to customers)	9	458,705	423,058
Funding from UBS Group AG and its subsidiaries (new line, formerly included within Due to customers)	9		35,648
Debt issued measured at amortized cost		107,458	107,458
Other financial liabilities measured at amortized cost (new line)	11		38,092
Total financial liabilities measured at amortized cost			**660,498**
Financial liabilities at fair value held for trading (formerly: Trading portfolio liabilities)		31,251	31,251
Derivative financial instruments (formerly: Negative replacement values)		119,138	119,138
Brokerage payables designated at fair value (new line, formerly included within Other liabilities)		n/a	n/a
Financial liabilities designated at fair value (superseded)	10	55,604	
Debt issued designated at fair value (new line)	10		50,782
Other financial liabilities designated at fair value (new line)	10,11		16,643
Total financial liabilities measured at fair value through profit or loss			**217,814**
Provisions		3,164	3,164
Other non-financial liabilities (new line)	11		6,499
Other liabilities (superseded)	11	56,412	
Total liabilities		887,974	**887,974**
Total liabilities and equity		940,020	**940,020**

Note 1 Summary of significant accounting policies (continued)

Explanatory footnotes to the table "Retrospective amendments to UBS AG's balance sheet presentation"

Table ref.	Description of presentation changes applied retrospectively to the balance sheet as of 31 December 2017
Balance sheet assets	
1	Cash collateral on securities borrowed of USD 12,714 million and reverse repurchase agreements of USD 79,238 million as of 31 December 2017 are now presented as a total of USD 91,951 million within a single line, *Receivables from securities financing transactions*.
2	Finance lease receivables of USD 1,086 million as of 31 December 2017, previously presented within *Loans*, are now presented within *Other financial assets measured at amortized cost*.
3	*Financial assets held to maturity* measured at amortized cost of USD 9,403 million as of 31 December 2017 are now presented within *Other financial assets measured at amortized cost*.
4	Precious metal positions of USD 4,681 million as of 31 December 2017, previously presented in *Trading portfolio assets*, are now presented within *Other non-financial assets*.
5	Financial assets designated at fair value through profit or loss of USD 60,070 million as of 31 December 2017, previously presented in a separate line, are now presented within *Financial assets at fair value not held for trading*.
6	Debt and equity instruments of USD 8,889 million as of 31 December 2017, previously presented in *Financial assets available for sale,* are now presented within *Financial assets measured at fair value through other comprehensive income*.
7	The reporting line *Other assets* has been split into two new reporting lines, *Other financial assets measured at amortized cost* and *Other non-financial assets*. – Assets of USD 30,268 million as of 31 December 2017, previously presented within *Other assets*, are now presented within *Other financial assets measured at amortized cost* (USD 27,401 million) and *Other non-financial assets* (USD 2,867 million). – Financial assets now presented within *Other financial assets measured at amortized cost* include brokerage receivables of USD 19,573 million, debt securities of USD 9,403 million, loans to financial advisors of USD 3,199 million and other assets amounting to USD 5,715 million. Refer to Note 17a for more information. – Refer to Note 17b for more information on assets now presented within *Other non-financial assets*.
Balance sheet liabilities	
8	Cash collateral on securities lent of USD 1,835 million and repurchase agreements of USD 15,650 million as of 31 December 2017 are now presented within a single line, *Payables from securities financing transactions*.
9	Obligations of UBS AG from funding received from UBS Group AG or its subsidiaries of USD 35,648 million as of 31 December 2017, which are not within the UBS AG scope of consolidation and were previously included within *Due to customers*, are now presented separately within *Funding from UBS Group AG and its subsidiaries*.
10	Financial liabilities designated at fair value through profit or loss of USD 55,604 million as of 31 December 2017 are now presented within *Debt issued designated at fair value* (USD 50,782 million) and *Other financial liabilities designated at fair value* (USD 4,822 million).
11	The reporting line *Other liabilities* has been split into three new reporting lines, *Other financial liabilities measured at amortized cost*, *Other financial liabilities designated at fair value* and *Other non-financial liabilities*. – Liabilities amounting to USD 56,412 million as of 31 December 2017, previously presented within *Other liabilities,* are now presented within *Other financial liabilities measured at amortized cost* (USD 38,093 million, thereof USD 30,413 million brokerage payables), within *Other financial liabilities designated at fair value* (amounts due under unit-linked investment contracts of USD 11,821 million) and within *Other non-financial liabilities* (USD 6,499 million). – Refer to Note 22a for more information on financial liabilities now presented within *Other financial liabilities measured at amortized cost.* – Refer to Note 22b for more information on financial liabilities now presented within *Other financial liabilities designated at fair value*. – Refer to Note 22c for more information on liabilities now presented within *Other non-financial liabilities*.

Note 1 Summary of significant accounting policies (continued)

5) Transition to IFRS 9 as of 1 January 2018

Transition to classification and measurement requirements

As set out in the amended accounting policies in Note 1a, IFRS 9 requires all financial assets, except equity instruments and derivatives, to be classified at amortized cost, at fair value through other comprehensive income or at fair value through profit or loss (FVTPL), based on the business model for managing the respective assets and their contractual cash flow characteristics.

Changes resulting from the application of IFRS 9 classification and measurement requirements as of 1 January 2018 have been applied as follows:

- Determination of the business model was made based on facts and circumstances as of the 1 January 2018 transition date.
- De-designations and new designations of financial instruments at FVTPL, pursuant to transition requirements of IFRS 9, have been carried out as of 1 January 2018. These reassessments resulted in:
  - i. the de-designation of certain financial assets designated at FVTPL, as they are managed on a fair value basis, and therefore mandatorily measured at fair value, or are no longer managed on a fair value basis but held to collect the contractual cash flows and therefore measured at amortized cost; and
  - ii. the new designation of financial liabilities at FVTPL (e.g., brokerage payables) in order to achieve measurement consistency with associated financial assets that are mandatorily measured at FVTPL (e.g., brokerage receivables).

For UBS AG, the most significant IFRS 9 classification and measurement changes on transition to IFRS 9 were as follows:

- financial assets that no longer qualify for amortized cost accounting under IFRS 9 have been classified at FVTPL because their cash flow characteristics do not satisfy the solely payments of principal and interest criterion (e.g., auction rate securities and certain brokerage receivables);
- lending arrangements that no longer qualify for amortized cost accounting under IFRS 9 are classified at FVTPL because the business model within which they are managed does not have an objective to hold financial assets in order to collect the contractual cash flows or to collect contractual cash flows and sell (e.g., certain Investment Bank lending arrangements);
- equity instruments classified as available for sale under IAS 39 are classified at FVTPL under IFRS 9; and
- financial liabilities are newly designated under IFRS 9 at FVTPL, from amortized cost accounting, to align with conclusions reached for associated financial assets that will be measured at FVTPL (e.g., brokerage payables).

Effect on UBS AG income statement presentation

Upon adoption of IFRS 9, the reclassification of auction rate securities, certain loans in the Investment Bank, certain repurchase agreements and brokerage balances from amortized cost to FVTPL has resulted in the interest income from these instruments moving from *Interest income (expense) from financial instruments measured at amortized cost* to *Interest income (expense) from financial instruments measured at fair value through profit or loss*. These changes have been applied prospectively from 1 January 2018.

Effect on UBS AG's statement of cash flows

Following the adoption of IFRS 9, changes have been made to the statement of cash flows to reflect the changes arising from financial instruments that have been reclassified on the balance sheet. In particular, cash flows from certain financial assets previously measured as available-for-sale assets at fair value through other comprehensive income have been reclassified from investing activities to operating activities as the assets are measured at fair value through profit or loss effective 1 January 2018.

Transition to expected credit loss requirements

As set out in UBS AG's amended accounting policies in Note 1a, IFRS 9 introduced a forward-looking ECL approach, which is intended to result in an earlier recognition of credit losses compared with the incurred-loss impairment approach for financial instruments under IAS 39 and the loss-provisioning approach for financial guarantees and loan commitments under IAS 37, *Provisions, Contingent Liabilities and Contingent Assets*.

The majority of ECL calculated as of the transition date relate to the private and commercial mortgage portfolio and corporate lending in Switzerland within Personal & Corporate Banking.

Models at transition

For the purpose of implementing ECL under IFRS 9, UBS AG has leveraged existing Pillar 1 internal ratings-based (IRB) models that are also used in determining expected loss and risk-weighted assets under the Basel III framework and Pillar 2 stress loss models.

Existing models have been adapted and 29 new models have been developed for the ECL calculation that consider the complexity, structure and risk profile of relevant portfolios and take account of the fact that the probabilities of default (PD) and the loss given default (LGD) used in the ECL calculation are point-in-time-based as opposed to the corresponding Basel III through-the-cycle (TTC) parameters. Management adjustments have also been made. UBS AG has leveraged its existing model risk framework, including the key model validation control executed by Model Risk Management & Control. New and revised models have been approved by UBS's Group Model Governance Board.

The assignment of internal counterparty rating grades and the determination of default probabilities for the purposes of Basel III remain unchanged.

→ **Refer to "Credit risk models" in the "Risk management and control" section of this report for more information**

Scenarios and scenario weights at transition

As outlined in Note 1a, UBS AG uses four different economic scenarios in the ECL calculation: an upside, a baseline, a mild downside and a severe downside scenario. ECL calculated on transition have been determined for each of the scenarios and subsequently weighted based on the probabilities in the table "Economic scenarios and weights applied."

Economic scenarios and weights applied

ECL scenario	Assigned weights in % (1.1.18)
Upside	20.0
Baseline	42.5
Mild downside	30.0
Severe downside	7.5

→ **Refer to Note 23b for information on weights applied to economic scenarios as at 31 December 2018**

UBS AG has established IFRS 9 ECL Scenario and Operating Committees to propose and approve the selection of the scenarios and weights to be applied and to monitor whether appropriate governance exists.

Macroeconomic and other factors at transition

Assumptions around the most important forward-looking economic factors for Switzerland, the US and other regions as applied in each of the economic scenarios to determine ECL at the date of transition can be summarized as follows.

For the baseline scenario, which is modeled along our business plan assumptions of a continuation of overall important global growth, Swiss GDP growth remains between 1% and 2% annually over the three years of the scenario. Moderate growth results in a very mild increase of unemployment, which stabilizes at around 3.5%. Asset price growth is also moderate, with the Swiss equity price index rising approximately 8% annually, while house prices grow by less than 1% annually. Policy rates, short-term interest rates and government bond yields increase very gradually over the three years of the scenario by approximately 50 basis points. GDP growth in the US remains relatively stable, and faster than in Switzerland. Monetary policy tightens at a similar pace to Switzerland and, combined with a modest decline in the unemployment rate, helps to keep inflation in check. US equity prices slightly underperform their Swiss counterparts, while house prices outperform relatively stagnant Swiss house price growth. In the rest of the world, growth remains buoyant, with moderating growth in both Europe and China contrasting with accelerating growth in other emerging markets.

In the upside scenario, which assumes GDP growth rising above trend in most countries with only a moderate rise in inflation and ongoing accommodative monetary policies, GDP growth in Switzerland peaks at around 5% annually. Strong growth leads to a decline in unemployment to very low levels (below 1%) by 2020. Asset prices grow at a robust pace, with equity prices increasing approximately 10% annually and house prices (single-family homes) rising approximately 4% annually. Policy and short-term interest rates remain low over the entire scenario, while government bond yields experience a sustained increase. In the US and the rest of the world, the scenario shows broadly similar features, with growth accelerating in Year 1 before steadily returning toward trend by Year 3. Specifically in the US, GDP growth accelerates at a slightly faster pace than in Switzerland, although the US experiences a slightly less substantial improvement in the unemployment rate by Year 3. The degree of policy tightening is marginally greater over the scenario horizon and, as in Switzerland, long-term government bond yields rise more significantly than short-term rates, and to a greater degree.

Note 1 Summary of significant accounting policies (continued)

The mild downside scenario is based on a monetary policy tightening assumption, implemented to deflate a potential asset price bubble, causing Swiss GDP to decline by almost 1% in the first year of the scenario. The unemployment rate rises to roughly 5%. Equity prices fall by more than 20% over three years, while house prices decline by 15% over the same period. The fall of the nominal asking rent index, which is cushioned by higher interest rates, is more moderate than the decline in house prices. Short-term interest rates rise significantly as a result of monetary tightening, as well as government bond yields. In this scenario, inflation in the US accelerates rapidly, leading to a sharp rise in short-term interest rates, with a similar development in Switzerland. GDP growth and house prices decline at a similar rate in the US and Switzerland. In the rest of the world, growth is also weighed down, particularly in more vulnerable emerging markets such as Russia, Turkey and Brazil, as interest rates and credit spreads rise sharply.

The severe downside scenario is modeled to mimic a severe recession caused by an event affecting Switzerland's competitiveness in key export markets, with Swiss GDP shrinking almost 7% in the first year of the scenario. The severe recession results in a substantial increase in unemployment, which peaks at around 9%. Asset prices plummet, with the Swiss equity index falling more than 55% over three years, and house prices declining 27% over the same period. Policy and short-term interest rates remain low over the entire scenario horizon. US GDP and unemployment deteriorate by a lesser degree than in Switzerland, and while house and equity prices decline sharply, the effects are also less severe than in Switzerland. With more scope to cut rates than the Swiss National Bank, short-term rates fall in the US. In the rest of the world, growth also slows sharply, particularly in the eurozone and neighboring emerging markets, such as Turkey and Russia.

→ **Refer to Note 23 for more information**

ECL measurement period at transition

As set out in Note 1a, for the majority of ECL-relevant instruments, the contractual maturity is used to calculate the measurement period, with this capped at 12 months when stage 1 ECL are required. In addition, for credit card limits and Swiss callable master credit facilities, judgment is required as UBS AG must determine the period over which it is exposed to credit risk. A seven-year period has been applied for credit cards and 12 months for master credit facilities. UBS AG's ECL-relevant financial instruments have relatively short average maturities, which significantly contribute to the level of ECL on transition.

SICR determination at transition

The identification of instruments for which a significant increase in credit risk (SICR) has been determined since initial recognition, and the corresponding allocation to stage 2 at transition, generally follow the principles described in the relevant accounting policy provided in Note 1a. Furthermore, the following principles have been applied.

General: In estimating the retrospective lifetime PDs, the economic conditions over the relevant prior periods and the general significant uncertainty inherent in such approximation have been considered to determine the allocation of instruments to stage 2 at transition.

Real estate financing: The Basel III rating methodology applied to the majority of income-producing real estate financings within Personal & Corporate Banking, which is leveraged for IFRS 9 ECL calculations, was significantly changed in 2017. As a consequence, there is no comparable rating on origination to determine whether an SICR has arisen over time. As permitted by the IFRS 9 transition requirements, a lifetime ECL allowance has therefore been recognized for certain real estate financing positions and will continue to be recognized until the positions are derecognized.

Other portfolios, including private mortgages and commercial SME clients: The Basel III rating models for other key portfolios in Personal & Corporate Banking, in particular for private client mortgages and commercial clients in the small and medium-sized enterprise segment, have recently been subject to a major redesign. While the methodology remained essentially the same and the calibration to the portfolios' average TTC PD value unchanged, the effect on the stage allocation is significant. This is due to the fact that the introduction of new models has led to a broader and different distribution of borrowers across the rating spectrum; while there was no material effect on those counterparties with an uplift in their rating, some of those that had a downward shift in their rating triggered the SICR threshold and a reclassification into stage 2 at transition.

Overview of transition effects

The table on the following pages provides a detailed overview of the IFRS 9 transition effects as of 1 January 2018. This includes:

- reclassification of IAS 39 carrying amounts to the new categories applicable under IFRS 9;
- remeasurement of carrying amounts due to reclassification (any remeasurement to fair value and / or reversal of IAS 39 allowances or IAS 37 provisions for assets moving from amortized cost to fair value); and
- recognition of IFRS 9 ECL for in-scope assets, off-balance sheet positions and other credit lines.

The following table also includes the effects recognized for deferred tax assets and therefore the total effect provided in *Retained earnings* in the table is net of tax effects. Explanatory footnotes set out after the table provide additional details on these changes.

Note 1 Summary of significant accounting policies (continued)

Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9

	31.12.17		1.1.18			
USD million	Classification under IAS 39	Carrying amount (IAS 39)	Reclassification (of IAS 39 carrying amounts)	Remeasurement due to reclassification incl. reversal of IAS 39 / IAS 37 allowances / provisions	Recognition of ECL (IFRS 9)	Carrying amount (IFRS 9)
Assets						
Cash and balances at central banks	Loans and receivables	90,045			0	90,045
Loans and advances to banks	Loans and receivables	14,047	(17)		(3)[12]	14,027
to: Brokerage receivables	*Loans and receivables*		*(17)[1]*			
Receivables from securities financing transactions	Loans and receivables	91,951	(5,085)		(2)[12]	86,864
to: Financial assets at fair value not held for trading	*Loans and receivables*		*(5,085)[2]*			
Cash collateral receivables on derivative instruments	Loans and receivables	24,040			0	24,040
Loans and advances to customers	Loans and receivables	328,952	(8,024)	0	(241)[12]	320,687
to: Financial assets at fair value not held for trading	*Loans and receivables*		*(2,747)[3]*			
to: Brokerage receivables	*Loans and receivables*		*(4,812)[1]*			
to: Financial assets at fair value held for trading	*Loans and receivables*		*(480)[4]*			
from: Financial assets at fair value not held for trading	*FVTPL (designated)*		*9[5]*	*0*		
from: Financial assets at fair value held for trading	*FVTPL (held for trading)*		*6[5]*			
Other financial assets measured at amortized cost	Loans and receivables, held to maturity	37,890	(19,004)	0	(36)[12]	18,850
to: Brokerage receivables	*Loans and receivables*		*(19,573)[1]*			
from: Financial assets measured at fair value through other comprehensive income	*Available for sale*		*569[6]*	*0*		
Total financial assets measured at amortized cost		586,925	(32,131)	0	(282)	554,512
Financial assets at fair value held for trading	FVTPL (held for trading)	129,509	(11,135)	(16)		118,359
to: Loans and advances to customers	*FVTPL (held for trading)*		*(6)[5]*			
to: Financial assets at fair value not held for trading	*FVTPL (held for trading)*		*(11,609)[7]*			
from: Loans and advances to customers	*Loans and receivables*		*480[4]*	*(16)[4]*		
of which: assets pledged as collateral that may be sold or repledged by counterparties	*FVTPL (held for trading)*	*36,277*				*36,277*
Derivative financial instruments	FVTPL (derivatives)	121,286				121,286
Brokerage receivables	Loans and receivables		24,403			24,403
from: Loans and advances to banks	*Loans and receivables*		*17[1]*			
from: Loans and advances to customers	*Loans and receivables*		*4,812[1]*			
from: Other financial assets measured at amortized cost	*Loans and receivables*		*19,573[1]*			
Financial assets at fair value not held for trading	FVTPL (designated)	60,070[9]	20,822	(295)		80,598
to: Loans and advances to customers	*FVTPL (designated)*		*(9)[5]*			
from: Financial assets at fair value held for trading	*FVTPL (held for trading)*		*11,609[7]*			
from: Receivables from securities financing transactions	*Loans and receivables*		*5,085[2]*	*(1)*		
from: Loans and advances to customers	*Loans and receivables*		*2,747[3]*	*(293)[3]*		
from: Financial assets measured at fair value through other comprehensive income	*Available for sale*		*1,391[8]*			
Total financial assets measured at fair value through profit or loss		310,865	34,090	(310)		344,646
Financial assets measured at fair value through other comprehensive income	Available for sale	8,889	(1,960)			6,930[10]
to: Other financial assets measured at amortized cost	*Available for sale*		*(569)[6]*			
to: Financial assets at fair value not held for trading	*Available for sale*		*(1,391)[8]*			
Investments in associates		1,045				1,045
Property, equipment and software		8,191				8,191
Goodwill and intangible assets		6,563				6,563
Deferred tax assets		9,993		59[11]	66[11]	10,118
Other non-financial assets		7,548				7,548
Total assets		940,020		(251)	(216)	939,554

Note 1 Summary of significant accounting policies (continued)

Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9 (continued)

	31.12.17		1.1.18			
USD million	Classification under IAS 39	Carrying amount (IAS 39)	Reclassification (of IAS 39 carrying amounts)	Remeasurement due to reclassification incl. reversal of IAS 39 / IAS 37 allowances / provisions	Recognition of ECL (IFRS 9)	Carrying amount (IFRS 9)
Liabilities						
Amounts due to banks	Amortized cost	7,728				7,728
Payables from securities financing transactions	Amortized cost	17,485	(5,212)			12,272
to: Other financial liabilities designated at fair value	*Amortized cost*		*(5,212)[13]*			
Cash collateral payables on derivative instruments	Amortized cost	31,029				31,029
Customer deposits	Amortized cost	423,058	(5,404)			417,653
to: Brokerage payables designated at fair value	*Amortized cost*		*(5,404)[14]*			
Funding from UBS Group AG and its subsidiaries	Amortized cost	35,648				35,648
Debt issued measured at amortized cost	Amortized cost	107,458				107,458
Other financial liabilities measured at amortized cost	Amortized cost	38,092	(30,413)	(4)		7,675
to: Brokerage payables designated at fair value	*Amortized cost*		*(30,413)[14]*			
Derecognition: deferred fees on other loan commitments	*Amortized cost*			*(4)[4]*		
Total financial liabilities measured at amortized cost		660,498	(41,030)	(4)		619,465
Financial liabilities at fair value held for trading	FVTPL (held for trading)	31,251				31,251
Derivative financial instruments	FVTPL (derivatives)	119,138		59		119,197
Recognition: Loan commitments	*Amortized cost – off-balance sheet*			*61[4]*		
Derecognition: Loan commitments	*FVTPL (derivatives)*			*(2)[5]*		
Brokerage payables designated at fair value	Amortized cost		35,818			35,818
from: Customer deposits	*Amortized cost*		*5,404[14]*			
from: Other financial liabilities measured at amortized cost	*Amortized cost*		*30,413[14]*			
Debt issued designated at fair value	FVTPL (designated)	50,782				50,782
Other financial liabilities designated at fair value	FVTPL (designated)	16,643	5,212	(5)		21,851
from: Payables from securities financing transactions	*Amortized cost*		*5,212[13]*	*(5)[13]*		
Total financial liabilities measured at fair value through profit or loss		217,814	41,030	54		258,898
Provisions		3,164			76[12]	3,240
Other non-financial liabilities		6,499				6,499
Total liabilities		887,974		50	76	888,100
Equity						
Share capital		338				338
Share premium		24,633				24,633
Retained earnings		22,189	74[8,15]	(300)	(291)	21,672
Other comprehensive income recognized directly in equity, net of tax		4,828	(74)[8,15]			4,754
Equity attributable to shareholders		51,987	0	(300)[15]	(291)[15]	51,397
Equity attributable to non-controlling interests		59				59
Total equity		52,046	0	(300)	(291)	51,455
Total liabilities and equity		940,020	0	(251)	(216)	939,554

Note 1 Summary of significant accounting policies (continued)

Explanatory footnotes to the table "Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9"

Table ref.	Description of classification or remeasurement changes on adoption of IFRS 9 as of 1 January 2018
1	Certain customer and prime brokerage receivable balances, in the Investment Bank and Global Wealth Management, fail the solely payments of principal and interest (SPPI) criterion for measurement at amortized cost. These include USD 4,812 million previously included within *Loans and advances to customers*, USD 17 million from *Loans and advances to banks* and USD 19,573 million previously included within *Other financial assets measured at amortized cost*. The receivables are managed under a business model whose objective is to hold the assets to collect contractual cash flows. However, the reported receivables represent an aggregation of cash receivable and payable balances that form a single unit of account at the client level and generate a return that does not constitute consideration for the time value of money, credit risk and other basic lending risks. The SPPI criterion is therefore not met and under IFRS 9 the receivables are mandatorily measured at fair value through profit or loss (FVTPL) and separately presented as *Brokerage receivables*. There was no difference between the amortized cost carrying amount and the fair value as of 1 January 2018 and therefore no remeasurement gain or loss has been recognized.
2	Based on the business model assessment under IFRS 9, certain reverse repurchase agreements with a carrying amount of USD 5,085 million as of 31 December 2017 were determined to be managed on a fair value basis and were therefore reclassified from amortized cost to FVTPL measurement under IFRS 9. The carrying value has been reclassified from *Receivables from securities financing transactions* to *Financial assets at fair value not held for trading* as of 1 January 2018. A remeasurement loss of USD 1 million has been recorded in *Retained earnings*. USD 11,787 million of forward starting reverse repurchase agreements are newly accounted for as derivatives, prior to settlement, from 1 January 2018 as they are managed on a fair value basis. The fair value of the derivatives as of 1 January 2018 was immaterial.
3	Certain positions previously included within *Loans and advances to customers* with a carrying amount of USD 2,747 million as of 31 December 2017 were reclassified to *Financial assets at fair value not held for trading* upon adoption of IFRS 9. This includes: – auction rate securities (USD 2,169 million) that are held in Corporate Center and contain an embedded leverage feature triggering the failure of the SPPI criterion; and – certain loans in the Investment Bank (USD 566 million) and in Corporate Center (USD 12 million) that either fail the SPPI criterion or are held within a business model with an intent to sell or substantially hedge the primary risks. These assets are mandatorily measured at FVTPL under IFRS 9. A corresponding net remeasurement loss of USD 293 million was recognized in *Retained earnings* related to these reclassifications. This remeasurement loss also included reversal of specific credit loss allowances (USD 11 million).
4	Due to a change in the underlying business model, loans and advances to customers with a carrying amount of USD 480 million as of 31 December 2017 have been reclassified to *Financial assets at fair value held for trading* as of 1 January 2018. A corresponding net remeasurement loss of USD 16 million, which includes the reversal of specific IAS 39 credit loss allowances, was recognized in *Retained earnings* related to this reclassification. Irrevocable loan commitments that are contractually linked with these financial assets are now recognized as *Derivative financial instruments* (derivative liabilities) and are measured at FVTPL as of 1 January 2018. This reclassification resulted in a USD 61 million loss with a corresponding entry to *Retained earnings*. Liabilities arising from deferred fees of USD 4 million related to these loan commitments recorded as *Other financial liabilities measured at amortized cost* at 31 December 2017 were derecognized with a corresponding entry to *Retained earnings*.
5	Financial assets with a carrying amount of USD 15 million as of 31 December 2017 were reclassified to *Loans and advances to customers* from *Financial assets at fair value not held for trading* (USD 9 million) and from *Financial assets at fair value held for trading* (USD 6 million) given management's intent to hold these financial assets to collect contractual cash flows. Loan commitments related to these financial assets, which were recognized as derivative liabilities with a carrying value of USD 2 million as of 31 December 2017, were accordingly derecognized on 1 January 2018 with a corresponding entry to *Retained earnings*.
6	Certain debt instruments with a carrying amount of USD 569 million as of 31 December 2017 were formerly classified as available for sale and measured at fair value through other comprehensive income (FVOCI) under IAS 39 but are measured at amortized cost under IFRS 9. Those positions, which are held to collect cash flows solely representing payment of principal and interest, are presented within *Other financial assets measured at amortized cost* as of 1 January 2018. The fair value of these assets was consistent with the amortized cost value as of 1 January 2018 and no remeasurement gain or loss has been recognized.
7	Upon adopting IFRS 9, UBS AG has elected to refine the assets classified within *Financial assets at fair value held for trading* to carve out those that are segregated from UBS AG's trading activities, where UBS AG's role is primarily to manage the assets on a fair value basis on behalf of others. Instead, such assets will be presented alongside others managed on a fair value basis within *Financial assets at fair value not held for trading*. As a consequence of this refinement, UBS AG has reclassified assets held to hedge unit-linked investment contracts of USD 11,609 million from *Financial assets at fair value held for trading* to *Financial assets at fair value not held for trading* as of 1 January 2018. No remeasurement gain or loss has been recognized.

Note 1 Summary of significant accounting policies (continued)

Explanatory footnotes to the table "Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9" (continued)

Table ref.	Description of classification or remeasurement changes on adoption of IFRS 9 as of 1 January 2018 (continued)
8	UBS AG holds certain global and local liquidity buffers that were determined to be managed on a fair value basis as management utilizes fair value information for reporting and decision-making purposes. Therefore, assets previously classified as available for sale under IAS 39 with a carrying amount of USD 636 million as of 31 December 2017 were reclassified to *Financial assets at fair value not held for trading*. An unrealized gain of USD 5 million related to these positions was reclassified from *Other comprehensive income* to *Retained earnings*. Additionally, equity instruments and investment fund units previously classified as available for sale under IAS 39 with a carrying amount of USD 755 million as of 31 December 2017 were reclassified to *Financial assets at fair value not held for trading* under the revised IFRS 9 measurement rules. A related unrealized gain in OCI of USD 204 million has been reclassified to *Retained earnings*. Additionally, a net tax expense of USD 134 million was transferred from OCI to *Retained earnings* related to the positions above that were reclassified out of the IAS 39 available-for-sale category.
9	Assets previously designated at FVTPL with a carrying amount of USD 60,070 million as of 31 December 2017 are no longer designated as such under IFRS 9, as it was determined that these assets were either held in a business model that is managed on a fair value basis, did not meet the SPPI criterion, or did meet the SPPI criterion and are held in a hold-to-collect business model. Of the total, assets with a carrying amount of USD 60,062 million are now mandatorily measured at FVTPL and included within *Financial assets at fair value not held for trading*. The remaining assets with a carrying amount of USD 9 million have been de-designated and were reclassified to *Loans and advances to customers*, given a change in business model to hold-to-collect (refer to footnote 5).
10	Certain debt instruments with a carrying amount of USD 6,930 million as of 31 December 2017 were formerly classified as available for sale under IAS 39 and are measured at FVOCI under IFRS 9. These instruments include US government bonds, US government-sponsored mortgage-backed securities, and other forms of debt that are held in a business model whose objective is achieved by both collecting contractual cash flows and selling and that meet the SPPI criterion. These positions are now presented within *Financial assets measured at fair value through other comprehensive income*.
11	Deferred tax assets of USD 126 million have been recognized in connection with the adoption of IFRS 9. Of the total effect, USD 66 million relates to the recognition of ECL and USD 59 million relates to classification and measurement changes upon adoption of IFRS 9.
12	Upon adoption of the ECL requirements of IFRS 9, a transition effect of USD 357 million was recognized, consisting of USD 148 million of stage 1 allowances, USD 193 million of stage 2 allowances and an incremental increase in stage 3 allowances of USD 16 million. The effect was mainly recognized within *Loans and advances to customers* (USD 241 million), with effects also recognized in *Other financial assets measured at amortized cost* (USD 36 million), *Loans and advances to banks* (USD 3 million), *Receivables from securities financing transactions* (USD 2 million) and *Provisions* (USD 76 million).
13	Certain repurchase agreements with a carrying amount of USD 5,212 million as of 31 December 2017 have been designated at FVTPL as they are managed in conjunction with reverse repurchase agreements that are mandatorily measured at FVTPL under IFRS 9. These amounts are included within *Other financial liabilities designated at fair value* as of 1 January 2018. A remeasurement gain of USD 5 million has been recognized in *Retained earnings* as of 1 January 2018 related to this reclassification. USD 7,930 million of forward starting repurchase agreements are newly accounted for as derivatives, prior to settlement, from 1 January 2018 as they are managed on a fair value basis. The fair value of the derivatives as of 1 January 2018 was immaterial.
14	To achieve measurement consistency with reclassified customer and prime brokerage receivables that are measured at FVTPL following adoption of IFRS 9, certain customer deposits with a carrying amount of USD 5,404 million and prime brokerage payables with a carrying amount of USD 30,413 million as of 31 December 2017 have been designated at FVTPL and are presented within *Brokerage payables designated at fair value* as of 1 January 2018. There was no difference between the amortized cost carrying amount and the fair value as of 1 January 2018 and therefore no remeasurement gain or loss has been recognized.
15	The adoption of IFRS 9 has resulted in a reduction to IFRS consolidated equity as of 1 January 2018 of USD 591 million. This effect is comprised of classification and measurement changes of USD 360 million on a pre-tax basis and USD 300 million net of tax, as well as effects from the implementation of ECL methodology of USD 357 million on a pre-tax basis and USD 291 million net of tax. In addition, USD 74 million has been reclassified from *Other comprehensive income* recognized directly in equity, net of tax, to *Retained earnings* (refer to footnote 8 above), with no overall effect on equity attributable to shareholders.

Note 1 Summary of significant accounting policies (continued)

Reconciliation of allowances and provisions on adoption of IFRS 9 as of 1 January 2018

The table below provides a reconciliation from the IAS 39 allowances / IAS 37 provisions to the IFRS 9 ECL allowances / provisions recognized as of 1 January 2018 upon adoption of IFRS 9.

Reconciliation of allowances and provisions on adoption of IFRS 9

	31.12.17	1.1.18		
USD million	Loss allowances and provisions (IAS 39 / IAS 37)	Reversal of allowances (IAS 39)	Recognition of ECL (IFRS 9)[1]	Allowances and provisions for ECL (IFRS 9)
On-balance sheet				
Cash and balances at central banks			0	0
Loans and advances to banks	(3)		(3)	(5)
Receivables from securities financing transactions			(2)	(2)
Cash collateral receivables on derivative instruments			0	0
Loans and advances to customers	(675)	27[2]	(241)[3]	(890)
Other financial assets measured at amortized cost	(104)[4]		(36)	(139)
Total on-balance sheet	(781)	27	(282)	(1,037)
Off-balance sheet financial instruments and other credit lines				
Guarantees	(30)		(8)	(38)
Loan commitments	(4)		(33)	(37)
Other credit lines			(35)	(35)
Total off-balance sheet financial instruments and other credit lines	(34)		(76)	(110)
Total	(815)	27	(357)	(1,146)
of which: stage 1			*(148)*	*(148)*
of which: stage 2			*(193)*	*(193)*
of which: stage 3			*(16)*[5]	*(806)*

1 Includes stage 1 and stage 2 expected credit losses and additional stage 3 expected credit losses. 2 The reversal of USD 27 million of IAS 39 loss allowances relates to instruments reclassified from amortized cost to fair value through profit or loss on transition to IFRS 9. Refer also to footnotes 3 and 4 to the table "Reclassification and remeasurement of carrying amounts and recognition of ECL upon adoption of IFRS 9." 3 Includes the reversal of collective allowances of USD 13 million. 4 Includes USD 84 million related to loans to financial advisors for which an allowance was reported as a direct reduction of the carrying amount as of 31 December 2017. 5 The incremental increase in stage 3 allowances of USD 16 million arises from additional consideration of forward looking scenarios under IFRS 9.

Note 1 Summary of significant accounting policies (continued)

IFRS 9 transition effect on other comprehensive income and retained earnings as of 1 January 2018

The table below presents the transition effects recognized in OCI and retained earnings upon adoption of IFRS 9.

IFRS 9 impact on other comprehensive income and retained earnings

USD million	
Other comprehensive income recognized directly in equity, net of tax	
Reclassification of financial assets (available for sale to fair value through profit or loss) – equity instruments	(204)
Reclassification of financial assets (available for sale to fair value through profit or loss) – debt instruments	(5)
Tax (expense) / benefit	134
Total change in other comprehensive income	(74)
Retained earnings	
Remeasurement of financial assets (reclassified from amortized cost to fair value through profit or loss)	(310)
Reclassification of financial assets (reclassified from available for sale to fair value through profit or loss)	209
Recognition of ECL for on-balance sheet financial assets	(282)
Remeasurement of financial liabilities (reclassified from amortized cost to designated at fair value through profit or loss)	5
Recognition of derivative loan commitments measured at fair value through profit or loss	(61)
Derecognition of liabilities for deferred fees on other loan commitments	4
Derecognition of derivative loan commitments measured at fair value through profit or loss	2
Recognition of ECL for off-balance sheet positions	(76)
Tax (expense) / benefit	(9)
Total change in retained earnings	(518)
Total change in equity due to the adoption of IFRS 9	(591)

d) International Financial Reporting Standards and Interpretations to be adopted in 2019 and later and other changes

IFRS 16, *Leases*

UBS AG will adopt IFRS 16, *Leases*, on 1 January 2019. This will fundamentally change how UBS AG accounts for operating leases when acting as a lessee, with a requirement to record a lease obligation and a right-of-use asset on the balance sheet. Upon adoption of IFRS 16, assets and liabilities are expected to increase by approximately USD 3.5 billion with no material effect to the UBS AG's equity.

Changes in Corporate Center cost allocations and equity attribution to business divisions as of the first quarter of 2019

In order to further align Group and divisional performance, UBS AG will adjust the methodology for the allocation of Corporate Center – Services funding costs and expenses to the business divisions. At the same time, UBS AG is updating its funds transfer pricing framework to better reflect the sources and usage of funding. All of these changes are effective as of 1 January 2019 and prior-period segment information will be restated.

Together, these changes will decrease the business divisions' operating results and thereby increase their adjusted cost / income ratios by approximately 1-2 percentage points, with an offsetting effect of approximately USD 0.7 billion in Corporate Center's operating profit / (loss) before tax.

Corporate Center will retain funding costs for deferred tax assets, costs relating to UBS AG's legal entity transformation program and other costs not attributable to or representative of the performance of the business divisions.

Alongside the update to allocations and UBS AG's funds transfer pricing framework, UBS AG is increasing the allocation of balance sheet resources from Corporate Center to the business divisions, resulting in approximately USD 220 billion of assets allocated from Corporate Center to the business divisions in restated 2018 numbers, predominantly from high-quality liquid assets and certain other assets centrally managed on behalf of the business divisions.

Upon adoption of IFRS 16, *Leases*, as of 1 January 2019, UBS AG intends to additionally allocate approximately USD 3.5 billion of newly recognized right of use assets to the business divisions.

Changes to Corporate Center segment reporting effective first quarter 2019

As announced in the third quarter 2018 report, UBS AG will no longer separately assess the performance of Non-core and Legacy Portfolio, given its substantially reduced size and resource consumption. In addition, following the aforementioned changes to UBS's methodology for allocating funding costs and expenses from Corporate Center – Services and Corporate Center – Group Asset and Liability Management (Group ALM) to the business divisions, the operating loss retained in Corporate Center – Services and Corporate Center – Group ALM will be significantly reduced. As a consequence and in compliance with IFRS 8, *Operating Segments*, beginning with the first quarter 2019 report, UBS AG will provide results for total Corporate Center only and will not separately report Corporate Center – Services, Group ALM and Non-core and Legacy Portfolio. Furthermore, UBS AG will operationally combine Group Treasury with Group ALM and call this combined unit Group Treasury. Commentary on performance of this function will be included in the Corporate Center management discussion and analysis in UBS's quarterly and annual reporting. Former Group ALM total risk management net income after allocations will continue to be disclosed separately. Prior-period information will be restated.

IFRIC 23, *Uncertainty over Income Tax Treatments*

In June 2017, the IASB issued IFRIC Interpretation 23, *Uncertainty over Income Tax Treatments* (IFRIC 23), which addresses how uncertain tax positions should be accounted for under IFRS. IFRIC 23 requires that, where acceptance of the tax treatment by the relevant tax authority is considered probable, it should be assumed as an accounting recognition matter that treatment of the item will ultimately be accepted. Therefore, no tax provision would be required in such cases. However, if acceptance of the tax treatment is not considered probable, the entity is required to reflect that uncertainty using an expected value (i.e., a probability-weighted approach) or the single most likely amount.

IFRIC 23 is mandatorily effective for accounting periods beginning on or after 1 January 2019 and any resulting change to the tax provisions should be recognized in retained earnings.

UBS AG expects to recognize a net tax expense of USD 11 million in retained earnings on 1 January 2019 in respect of the adoption of IFRIC 23, which will be reflected in UBS AG's first quarter 2019 report.

Note 1 Summary of significant accounting policies (continued)

Amendments to IAS 19, *Employee Benefits*

In February 2018, the IASB issued amendments to IAS 19, *Employee Benefits*, which address the accounting when a plan amendment, curtailment or settlement occurs during the reporting period. The amendments require entities to use the updated actuarial assumption to determine current service cost and net interest for the remainder of the annual reporting period after such an event. The amendments also clarify how the requirements for accounting for a plan amendment, curtailment or settlement affect the asset ceiling requirements. The amendments are effective prospectively for plan amendments, curtailments or settlements that occur on or after 1 January 2019. The adoption will have no effect on UBS AG's financial statements on transition at 1 January 2019.

Annual Improvements to IFRS Standards 2015–2017 Cycle

In December 2017, the IASB issued *Annual Improvements to IFRS Standards 2015–2017 Cycle*, which resulted in amendments to IFRS 3, *Business Combinations*, IFRS 11, *Joint Arrangements*, IAS 12, *Income Taxes,* and IAS 23, *Borrowing Costs*. The amendments are mandatorily effective as of 1 January 2019. The adoption of these amendments will have no material effect on the UBS AG's financial statements on the transition date.

Conceptual Framework

In March 2018, the IASB issued a revised version of its Conceptual Framework for Financial Reporting (the Framework). The Framework sets out the fundamental concepts of financial reporting that guide the IASB in developing IFRS standards. The amended Framework seeks to improve the concepts for reporting assets, liabilities, income and expenses, explains how to decide when assets and liabilities should be measured using historical cost and when they should be measured at current value, and provides up-to-date tools that will help the IASB in setting IFRS standards. It underpins existing IFRS standards but does not override them. Preparers use the Framework as a point of reference to develop accounting policies in rare instances where a particular business transaction is not covered by existing IFRS standards.

The IASB and the IFRS Interpretations Committee will begin to use the new Framework immediately in developing new, or amending existing, financial reporting standards and interpretations. For UBS AG, the Framework becomes effective in annual periods beginning on 1 January 2020. UBS AG is currently assessing the effect of the amended Framework on its financial accounting policies.

Amendments to IFRS 3, *Business Combinations*

In October 2018, the IASB issued *Definition of a Business (Amendments to IFRS 3)*. The amendments clarify the definition of a business, with the objective of assisting in the determination of whether a transaction should be accounted for as a business combination or an asset acquisition. The amendments apply to transactions for which the acquisition date is on or after 1 January 2020, with early application permitted. Adoption of these amendments is not expected to have a material effect on the financial statements.

Note 2a Segment reporting

The operational structure of UBS AG as of 31 December 2018 was comprised of Corporate Center and four business divisions: Global Wealth Management, Personal & Corporate Banking, Asset Management and the Investment Bank.

→ **Refer to "Segment reporting" in Note 1a for more information**

Global Wealth Management

In the first quarter of 2018, Wealth Management and Wealth Management Americas were combined into a single unit. Global Wealth Management provides investment advice and solutions to private clients, in particular in the ultra high net worth and high net worth segments. Clients benefit from Global Wealth Management's comprehensive set of capabilities, including wealth planning, investing, lending, asset protection, philanthropy, corporate and banking services as well as family office services in collaboration with the Investment Bank and Asset Management. Global Wealth Management has a global footprint, with the US representing its largest market. Clients are served through local offices and dedicated advisors. The ultra high net worth business is managed globally across the regions.

Personal & Corporate Banking

Personal & Corporate Banking provides comprehensive financial products and services to private, corporate and institutional clients and operates in Switzerland in the private and corporate loan market. Personal & Corporate Banking is central to UBS AG's universal bank model in Switzerland and it works with the wealth management, investment bank and asset management businesses to help clients receive the best products and solutions for their specific financial needs. While Personal & Corporate Banking operates primarily in its home market of Switzerland, it also provides capabilities to support the growth of the international business activities of UBS AG's corporate and institutional clients through local hubs in Frankfurt, New York, Hong Kong and Singapore. The business is divided into Personal Banking and Corporate & Institutional Clients (CIC).

Asset Management

Asset Management is a large-scale and diversified global asset manager. It offers investment capabilities and styles across all major traditional and alternative asset classes, as well as platform solutions and advisory support to institutions, wholesale intermediaries and Global Wealth Management clients around the world. Asset Management offers clients a wide range of investment products and services in different asset classes in the form of segregated, pooled or advisory mandates as well as registered investment funds in various jurisdictions. It covers the main asset management markets globally, with a presence in 23 countries grouped in four regions: the Americas; Europe, Middle East and Africa; Switzerland; and Asia Pacific.

Investment Bank

The Investment Bank provides a range of services to institutional, corporate and wealth management clients to help them raise capital, grow their businesses, invest and manage risks. It is focused on its traditional strengths in advisory, capital markets, equities and foreign exchange, complemented by a targeted rates and credit platform. The Investment Bank uses its research and technology capabilities to support its clients as they adapt to the evolving market structures and changes in the regulatory, technological, economic and competitive landscape. The Investment Bank delivers solutions to corporate, institutional and wealth management clients, using its intellectual capital and electronic platforms. It also provides services to Global Wealth Management, Personal & Corporate Banking and Asset Management. It has a global reach, with a presence in 33 countries and principal offices in all major financial hubs.

Corporate Center

Corporate Center provides services to the Group through the Corporate Center – Services and Group Asset and Liability Management (Group ALM) units. Corporate Center also includes the Non-Core and Legacy Portfolio unit.

Corporate Center – Services consists of the Group Chief Operating Officer area (Group Technology, Group Corporate Services, Group Human Resources, Group Operations and Group Sourcing), Group Finance (excluding Group ALM), Group Legal, Group Risk Control, Communications & Branding, Group Compliance, Regulatory & Governance, and UBS in society.

Group ALM manages the structural risk of UBS AG's balance sheet, including interest rate risk, structural foreign exchange risk and collateral risk, as well as the risks associated with UBS AG's liquidity and funding portfolios. Group ALM also seeks to optimize financial performance by matching assets and liabilities. Group ALM serves all business divisions and the other Corporate Center units through three main risk management areas, and its risk management is fully integrated into UBS AG's risk governance framework.

Non-core and Legacy Portfolio manages legacy positions from businesses exited by the Investment Bank. It is overseen by a committee chaired by the Group Chief Risk Officer.

Note 2a Segment reporting (continued)

USD million	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center – Services	Corporate Center – Group ALM	Corporate Center – Non-core and Legacy Portfolio	UBS AG
For the year ended 31 December 2018[1]								
Net interest income	4,206	2,057	(31)	937	(410)	(845)	35	5,949
Non-interest income	12,659	2,167	1,874	7,642	312	(89)	246	24,811
Allocations from CC – Group ALM	90	56	15	(391)	43	295	(108)	0
Income[2]	16,957	4,279	1,857	8,189	(56)	(639)	172	30,759
Credit loss (expense) / recovery	(15)	(56)	0	(38)	0	0	(8)	(117)
Total operating income	16,941	4,223	1,857	8,151	(56)	(639)	165	30,642
Personnel expenses	7,680	799	702	2,936	1,800	40	35	13,992
General and administrative expenses	1,771	289	206	706	6,956	43	105	10,075
Services (to) / from CC and other BDs	3,851	1,206	496	2,884	(8,615)	1	176	0
of which: services from CC – Services	*3,739*	*1,282*	*539*	*2,806*	*(8,688)*	*169*	*152*	*0*
Depreciation and impairment of property, equipment and software	4	14	2	8	1,023	0	0	1,052
Amortization and impairment of intangible assets[3]	50	0	1	12	2	0	0	65
Total operating expenses	13,356	2,309	1,407	6,546	1,166	84	317	25,184
Operating profit / (loss) before tax	3,586	1,914	450	1,604	(1,221)	(723)	(152)	5,458
Tax expense / (benefit)								1,345
Net profit / (loss)								4,113
Additional information								
Total assets	200,036	138,873	24,371	258,871	20,193	280,996	34,715	958,055
Additions to non-current assets	196	23	1	89	1,448	0	0	1,757

1 Prior-period information may not be comparable as a result of the adoption of IFRS 9 and IFRS 15, both effective 1 January 2018. Refer to Note 1b and c for more information on these changes. 2 Impairments of financial assets classified at fair value through other comprehensive income for the year ended 31 December 2018 totaled USD 0 million. 3 Refer to Note 16 for more information.

Note 2a Segment reporting (continued)

USD million	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center – Services	Corporate Center – Group ALM	Corporate Center – Non-core and Legacy Portfolio	UBS AG
For the year ended 31 December 2017[1]								
Net interest income	3,723	1,954	(33)	1,217	(361)	84	24	6,607
Non-interest income	12,197	1,807	2,097	7,020	476	(77)	50	23,569
Allocations from CC – Group ALM	377	184	19	(351)	123	(268)	(84)	0
Income[2]	16,296	3,945	2,083	7,886	237	(260)	(11)	30,176
Credit loss (expense) / recovery	(8)	(20)	0	(92)	0	0	(11)	(131)
Total operating income	16,288	3,925	2,083	7,795	237	(260)	(22)	30,044
Personnel expenses	7,679	849	731	3,007	2,608	34	44	14,952
General and administrative expenses	1,308	300	238	728	6,283	27	116	9,001
Services (to) / from CC and other BDs	3,726	1,154	522	2,822	(8,438)	(13)	228	0
of which: services from CC – Services	*3,626*	*1,248*	*560*	*2,727*	*(8,503)*	*145*	*197*	*0*
Depreciation and impairment of property, equipment and software	4	13	1	10	916	0	0	945
Amortization and impairment of intangible assets[3]	49	0	3	12	7	0	0	71
Total operating expenses	12,766	2,316	1,496	6,578	1,376	48	388	24,969
Operating profit / (loss) before tax	**3,522**	**1,609**	**587**	**1,216**	**(1,139)**	**(308)**	**(410)**	**5,076**
Tax expense / (benefit)								4,242
Net profit / (loss)								**834**
Additional information								
Total assets	194,990	139,094	14,639	269,849	19,907	254,146	47,395	940,020
Additions to non-current assets	120	15	1	3	1,509	0	0	1,648

1 Prior-period information may not be comparable as a result of the adoption of IFRS 9 and IFRS 15, both effective 1 January 2018. Refer to Note 1b and c for more information on these changes. 2 Impairments of financial assets classified at fair value through other comprehensive income (prior to 2018 classified as financial assets available for sale) for the year ended 31 December 2017 totaled USD 15 million, of which USD 12 million was recorded in Asset Management. 3 Refer to Note 16 for more information.

Note 2a Segment reporting (continued)

USD million	Global Wealth Management	Personal & Corporate Banking	Asset Management	Investment Bank	Corporate Center – Services	Corporate Center – Group ALM	Corporate Center – Non-core and Legacy Portfolio	UBS AG
For the year ended 31 December 2016[1]								
Net interest income	3,318	1,914	(33)	1,012	(326)	568	3	6,457
Non-interest income	11,427	1,791	1,980	7,039	253	(169)	89	22,411
Allocations from CC – Group ALM	512	336	7	(264)	37	(517)	(112)	0
Income[2]	15,257	4,042	1,955	7,788	(36)	(118)	(20)	28,868
Credit loss (expense) / recovery	(8)	(6)	0	(11)	0	0	(12)	(38)
Total operating income	15,250	4,035	1,955	7,777	(36)	(118)	(32)	28,831
Personnel expenses	7,253	854	736	3,122	3,718	31	67	15,782
General and administrative expenses	1,261	288	245	861	4,361	17	743	7,776
Services (to) / from CC and other BDs	3,626	1,092	512	2,790	(8,255)	(49)	283	0
of which: services from CC – Services	*3,520*	*1,200*	*537*	*2,700*	*(8,295)*	*112*	*227*	*0*
Depreciation and impairment of property, equipment and software	4	15	1	22	950	0	0	992
Amortization and impairment of intangible assets[3]	54	0	5	12	21	0	0	93
Total operating expenses	12,199	2,250	1,499	6,807	796	(1)	1,093	24,643
Operating profit / (loss) before tax	**3,051**	**1,785**	**455**	**970**	**(832)**	**(117)**	**(1,125)**	**4,188**
Tax expense / (benefit)								753
Net profit / (loss)								**3,435**
Additional information								
Total assets	178,250	137,499	11,816	238,151	23,630	262,603	67,288	919,236
Additions to non-current assets	31	24	1	3	1,763	0	0	1,821

1 Prior-period information may not be comparable as a result of the adoption of IFRS 9 and IFRS 15, both effective 1 January 2018. Refer to Note 1b and c for more information on these changes. 2 Impairments of financial assets classified at fair value through other comprehensive income (prior to 2018 classified as financial assets available for sale) for the year ended 31 December 2016 totaled USD 5 million, of which USD 3 million was recorded in Asset Management. 3 Refer to Note 16 for more information.

Note 2b Segment reporting by geographic location

The operating regions shown in the table below correspond to the regional management structure of UBS AG. The allocation of operating income to these regions reflects, and is consistent with, the basis on which the business is managed and its performance is evaluated. These allocations involve assumptions and judgments that management considers to be reasonable, and may be refined to reflect changes in estimates or management structure. The main principles of the allocation methodology are that client revenues are attributed to the domicile of the client and trading and portfolio management revenues are attributed to the country where the risk is managed. This revenue attribution is consistent with the mandate of the regional Presidents. Certain revenues, such as those related to Corporate Center – Non-core and Legacy Portfolio, are managed at a global level. These revenues are included in the *Global* line.

The geographic analysis of non-current assets is based on the location of the entity in which the assets are recorded.

For the year ended 31 December 2018

	Total operating income		Total non-current assets	
	USD billion	Share %	USD billion	Share %
Americas	12.8	42	7.4	46
of which: USA	*12.2*	*40*	*7.0*	*43*
Asia Pacific	5.0	16	0.8	5
Europe, Middle East and Africa	6.3	20	1.8	11
Switzerland	7.3	24	6.2	38
Global	(0.6)	(2)	0.0	0
Total	30.6	100	16.2	100

For the year ended 31 December 2017[1]

	Total operating income		Total non-current assets	
	USD billion	Share %	USD billion	Share %
Americas	12.1	40	7.4	47
of which: USA	*11.6*	*39*	*6.9*	*44*
Asia Pacific	4.8	16	0.8	5
Europe, Middle East and Africa	6.2	21	1.7	10
Switzerland	7.0	23	6.0	38
Global	0.0	0	0.0	0
Total	**30.0**	**100**	**15.8**	**100**

For the year ended 31 December 2016[1]

	Total operating income		Total non-current assets	
	USD billion	Share %	USD billion	Share %
Americas	11.6	40	7.2	47
of which: USA	*11.1*	*38*	*6.8*	*44*
Asia Pacific	4.3	15	0.6	4
Europe, Middle East and Africa	6.2	22	1.8	11
Switzerland	7.0	24	5.9	38
Global	(0.3)	(1)	0.0	0
Total	**28.8**	**100**	**15.5**	**100**

1 2017 and 2016 figures have been restated for the change of the presentation currency from Swiss francs to US dollars. Refer to Note 1b item 1 for more information. In addition, 2017 and 2016 figures have been restated to reflect the regional representation of Global Wealth Management after combining Wealth Management and Wealth Management Americas in 2018. Refer to Note 1b item 3 for more information.

Income statement notes

Note 3 Net interest income and other net income from fair value changes on financial instruments

Change in presentation of net interest income and other net income from fair value changes on financial instruments

The table on the following pages reflects certain presentation changes made to reflect the effects from the adoption of new standards and interpretations in 2018. These changes are summarized as follows:

– In line with amendments to IAS 1, *Presentation of Financial Statements*, from 1 January 2018, UBS presents interest income and interest expense calculated, using the effective interest rate method, on financial instruments measured at amortized cost and financial assets measured at fair value through other comprehensive income separately from interest income and expense on financial instruments measured at fair value through profit or loss (FVTPL) in the income statement. Comparative information has been adjusted accordingly. As a result of this change, forward points on certain short-duration foreign exchange contracts are now presented within *Interest income from financial instruments at fair value held for trading* that were previously presented within *Interest income from loans and deposits*. Comparative information was restated accordingly.
– Upon adoption of IFRS 9, certain assets and liabilities were reclassified from amortized cost to fair value through profit or loss (auction rate securities, certain loans in the Investment Bank, certain repurchase agreements and brokerage balances). This has resulted in the interest income from these instruments moving from *Interest income (expense) from financial instruments measured at amortized cost* to *Interest income (expense) from financial instruments measured at fair value through profit or loss*. These changes have been applied prospectively from 1 January 2018 with certain prior-period information being adjusted for comparability. Comparative information for brokerage balances now separately presents the related interest income and expense, which was formerly included within *Interest income (expense) from loans and deposits*.
– A new line, *Interest income from financial instruments at fair value not held for trading*, has been included to accommodate in particular interest income from financial assets previously designated at fair value under IAS 39, which are now mandatorily classified at fair value through profit or loss under IFRS 9. Comparative information has been adjusted accordingly.
– Net gains / losses from financial assets previously designated at fair value under IAS 39 (2017: net gains of USD 2,567 million; 2016: net losses of USD 171 million) are no longer separately disclosed in the table on the following pages as assets are now mandatorily classified at fair value through profit or loss under IFRS 9.

Note 3 Net interest income and other net income from fair value changes on financial instruments (continued)

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	3,628	4,969	5,372
Net interest income from financial instruments measured at fair value through profit or loss	2,321	1,638	1,084
Other net income from fair value changes on financial instruments	5,977	5,067	5,018
Total[1]	11,925	11,674	11,475
Global Wealth Management	*5,254*	*5,150*	*4,893*
of which: net interest income	*4,310*	*4,104*	*3,843*
of which: transaction-based income from foreign exchange and other intermediary activity[2]	*944*	*1,046*	*1,050*
Personal & Corporate Banking	*2,514*	*2,510*	*2,563*
of which: net interest income	*2,106*	*2,127*	*2,225*
of which: transaction-based income from foreign exchange and other intermediary activity[2]	*408*	*383*	*337*
Asset Management	*(30)*	*(24)*	*(29)*
Investment Bank	*4,813*	*4,364*	*4,328*
Corporate Client Solutions	*1,056*	*1,087*	*830*
Investor Client Services	*3,756*	*3,276*	*3,498*
Corporate Center	*(626)*	*(325)*	*(279)*
CC – Services	*(177)*	*(49)*	*(93)*
CC – Group ALM	*(621)*	*(204)*	*(126)*
CC – Non-core and Legacy Portfolio	*173*	*(72)*	*(60)*

Net interest income[3]

	31.12.18	31.12.17	31.12.16
Net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income			
Interest income from loans and deposits[4,5]	7,822	6,736	8,075
Interest income from brokerage balances		1,030	906
Interest income from securities financing transactions[6]	1,567	1,573	1,152
of which: interest income from securities financing transactions measured at fair value through profit or loss since 1 January 2018		*663*	*252*
Interest income from other financial instruments measured at amortized cost	266	99	54
Interest income from debt instruments measured at fair value through other comprehensive income	142	152	189
Interest income from derivative instruments designated as cash flow hedges	324	846	
Total interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	10,121	10,437	10,375
Interest expense on loans and deposits[7]	3,566	2,161	1,537
Interest expense on brokerage balances		354	147
Interest expense on securities financing transactions[8]	1,130	1,473	1,251
of which: interest expense on securities financing transactions measured at fair value through profit or loss since 1 January 2018		*249*	*127*
Interest expense on debt issued	1,797	1,480	2,068
Total interest expense from financial instruments measured at amortized cost	6,494	5,468	5,002
Total net interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	3,628	4,969	5,372
Net interest income from financial instruments measured at fair value through profit or loss			
Interest income from financial instruments at fair value held for trading[4,9]	3,729	3,483	3,201
Interest income from brokerage balances	1,243		
Interest income from financial instruments at fair value not held for trading[9]	1,786	512	330
of which: interest income from securities financing transactions measured at fair value through profit or loss since 1 January 2018[10]	*974*		
Other interest income	215	61	48
Total interest income from financial instruments measured at fair value through profit or loss	6,974	4,056	3,579
Interest expense on financial instruments at fair value held for trading[11]	1,671	1,537	1,644
Interest expense on brokerage balances	668		
Interest expense on financial instruments designated at fair value	2,314	881	851
of which: interest expense on securities financing transactions measured at fair value through profit or loss since 1 January 2018[12]	*124*		
Total interest expense from financial instruments measured at fair value through profit or loss	4,653	2,418	2,495
Total net interest income from financial instruments measured at fair value through profit or loss	2,321	1,638	1,084

Note 3 Net interest income and other net income from fair value changes on financial instruments (continued)

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Other net income from fair value changes on financial instruments			
Investment Bank Corporate Client Solutions	709	611	188
Investment Bank Investor Client Services	3,537	2,863	3,380
Other business divisions and Corporate Center	1,730	1,593	1,451
Other net income from fair value changes on financial instruments	5,977	5,067	5,018
of which: net gains / (losses) from financial liabilities designated at fair value[13]	*9,382*	*(3,979)*	*(1,516)*

1 Net interest income and other net income from fair value changes on financial instruments presented for business divisions and Corporate Center units includes allocations from Corporate Center – Group ALM. 2 Mainly includes spread-related income in connection with client-driven transactions, foreign currency translation effects and income and expenses from precious metals, which are included in the income statement line Other net income from fair value changes on financial instruments. 3 Prior-period information may not be comparable as a result of the adoption of IFRS 9, effective 1 January 2018. Refer to Note 1c for more information on these changes. Negative interest income and negative interest expense are each individually approximately 9% of net interest income (2017: approximately 8% of net interest income; 2016: approximately 5% of net interest income). 4 As a consequence of amendments to IAS 1, Presentation of Financial Statements, effective 1 January 2018, forward points on certain short-duration foreign exchange contracts previously presented within Interest income from loans and deposits are now presented within Interest income from financial instruments at fair value held for trading. Comparative information was restated accordingly. 5 Consists of interest income from cash and balances at central banks, loans and advances to banks, and negative interest on amounts due to banks and customer deposits. 6 Includes interest income on receivables from securities financing transactions and negative interest, including fees, on payables from securities financing transactions. 7 Consists of interest expense on amounts due to banks and customer deposits, and negative interest on cash and balances at central banks, loans and advances to banks. 8 Includes interest expense on payables from securities financing transactions and negative interest, including fees, on receivables from securities financing transactions. 9 Includes dividend income. 10 Includes interest income on certain reverse repurchase agreements that are measured at fair value through profit or loss since 1 January 2018 and negative interest, including fees, on the corresponding repurchase agreements. 11 Includes expense related to dividend payment obligations on financial instruments held for trading. 12 Includes interest expense on certain repurchase agreements that are measured at fair value through profit or loss since 1 January 2018 and negative interest, including fees, on the corresponding reverse repurchase agreements. 13 Excludes fair value changes of hedges related to financial liabilities designated at fair value and foreign currency translation effects arising from translating foreign currency transactions into the respective functional currency, both of which are reported within Other net income from fair value changes on financial instruments. 2018 includes a net gain of USD 2,152 million related to amounts due under unit-linked investment contracts, which are designated at fair value under IFRS 9. Refer to Note 1c for more information.

Note 4 Net fee and commission income[1]

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Underwriting fees	843	1,029	787
of which: equity underwriting fees	*431*	*573*	*356*
of which: debt underwriting fees	*412*	*456*	*431*
M&A and corporate finance fees	768	698	742
Brokerage fees	3,521	3,821	3,804
Investment fund fees	4,955	4,322	4,265
Portfolio management and related services	7,756	7,666	7,069
Other	1,789	1,854	1,758
Total fee and commission income[2]	19,632	19,390	18,425
of which: recurring	*12,911*		
of which: transaction-based	*6,629*		
of which: performance-based	*93*		
Brokerage fees paid	316	673	769
Other	1,387	1,167	1,013
Total fee and commission expense	1,703	1,840	1,781
Net fee and commission income	17,930	17,550	16,644
of which: net brokerage fees	*3,205*	*3,148*	*3,035*

1 Upon adoption of IFRS 15, certain brokerage fees paid in an agency capacity have been reclassified from Fee and commission expense to Fee and commission income on a prospective basis from 1 January 2018, primarily relating to third-party execution costs for exchange-traded derivative transactions and fees payable to third-party research providers on behalf of clients. In addition to the IFRS 15 changes, certain revenues, primarily distribution fees and fund management fees, have been reclassified between reporting lines to better reflect the nature of the revenues, with prior-period information restated accordingly. This resulted in the following effects: For the year ended 31 December 2017, USD 316 million was reclassified from Underwriting fees to Brokerage fees and USD 1,040 million was reclassified from Portfolio management and related services to Investment fund fees. For the year ended 31 December 2016, USD 220 million was reclassified from Underwriting fees to Brokerage fees and USD 1,061 million was reclassified from Portfolio management and related services to Investment fund fees. Also, certain expenses that are incremental and incidental to revenues have been reclassified prospectively from General and administrative expenses to Fee and commission expense to improve the alignment of transaction-based costs with the associated revenue stream, primarily affecting clearing costs, client loyalty costs, fund and custody expenses. As the effect of this reclassification was not material, prior-period information was not restated. 2 Reflects third-party fee and commission income of USD 12,059 million for Global Wealth Management, USD 3,557 million for the Investment Bank, USD 2,579 million for Asset Management, USD 1,338 million for Personal & Corporate Banking and USD 100 million for Corporate Center.

Note 5 Other income

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Associates, joint ventures and subsidiaries			
Net gains / (losses) from acquisitions and disposals of subsidiaries[1]	(292)[2,3]	32	(96)
Net gains / (losses) from disposals of investments in associates	46[4]	0	0
Share of net profits of associates and joint ventures	529[5]	76	109
Impairments related to associates		(7)	
Total	283	101	12
Financial assets measured at fair value through other comprehensive income			
Net gains / (losses) from disposals	0	195	350
Impairments	0	(15)	(5)
Total	1	180	345
Net gains / (losses) from disposals of financial assets measured at amortized cost	0	14	(3)
Net income from properties (excluding net gains / (losses) from disposals)[6]	24	24	26
Net gains / (losses) from disposals of properties held for sale	40[3]	0	128
Income from shared services provided to UBS Group AG or its subsidiaries[7]	478	395	48
Other	80	238	193
Total other income	905	952	749

1 Includes foreign exchange gains / losses reclassified from other comprehensive income related to disposed foreign subsidiaries and branches. As a result of the change in presentation currency, foreign exchange gains / losses were restated. Refer to Note 1b for more information. 2 Includes a remeasurement loss of USD 270 million related to UBS Securities China. Refer to Note 32 for more information. 3 Includes a USD 25 million gain on sale of subsidiaries and a USD 31 million pre-tax gain on sale of real estate related to the sale of Widder Hotel. Refer to Note 32 for more information. 4 Reflects a net foreign currency translation gain related to UBS Securities China. Refer to Note 32 for more information. 5 Includes a USD 460 million valuation gain on our equity ownership in SIX related to the sale of SIX Payment Services to Worldline. Refer to Note 31b for more information. 6 Includes net rent received from third parties and net operating expenses. 7 Relates to subsidiaries not in the UBS AG scope of consolidation. The increase in 2018 and 2017 compared with 2016 was mainly due to the transfer of shared services functions in Switzerland and the UK from UBS AG to UBS Business Solutions AG in the second quarter and fourth quarter of 2017, respectively. Refer to Note 32 for more information.

Note 6 Personnel expenses

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Salaries[1]	5,199	5,423	6,210
Variable compensation – performance awards[2]	2,794	3,054	3,005
of which: guarantees for new hires	*43*	*36*	*30*
Variable compensation – other[2]	220	231	425
of which: replacement payments[3]	*68*	*70*	*87*
of which: forfeiture credits	*(136)*	*(106)*	*(74)*
of which: severance payments[4]	*106*	*95*	*220*
of which: retention plan and other payments[5]	*181*	*172*	*191*
Financial advisor variable compensation[2,6]	4,054	4,064	3,740
Contractors	184	318	425
Social security	629	731	742
Pension and other post-employment benefit plans[7]	363	601	677
Other personnel expenses	549	531	559
Total personnel expenses[8]	13,992	14,952	15,782

1 Includes role-based allowances. 2 Refer to Note 30 for more information. 3 Replacement payments are payments made to compensate employees for deferred awards forfeited as a result of joining UBS. 4 Includes legally obligated and standard severance payments. 5 Includes interest expense related to Deferred Contingent Capital Plan awards. 6 Financial advisor variable compensation consists of formulaic compensation based directly on compensable revenues generated by financial advisors and supplemental compensation calculated based on financial advisor productivity, firm tenure, new assets and other variables. It also includes expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. 7 Changes to the pension fund of UBS AG in Switzerland in 2018 resulted in a reduction in the pension obligation recognized by UBS AG. As a consequence, a pre-tax gain of USD 132 million was recognized in the income statement in 2018, with no overall effect on total equity. Refer to Note 29 for more information. 8 The decrease in 2018 and 2017 compared with 2016 was mainly due to the transfer of shared services functions in Switzerland and the UK from UBS AG to UBS Business Solutions AG in the second quarter and fourth quarter of 2017, respectively. Refer to Note 32 for more information.

Note 7 General and administrative expenses

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Occupancy	852	865	931
Rent and maintenance of IT and other equipment	326	422	517
Communication and market data services	520	544	632
Administration	5,383	3,644	1,077
of which: shared services costs charged by UBS Group AG or its subsidiaries[1]	*4,803*	*3,046*	*370*
of which: UK and German bank levy[2]	58	20	124
Marketing and public relations	277	338	470
Travel and entertainment	367	382	416
Professional fees	870	1,086	1,238
Outsourcing of IT and other services	729	1,169	1,610
Litigation, regulatory and similar matters[3]	657	434	805
Other	95	118	79
Total general and administrative expenses	10,075	9,001	7,776

1 Relates to subsidiaries not in the UBS AG scope of consolidation. The increase in 2018 and 2017 compared with 2016 was mainly due to the transfer of shared services functions in Switzerland and the UK from UBS AG to UBS Business Solutions AG in the second quarter and fourth quarter of 2017, respectively. Refer to Note 32 for more information. 2 The UK bank levy expenses of USD 40 million for 2018 and USD 17 million for 2017 included a credit of USD 45 million and USD 85 million, respectively, related to prior years. 3 Reflects the net increase in provisions for litigation, regulatory and similar matters recognized in the income statement. Refer to Note 21 for more information. Also includes recoveries from third parties of USD 29 million, USD 55 million and USD 13 million for the years ended 31 December 2018, 31 December 2017 and 31 December 2016, respectively.

Note 8 Income taxes

USD million	For the year ended 31.12.18	31.12.17	31.12.16
Tax expense / (benefit)			
Swiss			
Current	434	408	431
Deferred	2,326	91	624
Non-Swiss			
Current	537	435	356
Deferred	(1,952)	3,308	(658)
Total income tax expense / (benefit) recognized in the income statement	1,345	4,242	753

Income tax recognized in the income statement

An income tax expense of USD 1,345 million was recognized for UBS AG in 2018, which included a net Swiss tax expense of USD 2,760 million and a net non-Swiss tax benefit of USD 1,415 million.

The Swiss tax expense included a deferred tax expense of USD 2,326 million, which reflected a net decrease in deferred tax assets (DTA) previously recognized in relation to tax losses carried forward and deductible temporary differences of USD 709 million following their offset against profits for the year and the write-off of a Swiss temporary difference DTA of USD 1,617 million relating to UBS AG's investment in our US intermediate holding company (US IHC), UBS Americas Holding LLC. The write-off occurred because the deductible temporary difference between the tax and accounting values in respect of UBS AG's investment in the US IHC is no longer expected to reverse in the foreseeable future, reflecting the expected repatriation of a significant portion of future US earnings. In addition, it included a current tax expense of USD 434 million related to taxable profits earned by Swiss subsidiaries against which no losses were available to offset.

The non-Swiss tax expense included a deferred tax benefit of USD 1,952 million. This primarily reflected a net increase in US DTAs of USD 2,052 million following the review of the approach to the remeasurement of those DTAs. It also included other net deferred tax expenses of USD 100 million and a current tax expense of USD 537 million related to taxable profits earned by non-Swiss subsidiaries and branches against which no losses were available to offset.

UBS AG considers the performance of its businesses and the accuracy of historical forecasts and other factors in evaluating the recoverability of its DTAs, including the length of time remaining until expiration for tax loss carry-forwards and its assessment of expected future taxable profits. Estimating future profitability is inherently subjective and is particularly sensitive to future economic, market and other conditions, which are difficult to predict.

USD million	For the year ended 31.12.18	31.12.17	31.12.16
Operating profit / (loss) before tax	5,458	5,076	4,188
of which: Swiss	*1,427*	*1,911*	*2,614*
of which: non-Swiss	*4,031*	*3,165*	*1,574*
Income taxes at Swiss tax rate of 21%	1,146	1,066	879
Increase / (decrease) resulting from:			
Non-Swiss tax rates differing from Swiss tax rate	68	230	70
Tax effects of losses not recognized	222	173	182
Previously unrecognized tax losses now utilized	(25)	(368)	(38)
Non-taxable and lower taxed income	(419)	(306)	(337)
Non-deductible expenses and additional taxable income	883	588	898
Adjustments related to prior years – current tax	114	(14)	22
Adjustments related to prior years – deferred tax	27	6	2
Change in deferred tax recognition	(802)	(165)	(961)
Adjustments to deferred tax balances arising from changes in tax rates	0	2,897	19
Other items	130	135	16
Income tax expense / (benefit)	1,345	4,242	753

Note 8 Income taxes (continued)

The tax expense of USD 1,345 million for 2018 was lower than the tax expense of USD 4,242 million in 2017. This was mainly because 2017 included a large net deferred tax expense of USD 3,399 million, which was primarily the result of a net write-down of DTAs related to the US federal corporate tax rate reduction included in the Tax Cuts and Jobs Act enacted in the fourth quarter of 2017.

The components of operating profit before tax, and the differences between income tax expense reflected in the financial statements and the amounts calculated at the Swiss tax rate, are provided in the table on the previous page and explained below.

Non-Swiss tax rates differing from Swiss tax rate

To the extent that UBS AG profits or losses arise outside Switzerland, the applicable local tax rate may differ from the Swiss tax rate. This item reflects, for such profits or losses, an adjustment from the tax expense / benefit that would arise at the Swiss tax rate and the tax expense / benefit that would arise at the applicable local tax rate. If an entity generates a profit, a tax expense arises where the local tax rate is in excess of the Swiss tax rate and a tax benefit arises where the local tax rate is below the Swiss tax rate. Conversely, if an entity incurs a loss, a tax benefit arises where the local tax rate is in excess of the Swiss tax rate and a tax expense arises where the local tax rate is less than the Swiss tax rate.

Tax effects of losses not recognized

This item relates to tax losses of entities arising in the year that are not recognized as DTAs. Consequently, no tax benefit arises in relation to those losses. Therefore, the tax benefit calculated by applying the local tax rate to those losses as described above is reversed.

Previously unrecognized tax losses now utilized

This item relates to taxable profits of the year that are offset by tax losses of previous years for which no DTAs were previously recorded. Consequently, no current tax or deferred tax expense arises in relation to those taxable profits. Therefore, the tax expense calculated by applying the local rate on those profits is reversed.

Non-taxable and lower taxed income

This item relates to tax deductions for the year in respect of permanent differences. These include deductions in respect of profits that are either not taxable or are taxable at a lower rate of tax than the local tax rate. They also include deductions made for tax purposes, which are not reflected in the accounts.

Non-deductible expenses and additional taxable income

This item relates to additional taxable income for the year in respect of permanent differences. These include income that is recognized for tax purposes by an entity, but is not included in its profit that is reported in the financial statements. In addition, they include expenses for the year that are non-deductible. For example, the costs of entertaining clients are not deductible in certain locations.

Adjustments related to prior years – current tax

This item relates to adjustments to current tax expense for prior years, e.g. if the tax payable for a year is agreed with the tax authorities in an amount that differs from the amount previously reflected in the financial statements.

Adjustments related to prior years – deferred tax

This item relates to adjustments to deferred tax positions recognized in prior years, e.g., if a tax loss for a year is fully recognized and the amount of the tax loss agreed with the tax authorities is expected to differ from the amount previously recognized as DTAs in the accounts.

Change in deferred tax recognition

This item relates to changes in DTAs, including those previously recognized resulting from reassessments of expected future taxable profits. It also includes changes in temporary differences in the year, for which deferred tax is not recognized. The net benefit in the year mainly relates to the upward revaluation of US DTAs, partly offset by the write-off of the Swiss temporary difference DTA relating to UBS AG's investment in the US intermediate holding company.

Adjustments to deferred tax balances arising from changes in tax rates

This item relates to remeasurements of DTAs and liabilities recognized due to changes in tax rates. These have the effect of changing the future tax saving that is expected from tax losses or deductible tax differences and therefore the amount of DTAs recognized or, alternatively, changing the tax cost of additional taxable income from taxable temporary differences and therefore the deferred tax liability.

Other items

Other items include other differences between profits or losses at the local tax rate and the actual local tax expense or benefit, including increases in provisions for uncertain positions in relation to the current year and other items.

Income tax recognized directly in equity

Certain tax expenses and benefits were recognized directly in equity during the year. These included the following items:

– a net tax benefit of USD 314 million recognized in other comprehensive income (OCI) (2017: net benefit of USD 159 million), which included a tax benefit of USD 67 million related to cash flow hedges (2017: benefit of USD 163 million), a tax benefit of USD 12 million related to financial assets recognized at fair value through OCI (2017: expense of USD 6 million), a tax expense of USD 2 million related to foreign currency translation gains and losses (2017: expense of USD 2 million), a tax benefit of USD 245 million related to defined benefit pension plans (2017: benefit of USD 6 million) and a tax expense of USD 8 million related to own credit (2017: expense of USD 2 million);
– a tax expense of USD 5 million recognized in share premium (2017: benefit of USD 16 million).

Deferred tax assets and liabilities

UBS AG has gross DTAs, valuation allowances and recognized DTAs related to tax loss carry-forwards and deductible temporary differences and also deferred tax liabilities in respect of taxable temporary differences as shown in the table below. The valuation allowances reflect DTAs that were not recognized because it was not considered probable that future taxable profits will be available to utilize the related tax loss carry-forwards and deductible temporary differences.

Of the recognized DTAs as of 31 December 2018, USD 9.5 billion related to the US, USD 0.3 billion related to Switzerland and USD 0.3 billion related to other locations (as of 31 December 2017, USD 7.2 billion related to the US, USD 2.5 billion related to Switzerland and USD 0.3 billion related to other locations).

As of 31 December 2018, UBS AG has recognized DTAs of USD 53 million (31 December 2017: USD 1,216 million) in respect of entities that incurred losses in either the current or preceding year. The recognition of these DTAs is supported by projections of future taxable profits for these entities.

USD million	31.12.18			31.12.17		
Deferred tax assets[1]	Gross	Valuation allowance	Recognized	Gross	Valuation allowance	Recognized
Tax loss carry-forwards	15,088	(8,989)	6,099	17,372	(11,480)	5,892
Temporary differences	4,526	(559)	3,967	5,102	(1,001)	4,101
of which: related to real estate costs capitalized for US tax purposes	*2,159*	*(25)*	*2,134*	*0*	*0*	*0*
of which: related to compensation and benefits	*1,146*	*(192)*	*954*	*1,162*	*(228)*	*934*
of which: related to trading assets	*390*	*(50)*	*339*	*485*	*(60)*	*425*
of which: related to investments in subsidiaries and goodwill	*179*	*0*	*179*	*2,344*	*0*	*2,344*
of which: other	*653*	*(292)*	*361*	*1,111*	*(713)*	*398*
Total deferred tax assets	19,614	(9,548)	10,066	22,474	(12,481)	9,993

Deferred tax liabilities	31.12.18	31.12.17
Goodwill and intangible assets	26	19
Other	62	32
Total deferred tax liabilities	88	51

1 Less deferred tax liabilities as applicable.

Note 8 Income taxes (continued)

As of 31 December 2018, tax loss carry-forwards totaling USD 38,428 million (31 December 2017: USD 47,427 million) that are not recognized as DTAs were available to be offset against future taxable profits. These tax losses expire as outlined in the table below.

Unrecognized tax loss carry-forwards

USD million	31.12.18	31.12.17
Within 1 year	0	171
From 2 to 5 years	464	106
From 6 to 10 years	16,297	3,267
From 11 to 20 years	4,457	26,688
No expiry	17,210	17,195
Total	38,428	47,427

As of 31 December 2018, USD 20.0 billion of the unrecognized tax losses carried forward related to the US, USD 14.2 billion related to the UK and USD 4.2 billion related to other locations (at 31 December 2017, USD 28.6 billion related to the US, USD 14.3 billion related to the UK and USD 4.5 billion related to other locations).

In general, Swiss tax losses can be carried forward for seven years, US federal tax losses incurred before 31 December 2017 for 20 years and US federal tax losses incurred after 31 December 2017 and also UK tax losses for an unlimited period. The amounts of US tax loss carry-forwards that are included in the above table are based on their amount for federal tax purposes rather than for state and local tax purposes.

Deferred tax liabilities are recognized in respect of investments in subsidiaries, branches and associates and interests in joint arrangements, except to the extent that UBS AG can control the timing of the reversal of the associated taxable temporary difference and it is probable that it will not reverse in the foreseeable future. However, as of 31 December 2018, this exception was not considered to apply to any taxable temporary differences.

Note 9 Earnings per share (EPS) and shares outstanding

In 2015, UBS AG shares were delisted from the SIX Swiss Exchange and the New York Stock Exchange. As of 31 December 2018, 100% of UBS AG's issued shares were held by UBS Group AG and therefore were not publicly traded. Accordingly, earnings per share information is not provided for UBS AG.

Balance sheet notes

Note 10 Financial assets at amortized cost and other positions in scope of expected credit loss measurement

The tables on the following pages provide information on financial instruments and certain non-financial instruments (e.g., committed unconditionally revocable credit lines) that are subject to ECL. UBS AG has established ECL disclosure segments or "ECL segments" to disaggregate portfolios based on shared risk characteristics and on the same or similar rating methods applied. The key segments are presented in the table below.

Tables provided for 31 December 2018 include additional detail on certain segments that have not been provided for balances as of 1 January 2018.

→ **Refer to Note 1c for the comparative information as of 31 December 2017 under IAS 39**

→ **Refer to Note 23 for more information on expected credit loss measurement**

Segment	Segment description	Description of credit risk sensitivity	Business division / Corporate Center
Private clients with mortgages	Lending to private clients secured by owner-occupied real estate and personal account overdrafts of those clients	Sensitive to the interest rate environment, employment status and influence from regional effects (e.g., property values)	– Personal & Corporate Banking – Global Wealth Management
Real estate financing	Rental or income-producing real estate financing to private and corporate clients secured by real estate	Sensitive to GDP development, the interest rate environment and regional effects (e.g., property values)	– Personal & Corporate Banking – Global Wealth Management
Large corporate clients	Lending to large corporate and multinational clients	Sensitive to GDP development, seasonality and business cycles and collateral values (diverse collateral including real estate and other collateral types)	– Personal & Corporate Banking – Investment Bank
SME clients	Lending to small and medium-sized corporate clients	Sensitive to GDP development, the interest rate environment and, to some extent, seasonality and business cycles and collateral values (diverse collateral including real estate and other collateral types)	– Personal & Corporate Banking
Lombard	Loans secured by pledges of marketable securities, guarantees and other forms of collateral	Sensitive to the market (e.g., changes in collateral as well as in invested assets)	– Personal & Corporate Banking – Global Wealth Management
Credit cards	Credit card solutions in Switzerland and the US	Sensitive to the interest rate environment and employment status	– Personal & Corporate Banking – Global Wealth Management
Commodity trade finance	Working capital financing of commodity traders, generally extended on a self-liquidating transactional basis	Sensitive primarily to the strength of individual transaction structures and collateral values (price volatility of commodities) as the primary source for debt service is directly linked to the shipments financed	– Personal & Corporate Banking

→ **Refer to Note 23g for more details on sensitivity**

Note 10 Financial assets at amortized cost and other positions in scope of expected credit loss measurement (continued)

For amortized cost instruments, the net carrying value represents the maximum exposure to credit risk, taking into account the allowance for credit losses. Financial assets measured at fair value through other comprehensive income (FVOCI) are also subject to ECL; however, unlike for amortized cost instruments, the allowance does not reduce the carrying value of these financial assets. The carrying value of financial assets measured at FVOCI represents the maximum exposure to credit risk.

No purchased credit-impaired financial assets are recognized in the period. Originated credit-impaired financial assets were not material and are not presented in the table below and on the following page.

In addition to on-balance sheet financial assets, certain off-balance sheet financial instruments and other credit lines are also subject to ECL. The maximum exposure to credit risk for off-balance sheet financial instruments is calculated based on notional amounts.

USD million	31.12.18							
	Carrying amount[1]				ECL allowances			
Financial instruments measured at amortized cost	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Cash and balances at central banks	108,370	108,370	0	0	0	0	0	0
Loans and advances to banks	16,642	16,440	202	0	(7)	(4)	(1)	(3)
Receivables from securities financing transactions	95,349	95,349	0	0	(2)	(2)	0	0
Cash collateral receivables on derivative instruments	23,603	23,603	0	0	0	0	0	0
Loans and advances to customers	321,482	299,378	20,357	1,748	(772)	(69)	(155)	(549)
of which: Private clients with mortgages	*126,335*	*115,679*	*9,859*	*796*	*(138)*	*(16)*	*(83)*	*(39)*
of which: Real estate financing	*36,474*	*28,578*	*7,858*	*38*	*(59)*	*(3)*	*(40)*	*(16)*
of which: Large corporate clients	*11,390*	*10,845*	*457*	*88*	*(95)*	*(9)*	*(4)*	*(82)*
of which: SME clients	*9,924*	*8,029*	*1,263*	*632*	*(281)*	*(13)*	*(12)*	*(256)*
of which: Lombard	*111,722*	*111,707*	*0*	*14*	*(21)*	*(4)*	*0*	*(17)*
of which: Credit cards	*1,529*	*1,216*	*297*	*16*	*(30)*	*(6)*	*(13)*	*(11)*
of which: Commodity trade finance	*3,260*	*2,798*	*445*	*16*	*(86)*	*(5)*	*(3)*	*(78)*
Other financial assets measured at amortized cost	22,637	21,936	223	478	(155)	(43)	(4)	(109)
of which: Loans to financial advisors	*3,291*	*3,104*	*62*	*125*	*(113)*	*(34)*	*(2)*	*(77)*
Total financial assets measured at amortized cost	588,084	565,076	20,782	2,226	(937)	(117)	(159)	(660)
Financial assets measured at fair value through other comprehensive income	6,667	6,667	0	0	0	0	0	0
Total on-balance sheet financial assets in scope of ECL requirements	594,750	571,743	20,782	2,226	(937)	(117)	(159)	(660)

	Total exposure				ECL provisions			
Off-balance sheet (in scope of ECL)	Total	Stage 1	Stage 2	Stage 3	Total	Stage 1	Stage 2	Stage 3
Guarantees	18,146	17,321	611	215	(43)	(7)	(2)	(34)
of which: Large corporate clients	*3,862*	*3,599*	*136*	*127*	*(8)*	*(1)*	*(1)*	*(6)*
of which: SME clients	*1,298*	*1,057*	*164*	*77*	*(26)*	*0*	*0*	*(25)*
of which: Financial intermediaries and hedge funds	*7,193*	*7,125*	*67*	*0*	*(4)*	*(3)*	*0*	*0*
of which: Lombard	*834*	*834*	*0*	*0*	*0*	*0*	*0*	*0*
of which: Commodity trade finance	*2,097*	*1,851*	*236*	*11*	*(1)*	*(1)*	*0*	*0*
Irrevocable loan commitments	31,212	30,590	568	53	(37)	(32)	(5)	0
of which: Large corporate clients	*22,019*	*21,492*	*519*	*7*	*(31)*	*(26)*	*(4)*	*0*
Forward starting reverse repurchase and securities borrowing agreements	937	937	0	0	0	0	0	0
Committed unconditionally revocable credit lines	38,851	37,338	1,420	93	(36)	(19)	(16)	0
of which: Real estate financing	*2,562*	*2,150*	*401*	*11*	*(17)*	*(4)*	*(12)*	*0*
of which: Large corporate clients	*4,260*	*4,152*	*91*	*17*	*(2)*	*(1)*	*0*	*0*
of which: SME clients	*4,505*	*4,163*	*285*	*57*	*(7)*	*(6)*	*(1)*	*0*
of which: Lombard	*7,402*	*7,402*	*0*	*0*	*0*	*(1)*	*0*	*0*
of which: Credit cards	*7,343*	*7,035*	*309*	*0*	*(6)*	*(4)*	*(2)*	*0*
of which: Commodity trade finance	*3,467*	*3,209*	*254*	*4*	*(2)*	*(2)*	*0*	*0*
Irrevocable committed prolongation of existing loans	3,339	2,861	456	22	(1)	(1)	0	0
Total off-balance sheet financial instruments and other credit lines	92,486	89,048	3,055	383	(116)	(59)	(23)	(34)
Total allowances and provisions					(1,054)	(176)	(183)	(695)

1 The carrying value of financial assets measured at amortized cost represents the total gross exposure net of the respective ECL allowances.

Note 10 Financial assets at amortized cost and other positions in scope of expected credit loss measurement (continued)

USD million	1.1.18							
	Carrying amount[1]				ECL allowances			
Financial instruments measured at amortized cost	Total	Stage 1	Stage 2	Stage 3[2]	Total	Stage 1	Stage 2	Stage 3
Cash and balances at central banks	90,045	90,045	0	0	0	0	0	0
Loans and advances to banks	14,027	14,007	18	0	(5)	(3)	0	(3)
Receivables from securities financing transactions	86,864	86,864	0	0	(2)	(2)	0	0
Cash collateral receivables on derivative instruments	24,040	24,040	0	0	0	0	0	0
Loans and advances to customers	320,687	290,582	28,575	1,530	(890)	(62)	(167)	(661)
of which: Private clients with mortgages	*122,652*	*106,553*	*15,394*	*704*	*(128)*	*(12)*	*(71)*	*(45)*
of which: Real estate financing	*36,824*	*26,888*	*9,907*	*30*	*(64)*	*(4)*	*(54)*	*(6)*
of which: Large corporate clients	*11,289*	*10,626*	*571*	*90*	*(71)*	*(6)*	*0*	*(65)*
of which: SME clients	*10,589*	*8,431*	*1,557*	*600*	*(295)*	*(8)*	*(24)*	*(262)*
of which: Lombard	*113,461*	*113,444*	*0*	*17*	*(86)*	*(5)*	*0*	*(81)*
Other financial assets measured at amortized cost	18,850	18,339	33	477	(139)	(30)	(1)	(108)
of which: Loans to financial advisors	*3,166*	*2,948*	*33*	*184*	*(118)*	*(29)*	*(1)*	*(89)*
Total financial assets measured at amortized cost	**554,512**	**523,878**	**28,628**	**2,007**	**(1,037)**	**(97)**	**(168)**	**(772)**
Financial assets measured at fair value through other comprehensive income	**6,930**	**6,930**	**0**	**0**	**0**	**0**	**0**	**0**
Total on-balance sheet financial assets in scope of ECL requirements	**561,442**	**530,808**	**28,628**	**2,007**	**(1,037)**	**(97)**	**(168)**	**(772)**
	Total exposure				ECL provisions			
Off-balance sheet (in scope of ECL)	Total	Stage 1	Stage 2	Stage 3[2]	Total	Stage 1	Stage 2	Stage 3
Guarantees	17,596	16,753	649	194	(38)	(6)	(2)	(30)
Irrevocable loan commitments	31,650	30,933	679	38	(37)	(25)	(8)	(4)
of which: Large corporate clients	*22,568*	*21,896*	*645*	*27*	*(28)*	*(19)*	*(4)*	*(4)*
Forward starting reverse repurchase and securities borrowing agreements	1,247	1,247	0	0	0	0	0	0
Committed unconditionally revocable credit lines	37,639	35,362	2,213	64	(35)	(19)	(15)	0
of which: Real estate financing	*3,183*	*2,151*	*1,033*	*0*	*(10)*	*(2)*	*(7)*	*0*
of which: SME clients	*4,893*	*4,422*	*416*	*54*	*(7)*	*(5)*	*(2)*	*0*
Irrevocable committed prolongation of existing loans	1,677	1,676	0	1	0	0	0	0
Total off-balance sheet financial instruments and other credit lines	**89,809**	**85,972**	**3,541**	**295**	**(110)**	**(50)**	**(25)**	**(34)**
Total allowances and provisions					**(1,146)**	**(148)**	**(193)**	**(806)**

1 The carrying value of financial assets measured at amortized cost represents the total gross exposure net of the respective ECL allowances. 2 Upon adoption of IFRS 9 as of 1 January 2018, an instrument is classified as credit-impaired if the counterparty is defaulted, and / or the instrument is purchased or originated credit-impaired and includes credit-impaired exposures for which no loss has occurred or no allowance has been recognized (e.g., because they are expected to be fully recoverable through the collateral held). Refer to Note 1c for more information on the adoption of IFRS 9.

Note 11 Derivative instruments

Derivatives: overview

A derivative is a financial instrument for which the value is derived from one or more variables (underlyings). Underlyings may be indices, foreign currency exchange or interest rates, or the value of shares, commodities, bonds or other financial instruments. A derivative commonly requires little or no initial net investment by either counterparty to the trade.

The majority of derivative contracts are negotiated with respect to notional amounts, tenor, price and settlement mechanisms, as is customary with other financial instruments.

Over-the-counter (OTC) derivative contracts are usually traded under a standardized International Swaps and Derivatives Association (ISDA) master agreement between UBS AG and its counterparties. Terms are negotiated directly with counterparties and the contracts have industry standard settlement mechanisms prescribed by ISDA. Beginning in 2016, regulators in various jurisdictions began a phased introduction of rules requiring the payment and collection of initial and variation margin on certain OTC derivative contracts, which may have a bearing on their price and other relevant terms.

The industry continues to promote the use of central counterparties (CCPs) to clear OTC trades. The trend toward CCP clearing and settlement will generally facilitate the reduction of systemic credit exposures.

Other derivative contracts are standardized in terms of their amounts and settlement dates, and are bought and sold on regulated exchanges. These are commonly referred to as exchange-traded derivatives (ETD) contracts. Exchanges offer the benefits of pricing transparency, standardized daily settlement of changes in value and consequently reduced credit risk.

For presentation purposes, UBS AG's derivative contracts are subject to IFRS netting provisions. Derivative instruments are measured at fair value and generally classified on the balance sheet as *Derivative financial instruments* within *Assets* when having positive replacement values and *Derivative financial instruments* within *Liabilities* when having negative replacement values. However, ETD that are economically settled on a daily basis and OTC derivatives that are either legally settled or in substance net settled on a daily basis are classified as *Cash collateral receivables on derivative instruments* or *Cash collateral payables on derivative instruments*. Changes in the replacement values of derivatives are recorded in *Other net income from fair value changes on financial instruments,* except for interest on derivatives designated as hedging instruments in effective hedge accounting relationships and forward points on certain short- and long-duration foreign exchange contracts, which are recorded in *Net interest income*.

→ **Refer to Note 1a items 3j and 3k for more information**

→ **Refer to Note 25 for more information on derivative financial assets and liabilities after consideration of netting potential allowed under enforceable netting arrangements**

UBS AG uses various derivative instruments for both trading and hedging purposes. Derivative product types as well as valuation principles and techniques applied by UBS AG are described in Note 24. Positive replacement values represent the estimated amount UBS AG would receive if the derivative contract were sold on the balance sheet date. Negative replacement values indicate the estimated amount UBS AG would pay to transfer its obligations in respect of the underlying contract were it required or entitled to do so on the balance sheet date.

Derivatives embedded in other financial instruments are not included in the "Derivative instruments" table within this Note. Bifurcated embedded derivatives are presented on the same balance sheet line as the host contract. In cases where UBS AG applies the fair value option to hybrid instruments, bifurcation of an embedded derivative component is not required and as such this component is also not included in the "Derivative instruments" table.

→ **Refer to Notes 19 and 24 for more information**

Risks of derivative instruments

Derivative instruments are transacted in many trading portfolios, which generally include several types of instruments, not just derivatives. The market risk of derivatives is predominantly managed and controlled as an integral part of the market risk of these portfolios. UBS AG's approach to market risk is described in the audited portions of "Market risk" in the "Risk management and control" section of this report.

Derivative instruments are also transacted with many different counterparties, most of whom are also counterparties for other types of business. The credit risk of derivatives is managed and controlled in the context of UBS AG's overall credit exposure to its counterparties. UBS AG's approach to credit risk is described in the audited portions of "Credit risk" in the "Risk management and control" section of this report. It should be noted that, although the derivative financial assets shown on the balance sheet can be an important component of UBS AG's credit exposure, the positive replacement values related to a respective counterparty are rarely an adequate reflection of UBS AG's credit exposure in its derivatives business with that counterparty. This is generally the case because, on the one hand, replacement values can increase over time (potential future exposure), while on the other hand, exposure may be mitigated by entering into master netting agreements and bilateral collateral arrangements. Both the exposure measures used internally by UBS AG to control credit risk and the capital requirements imposed by regulators reflect these additional factors.

→ **Refer to Note 25 for more information on derivative financial assets and liabilities after consideration of netting potential allowed under enforceable netting arrangements**

Note 11 Derivative instruments (continued)

Derivative instruments[1,2]

	31.12.18					31.12.17				
USD billion	PRV[3]	Notional values related to PRV[4]	NRV[5]	Notional values related to NRV[4]	Other notional values[4,6]	PRV[3]	Notional values related to PRV[4]	NRV[5]	Notional values related to NRV[4]	Other notional values[4,6]
Interest rate contracts										
Over-the-counter (OTC) contracts										
Forward contracts	0.0	1.4	0.1	3.1	2,873.9	0.1	22.6	0.3	8.5	2,381.2
Swaps	29.5	459.8	23.5	441.8	7,189.1	36.3	553.2	29.0	465.5	7,724.9
Options	7.6	562.2	9.0	550.0		8.7	572.6	10.1	561.4	
Exchange-traded contracts										
Futures					516.1					467.3
Options	0.0	27.7	0.0	26.3	199.7	0.0	23.2	0.0	35.2	159.4
Agency transactions[7]	0.0		0.1			0.0		0.0		
Total	37.1	1,051.1	32.7	1,021.3	10,778.8	45.2	1,171.6	39.4	1,070.5	10,732.8
Credit derivative contracts										
Over-the-counter (OTC) contracts										
Credit default swaps	1.7	68.8	2.1	73.2		2.7	87.4	3.0	96.8	1.2
Total return swaps	0.2	3.0	0.6	3.7		0.2	2.3	0.9	4.0	
Options and warrants	0.0	2.7	0.0	1.4		0.0	4.4	0.0	0.1	
Total	1.9	74.5	2.7	78.3		2.9	94.1	3.9	100.8	1.2
Foreign exchange contracts										
Over-the-counter (OTC) contracts										
Forward contracts	20.3	708.8	20.9	731.2		17.6	699.0	18.3	709.5	
Interest and currency swaps	24.8	1,299.7	24.6	1,203.5		24.4	1,308.5	22.3	1,126.9	
Options	8.3	613.8	7.8	577.4		6.3	438.1	6.0	407.9	
Exchange-traded contracts										
Futures					0.4					0.4
Options	0.0	3.6	0.0	5.3		0.0	4.8	0.1	5.7	
Agency transactions[7]	0.0		0.1			0.0		0.0		
Total	53.5	2,625.8	53.4	2,517.3	0.4	48.4	2,450.3	46.7	2,250.0	0.4
Equity / index contracts										
Over-the-counter (OTC) contracts										
Forward contracts	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Swaps	4.7	78.5	5.6	86.3		3.4	73.0	5.7	103.0	
Options	5.5	97.6	7.2	139.6		6.0	78.6	8.4	128.2	
Exchange-traded contracts										
Futures					71.7					53.3
Options	10.1	232.8	9.0	262.8	34.1	7.1	238.6	7.1	268.0	31.8
Agency transactions[7]	11.2		13.3			6.3		6.3		
Total	31.4	408.9	35.0	488.8	105.9	22.8	390.2	27.4	499.2	85.0

Table continues on the next page.

Note 11 Derivative instruments (continued)

Derivative instruments (continued)[1,2]

Table continued from the previous page.

	31.12.18					31.12.17				
USD billion	PRV[3]	Notional values related to PRV[4]	NRV[5]	Notional values related to NRV[4]	Other notional values[4,6]	PRV[3]	Notional values related to PRV[4]	NRV[5]	Notional values related to NRV[4]	Other notional values[4,6]
Commodity contracts										
Over-the-counter (OTC) contracts										
Forward contracts	0.1	3.2	0.1	3.4		0.1	3.0	0.1	3.9	
Swaps	0.7	15.2	0.4	9.9		0.2	8.7	0.4	13.1	
Options	0.4	18.6	0.3	16.1		0.3	11.6	0.1	8.1	
Exchange-traded contracts										
Futures					8.5					8.4
Forward contracts	0.0	6.6	0.0	5.4		0.2	9.6	0.0	8.1	
Options	0.1	2.9	0.0	3.7	0.1	0.0	1.0	0.1	4.6	0.3
Agency transactions[7]	0.4		0.7			0.9		0.9		
Total	1.8	46.4	1.5	38.5	8.6	1.8	33.9	1.6	37.8	8.6
Unsettled purchases of non-derivative financial instruments[8]	0.2	17.0	0.1	6.0		0.1	12.4	0.1	11.2	
Unsettled sales of non-derivative financial instruments[8]	0.4	15.1	0.2	13.2		0.1	15.2	0.1	9.0	
Total derivative instruments, based on IFRS netting[9]	126.2	4,238.7	125.7	4,163.4	10,893.6	121.3	4,167.7	119.1	3,978.6	10,828.0

1 Derivative financial liabilities as of 31 December 2018 include USD 0.0 billion related to derivative loan commitments (31 December 2017: USD 0.0 billion). No notional amounts related to these commitments are included in this table, but they are disclosed within Note 34 under Loan commitments. 2 Upon adoption of IFRS 9 on 1 January 2018, certain forward starting repurchase and reverse repurchase agreements have been classified as measured at fair value through profit or loss and are recognized within derivative instruments. The fair value of these derivative instruments was not material as of 31 December 2018. No notional amounts related to these instruments are included in this table, but they are disclosed within Note 34 under Forward starting transactions. 3 PRV: positive replacement value. 4 In cases where replacement values are presented on a net basis on the balance sheet, the respective notional values of the netted replacement values are still presented on a gross basis. 5 NRV: negative replacement value. 6 Other notional values relate to derivatives that are cleared through either a central counterparty or an exchange. The fair value of these derivatives is presented on the balance sheet net of the corresponding cash margin under Cash collateral receivables on derivative instruments and Cash collateral payables on derivative instruments and was not material for all periods presented. 7 Notional values of exchange-traded agency transactions and OTC-cleared transactions entered into on behalf of clients are not disclosed as they have a significantly different risk profile. 8 Changes in the fair value of purchased and sold non-derivative financial instruments between trade date and settlement date are recognized as replacement values. 9 Financial assets and liabilities are presented net on the balance sheet if UBS has the unconditional and legally enforceable right to offset the recognized amounts, both in the normal course of business and in the event of default, bankruptcy or insolvency of the entity and all of the counterparties, and intends either to settle on a net basis or to realize the asset and settle the liability simultaneously. Refer to Note 25 for more information on netting arrangements.

The notional amount of a derivative is generally the quantity of the underlying instrument on which the derivative contract is based and is the reference against which changes in the value of the derivative are measured. Notional values in themselves are generally not a direct indication of the values that are exchanged between parties, and are therefore not a direct measure of risk or financial exposure but are viewed as an indication of the scale of the different types of derivatives entered into by UBS AG.

On a notional value basis, approximately 56% of OTC interest rate contracts held as of 31 December 2018 (31 December 2017: 54%) mature within one year, 28% (31 December 2017: 28%) within one to five years and 16% (31 December 2017: 18%) after five years. Notional values of interest rate contracts cleared with a clearing house that qualify for IFRS balance sheet netting or are legally settled on a daily basis are presented under *Other notional values* and are categorized into maturity buckets on the basis of contractual maturities of the cleared underlying derivative contracts.

Derivatives transacted for sales and trading purposes

Most of UBS AG's derivative transactions relate to sales and trading activities. Sales activities include the structuring and marketing of derivative products to customers to enable them to take, transfer, modify or reduce current or expected risks. Trading activities include market-making to directly support the facilitation and execution of client activity. Market-making involves quoting bid and offer prices to other market participants with the intention of generating revenues based on spread and volume.

Credit derivatives

UBS AG is an active dealer in the fixed income market, including credit default swaps (CDS) and related products, with respect to a large number of issuers' securities. The primary objectives of these activities are ongoing hedging of trading book exposures and market making, primarily on behalf of clients.

Market-making activity, which is undertaken within the Investment Bank, consists of buying and selling single-name CDS, index CDS, loan CDS and related referenced cash instruments to facilitate client trading activity. UBS AG also actively utilizes CDS to economically hedge specific counterparty credit risks in its accrual and traded loan portfolios (including off-balance sheet loan commitments) with the aim of reducing concentrations in individual names, sectors or specific portfolios.

In addition, UBS AG actively utilizes CDS to economically hedge specific counterparty credit risks in its OTC derivative portfolios, including financial instruments that are designated at fair value through profit or loss.

The tables below provide more information on credit protection bought and sold, including replacement and notional value information by instrument type and counterparty type. The value of protection bought and sold is not, in isolation, a measure of UBS AG's credit risk. Counterparty relationships are viewed in terms of the total outstanding credit risk, which relates to other instruments in addition to CDS, and in connection with collateral arrangements in place. On a notional value basis, approximately 14% of credit protection bought and sold as of 31 December 2018 matures within one year (31 December 2017: 23%), approximately 74% within one to five years (31 December 2017: 65%) and approximately 12% after five years (31 December 2017: 12%).

Credit derivatives by type of instrument

	Protection bought			Protection sold		
USD billion	PRV	NRV	Notional values	PRV	NRV	Notional values
Single-name credit default swaps	0.6	0.6	43.3	0.5	1.0	44.9
Multi-name index-linked credit default swaps	0.3	0.3	29.1	0.3	0.2	24.4
Multi-name other credit default swaps	0.0	0.0	0.1	0.0	0.0	0.1
Total rate of return swaps	0.2	0.7	4.7	0.0	0.0	2.0
Options and warrants	0.0	0.0	4.1	0.0	0.0	0.1
Total 31 December 2018	1.1	1.6	81.3	0.8	1.2	71.4
of which: credit derivatives related to economic hedges	*0.9*	*1.3*	*59.2*	*0.5*	*1.1*	*48.9*
of which: credit derivatives related to market-making	*0.2*	*0.4*	*22.1*	*0.3*	*0.2*	*22.6*

	Protection bought			Protection sold		
USD billion	PRV	NRV	Notional values	PRV	NRV	Notional values
Single-name credit default swaps	0.6	1.2	62.9	1.1	0.7	57.1
Multi-name index-linked credit default swaps	0.2	1.0	32.6	0.9	0.2	32.8
Multi-name other credit default swaps	0.0	0.0	0.1	0.0	0.0	0.0
Total rate of return swaps	0.0	0.8	4.6	0.1	0.0	1.7
Options and warrants	0.0	0.0	4.4	0.0	0.0	0.1
Total 31 December 2017	0.8	3.0	104.5	2.1	0.9	91.7
of which: credit derivatives related to economic hedges	*0.8*	*2.5*	*83.7*	*1.6*	*0.9*	*72.3*
of which: credit derivatives related to market-making	*0.0*	*0.5*	*20.9*	*0.5*	*0.0*	*19.4*

Note 11 Derivative instruments (continued)

Credit derivatives by counterparty

	Protection bought			Protection sold		
USD billion	PRV	NRV	Notional values	PRV	NRV	Notional values
Broker-dealers	0.2	0.1	13.0	0.1	0.2	11.5
Banks	0.4	0.4	29.2	0.3	0.5	25.6
Central clearing counterparties	0.2	0.4	31.9	0.4	0.3	30.8
Other	0.3	0.7	7.2	0.0	0.3	3.5
Total 31 December 2018	1.1	1.6	81.3	0.8	1.2	71.4

	Protection bought			Protection sold		
USD billion	PRV	NRV	Notional values	PRV	NRV	Notional values
Broker-dealers	0.2	0.2	16.6	0.2	0.1	12.6
Banks	0.3	0.8	38.0	0.6	0.4	32.4
Central clearing counterparties	0.1	1.1	42.5	1.0	0.1	41.6
Other	0.3	0.9	7.4	0.3	0.2	5.0
Total 31 December 2017	0.8	3.0	104.5	2.1	0.9	91.7

UBS AG's CDS trades are documented using industry standard forms of documentation or equivalent terms documented in a bespoke agreement. The agreements that govern CDS generally do not contain recourse provisions that would enable UBS AG to recover from third parties any amounts paid out by UBS AG.

The types of credit events that would require UBS AG to perform under a CDS contract are subject to agreement between the parties at the time of the transaction. However, nearly all transactions are traded with reference to credit events that are applicable under certain market conventions based on the type of reference entity to which the transaction relates. Applicable credit events according to market conventions include bankruptcy, failure to pay, restructuring, obligation acceleration and repudiation / moratorium.

Contingent collateral features of derivative liabilities

Certain derivative instruments contain contingent collateral or termination features triggered upon a downgrade of the published credit ratings of UBS AG in the normal course of business. Based on UBS AG's credit ratings as of 31 December 2018, USD 0.0 billion, USD 0.3 billion and USD 1.0 billion would have been required for contractual obligations related to OTC derivatives in the event of a one-notch, two-notch and three-notch reduction in long-term credit ratings, respectively. In evaluating UBS AG's liquidity requirements, UBS AG considers additional collateral or termination payments that would be required in the event of a reduction in UBS AG 's long-term credit ratings, and a corresponding reduction in UBS AG's short-term ratings.

Note 12 Financial assets and liabilities at fair value held for trading

USD million	31.12.18	31.12.17
Financial assets at fair value held for trading[1]		
Government bills / bonds	11,161	13,186
Corporate and municipal bonds	6,908	8,886
Loans	3,566	3,946
Investment fund units	9,716	9,881
Asset-backed securities	392	377
Equity instruments	72,771	81,624
Financial assets for unit-linked investment contracts[2]		11,609
Total financial assets at fair value held for trading	104,513	129,509
Financial liabilities at fair value held for trading[1]		
Government bills / bonds	2,839	5,549
Corporate and municipal bonds	3,530	3,629
Investment fund units	689	841
Equity instruments	21,892	21,230
Other	0	2
Total financial liabilities at fair value held for trading	28,949	31,251

1 Refer to Note 24c for more information on product type and fair value hierarchy categorization. 2 Financial assets for unit-linked investment contracts were reclassified from Financial assets at fair value held for trading to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information.

Note 13 Financial assets at fair value not held for trading

USD million	31.12.18	31.12.17
Financial assets at fair value not held for trading[1]		
Government bills / bonds	22,493	26,633
Corporate and municipal bonds	17,236	22,022
Financial assets for unit-linked investment contracts[2]	21,446	
Loans	8,132	10,405
Securities financing transactions[3]	9,937	298
Auction rate securities[4]	1,664	
Investment fund units	407	210
Equity instruments[5]	702	
Other	369	501
Total financial assets at fair value not held for trading	82,387	60,070

1 Refer to Note 24c for more information on product type and fair value hierarchy categorization. 2 Financial assets for unit-linked investment contracts were reclassified from Financial assets at fair value held for trading to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 3 Certain reverse repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 4 Auction rate securities have been reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 5 Upon adoption of IFRS 9 on 1 January 2018, equity instruments that were formerly classified as available for sale under IAS 39 were reclassified to Financial assets at fair value not held for trading. Refer to Note 1c for more information.

Note 14 Financial assets measured at fair value through other comprehensive income

USD million	31.12.18	31.12.17
Financial assets measured at fair value through other comprehensive income[1]		
Debt instruments		
Government and government agencies	6,463	7,181
of which: USA	*6,101*	*6,739*
Banks	149	307
Corporates and other	54	842
Total debt instruments	6,667	8,330
Equity instruments[2]		560
Total financial assets measured at fair value through other comprehensive income	6,667	8,889
Unrealized gains – before tax	4	221
Unrealized (losses) – before tax	(146)	(108)
Net unrealized gains / (losses) – before tax	(143)	114
Net unrealized gains / (losses) – after tax	(104)	6

1 Refer to Note 24c for more information on product type and fair value hierarchy categorization. Refer also to Note 10 and Note 23 for more information on expected credit loss measurement. 2 Comparative-period information includes equity instruments that were formerly classified as available for sale under IAS 39 and have been reclassified to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information.

Note 15 Property, equipment and software

At historical cost less accumulated depreciation

USD million	Own-used properties	Leasehold improvements	IT hardware and communications equipment	Internally generated software	Purchased software	Other machines and equipment	Projects in progress	2018	2017
Historical cost									
Balance at the beginning of the year	7,268	3,309	1,044	3,967	279	836	1,001	17,705	17,789
Additions[1]	16	18	81	30	27	19	1,294	1,484	1,540
Disposals / write-offs[2]	(14)	(385)	(111)	(94)	(11)	(111)	0	(726)	(2,293)
Reclassifications	(177)	135	0	1,009	11	32	(1,205)	(195)[7]	(47)
Foreign currency translation	(61)	(36)	(12)	(33)	(3)	(7)	(15)	(166)	716
Balance at the end of the year	7,031	3,042	1,002	4,879	303	769	1,076	18,102	17,705
Accumulated depreciation									
Balance at the beginning of the year	4,171	2,045	747	1,763	188	599	0	9,514	9,638
Depreciation	139	189	105	456	35	61	0	984	930
Impairment[3]	0	2	1	63	0	0	0	67	15
Disposals / write-offs[2]	(14)	(380)	(111)	(107)	(11)	(108)	0	(730)	(1,445)
Reclassifications	(129)	4	1	0	0	0	0	(124)[7]	(7)
Foreign currency translation	(36)	(19)	(10)	(14)	(3)	(6)	0	(88)	383
Balance at the end of the year	4,132	1,842	733	2,161	209	546	0	9,623	9,514
Net book value									
Net book value at the beginning of the year	3,097	1,264	297	2,203	91	238	1,001	8,191	8,152
Net book value at the end of the year[4,5]	**2,900**	**1,200**	**269**	**2,718**	**93**	**223**	**1,076[6]**	**8,479**	**8,191**

1 Includes USD 7 million additional assets related to acquisition of businesses in 2018. 2 Includes write-offs of fully depreciated assets. 3 Impairment charges recorded in 2018 relate to assets for which the recoverable amount was determined based on value-in-use. Recoverable amounts for these impaired assets were not material as of 31 December 2018. 4 As of 31 December 2018, contractual commitments to purchase property in the future amounted to approximately USD 0.3 billion (31 December 2017: approximately USD 0.3 billion). 5 Includes USD 22 million related to leased assets, mainly Own-used properties. 6 Consists of USD 739 million related to Internally generated software, USD 279 million related to Own-used properties and USD 58 million related to Leasehold improvements. 7 Reflects reclassifications to Properties held for sale (USD 70 million on a net basis) of properties sold in 2018.

Note 16 Goodwill and intangible assets

Introduction

UBS AG performs an impairment test on its goodwill assets on an annual basis or when indicators of impairment exist.

For annual tests prior to 2018, UBS AG considered the segments, as they were reported in Note 2a, as separate cash-generating units, as that was the level at which the performance of investments (and the related goodwill) was reviewed and assessed by management. Following the integration in 2018 of the Wealth Management and Wealth Management Americas business divisions into the single reportable segment Global Wealth Management, UBS AG continued to separately monitor the goodwill previously allocated to the two former business divisions. As a consequence, for the purposes of goodwill impairment testing, the former Wealth Management and Wealth Management Americas business divisions are considered to be two separate cash-generating units, referred to in this Note as Global Wealth Management Americas[1] and Global Wealth Management ex Americas. The remaining goodwill balances continued to be tested at the level of Asset Management and the Investment Bank, respectively, consistent with the 2017 annual test.

The impairment test is performed for each cash-generating unit to which goodwill is allocated by comparing the recoverable amount, based on its value-in-use, with the carrying amount of the respective cash-generating unit. An impairment charge is recognized if the carrying amount exceeds the recoverable amount. As of 31 December 2018, total goodwill recognized on the balance sheet was USD 6.4 billion, of which USD 3.7 billion was carried by the Global Wealth Management Americas cash-generating unit, USD 1.2 billion was carried by the Global Wealth Management ex Americas cash-generating unit, USD 1.4 billion was carried by Asset Management and USD 0.1 billion was carried by the Investment Bank. Based on the impairment testing methodology described below, UBS AG concluded that the goodwill balances as of 31 December 2018 allocated to these cash-generating units are not impaired.

Methodology for goodwill impairment testing

The recoverable amounts are determined using a discounted cash flow model, which has been adapted to use inputs that consider features of the banking business and its regulatory environment. The recoverable amount of a cash-generating unit is the sum of the discounted earnings attributable to shareholders from the first three forecast years and the terminal value, adjusted for the effect of the capital assumed to be needed over the next three years and to support growth beyond this period. The terminal value, which covers all periods beyond the third year, is calculated on the basis of the forecast of third-year profit, the discount rate and the long-term growth rate, as well as the implied perpetual capital growth.

The carrying amount for each cash-generating unit is determined by reference to the Group's equity attribution framework. Within this framework, which is described in the "Capital management" section of this report, we attribute equity to the businesses on the basis of their risk-weighted assets and leverage ratio denominator, their goodwill and intangible assets as well as equity directly associated with activity that Corporate Center – Group Asset and Liability Management manages centrally on behalf of the business divisions. The framework is primarily used for purposes of measuring the performance of the businesses and includes certain management assumptions. Attributed equity equals the capital that a cash-generating unit requires to conduct its business and is currently considered a reasonable approximation of the carrying value of the cash-generating units. The attributed equity methodology is aligned with the business planning process, the inputs from which are used in calculating the recoverable amounts of the respective cash-generating unit.

→ **Refer to the "Capital management" section of this report for more information on the equity attribution framework**

Assumptions

Valuation parameters used within UBS AG's impairment test model are linked to external market information, where applicable. The model used to determine the recoverable amount is most sensitive to changes in the forecast earnings available to shareholders in years one to three, to changes in the discount rates and to changes in the long-term growth rate. The applied long-term growth rate is based on long-term economic growth rates for different regions worldwide. Earnings available to shareholders are estimated on the basis of forecast results, which are part of the business plan approved by the Board of Directors.

The discount rates are determined by applying a capital asset pricing model-based approach, as well as considering quantitative and qualitative inputs from both internal and external analysts and the view of management.

1 Now including the Global Wealth Management business in Latin America, previously part of the Wealth Management business division.

Note 16 Goodwill and intangible assets (continued)

Following the change of UBS AG's presentation currency to US dollars, UBS AG has refined its assumptions on long-term growth rates and discount rates. The discount rates now take into account regional differences in risk free rates, at the level of individual cash-generating units. Consistently, long-term growth rates are determined based on nominal or real GDP growth rate forecasts, depending on region. The change to nominal GDP forecasts for some regions results in higher long-term growth rates and thus higher recoverable amounts for all cash-generating units. The change did not affect the outcome of the impairment test.

Key assumptions used to determine the recoverable amounts of each cash-generating unit are tested for sensitivity by applying a reasonably possible change to those assumptions. Forecast earnings available to shareholders were changed by 20%, the discount rates were changed by 1.5 percentage points and the long-term growth rates were changed by 0.75 percentage points. Under all scenarios, reasonably possible changes in key assumptions did not result in an impairment of goodwill or intangible assets that would be material to the consolidated financial statements or to the reported financial performance of any of the business divisions. As of 31 December 2018, the Investment Bank's recoverable amount exceeded its carrying amount by USD 2.5 billion. A reasonably possible change in the forecast earnings or the discount rate used in the calculation of the Investment Bank's recoverable amount would cause its carrying amount to exceed the recoverable amount. More specifically, if forecast earnings used in the calculation of the Investment Bank's recoverable amount were reduced by approximately 12% or the discount rate increased by 1.4 percentage points, then the Investment Bank's recoverable amount would be equal to its carrying amount.

If the estimated earnings and other assumptions in future periods deviate from the current outlook, the value of goodwill may become impaired in the future, giving rise to losses in the income statement. Recognition of any impairment of goodwill would reduce IFRS equity and net profit. It would not affect cash flows and, as goodwill is required to be deducted from capital under the Basel III capital framework, no effect would be expected on UBS AG's capital ratios.

Discount and growth rates

	Discount rates		Growth rates	
In %	31.12.18	31.12.17	31.12.18	31.12.17
Global Wealth Management Americas	9.5	9.0	3.2	2.4
Global Wealth Management ex Americas	8.5	9.0	3.0	1.7
Asset Management	9.0	9.0	2.7	2.4
Investment Bank	11.0	11.0	3.5	2.4

	Goodwill	Intangible assets				
USD million	Total	Infrastructure[1]	Customer relationships, contractual rights and other	Total	2018	2017
Historical cost						
Balance at the beginning of the year	6,342	760	786	1,546	7,888	7,687
Additions	161		109	109	270	105
Disposals	(40)		(5)	(5)	(45)	(63)
Write-offs			(7)	(7)	(7)	0
Foreign currency translation	(71)		(17)	(17)	(88)	160
Balance at the end of the year	6,392	760	865	1,625	8,018	7,888
Accumulated amortization and impairment						
Balance at the beginning of the year		653	672	1,325	1,325	1,245
Amortization		38	24	62	62	71
Impairment[2]			4	4	4	0
Disposals			(1)	(1)	(1)	(16)
Write-offs			(7)	(7)	(7)	0
Foreign currency translation			(12)	(12)	(12)	26
Balance at the end of the year		691	679	1,371	1,371	1,325
Net book value at the end of the year	6,392	68	186	254	6,647	6,563

1 Consists of the branch network intangible asset recognized in connection with the acquisition of PaineWebber Group, Inc. 2 Impairment charges recorded in 2018 and 2017 relate to assets for which the recoverable amount was determined based on value-in-use (recoverable amount of the impaired assets: USD 18 million for 2018 and USD 0 million for 2017).

Note 16 Goodwill and intangible assets (continued)

The table below presents goodwill and intangible assets by cash-generating unit for the year ended 31 December 2018.

USD million	Global Wealth Management Americas	Global Wealth Management ex Americas	Investment Bank	Asset Management	Corporate Center – Services	Total
Goodwill						
Balance at the beginning of the year	3,742	1,148	35	1,418		6,342
Additions		79	82	0		161
Disposals	(13)		0	(27)		(40)
Foreign currency translation	(8)	(21)	(5)	(37)		(71)
Balance at the end of the year	3,721	1,206	112	1,354		6,392
Intangible assets						
Balance at the beginning of the year	164	25	29	1	2	221
Additions / transfers	22	86			1	109
Disposals	0		(4)	0		(4)
Amortization	(44)	(6)	(10)	(1)	(2)	(62)
Impairment	0	0	(3)	0		(4)
Foreign currency translation	(4)	0	(1)	0	0	(5)
Balance at the end of the year	138	104	11	0	1	254

The table below presents estimated aggregated amortization expenses for intangible assets.

USD million	Intangible assets
Estimated, aggregated amortization expenses for:	
2019	65
2020	52
2021	21
2022	21
2023	18
Thereafter	76
Not amortized due to indefinite useful life	2
Total	254

Note 17 Other assets

a) Other financial assets measured at amortized cost

USD million	31.12.18	31.12.17
Prime brokerage receivables[1]		19,573
Debt securities	13,562	9,403
of which: government bills / bonds	*8,778*	*6,632*
Loans to financial advisors[2]	3,291	3,199
Fee- and commission-related receivables	1,644	1,794
Finance lease receivables	1,091	1,086
Settlement and clearing accounts	1,039	734
Accrued interest income	700	593
Other	1,310	1,508
Total other financial assets measured at amortized cost	22,637	37,890

1 Upon adoption of IFRS 9 on 1 January 2018, prime brokerage receivables and payables were reclassified from amortized cost to fair value through profit or loss. Brokerage receivables and payables are now presented separately on the balance sheet. Refer to Note 1c for more information. 2 Related to financial advisors in the US and Canada.

b) Other non-financial assets

USD million	31.12.18	31.12.17
Precious metals and other physical commodities	4,298	4,681
Bail deposit[1]	1,312	1,371
Prepaid expenses	731	840
VAT and other tax receivables	282	299
Properties and other non-current assets held for sale	82	98
Other	358	258
Total other non-financial assets	7,062	7,548

1 Refer to item 1 in Note 21b for more information.

Note 18 Amounts due to banks, customer deposits, and funding from UBS Group AG and its subsidiaries

a) Amounts due to banks and customer deposits

USD million	31.12.18	31.12.17
Amounts due to banks	10,962	7,728
Customer deposits	421,986	423,058
of which: demand deposits	*182,642*	*195,264*
of which: retail savings / deposits	*165,790*	*166,013*
of which: time deposits	*54,998*	*50,291*
of which: fiduciary deposits	*18,556*	*11,490*
Total amounts due to banks and customer deposits	432,948	430,786

b) Funding from UBS Group AG and its subsidiaries

USD million	31.12.18	31.12.17
Senior unsecured debt that contributes to total loss-absorbing capacity (TLAC)	29,988	27,937
Senior unsecured debt other than TLAC	1,031	2,736
High-trigger loss-absorbing additional tier 1 capital instruments	7,805	3,761
Low-trigger loss-absorbing additional tier 1 capital instruments	2,378	1,213
Total[1]	41,202	35,648

1 All balances in 2018 are against UBS Group Funding (Switzerland) AG as counterparty. Prior year balances were against both UBS Group AG and UBS Group Funding (Switzerland) AG as counterparties. In May 2018, UBS substituted UBS Group AG where it was the issuer of outstanding AT1 capital instruments with UBS Group Funding (Switzerland) AG.

Note 19 Debt issued designated at fair value

USD million	31.12.18	31.12.17
Issued debt instruments		
Equity-linked[1]	34,392	35,046
Rates-linked	12,073	5,961
Credit-linked	3,282	3,013
Fixed-rate	5,099	4,022
Other	2,185	2,740
Total debt issued designated at fair value	57,031	50,782
of which: issued by UBS AG with original maturity greater than one year[2]	*40,289*	*38,230*
of which: life-to-date own credit (gain) / loss	*(270)*	*163*

1 Includes investment fund unit-linked instruments issued. 2 Issued by the legal entity UBS AG. Based on original contractual maturity without considering any early redemption features. More than 99% of the balance as of 31 December 2018 was unsecured (31 December 2017: more than 99% of the balance was unsecured).

As of 31 December 2018 and 31 December 2017, the contractual redemption amount at maturity of debt issued designated at fair value through profit or loss was not materially different from the carrying value.

The table below shows the residual contractual maturity of the carrying value of debt issued designated at fair value, split between fixed-rate and floating-rate instruments based on the contractual terms, and does not consider any early redemption features. Interest rate ranges for future interest payments related to debt issued designated at fair value have not been included in the table below as a majority of the debt instruments issued are structured products, and therefore the future interest payments are highly dependent upon the embedded derivative and prevailing market conditions at the point in time that each interest payment is made.

→ **Refer to Note 27 for maturity information on an undiscounted cash flow basis**

Contractual maturity of carrying value

USD million	2019	2020	2021	2022	2023	2024–2028	Thereafter	Total 31.12.18	Total 31.12.17
UBS AG[1]									
Non-subordinated debt									
Fixed-rate	3,904	1,509	1,178	447	274	802	3,694	11,807	9,664
Floating-rate	19,921	4,669	3,947	1,610	2,758	5,544	5,113	43,562	39,063
Subtotal	23,825	6,178	5,126	2,057	3,031	6,346	8,807	55,370	48,728
Other subsidiaries[2]									
Non-subordinated debt									
Fixed-rate	805	25	66	7	0	321	6	1,230	1,437
Floating-rate	13	119	83	6	26	0	183	431	617
Subtotal	818	145	149	13	26	321	189	1,662	2,054
Total	24,643	6,322	5,275	2,070	3,058	6,668	8,996	57,031	50,782

1 Comprises instruments issued by the legal entity UBS AG. 2 Comprises instruments issued by subsidiaries of UBS AG.

Note 20 Debt issued measured at amortized cost

USD million	31.12.18	31.12.17
Certificates of deposit	7,980	24,447
Commercial paper	27,514	24,140
Other short-term debt	3,531	3,683
Short-term debt[1]	39,025	52,270
Senior unsecured debt	32,135	33,102
of which: issued by UBS AG with original maturity greater than one year[2]	*32,133*	*33,090*
Covered bonds	3,947	4,218
Subordinated debt	7,511	9,217
of which: low-trigger loss-absorbing tier 2 capital instruments	*6,808*	*8,500*
of which: non-Basel III-compliant tier 2 capital instruments	*703*	*718*
Debt issued through the Swiss central mortgage institutions	8,569	8,561
Other long-term debt	58	89
of which: issued by UBS AG with original maturity greater than one year[2]	*52*	*68*
Long-term debt[3]	52,220	55,187
Total debt issued measured at amortized cost[4]	91,245	107,458

1 Debt with an original maturity of less than one year. 2 Issued by the legal entity UBS AG. Based on original contractual maturity without considering any early redemption features. As of 31 December 2018, 100% of the balance was unsecured (31 December 2017: 100% of the balance was unsecured). 3 Debt with an original maturity greater than or equal to one year. The classification of debt issued into short-term and long-term does not consider any early redemption features. 4 Net of bifurcated embedded derivatives, the fair value of which was not material for the periods presented.

UBS AG uses interest rate and foreign exchange derivatives to manage the risks inherent in certain debt instruments held at amortized cost. In certain cases, UBS AG applies hedge accounting for interest rate risk as discussed in Note 1a item 3j and Note 28. As a result of applying hedge accounting, the life-to-date adjustment to the carrying value of debt issued was an increase of USD 282 million as of 31 December 2018 and an increase of USD 493 million as of 31 December 2017, reflecting changes in fair value due to interest rate movements.

Note 20 Debt issued measured at amortized cost (continued)

Subordinated debt consists of unsecured debt obligations that are contractually subordinated in right of payment to all other present and future non-subordinated obligations of the respective issuing entity. All of the subordinated debt instruments outstanding as of 31 December 2018 pay a fixed rate of interest.

The table below shows the residual contractual maturity of the carrying value of debt issued, split between fixed-rate and floating-rate based on the contractual terms, and does not consider any early redemption features. The effects from interest rate swaps, which are used to hedge various fixed-rate debt issuances by changing the repricing characteristics into those similar to floating-rate debt, are also not considered in the table below.

→ **Refer to Note 27 for maturity information on an undiscounted cash flow basis**

Contractual maturity of carrying value

USD million, except where indicated	2019	2020	2021	2022	2023	2024–2028	Thereafter	Total 31.12.18	Total 31.12.17
UBS AG[1]									
Non-subordinated debt									
Fixed-rate	21,287	9,397	4,078	2,726	1,635	0	985	40,108	57,694
Floating-rate	25,450	6,482	1,964	0	369	0	770	35,035	31,930
Subordinated debt									
Fixed-rate	0	0	0	1,945	0	5,566	0	7,511	9,217
Subtotal	46,737	15,879	6,042	4,671	2,005	5,566	1,755	82,654	98,841
Other subsidiaries[2]									
Non-subordinated debt									
Fixed-rate	765	734	1,016	845	937	3,647	646	8,590	8,616
Floating-rate	0	0	0	0	0	0	0	0	1
Subtotal	765	734	1,016	845	937	3,647	646	8,591	8,617
Total	47,502	16,613	7,057	5,517	2,942	9,213	2,402	91,245	107,458

1 Comprises debt issued by the legal entity UBS AG. 2 Comprises debt issued by subsidiaries of UBS AG.

Note 21 Provisions and contingent liabilities

a) Provisions

The table below presents an overview of total provisions recognized under both IAS 37 and IFRS 9.

USD million	31.12.18	31.12.17
Provisions recognized under IAS 37	3,341	3,130
Provisions for off-balance sheet financial instruments[1]	79	34
Provisions for other credit lines[1]	37	0
Total provisions	3,457	3,164

1 Provisions recognized in 2018 relate to exposures in the scope of the expected credit loss requirements of IFRS 9. Refer to Notes 1c, 10 and 23 for more information. 2017 provisions for off-balance sheet financial instruments relate to loss provisions recognized under IAS 37.

The following table presents additional information for provisions recognized under IAS 37.

USD million	Operational risks[1]	Litigation, regulatory and similar matters[2]	Restructuring	Real estate	Employee benefits[5]	Other	Total 2018	Total 2017
Balance at the beginning of the year	44	2,508	302	128	57	91	3,130	4,043
Additions from acquired companies	0	0	0	2	0	0	2	7
Increase in provisions recognized in the income statement	25	905	142	4	8	34	1,117	956
Release of provisions recognized in the income statement	(5)	(220)	(54)	(1)	(7)	(14)	(301)	(338)
Provisions used in conformity with designated purpose	(20)	(350)	(173)	(11)	0	(33)	(587)	(1,598)
Capitalized reinstatement costs	0	0	0	0	0	0	0	4
Reclassifications	0	0	0	0	0	0	0	(35)
Foreign currency translation / unwind of discount	0	(16)	(1)	0	(2)	(1)	(20)	91
Balance at the end of the year	45	2,827	215[3]	122[4]	55	77	3,341	3,130

1 Comprises provisions for losses resulting from security risks and transaction processing risks. 2 Comprises provisions for losses resulting from legal, liability and compliance risks. 3 Primarily consists of personnel-related restructuring provisions of USD 40 million as of 31 December 2018 (31 December 2017: USD 56 million) and provisions for onerous lease contracts of USD 170 million as of 31 December 2018 (31 December 2017: USD 241 million). 4 Consists of reinstatement costs for leasehold improvements of USD 83 million as of 31 December 2018 (31 December 2017: USD 89 million) and provisions for onerous lease contracts of USD 40 million as of 31 December 2018 (31 December 2017: USD 40 million). 5 Includes provisions for sabbatical and anniversary awards.

Restructuring provisions primarily relate to onerous lease contracts and severance payments. The use of onerous lease provisions is driven by the maturities of the underlying lease contracts. Severance-related provisions are used within a short time period, usually within six months, but potential changes in amount may be triggered when natural staff attrition reduces the number of people affected by a restructuring and therefore the estimated costs.

Information on provisions and contingent liabilities in respect of litigation, regulatory and similar matters, as a class, is included in Note 21b. There are no material contingent liabilities associated with the other classes of provisions.

b) Litigation, regulatory and similar matters

UBS operates in a legal and regulatory environment that exposes it to significant litigation and similar risks arising from disputes and regulatory proceedings. As a result, UBS (which for purposes of this Note may refer to UBS AG and / or one or more of its subsidiaries, as applicable) is involved in various disputes and legal proceedings, including litigation, arbitration, and regulatory and criminal investigations.

Such matters are subject to many uncertainties, and the outcome and the timing of resolution are often difficult to predict, particularly in the earlier stages of a case. There are also situations where UBS may enter into a settlement agreement. This may occur in order to avoid the expense, management distraction or reputational implications of continuing to contest liability, even for those matters for which UBS believes it should be exonerated. The uncertainties inherent in all such matters affect the amount and timing of any potential outflows for both matters with respect to which provisions have been established and other contingent liabilities. UBS makes provisions for such matters brought against it when, in the opinion of management after seeking legal advice, it is more likely than not that UBS has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required, and the amount can be reliably estimated. Where these factors are otherwise satisfied, a provision may be established for claims that have not yet been asserted against UBS, but are nevertheless expected to be, based on UBS's experience with similar asserted claims. If any of those conditions is not met, such matters result in contingent liabilities. If the amount of an obligation cannot be reliably estimated, a liability exists that is not recognized even if an outflow of resources is probable. Accordingly, no provision is established even if the potential outflow of resources with respect to such matters could be significant. Developments relating to a matter that occur after the relevant reporting period, but prior to the issuance of financial statements, which affect management's assessment of the provision for such matter (because, for example, the developments provide evidence of conditions that existed at the end of the reporting period), are adjusting events after the reporting period under IAS 10 and must be recognized in the financial statements for the reporting period.

Note 21 Provisions and contingent liabilities (continued)

Specific litigation, regulatory and other matters are described below, including all such matters that management considers to be material and others that management believes to be of significance due to potential financial, reputational and other effects. The amount of damages claimed, the size of a transaction or other information is provided where available and appropriate in order to assist users in considering the magnitude of potential exposures.

In the case of certain matters below, we state that we have established a provision, and for the other matters, we make no such statement. When we make this statement and we expect disclosure of the amount of a provision to prejudice seriously our position with other parties in the matter because it would reveal what UBS believes to be the probable and reliably estimable outflow, we do not disclose that amount. In some cases we are subject to confidentiality obligations that preclude such disclosure. With respect to the matters for which we do not state whether we have established a provision, either (a) we have not established a provision, in which case the matter is treated as a contingent liability under the applicable accounting standard; or (b) we have established a provision but expect disclosure of that fact to prejudice seriously our position with other parties in the matter because it would reveal the fact that UBS believes an outflow of resources to be probable and reliably estimable.

With respect to certain litigation, regulatory and similar matters for which we have established provisions, we are able to estimate the expected timing of outflows. However, the aggregate amount of the expected outflows for those matters for which we are able to estimate expected timing is immaterial relative to our current and expected levels of liquidity over the relevant time periods.

The aggregate amount provisioned for litigation, regulatory and similar matters as a class is disclosed in the "Provisions" table in Note 21a above. It is not practicable to provide an aggregate estimate of liability for our litigation, regulatory and similar matters as a class of contingent liabilities. Doing so would require us to provide speculative legal assessments as to claims and proceedings that involve unique fact patterns or novel legal theories, that have not yet been initiated or are at early stages of adjudication, or as to which alleged damages have not been quantified by the claimants. Although we therefore cannot provide a numerical estimate of the future losses that could arise from litigation, regulatory and similar matters, we believe that the aggregate amount of possible future losses from this class that are more than remote substantially exceeds the level of current provisions.

Litigation, regulatory and similar matters may also result in non-monetary penalties and consequences. For example, the non-prosecution agreement described in item 5 of this Note, which we entered into with the US Department of Justice (DOJ), Criminal Division, Fraud Section in connection with our submissions of benchmark interest rates, including, among others, the British Bankers' Association London Interbank Offered Rate (LIBOR), was terminated by the DOJ based on its determination that we had committed a US crime in relation to foreign exchange matters. As a consequence, UBS AG pleaded guilty to one count of wire fraud for conduct in the LIBOR matter, paid a fine and is subject to probation through January 2020.

A guilty plea to, or conviction of, a crime could have material consequences for UBS. Resolution of regulatory proceedings may require us to obtain waivers of regulatory disqualifications to maintain certain operations, may entitle regulatory authorities to limit, suspend or terminate licenses and regulatory authorizations, and may permit financial market utilities to limit, suspend or terminate our participation in such utilities. Failure to obtain such waivers, or any limitation, suspension or termination of licenses, authorizations or participations, could have material consequences for UBS.

The risk of loss associated with litigation, regulatory and similar matters is a component of operational risk for purposes of determining our capital requirements. Information concerning our capital requirements and the calculation of operational risk for this purpose is included in the "Capital management" section of this report.

Provisions for litigation, regulatory and similar matters by business division and Corporate Center unit[1]

USD million	Global Wealth Manage-ment	Personal & Corporate Banking	Asset Manage-ment	Investment Bank	CC – Services	CC – Group ALM	CC – Non-core and Legacy Portfolio	Total 2018	Total 2017
Balance at the beginning of the year	569	81	1	354	246	0	1,256	2,508	3,204
Increase in provisions recognized in the income statement	659	41	0	83	32	0	90	905	703
Release of provisions recognized in the income statement	(33)	(1)	(1)	(146)	(38)	0	0	(220)	(214)
Provisions used in conformity with designated purpose	(184)	(3)	0	(18)	(1)	0	(143)	(350)	(1,251)
Foreign currency translation / unwind of discount	(9)	(1)	0	(3)	(2)	0	(1)	(16)	66
Balance at the end of the year	1,003	117	0	269	236	0	1,202	2,827	2,508

1 Provisions, if any, for the matters described in this Note are recorded in Global Wealth Management (items 3 and 4), the Investment Bank (item 7) and Corporate Center – Non-core and Legacy Portfolio (item 2). Provisions, if any, for the matters described in items 1 and 6 of this Note are allocated between Global Wealth Management and Personal & Corporate Banking, and provisions, if any, for the matters described in this Note in item 5 are allocated between the Investment Bank, Corporate Center – Services and Corporate Center – Non-core and Legacy Portfolio.

1. Inquiries regarding cross-border wealth management businesses

Tax and regulatory authorities in a number of countries have made inquiries, served requests for information or examined employees located in their respective jurisdictions relating to the cross-border wealth management services provided by UBS and other financial institutions. It is possible that the implementation of automatic tax information exchange and other measures relating to cross-border provision of financial services could give rise to further inquiries in the future. UBS has received disclosure orders from the Swiss Federal Tax Administration (FTA) to transfer information based on requests for international administrative assistance in tax matters. The requests concern a number of UBS account numbers pertaining to current and former clients and are based on data from 2006 and 2008. UBS has taken steps to inform affected clients about the administrative assistance proceedings and their procedural rights, including the right to appeal. The requests are based on data received from the German authorities, who seized certain data related to UBS clients booked in Switzerland during their investigations and have apparently shared this data with other European countries. UBS expects additional countries to file similar requests.

The Swiss Federal Administrative Court ruled in 2016 that, in the administrative assistance proceedings related to a French bulk request, UBS has the right to appeal all final FTA client data disclosure orders. On 30 July 2018, the Swiss Federal Administrative Court granted UBS's appeal by holding the French administrative assistance request inadmissible. The FTA filed a final appeal with the Swiss Federal Supreme Court.

Since 2013, UBS (France) S.A., UBS AG and certain former employees have been under investigation in France for alleged complicity in having illicitly solicited clients on French territory, regarding the laundering of proceeds of tax fraud, and of banking and financial solicitation by unauthorized persons. In connection with this investigation, the investigating judges ordered UBS AG to provide bail ("caution") of EUR 1.1 billion and UBS (France) S.A. to post bail of EUR 40 million, which was reduced on appeal to EUR 10 million.

In March 2017, the investigating judges issued a trial order ("ordonnance de renvoi") that charges UBS AG and UBS (France) S.A., as well as various former employees, with illicit solicitation of clients on French territory and with participation in the laundering of the proceeds of tax fraud. The trial on these charges in the court of first instance took place from 8 October 2018 until 15 November 2018. During the trial, the prosecutors and the French State requested penalties and civil monetary damages in connection with the money laundering charges aggregating EUR 5.3 billion. On 20 February 2019, the court announced a verdict finding UBS AG guilty of illicitly soliciting clients on French territory and laundering the proceeds of tax fraud, and UBS France S.A. guilty of aiding and abetting unlawful solicitation and laundering the proceeds of tax fraud. The court imposed fines aggregating EUR 3.7 billion on UBS AG and UBS France S.A. and awarded EUR 800 million of civil damages to the French state. UBS has appealed the decision. Under French law, the judgment is suspended while the appeal is pending. The Court of Appeal will retry the case de novo as to both the law and the facts and the fines and penalties can be greater than or less than those imposed by the court of first instance. A subsequent appeal to the Cour de Cassation, France's highest court, is possible with respect to questions of law.

UBS believes that based on both the law and the facts the judgment of the court of first instance should be reversed. UBS believes it followed its obligations under Swiss and French law as well as the European Savings Tax Directive. Even assuming liability, which it contests, UBS believes the penalties and damage amounts awarded greatly exceeded the amounts that could be supported by the law and the facts. In particular, UBS believes the court incorrectly based the penalty on the total regularized assets rather than on any unpaid taxes on those assets for which a fraud has been characterized, and further incorrectly awarded damages based on costs that were not proven by the civil party. Notwithstanding that UBS believes it should be acquitted, our balance sheet at 31 December 2018 reflected provisions with respect to this matter in an amount of USD 516 million. The wide range of possible outcomes in this case contributes to a high degree of estimation uncertainty. The provision reflected on our balance sheet at 31 December 2018 reflects our best estimate of possible financial implications, although it is reasonably possible that actual penalties and civil damages could exceed the provision amount.

In 2016, UBS was notified by the Belgian investigating judge that it is under formal investigation ("inculpé") regarding the laundering of proceeds of tax fraud, of banking and financial solicitation by unauthorized persons, and of serious tax fraud. In 2018, tax authorities and a prosecutor's office in Italy asserted that UBS is potentially liable for taxes and penalties as a result of its activities in Italy from 2012 to 2017.

UBS has, and reportedly numerous other financial institutions have, received inquiries from authorities concerning accounts relating to the Fédération Internationale de Football Association (FIFA) and other constituent soccer associations and related persons and entities. UBS is cooperating with authorities in these inquiries.

Our balance sheet at 31 December 2018 reflected provisions with respect to matters described in this item 1 in an amount that UBS believes to be appropriate under the applicable accounting standard. As in the case of other matters for which we have established provisions, the future outflow of resources in respect of such matters cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provision that we have recognized.

Note 21 Provisions and contingent liabilities (continued)

2. Claims related to sales of residential mortgage-backed securities and mortgages

From 2002 through 2007, prior to the crisis in the US residential loan market, UBS was a substantial issuer and underwriter of US residential mortgage-backed securities (RMBS) and was a purchaser and seller of US residential mortgages. A subsidiary of UBS, UBS Real Estate Securities Inc. (UBS RESI), acquired pools of residential mortgage loans from originators and (through an affiliate) deposited them into securitization trusts. In this manner, from 2004 through 2007, UBS RESI sponsored approximately USD 80 billion in RMBS, based on the original principal balances of the securities issued.

UBS RESI also sold pools of loans acquired from originators to third-party purchasers. These whole loan sales during the period 2004 through 2007 totaled approximately USD 19 billion in original principal balance.

UBS was not a significant originator of US residential loans. A branch of UBS originated approximately USD 1.5 billion in US residential mortgage loans during the period in which it was active from 2006 to 2008, and securitized less than half of these loans.

Lawsuits related to contractual representations and warranties concerning mortgages and RMBS: When UBS acted as an RMBS sponsor or mortgage seller, it generally made certain representations relating to the characteristics of the underlying loans. In the event of a material breach of these representations, UBS was in certain circumstances contractually obligated to repurchase the loans to which the representations related or to indemnify certain parties against losses. In 2012, certain RMBS trusts filed an action in the US District Court for the Southern District of New York seeking to enforce UBS RESI's obligation to repurchase loans in the collateral pools for three RMBS securitizations issued and underwritten by UBS with an original principal balance of approximately USD 2 billion. In July 2018, UBS and the trustee entered into an agreement under which UBS will pay USD 850 million to resolve this matter. A significant portion of this amount will be borne by other parties that indemnified UBS. The settlement remains subject to court approval and proceedings to determine how the settlement funds will be distributed to RMBS holders. After giving effect to this settlement, UBS considers claims relating to substantially all loan repurchase demands to be resolved, and believes that new demands to repurchase US residential mortgage loans are time-barred under a decision rendered by the New York Court of Appeals.

Mortgage-related regulatory matters: Since 2014, the US Attorney's Office for the Eastern District of New York has sought information from UBS pursuant to the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA), related to UBS's RMBS business from 2005 through 2007. On 8 November 2018, the DOJ filed a civil complaint in the District Court for the Eastern District of New York. The complaint seeks unspecified civil monetary penalties under FIRREA related to UBS's issuance, underwriting and sale of 40 RMBS transactions in 2006 and 2007. UBS moved to dismiss the civil complaint on 6 February 2019.

Our balance sheet at 31 December 2018 reflected a provision with respect to matters described in this item 2 in an amount that UBS believes to be appropriate under the applicable accounting standard. As in the case of other matters for which we have established provisions, the future outflow of resources in respect of this matter cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provision that we have recognized.

3. Madoff

In relation to the Bernard L. Madoff Investment Securities LLC (BMIS) investment fraud, UBS AG, UBS (Luxembourg) S.A. (now UBS Europe SE, Luxembourg branch) and certain other UBS subsidiaries have been subject to inquiries by a number of regulators, including the Swiss Financial Market Supervisory Authority (FINMA) and the Luxembourg Commission de Surveillance du Secteur Financier. Those inquiries concerned two third-party funds established under Luxembourg law, substantially all assets of which were with BMIS, as well as certain funds established in offshore jurisdictions with either direct or indirect exposure to BMIS. These funds faced severe losses, and the Luxembourg funds are in liquidation. The documentation establishing both funds identifies UBS entities in various roles, including custodian, administrator, manager, distributor and promoter, and indicates that UBS employees serve as board members.

In 2009 and 2010, the liquidators of the two Luxembourg funds filed claims against UBS entities, non-UBS entities and certain individuals, including current and former UBS employees, seeking amounts totaling approximately EUR 2.1 billion, which includes amounts that the funds may be held liable to pay the trustee for the liquidation of BMIS (BMIS Trustee).

A large number of alleged beneficiaries have filed claims against UBS entities (and non-UBS entities) for purported losses relating to the Madoff fraud. The majority of these cases have been filed in Luxembourg, where decisions that the claims in eight test cases were inadmissible have been affirmed by the Luxembourg Court of Appeal, and the Luxembourg Supreme Court has dismissed a further appeal in one of the test cases.

In the US, the BMIS Trustee filed claims against UBS entities, among others, in relation to the two Luxembourg funds and one of the offshore funds. The total amount claimed against all defendants in these actions was not less than USD 2 billion. In 2014, the US Supreme Court rejected the BMIS Trustee's motion for leave to appeal decisions dismissing all claims except those for the recovery of fraudulent conveyances and preference payments. In 2016, the bankruptcy court dismissed the remaining claims against the UBS entities. The BMIS Trustee appealed.

4. Puerto Rico

Declines since 2013 in the market prices of Puerto Rico municipal bonds and of closed-end funds (funds) that are sole-managed and co-managed by UBS Trust Company of Puerto Rico and distributed by UBS Financial Services Incorporated of Puerto Rico (UBS PR) have led to multiple regulatory inquiries, as well as customer complaints and arbitrations with aggregate claimed damages of USD 2.9 billion, of which claims with aggregate claimed damages of USD 1.9 billion have been resolved through settlements, arbitration or withdrawal of the claim. The claims have been filed by clients in Puerto Rico who own the funds or Puerto Rico municipal bonds and / or who used their UBS account assets as collateral for UBS non-purpose loans; customer complaint and arbitration allegations include fraud, misrepresentation and unsuitability of the funds and of the loans.

A shareholder derivative action was filed in 2014 against various UBS entities and current and certain former directors of the funds, alleging hundreds of millions of US dollars in losses in the funds. In 2015, defendants' motion to dismiss was denied and a request for permission to appeal that ruling was denied by the Puerto Rico Supreme Court. In 2014, a federal class action complaint also was filed against various UBS entities, certain members of UBS PR senior management and the co-manager of certain of the funds, seeking damages for investor losses in the funds during the period from May 2008 through May 2014. Following denial of the plaintiffs' motion for class certification, the case was dismissed in October 2018.

In 2014 and 2015, UBS entered into settlements with the Office of the Commissioner of Financial Institutions for the Commonwealth of Puerto Rico, the US Securities and Exchange Commission (SEC) and the Financial Industry Regulatory Authority in relation to their examinations of UBS's operations. We also understand that the DOJ is conducting a criminal inquiry into the impermissible reinvestment of non-purpose loan proceeds. We are cooperating with the authorities in this inquiry.

In 2011, a purported derivative action was filed on behalf of the Employee Retirement System of the Commonwealth of Puerto Rico (System) against over 40 defendants, including UBS PR, which was named in connection with its underwriting and consulting services. Plaintiffs alleged that defendants violated their purported fiduciary duties and contractual obligations in connection with the issuance and underwriting of USD 3 billion of bonds by the System in 2008 and sought damages of over USD 800 million. In 2016, the court granted the System's request to join the action as a plaintiff, but ordered that plaintiffs must file an amended complaint. In 2017, the court denied defendants' motion to dismiss the amended complaint.

Beginning in 2015, and continuing through 2017, certain agencies and public corporations of the Commonwealth of Puerto Rico (Commonwealth) defaulted on certain interest payments on Puerto Rico bonds. In 2016, US federal legislation created an oversight board with power to oversee Puerto Rico's finances and to restructure its debt. The oversight board has imposed a stay on the exercise of creditors' rights. In 2017, the oversight board placed certain of the bonds into a bankruptcy-like proceeding under the supervision of a Federal District Judge. These events, further defaults, any further legislative action to create a legal means of restructuring Commonwealth obligations or to impose additional oversight on the Commonwealth's finances, or any restructuring of the Commonwealth's obligations, may increase the number of claims against UBS concerning Puerto Rico securities, as well as potential damages sought.

Our balance sheet at 31 December 2018 reflected provisions with respect to matters described in this item 4 in amounts that UBS believes to be appropriate under the applicable accounting standard. As in the case of other matters for which we have established provisions, the future outflow of resources in respect of such matters cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provisions that we have recognized.

Note 21 Provisions and contingent liabilities (continued)

5. Foreign exchange, LIBOR and benchmark rates, and other trading practices

Foreign exchange-related regulatory matters: Beginning in 2013 numerous authorities commenced investigations concerning possible manipulation of foreign exchange markets and precious metals prices. In 2014 and 2015, UBS reached settlements with the UK Financial Conduct Authority (FCA) and the US Commodity Futures Trading Commission (CFTC) in connection with their foreign exchange investigations, FINMA issued an order concluding its formal proceedings relating to UBS's foreign exchange and precious metals businesses, and the Board of Governors of the Federal Reserve System (Federal Reserve Board) and the Connecticut Department of Banking issued a Cease and Desist Order and assessed monetary penalties against UBS AG. In 2015, the DOJ's Criminal Division terminated the 2012 non-prosecution agreement with UBS AG related to UBS's submissions of benchmark interest rates and UBS AG pleaded guilty to one count of wire fraud, paid a fine and is subject to probation through January 2020. UBS has ongoing obligations to cooperate with these authorities and to undertake certain remediation measures. UBS has also been granted conditional immunity by the Antitrust Division of the DOJ and by authorities in other jurisdictions in connection with potential competition law violations relating to foreign exchange and precious metals businesses. Investigations relating to foreign exchange and precious metals matters by certain authorities remain ongoing notwithstanding these resolutions.

Foreign exchange-related civil litigation: Putative class actions have been filed since 2013 in US federal courts and in other jurisdictions against UBS and other banks on behalf of putative classes of persons who engaged in foreign currency transactions with any of the defendant banks. UBS has entered into a settlement agreement that would resolve US federal court class actions relating to foreign currency transactions with the defendant banks and persons who transacted in foreign exchange futures contracts and options on such futures. The settlement agreement, which has been approved by the court, requires, among other things, that UBS pay an aggregate of USD 141 million and provide cooperation to the settlement classes. Certain class members have excluded themselves from that settlement and have filed individual actions in US and English courts against UBS and other banks alleging violations of US and European competition laws and unjust enrichment.

In 2015, a putative class action was filed in federal court against UBS and numerous other banks on behalf of persons and businesses in the US who directly purchased foreign currency from the defendants and alleged co-conspirators for their own end use. In March 2017, the court granted UBS's (and the other banks') motions to dismiss the complaint. The plaintiffs filed an amended complaint in August 2017. In March 2018, the court denied the defendants' motions to dismiss the amended complaint.

In 2016, a putative class action was filed in federal court in New York against UBS and numerous other banks on behalf of persons and entities who had indirectly purchased foreign exchange instruments from a defendant or co-conspirator in the US. The complaint asserts claims under federal and state antitrust laws. In response to defendants' motion to dismiss, plaintiffs agreed to dismiss their complaint.

In 2017, two new putative class actions were filed in federal court in New York against UBS and numerous other banks on behalf of different proposed classes of indirect purchasers of currency, and a consolidated complaint was filed in June 2017. In March 2018, the court dismissed the consolidated complaint. In October 2018, the court granted plaintiffs' motion seeking leave to file an amended complaint.

Putative class actions were also filed against UBS and other banks in federal court in New York and other jurisdictions on behalf of putative classes of persons who had bought or sold physical precious metals and various precious metal products and derivatives. The complaints in these lawsuits asserted claims under the antitrust laws and the Commodity Exchange Act (CEA), and other claims. In July 2018, the court in New York granted UBS's motions to dismiss amended complaints in the putative class actions relating to gold and silver. In 2017, the court granted UBS's motion to dismiss the platinum and palladium action. Plaintiffs in the platinum and palladium action subsequently filed an amended complaint that did not allege claims against UBS.

LIBOR and other benchmark-related regulatory matters: Numerous government agencies, including the SEC, the CFTC, the DOJ, the FCA, the UK Serious Fraud Office, the Monetary Authority of Singapore, the Hong Kong Monetary Authority, FINMA, various state attorneys general in the US and competition authorities in various jurisdictions, have conducted or are continuing to conduct investigations regarding potential improper attempts by UBS, among others, to manipulate LIBOR and other benchmark rates at certain times. In 2012, UBS reached settlements relating to benchmark interest rates with the UK Financial Services Authority, the CFTC and the Criminal Division of the DOJ, and FINMA issued an order in its proceedings with respect to UBS relating to benchmark interest rates. In addition, UBS entered into settlements with the European Commission and with the Swiss Competition Commission (WEKO) regarding its investigation of bid-ask spreads in connection with Swiss franc interest rate derivatives. UBS has ongoing obligations to cooperate with the authorities with whom we have reached resolutions and to undertake certain remediation measures with respect to benchmark interest rate submissions. In December 2018, UBS entered into a settlement agreement with the New York and other state attorneys general under which it will pay USD 68 million to resolve claims by the attorneys general related to LIBOR. UBS has been granted conditional leniency or conditional immunity from authorities in certain jurisdictions, including the Antitrust Division of the DOJ and WEKO, in connection with potential antitrust or competition law violations related to certain rates. However, UBS has not reached a final settlement with WEKO as the Secretariat of WEKO has asserted that UBS does not qualify for full immunity.

LIBOR and other benchmark-related civil litigation: A number of putative class actions and other actions are pending in the federal courts in New York against UBS and numerous other banks on behalf of parties who transacted in certain interest rate benchmark-based derivatives. Also pending in the US and in other jurisdictions are a number of other actions asserting losses related to various products whose interest rates were linked to LIBOR and other benchmarks, including adjustable rate mortgages, preferred and debt securities, bonds pledged as collateral, loans, depository accounts, investments and other interest-bearing instruments. The complaints allege manipulation, through various means, of certain benchmark interest rates, including USD LIBOR, Euroyen TIBOR, Yen LIBOR, EURIBOR, CHF LIBOR, GBP LIBOR, USD and SGD SIBOR and SOR and Australian BBSW, and seek unspecified compensatory and other damages under varying legal theories.

USD LIBOR class and individual actions in the US: In 2013 and 2015, the district court in the USD LIBOR actions dismissed, in whole or in part, certain plaintiffs' antitrust claims, federal racketeering claims, CEA claims, and state common law claims. Although the Second Circuit vacated the district court's judgment dismissing antitrust claims, the district court again dismissed antitrust claims against UBS in 2016. Certain plaintiffs have appealed that decision to the Second Circuit. Separately, in 2018, the Second Circuit reversed in part the district court's 2015 decision dismissing certain individual plaintiffs' claims. UBS entered into an agreement in 2016 with representatives of a class of bondholders to settle their USD LIBOR class action. The agreement has received preliminary court approval and remains subject to final approval. In 2018, the district court denied plaintiffs' motions for class certification in the USD class actions for claims pending against UBS, and plaintiffs sought permission to appeal that ruling to the Second Circuit. In July 2018, the Second Circuit denied the petition to appeal of the class of USD lenders and in November 2018 denied the petition of the USD exchange class. In January 2019, a putative class action was filed in the District Court for the Southern District of New York against UBS and numerous other banks on behalf of US residents who, from 1 February 2014 through the present, directly transacted with a defendant bank in USD LIBOR instruments. The complaint asserts antitrust and unjust enrichment claims.

Other benchmark class actions in the US: In 2014, the court in one of the Euroyen TIBOR lawsuits dismissed certain of the plaintiff's claims, including a federal antitrust claim, for lack of standing. In 2015, this court dismissed the plaintiff's federal racketeering claims on the same basis and affirmed its previous dismissal of the plaintiff's antitrust claims against UBS. In 2017, this court also dismissed the other Yen LIBOR / Euroyen TIBOR action in its entirety on standing grounds, as did the court in the CHF LIBOR action. Also in 2017, the courts in the EURIBOR lawsuit dismissed the cases as to UBS and certain other foreign defendants for lack of personal jurisdiction. In October 2018, the court in the SIBOR / SOR action dismissed all but one of plaintiffs' claims against UBS. Plaintiffs in the CHF LIBOR and SIBOR / SOR actions have filed amended complaints following the dismissals, which UBS and other defendants have moved to dismiss. In November 2018, the court in the BBSW lawsuit dismissed the case as to UBS and certain other foreign defendants for lack of personal jurisdiction. Following that dismissal, plaintiffs in the BBSW action moved in January 2019 to file an amended complaint seeking to re-name UBS and certain other banks as defendants. UBS and other defendants also moved to dismiss the GBP LIBOR action in December 2016, but that motion was denied as to UBS in December 2018. UBS moved for reconsideration of that decision in January 2019.

Government bonds: Putative class actions have been filed since 2015 in US federal courts against UBS and other banks on behalf of persons who participated in markets for US Treasury securities since 2007. A consolidated complaint was filed in 2017 in the US District Court for the Southern District of New York alleging that the banks colluded with respect to, and manipulated prices of, US Treasury securities sold at auction and in the secondary market and asserting claims under the antitrust laws and for unjust enrichment. Defendants' motions to dismiss the consolidated complaint are pending.

Note 21 Provisions and contingent liabilities (continued)

UBS and reportedly other banks are responding to investigations and requests for information from various authorities regarding US Treasury securities and other government bond trading practices. As a result of its review to date, UBS has taken appropriate action.

With respect to additional matters and jurisdictions not encompassed by the settlements and orders referred to above, our balance sheet at 31 December 2018 reflected a provision in an amount that UBS believes to be appropriate under the applicable accounting standard. As in the case of other matters for which we have established provisions, the future outflow of resources in respect of such matters cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provision that we have recognized.

6. Swiss retrocessions

The Federal Supreme Court of Switzerland ruled in 2012, in a test case against UBS, that distribution fees paid to a firm for distributing third-party and intra-group investment funds and structured products must be disclosed and surrendered to clients who have entered into a discretionary mandate agreement with the firm, absent a valid waiver.

FINMA has issued a supervisory note to all Swiss banks in response to the Supreme Court decision. UBS has met the FINMA requirements and has notified all potentially affected clients.

The Supreme Court decision has resulted, and may continue to result, in a number of client requests for UBS to disclose and potentially surrender retrocessions. Client requests are assessed on a case-by-case basis. Considerations taken into account when assessing these cases include, among other things, the existence of a discretionary mandate and whether or not the client documentation contained a valid waiver with respect to distribution fees.

Our balance sheet at 31 December 2018 reflected a provision with respect to matters described in this item 6 in an amount that UBS believes to be appropriate under the applicable accounting standard. The ultimate exposure will depend on client requests and the resolution thereof, factors that are difficult to predict and assess. Hence, as in the case of other matters for which we have established provisions, the future outflow of resources in respect of such matters cannot be determined with certainty based on currently available information and accordingly may ultimately prove to be substantially greater (or may be less) than the provision that we have recognized.

7. Investigation of UBS's role in initial public offerings in Hong Kong

The Hong Kong Securities and Futures Commission (SFC) has been conducting investigations into UBS's role as a sponsor of certain initial public offerings listed on the Hong Kong Stock Exchange. The SFC has previously indicated that it intended to take enforcement action against UBS and certain employees in relation to certain of these offerings. In March 2018, the SFC issued a decision notice in relation to one of the offerings under investigation. On 13 March 2019, UBS Securities Hong Kong Limited and UBS AG entered into a settlement agreement with the SFC resolving all of the SFC's pending investigations related to sponsorship of initial public offerings (IPOs) by UBS. The agreement provides for a fine of HKD 375 million (USD 48 million) and the suspension of UBS Securities Hong Kong Limited's ability to act as a sponsor for Hong Kong-listed IPOs for one year.

Note 22 Other liabilities

a) Other financial liabilities measured at amortized cost

USD million	31.12.18	31.12.17
Prime brokerage payables[1]		30,413
Other accrued expenses	1,911	2,160
Accrued interest expenses	1,501	1,572
Settlement and clearing accounts	1,477	1,416
Other	2,688	2,532
Total other financial liabilities measured at amortized cost	7,576	38,092

1 Upon adoption of IFRS 9 on 1 January 2018, prime brokerage receivables and payables were reclassified from amortized cost to fair value through profit or loss. Brokerage receivables and payables are now presented separately on the balance sheet. Refer to Note 1c for more information.

b) Other financial liabilities designated at fair value

USD million	31.12.18	31.12.17
Amounts due under unit-linked investment contracts	21,679	11,821
Securities financing transactions[1]	9,461	384
Over-the-counter debt instruments	2,450	4,428
of which: life-to-date own credit (gain) / loss	*(51)*	*37*
Other	5	9
Total other financial liabilities designated at fair value[2]	33,594	16,643

1 Certain repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 as of 1 January 2018. Refer to Note 1c for more information. 2 As of 31 December 2018 and 31 December 2017, the contractual redemption amount at maturity of other financial liabilities designated at fair value through profit or loss was not materially different from the carrying value.

c) Other non-financial liabilities

USD million	31.12.18	31.12.17
Compensation-related liabilities	4,645	5,036
of which: accrued expenses	*2,400*	*2,433*
of which: other deferred compensation plans	*1,473*	*1,655*
of which: net defined benefit pension and post-employment liabilities[1]	*773*	*948*
Current and deferred tax liabilities[2]	915	866
VAT and other tax payables	403	388
Deferred income	215	153
Other	98	55
Total other non-financial liabilities	6,275	6,499

1 Refer to Note 29 for more information. 2 Refer to Note 8 for more information.

Additional information

Note 23 Expected credit loss measurement

a) Expected credit losses in the period

Total net credit loss expenses amounted to USD 118 million in 2018, reflecting expected credit losses (ECL) of USD 23 million related to stage 1 and 2 positions and net losses of USD 95 million related to credit-impaired (stage 3) positions.

In the Investment Bank and Global Wealth Management, increased stage 1 and 2 ECL provisions recognized over the year primarily relate to loans and credit facilities originated during 2018 and to a lesser extent to changes in credit quality of existing assets. In Personal & Corporate Banking, ECL remained unchanged over the year primarily because increased ECL from new transactions and minor changes in applied credit risk models were offset by ECL net recoveries as a lower proportion of transactions was subject to stage 2 classification.

Stage 3 net losses of USD 95 million were recognized across a number of defaulted positions, mainly in Personal & Corporate Banking (USD 56 million) and to a lesser extent in the Investment Bank (USD 29 million).

b) Changes to ECL models, scenarios, scenario weights and key inputs

Refer to Note 1a and 1c for information on ECL models, scenarios, scenario weights and key inputs applied at transition to IFRS 9 as of 1 January 2018. No changes were applied to the determination of a significant increase in credit risk (SICR) and the ECL measurement period during the year 2018. Apart from updating market data, such as house prices, equity indices and foreign exchange rates, and macroeconomic factors, such as gross domestic product (GDP) and unemployment rates, no significant changes were applied to the models used to calculate ECL during the year 2018.

The four scenarios and the related macroeconomic factors were reviewed in light of the economic and political conditions prevailing at year-end 2018. UBS has determined that the fundamental risk assessment made upon transition to IFRS 9 on 1 January 2018 is still appropriate and that potential developments remain suitably covered by the baseline scenario, which is aligned with the business plan, and the three additional scenarios introduced to capture potential non-linearity of credit losses required under IFRS 9. The key parameters (e.g., the real GDP growth, consumer price inflation, unemployment rate) of each scenario have been updated over the course of the year, but remained materially unchanged from what was applied at transition (refer to Note 1c). The key parameters applied as of 31 December 2018 are summarized in the table on the following page.

The determination of the scenario weights is subject to the process and governance outlined in Note 1a Section 3g. An econometric model is used to provide an input into the scenario weight assessment process giving a first indication of the probability that the GDP forecast used for each scenario would materialize, if historically observed deviations of GDP growth from trend growth were representative. As such historical analyses of GDP development do not include an assessment of the underlying economic or political causes, management positions the model output into the context of current conditions and future expectations and applies judgment in determining the final scenario weights. The reviews during 2018 reflected the increasing probability of a weakening economy in key markets, after a long spell of substantial expansion, and the uncertainties about the influence that several political developments with unforeseeable outcomes may have on future growth. At year-end 2018, management reflected these developments by giving more weight to the mild and severe downside scenarios compared to transition date.

Non-linearity of credit losses in relation to macroeconomic factors is usually most pronounced in portfolios that are most sensitive to interest rates, especially in the areas of mortgage loans to private clients and real estate financing. The mild downside scenario reflects a significant rise of interest rates as a key component and is also particularly relevant for credit risk management purposes.

As noted above, scenario weights are a reflection of risks identified during management's assessment of economic and geopolitical risks and not a specific expectation that a particular narrative with its defined macroeconomic factors (e.g., interest rates) will materialize. Other scenarios for a mild downside with less focus on interest rates would, however, not have been representative of the potential asymmetry of loan losses in a downturn. A more severe recession can be triggered by political factors that cannot be modeled based on observed history; given this consideration, the weight assigned to the severe downside case was based on management's assessment of the geopolitical risks that might affect all of our key markets and portfolios.

ECL scenario	Assigned weights in %	
	31.12.18	1.1.18
Upside	10.0	20.0
Baseline	45.0	42.5
Mild downside	35.0	30.0
Severe downside	10.0	7.5

Note 23 Expected credit loss measurement (continued)

Key parameters	1-year shock Upside	Baseline	Mild downside	Severe downside	3-year cumulative shock Upside	Baseline	Mild downside	Severe downside
Real GDP growth (% change)								
United States	5.5	2.8	(0.5)	(5.2)	9.9	7.0	0.0	(3.6)
Eurozone	4.3	1.8	(0.3)	(10.4)	8.5	4.7	0.7	(13.4)
Switzerland	5.0	2.0	(0.8)	(7.0)	9.4	5.5	(0.1)	(6.9)
Consumer price inflation (% change)								
United States	3.5	2.1	4.9	(1.0)	10.4	5.5	11.1	0.6
Eurozone	2.4	1.6	2.8	(1.1)	8.1	5.3	6.2	(1.4)
Switzerland	1.4	0.9	1.8	(1.8)	7.1	2.8	4.2	(1.2)
Unemployment rate (%, average)								
United States	(1.7)	(0.6)	0.6	3.4	(1.5)	(0.5)	1.8	2.9
Eurozone	(1.0)	(0.5)	0.0	3.2	(1.9)	(0.9)	0.1	3.7
Switzerland	(1.5)	(0.3)	0.6	4.3	(1.4)	0.1	1.6	5.3
Fixed income: 10-year government bonds (bps)								
USD	61.0	3.9	187.5	(160.0)	249.1	5.7	262.5	(135.0)
EUR	40.0	22.0	75.0	(20.0)	146.7	60.7	225.0	(10.0)
CHF	48.0	19.7	187.5	(75.0)	208.0	53.2	262.5	(40.0)
Equity indices (% change)								
S&P 500	14.8	5.8	(20.3)	(50.1)	38.7	15.1	(23.5)	(48.2)
EuroStoxx 50	17.0	6.0	(15.5)	(63.7)	38.4	15.6	(14.7)	(65.9)
SPI	13.9	4.2	(19.0)	(56.2)	37.1	10.4	(24.0)	(56.7)
Swiss real estate (% change)								
Single-Family Homes	4.5	(0.3)	(7.3)	(15.2)	14.1	1.4	(15.8)	(27.0)
Other real estate (% change)								
United States (S&P/Case-Shiller)	10.3	6.9	(2.7)	(16.0)	30.9	17.7	(17.0)	(22.1)
Eurozone (Housing Price Index)	4.9	1.9	(0.2)	(9.5)	15.4	8.2	3.0	(18.3)

c) Development of ECL allowances and provisions

The ECL allowances and provisions recognized in the period are impacted by a variety of factors, such as:
- origination of new instruments during the period;
- effect of passage of time as the ECL on an instrument for the remaining lifetime reduces (all other factors remaining the same);
- credit impairment: increased ECL as default is certain and PD increases to 100%;
- discount unwind within ECL as it is measured on a present value basis;
- derecognition of instruments in the period;
- change in individual asset quality of instruments;
- portfolio effect of updating forward-looking scenarios and the respective weights;
- movements from a "maximum 12-month ECL" to the recognition of "lifetime ECL" (and vice versa) following transfers between the stages 1, 2 and 3 (SICR or credit-impairment status);
- changes in credit risk and / or economic forecasting models or updates to model parameters;
- foreign exchange translations for assets denominated in foreign currencies and other movements.

Note 23 Expected credit loss measurement (continued)

The following table explains the changes in the ECL allowances and provisions for *Loans and advances to customers, Loans to financial advisors* and off-balance sheet financial instruments and other credit lines between the beginning and the end of the period due to the factors listed on the previous page.

	Development of ECL allowances and provisions			
USD million	Total	Stage 1	Stage 2	Stage 3
Balance as of 1 January 2018	(1,117)	(141)	(193)	(783)
ECL movements due to stage transfer (profit or loss neutral)[1]	0	(97)	95	2
ECL movements with profit or loss impact[2]	(104)	66	(83)	(88)
Net movement from new and derecognized transactions[3]	(10)	(44)	15	19
of which: Private clients with mortgages	*(3)*	*(6)*	*4*	*0*
of which: Real estate financing	*(3)*	*(8)*	*5*	*0*
of which: Large corporate clients	*2*	*(6)*	*1*	*8*
of which: SME clients	*(10)*	*(14)*	*4*	*0*
Book quality movements	(89)	112	(87)	(114)
Remeasurements due to stage transfers[4]	(16)	95	(103)	(7)
of which: Private clients with mortgages	*(11)*	*54*	*(63)*	*(1)*
of which: Real estate financing	*5*	*24*	*(19)*	*0*
of which: Large corporate clients	*(1)*	*0*	*(3)*	*1*
of which: SME clients	*1*	*7*	*(7)*	*0*
Remeasurements without stage transfers[5]	(73)	17	16	(106)
of which: Private clients with mortgages	*(9)*	*2*	*(3)*	*(7)*
of which: Real estate financing	*8*	*4*	*12*	*(8)*
of which: Large corporate clients	*(56)*	*(2)*	*(6)*	*(48)*
of which: SME clients	*(55)*	*9*	*6*	*(70)*
Model and methodology changes[6]	(13)	(2)	(11)	0
Other allowance and provision movements	227	10	1	216
Write-offs / recoveries[7]	200	1	0	199
Reclassifications[8]	25	7	3	15
Foreign exchange movements[9]	8	0	0	8
Other	(6)	2	(1)	(6)
Balance as of 31 December 2018	(1,002)	(162)	(180)	(661)

1 Represents ECL allowances and provisions prior to ECL remeasurement due to stage transfer. 2 Includes ECL movements from new and derecognized transactions, book quality changes, model and methodology changes and foreign exchange rates. 3 Represents the increase and decrease in allowances and provisions resulting from financial instruments (including guarantees and facilities) that were newly originated, purchased or renewed and from the final derecognition of loans or facilities on their maturity date or earlier. 4 Represents the remeasurement between 12-month and lifetime ECL due to stage transfers. 5 Represents the change in allowances and provisions related to changes in model inputs or assumptions, including changes in forward-looking macroeconomic conditions, changes in the exposure profile, PD and LGD changes, and unwinding of the time value. 6 Represents the change in the allowances and provisions related to changes in models and methodologies. 7 Represents the decrease in allowances and provisions resulting from write-offs of the ECL allowance against the gross carrying amount when all or part of a financial asset is deemed uncollectible or forgiven. 8 Represents reclassifications to Other assets measured at amortized cost. 9 Represents the change in allowances and provisions related to movements in foreign exchange rates.

d) Maximum exposure to credit risk

The tables on the following pages provide UBS AG's maximum exposure to credit risk for financial instruments subject to ECL and the respective collateral and other credit enhancements mitigating credit risk for these classes of financial instruments.

The maximum exposure to credit risk includes the carrying amounts of financial instruments recognized on the balance sheet subject to credit risk and the notional amounts for off-balance sheet arrangements. Where information is available, collateral is presented at fair value. For other collateral, such as real estate, a reasonable alternative value is used. Credit enhancements, such as credit derivative contracts and guarantees, are included at their notional amounts. Both are capped at the maximum exposure to credit risk for which they serve as security. The "Risk management and control" section of this report describes management's view of credit risk and the related exposures, which can differ in certain respects from the requirements of IFRS.

Maximum exposure to credit risk

	31.12.18								
		Collateral				Credit enhancements			Exposure to credit risk after collateral and credit enhancements
USD billion	Maximum exposure to credit risk	Cash collateral received	Collateralized by securities	Secured by real estate	Other collateral[1]	Netting	Credit derivative contracts	Guarantees	
Financial assets measured at amortized cost on the balance sheet									
Cash and balances at central banks	108.4								108.4
Loans and advances to banks[2]	16.6		0.1						16.6
Receivables from securities financing transactions	95.3		92.5		2.5				0.3
Cash collateral receivables on derivative instruments[3,4]	23.6					14.5			9.1
Loans and advances to customers[5]	321.5	17.7	104.4	167.1	16.2		0.0	1.2	14.8
Other financial assets measured at amortized cost	22.6	0.1	0.4	0.0	1.1				21.0
Total financial assets measured at amortized cost	588.1	17.8	197.4	167.2	19.9	14.5	0.0	1.2	170.2
Financial assets measured at fair value through other comprehensive income – debt	6.7								6.7
Total maximum exposure to credit risk reflected on the balance sheet in scope of ECL	594.8	17.8	197.4	167.2	19.9	14.5	0.0	1.2	176.9
Guarantees[6]	18.1	1.3	2.5	0.1	1.2			2.7	10.2
Loan commitments[6]	31.2	0.4	2.8	1.5	5.7		0.2	0.7	19.8
Forward starting transactions, reverse repurchase and securities borrowing agreements	0.9		0.9						0.0
Committed unconditionally revocable credit lines	38.8	1.1	6.5	4.2	3.9				23.2
Total maximum exposure to credit risk not reflected on the balance sheet, in scope of ECL	89.0	2.8	12.7	5.8	10.8	0.0	0.2	3.4	53.2

Note 23 Expected credit loss measurement (continued)

Maximum exposure to credit risk (continued)

	31.12.17								
		Collateral				Credit enhancements			
USD billion	Maximum exposure to credit risk	Cash collateral received	Collateralized by securities	Secured by real estate	Other collateral[1]	Netting	Credit derivative contracts	Guarantees	Exposure to credit risk after collateral and credit enhancements
Financial assets measured at amortized cost on the balance sheet									
Cash and balances at central banks	90.0								90.0
Loans and advances to banks[2]	14.0	0.0	0.1					0.0	13.9
Receivables from securities financing transactions	92.0		87.2		4.3				0.4
Cash collateral receivables on derivative instruments[3,4]	24.0					12.8			11.3
Loans and advances to customers[5]	329.0	18.3	114.3	164.3	15.2		0.0	1.4	15.5
Other financial assets measured at amortized cost	37.9	0.1	20.0	0.0	1.1				16.7
Total financial assets measured at amortized cost	**586.9**	**18.4**	**221.6**	**164.3**	**20.7**	**12.8**	**0.0**	**1.4**	**147.8**
Financial assets measured at fair value through other comprehensive income – debt	**8.1**								**8.1**
Total maximum exposure to credit risk reflected on the balance sheet in scope of ECL	**595.1**	**18.4**	**221.6**	**164.3**	**20.7**	**12.8**	**0.0**	**1.4**	**155.9**
Guarantees[6]	17.7	1.0	2.1	0.2	1.3			3.1	9.9
Loan commitments[6]	32.1	0.0	2.9	1.1	5.8		0.1	1.2	21.0
Forward starting transactions, reverse repurchase and securities borrowing agreements	13.0		12.8						0.3
Total maximum exposure to credit risk not reflected on the balance sheet, in scope of ECL	**62.8**	**1.1**	**17.8**	**1.2**	**7.1**	**0.0**	**0.1**	**4.3**	**31.2**

1 Includes but is not limited to life insurance contracts, inventory, accounts receivable, mortgage loans, patents and copyrights. 2 Loans and advances to banks include amounts held with third-party banks on behalf of clients. The credit risk associated with these balances may be borne by those clients. 3 Included within Cash collateral receivables on derivative instruments are margin balances due from exchanges or clearing houses. Some of these margin balances reflect amounts transferred on behalf of clients who retain the associated credit risk. 4 The amount shown in the "Netting" column represents the netting potential not recognized on the balance sheet. Refer to Note 25 for more information. 5 Collateral arrangements generally incorporate a range of collateral, including cash, securities, property and other collateral. 6 The amount shown in the "Guarantees" column largely relates to sub-participations. Refer to Note 34 for more information.

Prior-period information is presented under IAS 39 requirements.

e) Financial assets subject to credit risk by rating category

The table below shows the credit quality and the maximum exposure to credit risk based on UBS AG's internal credit rating system and year-end stage classification. With the transition to IFRS 9, the credit risk rating reflects UBS AG's assessment of the probability of default of individual counterparties, prior to substitutions. The amounts presented are gross of impairment allowances.

→ **Refer to the "Risk management and control" section of this report for more details on UBS AG's internal grading system**

Financial assets subject to credit risk by rating category

USD million	31.12.18								
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Credit-impaired (defaulted)	Total gross carrying amount	ECL allowances	Net carrying amount (maximum exposure to credit risk)
Financial assets measured at amortized cost									
Cash and balances at central banks	103,635	4,735	0	0	0	0	108,370	0	108,370
of which: stage 1	*103,635*	*4,735*	*0*	*0*	*0*	*0*	*108,370*	*0*	*108,370*
Loans and advances to banks	829	13,286	1,302	922	307	3	16,649	(8)	16,641
of which: stage 1	*829*	*13,286*	*1,302*	*758*	*268*	*0*	*16,443*	*(4)*	*16,439*
of which: stage 2	*0*	*0*	*0*	*164*	*39*	*0*	*203*	*(1)*	*202*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*3*	*3*	*(3)*	*0*
Receivables from securities financing transactions	29,065	24,653	13,602	26,866	1,165	0	95,351	(2)	95,349
of which: stage 1	*29,065*	*24,653*	*13,602*	*26,866*	*1,165*	*0*	*95,351*	*(2)*	*95,349*
Cash collateral receivables on derivative instruments	5,136	10,044	5,282	3,040	101	0	23,603	0	23,603
of which: stage 1	*5,136*	*10,044*	*5,282*	*3,040*	*101*	*0*	*23,603*	*0*	*23,603*
Loans and advances to customers	3,641	173,454	52,806	74,042	16,014	2,297	322,255	(772)	321,482
of which: stage 1	*3,621*	*172,714*	*49,517*	*62,484*	*11,111*	*0*	*299,448*	*(69)*	*299,379*
of which: stage 2	*20*	*740*	*3,289*	*11,558*	*4,903*	*0*	*20,510*	*(155)*	*20,355*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*2,297*	*2,297*	*(549)*	*1,748*
Other financial assets measured at amortized cost	13,409	682	316	7,525	274	586	22,792	(156)	22,636
of which: stage 1	*13,409*	*682*	*316*	*7,300*	*272*	*0*	*21,979*	*(43)*	*21,936*
of which: stage 2	*0*	*0*	*0*	*225*	*2*	*0*	*227*	*(4)*	*223*
of which: stage 3	*0*	*0*	*0*	*0*	*0*	*586*	*586*	*(109)*	*477*
Total financial assets measured at amortized cost	155,715	226,854	73,308	112,395	17,861	2,886	589,020	(937)	588,081
On-balance sheet financial instruments									
Financial assets measured at FVOCI – debt instruments	3,889	2,702	0	76	0	0	6,667	0	6,667
Total on balance sheet financial instruments	159,604	229,556	73,308	112,471	17,861	2,886	595,687	(937)	594,748

1 Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

Note 23 Expected credit loss measurement (continued)

Off-balance sheet positions subject to expected credit loss by rating category

USD million	31.12.18							
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Credit-impaired (defaulted)	Total carrying amount (maximum exposure to credit risk)	ECL provision
Off-balance sheet financial instruments								
Guarantees	978	6,673	3,859	5,415	1,006	215	18,146	(43)
of which: stage 1	*978*	*6,670*	*3,849*	*5,013*	*811*		*17,321*	*(7)*
of which: stage 2		*3*	*10*	*402*	*195*	*0*	*610*	*(2)*
of which: stage 3	*0*	*0*	*0*	*0*		*215*	*215*	*(34)*
Irrevocable loan commitments	2,088	11,667	6,519	6,480	4,405	53	31,212	(37)
of which: stage 1	*2,088*	*11,667*	*6,519*	*6,297*	*4,020*	*0*	*30,591*	*(32)*
of which: stage 2	*0*	*0*	*0*	*183*	*385*	*0*	*568*	*(5)*
of which: stage 3	*0*	*0*	*0*	*0*		*53*	*53*	*0*
Forward starting reverse repurchase and securities borrowing agreements	25	510	150	254	0	0	939	0
Total off balance sheet financial instruments	3,091	18,850	10,528	12,148	5,411	268	50,296	(80)
Other credit lines								
Committed unconditionally revocable credit lines	776	12,426	5,332	12,140	8,084	93	38,851	(35)
of which: stage 1	*768*	*12,398*	*5,202*	*11,367*	*7,603*		*37,338*	*(19)*
of which: stage 2	*8*	*28*	*130*	*773*	*481*	*0*	*1,420*	*(16)*
of which: stage 3	*0*				*0*	*93*	*93*	
Irrevocable committed prolongation of existing loans	27	1,346	889	901	154	22	3,339	(1)
of which: stage 1	*27*	*1,315*	*680*	*701*	*137*	*0*	*2,860*	*(1)*
of which: stage 2	*0*	*31*	*209*	*200*	*17*	*0*	*457*	*0*
of which: stage 3	*0*	*0*	*0*			*22*	*22*	*0*
Total other credit lines	803	13,772	6,221	13,041	8,238	115	42,190	(36)

1 Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

Note 23 Expected credit loss measurement (continued)

Financial assets subject to credit risk by rating category

USD billion	31.12.17						
	Gross carrying amount per rating category						
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Credit-impaired (defaulted)	Total gross carrying amount
Financial assets measured at amortized cost							
Cash and balances at central banks	89.6	0.5	0.0				90.0
Loans and advances to banks	0.6	10.8	1.4	0.9	0.3		14.1
Receivables from securities financing transactions	24.9	37.3	17.2	10.7	1.8		92.0
Cash collateral receivables on derivative instruments	6.6	10.0	5.7	1.6	0.1		24.0
Loans and advances to customers	3.2	165.9	66.9	71.3	17.9	1.5	326.7
Other financial assets measured at amortized cost	9.4	1.1	8.9	17.1	1.0	0.3	37.8
Total financial assets measured at amortized cost	**134.4**	**225.6**	**100.1**	**101.5**	**21.1**	**1.9**	**584.7**
On-balance sheet financial instruments							
Financial assets measured at FVOCI – debt instruments	**7.0**	**1.0**		**0.1**			**8.1**
Total on-balance sheet financial instruments	**141.4**	**226.6**	**100.1**	**101.6**	**21.1**	**1.9**	**592.8**

1 Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

Off-balance sheet positions subject to expected credit loss by rating category

USD billion	31.12.17						
	Gross carrying amount per rating category						
Rating category[1]	0–1	2–3	4–5	6–8	9–13	Credit-impaired (defaulted)	Total carrying amount (maximum exposure to credit risk)
Off-balance sheet financial instruments							
Guarantees	1.2	8.5	4.2	2.8	0.8	0.2	17.7
Irrevocable loan commitments	2.0	13.5	7.8	5.2	3.6		32.1
Forward starting reverse repurchase and securities borrowing agreements		13.0					13.0
Total off-balance sheet financial instruments	**3.2**	**34.9**	**12.0**	**8.1**	**4.4**	**0.2**	**62.8**

1 Refer to the "Internal UBS rating scale and mapping of external ratings" table in the "Risk management and control" section of this report for more information on rating categories.

Prior-period information is presented under IAS 39 requirements.

Note 23 Expected credit loss measurement (continued)

f) Credit-impaired financial instruments at amortized cost

The credit risk in UBS AG's portfolio is actively managed by taking collateral against exposures and by utilizing credit hedging. Collateral held against the credit-impaired loan exposure (stage 3) mainly consisted of real estate and securities. It is UBS AG's policy to dispose of foreclosed real estate as soon as practicable. The carrying amount of foreclosed property recorded in our balance sheet at the end of 2018 and 2017 amounted to USD 60 million and USD 61 million, respectively. The Bank seeks to liquidate collateral held in the form of financial assets expeditiously and at prices considered fair. This may require us to purchase assets for our own account, where permitted by law, pending orderly liquidation. Financial assets that are credit-impaired and related collateral held in order to mitigate potential losses are shown in the table below.

USD million	31.12.18			
	Gross carrying amount	Allowance for expected credit losses	Net carrying amount	Collateral / credit enhancements
Loans and advances to banks	3	(3)	0	0
Loans and advances to customers	2,297	(549)	1,748	1,654
of which: Private clients with mortgages	*836*	*(39)*	*796*	*796*
of which: Real estate financing	*54*	*(16)*	*38*	*30*
of which: Large corporate clients	*170*	*(82)*	*88*	*79*
of which: SME clients	*888*	*(256)*	*632*	*561*
of which: Lombard	*31*	*(17)*	*14*	*14*
Other financial assets measured at amortized cost	586	(109)	478	12
Total credit-impaired financial assets measured at amortized cost	**2,886[1]**	**(660)[1]**	**2,226**	**1,666**
Guarantees	215	(34)		84
of which: Large corporate clients	*127*	*(6)*		*79*
of which: SME clients	*77*	*(25)*		*5*
Loan commitments	53	0		8
Committed unconditionally revocable credit lines	93	0		9
Irrevocable committed prolongation of existing loans	22	0		0
Total off-balance sheet financial instruments and other credit lines	**383[1]**	**(34)[1]**		**102**

	31.12.17			
USD million	Gross carrying amount	Allowance for expected credit losses	Net carrying amount	Collateral / credit enhancements
Loans and advances to customers	1,104	(672)	432	210
Guarantees and loan commitments	204	(34)		5
Total credit-impaired financial assets	**1,308[2]**	**(706)[2]**	**432**	**215**

1 Upon adoption of IFRS 9 as of 1 January 2018, an instrument is classified as credit-impaired if the counterparty is defaulted, and / or the instrument is purchased or originated credit-impaired and includes credit-impaired exposures for which no loss has occurred or no allowance has been recognized (e.g., because they are expected to be fully recoverable through the collateral held). Refer to Note 1c for more information on the adoption of IFRS 9. 2 December 2017 numbers do not include exposure of USD 0.3 billion presented on the balance sheet as other assets.

Note 23 Expected credit loss measurement (continued)

g) Sensitivity analysis

As outlined in Note 1a, ECL estimates involve significant uncertainties at the time they are made.

ECL model

The models applied to determine point-in-time PD and LGD rely on market and statistical data, which have been found to correlate well with historically observed defaults in sufficiently homogeneous segments. The risk sensitivity of each of our IFRS 9 reporting segments to such factors has been summarized in Note 10.

Emerging new systematic risk factors may not be sufficiently taken into account by existing models and affect their responsiveness to a changing environment. This risk is deemed to be immaterial and monitored through regular model review processes; in particular, it is deemed to be of less importance for the large books of mortgage loans, where risk drivers tend to be stable.

Statistically derived models, which perform well on a reasonably sized and homogeneous portfolio, may show weakness in smaller-sized sub-portfolios, for which other or differently weighted factors may be more relevant criteria. Where risk experts conclude that the output of a general model is not in line with what they would have expected for a specific portfolio segment, and that this would be material for ECL, overlays would be recommended based on management judgment.

ECL estimations for segments where the PD is homogeneous, but the credit exposure is not, may prove to be inaccurate – even though all parameters were accurately predicted – as the actual amount of loss depends on the exposure of the position that defaulted. This observation is less relevant in retail-type portfolios with smaller individual exposures from mortgage loans or financings of SME, but may become important in the large corporate client portfolios in the Investment Bank and Personal & Corporate Banking.

Forward-looking scenarios

Depending on the scenario selection and related macroeconomic assumptions for the risk factors, the components of the relevant weighted average ECL change. This is particularly relevant for interest rates, which can take both directions under a given growth assumption (for example, low growth with high interest rates in a stagflation scenario, versus low growth and falling interest rates in a recession). Management will look for scenario narratives that are expected to address the risks of a credit portfolio, while at the same time meeting the requirements of IFRS 9 to avoid bias.

As forecasting models are complex due to the combination of multiple factors, simple what-if analyses by changing individual parameters do not provide reasonable information on the exposure of segments to changes in the macroeconomy. Portfolio-specific analyses based on their key risk factors would also not be additive as potential compensatory effects in other segments would be ignored. Sensitivities at the UBS AG level can only be meaningfully assessed in the context of coherent scenarios with consistently developed macroeconomic factors.

The table below indicates the potential effect of changing economic conditions on ECL for stage 1 and stage 2 positions by disclosing for each scenario (see Note 23b) and material portfolio the corresponding ECL output. The effect of applying scenarios is not linear across the portfolio, with a significant impact observed in the mortgage loan books as the potential effect of rising interest rates manifests itself in the mild downside scenario, with high unemployment rates combined with a marked correction of house prices contributing to high expected losses in the severe downside scenario.

Potential effect of changing economic conditions

					Scenarios					
	Weighted average		Baseline		Upside		Mild downside		Severe downside	
USD million, unless otherwise indicated	ECL	in % of baseline	ECL	in % of baseline	ECL	in % of baseline	ECL	in % of baseline	ECL	in % of baseline
Segmentation										
Private clients with mortgages	102	275	37	100	29	78	173	468	365	988
Real estate financing	61	150	41	100	32	79	80	198	119	293
Large corporate clients	47	133	35	100	31	89	46	130	108	308
SME clients	34	118	29	100	28	97	39	135	63	216
Other segments	115	122	95	100	83	88	135	142	171	180
Total	**359**	**152**	**237**	**100**	**204**	**86**	**473**	**200**	**826**	**349**

Note 23 Expected credit loss measurement (continued)

The forecasting horizon is limited to three years, with a model-based mean reversion of PD and LGD assumed thereafter. Changes to these timelines may have an effect on ECL; depending on the cycle, a longer or shorter forecasting horizon will lead to different annualized lifetime PD and average LGD estimations. This is currently not deemed to be material for UBS AG as a large share of positions, including mortgages in Switzerland, have a maturity that is within the forecasting horizon.

Scenario weights

ECL is sensitive to changing scenario weights, in particular, if narratives and parameters are selected that are not close to the baseline scenario highlighting the non-linearity of credit losses.

As shown in the table on the previous page, the ECL for stage 1 and stage 2 positions would have been USD 237 million instead of USD 359 million if ECL had been determined solely on the baseline scenario. The weighted average ECL amounts therefore to 152% of the baseline value.

Stage allocation and SICR

The determination of what constitutes an SICR is based on management judgment as explained in Note 1a. Changing the SICR trigger will have a direct effect on ECL as more or fewer positions would be subject to lifetime ECL under any scenario.

Maturity profile

The maturity profile of the assets is an important driver for changes in ECL due to transfers to stage 2. The current maturity profile of most lending books is relatively short; hence a movement to stage 2 may have a limited effect on ECL. A significant portion of our lending to SME is documented under frame credit agreements, which allow for various forms of utilization but are unconditionally cancelable by UBS AG at any time. The relevant maturity for drawings under such agreements with a fixed maturity is the respective term, or maximum 12 months in stage 1. For unused credit lines and all drawings that have no fixed maturity (e.g., current accounts), UBS AG generally applies a 12-month maturity from the reporting date, given the credit review policies, which require either continuous monitoring of key indicators and behavioral patterns for smaller positions or an annual formal review for any other limit. The ECL for these products is sensitive to shortening or extending the maturity assumption.

Note 24 Fair value measurement

This Note provides fair value measurement information for both financial and non-financial instruments and is structured as follows:

a) Valuation principles
b) Valuation governance
c) Fair value hierarchy
d) Valuation adjustments
e) Transfers between Level 1 and Level 2
f) Level 3 instruments: valuation techniques and inputs
g) Level 3 instruments: sensitivity to changes in unobservable input assumptions
h) Level 3 instruments: movements during the period
i) Maximum exposure to credit risk for financial instruments measured at fair value
j) Financial instruments not measured at fair value

Adoption of IFRS 9

Adoption of IFRS 9 on 1 January 2018 resulted in the reclassification of certain financial assets and liabilities from amortized cost to fair value through profit or loss. This included:

– brokerage receivables and payables held in the Investment Bank and Global Wealth Management;
– auction rate securities held in Corporate Center; and
– certain loans held in the Investment Bank.

Some of those financial assets and liabilities are designated as Level 3 in the fair value hierarchy. Refer to the tables and text within this Note for more information.

An immaterial amount of financial assets were reclassified from *Financial assets at fair value held for trading* and *Financial assets at fair value not held for trading* to *Loans and advances to customers* upon adoption of IFRS 9. An immaterial amount of associated loan commitments, which were recognized as derivative liabilities as of 31 December 2017, were also derecognized from the balance sheet. No material fair value gains or losses would have been recognized in the income statement in 2018 had these instruments not been reclassified. Similarly, no material fair value gains or losses would have been recognized in *Other comprehensive income* related to debt instruments that were reclassified from *Financial assets available for sale* to *Other financial assets measured at amortized cost* upon adoption of IFRS 9.

→ **Refer to Note 1c for more information**

a) Valuation principles

Fair value is defined as the price that would be received for the sale of an asset or paid to transfer a liability in an orderly transaction between market participants in the principal market (or most advantageous market, in the absence of a principal market) as of the measurement date. In measuring fair value, the Group uses various valuation approaches and applies a hierarchy for prices and inputs that maximizes the use of observable market data, if available.

All financial and non-financial assets and liabilities measured or disclosed at fair value are categorized into one of three fair value hierarchy levels. In certain cases, the inputs used to measure fair value may fall within different levels of the fair value hierarchy. For disclosure purposes, the level in the hierarchy within which the instrument is classified in its entirety is based on the lowest level input that is significant to the position's fair value measurement:

– Level 1 – quoted prices (unadjusted) in active markets for identical assets and liabilities;
– Level 2 – valuation techniques for which all significant inputs are, or are based on, observable market data; or
– Level 3 – valuation techniques for which significant inputs are not based on observable market data.

Note 24 Fair value measurement (continued)

If available, fair values are determined using quoted prices in active markets for identical assets or liabilities. An active market is one in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing data on an ongoing basis. Assets and liabilities that are quoted and traded in an active market are valued at the currently quoted price multiplied by the number of units of the instrument held.

Where the market for a financial instrument or non-financial asset or liability is not active, fair value is established using a valuation technique, including pricing models. Valuation techniques involve the use of estimates, the extent of which depends on the complexity of the instrument and the availability of market-based data. Valuation adjustments may be made to allow for additional factors, including model, liquidity, credit and funding risks, which are not explicitly captured within the valuation technique, but which would nevertheless be considered by market participants when establishing a price. The limitations inherent in a particular valuation technique are considered in the determination of an asset or liability's classification within the fair value hierarchy.

Many cash instruments and over-the-counter (OTC) derivative contracts have bid and offer prices that can be observed in the marketplace. Bid prices reflect the highest price that a party is willing to pay for an asset. Offer prices represent the lowest price that a party is willing to accept for an asset. In general, long positions are measured at a bid price and short positions at an offer price, reflecting the prices at which the instruments could be transferred under normal market conditions. Offsetting positions in the same financial instrument are marked at the mid-price within the bid-offer spread.

Generally, the unit of account for a financial instrument is the individual instrument, and UBS applies valuation adjustments at an individual instrument level, consistent with that unit of account. However, if certain conditions are met, UBS may estimate the fair value of a portfolio of financial assets and liabilities with substantially similar and offsetting risk exposures on the basis of the net open risks.

For transactions where the valuation technique used to measure fair value requires significant inputs that are not based on observable market data, the financial instrument is initially recognized at the transaction price. This initial recognition amount may differ from the fair value obtained using the valuation technique. Any such difference is deferred and not recognized in the income statement and referred to as deferred day-1 profit or loss.

→ **Refer to Note 24d for more information**

b) Valuation governance

UBS's fair value measurement and model governance framework includes numerous controls and other procedural safeguards that are intended to maximize the quality of fair value measurements reported in the financial statements. New products and valuation techniques must be reviewed and approved by key stakeholders from risk and finance control functions. Responsibility for the ongoing measurement of financial and non-financial instruments at fair value resides with the business divisions. In carrying out their valuation responsibilities, the businesses are required to consider the availability and quality of external market data and to provide justification and rationale for their fair value estimates.

Fair value estimates are validated by risk and finance control functions, which are independent of the business divisions. Independent price verification is performed by Finance through benchmarking the business divisions' fair value estimates with observable market prices and other independent sources. Controls and a governance framework are in place and are intended to ensure the quality of third-party pricing sources where used. For instruments where valuation models are used to determine fair value, independent valuation and model control groups within Finance and Risk Control evaluate UBS's models on a regular basis, including valuation and model input parameters as well as pricing. As a result of the valuation controls employed, valuation adjustments may be made to the business divisions' estimates of fair value to align with independent market data and the relevant accounting standard.

→ **Refer to Note 24d for more information**

Note 24 Fair value measurement (continued)

c) Fair value hierarchy

The table below provides the fair value hierarchy classification of financial and non-financial assets and liabilities measured at fair value. The narrative that follows describes the different product types, valuation techniques used in measuring their fair value, including significant valuation inputs and assumptions used, and the factors determining their classification within the fair value hierarchy.

Determination of fair values from quoted market prices or valuation techniques[1]

	31.12.18				31.12.17			
USD million	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value on a recurring basis								
Financial assets at fair value held for trading	88,455	14,096	1,962	104,513	111,781	15,705	2,023	129,509
of which:								
Government bills / bonds	*9,554*	*1,607*	*0*	*11,161*	*12,244*	*941*	*0*	*13,186*
Corporate and municipal bonds	*558*	*5,699*	*651*	*6,908*	*38*	*8,281*	*566*	*8,886*
Loans	*0*	*2,886*	*680*	*3,566*	*0*	*3,433*	*513*	*3,946*
Investment fund units	*6,074*	*3,200*	*442*	*9,716*	*7,409*	*1,886*	*586*	*9,881*
Asset-backed securities	*0*	*248*	*144*	*392*	*0*	*199*	*178*	*377*
Equity instruments	*72,270*	*455*	*46*	*72,771*	*81,326*	*190*	*108*	*81,624*
Financial assets for unit-linked investment contracts[2]					*10,764*	*774*	*71*	*11,609*
Derivative financial instruments	753	124,035	1,424	126,212	470	119,228	1,589	121,286
of which:								
Interest rate contracts	*0*	*36,658*	*418*	*37,076*	*1*	*45,049*	*138*	*45,188*
Credit derivative contracts	*0*	*1,444*	*476*	*1,920*	*0*	*2,325*	*564*	*2,889*
Foreign exchange contracts	*311*	*53,151*	*30*	*53,492*	*212*	*47,958*	*194*	*48,364*
Equity / index contracts	*3*	*30,905*	*496*	*31,404*	*16*	*22,099*	*693*	*22,807*
Commodity contracts	*0*	*1,768*	*2*	*1,769*	*0*	*1,772*	*0*	*1,772*
Brokerage receivables[3]	0	16,840	0	16,840				
Financial assets at fair value not held for trading[4]	35,458	42,516	4,413	82,387	23,628	34,986	1,456	60,070
of which:								
Government bills / bonds	*17,687*	*4,806*	*0*	*22,493*	*22,632*	*4,000*	*0*	*26,633*
Corporate and municipal bonds	*781*	*16,455*	*0*	*17,236*	*785*	*21,237*	*0*	*22,022*
Financial assets for unit-linked investment contracts[2]	*16,694*	*4,751*	*0*	*21,446*				
Loans	*0*	*6,380*	*1,752*	*8,132*	*0*	*9,627*	*778*	*10,405*
Securities financing transactions[5]	*0*	*9,899*	*39*	*9,937*	*0*	*121*	*177*	*298*
Auction rate securities[3]	*0*	*0*	*1,664*	*1,664*				
Investment fund units	*173*	*125*	*109*	*407*	*210*	*0*	*0*	*210*
Equity instruments[6]	*123*	*62*	*517*	*702*				
Other	*0*	*38*	*331*	*369*	*0*	*0*	*501*	*501*
Financial assets measured at fair value through other comprehensive income on a recurring basis								
Financial assets measured at fair value through other comprehensive income[4]	2,319	4,347	0	6,667	3,078	5,291	521	8,889
of which:								
Government bills / bonds	*2,171*	*69*	*0*	*2,239*	*2,804*	*136*	*0*	*2,940*
Corporate and municipal bonds	*149*	*348*	*0*	*497*	*124*	*1,087*	*9*	*1,220*
Asset-backed securities	*0*	*3,931*	*0*	*3,931*	*0*	*3,980*	*0*	*3,980*
Other[6]	*0*	*0*	*0*	*0*	*150*	*88*	*512*	*749*
Non-financial assets measured at fair value on a recurring basis								
Precious metals and other physical commodities	4,298	0	0	4,298	4,681	0	0	4,681
Non-financial assets measured at fair value on a non-recurring basis								
Other non-financial assets[7]	0	82	0	82	0	55	43	98
Total assets measured at fair value	131,283	201,916	7,800	340,999	143,638	175,266	5,631	324,535

Note 24 Fair value measurement (continued)

Determination of fair values from quoted market prices or valuation techniques (continued)[1]

	31.12.18				31.12.17			
USD million	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Financial liabilities measured at fair value on a recurring basis								
Financial liabilities at fair value held for trading	24,413	4,468	69	28,949	26,710	4,421	120	31,251
of which:								
Government bills / bonds	*2,423*	*416*	*0*	*2,839*	*5,286*	*263*	*0*	*5,549*
Corporate and municipal bonds	*126*	*3,377*	*27*	*3,530*	*51*	*3,542*	*36*	*3,629*
Investment fund units	*551*	*137*	*0*	*689*	*555*	*269*	*16*	*841*
Equity instruments	*21,313*	*537*	*42*	*21,892*	*20,817*	*345*	*68*	*21,230*
Derivative financial instruments	580	122,933	2,210	125,723	409	115,850	2,879	119,138
of which:								
Interest rate contracts	*7*	*32,511*	*226*	*32,743*	*5*	*39,184*	*191*	*39,380*
Credit derivative contracts	*0*	*2,203*	*519*	*2,722*	*0*	*3,278*	*617*	*3,895*
Foreign exchange contracts	*322*	*52,964*	*86*	*53,372*	*218*	*46,319*	*125*	*46,663*
Equity / index contracts	*1*	*33,669*	*1,371*	*35,041*	*43*	*25,445*	*1,945*	*27,433*
Commodity contracts	*0*	*1,487*	*0*	*1,487*	*0*	*1,601*	*1*	*1,602*
Financial liabilities designated at fair value on a recurring basis								
Brokerage payables designated at fair value[3]	0	38,420	0	38,420				
Debt issued designated at fair value	0	46,074	10,957	57,031	0	39,616	11,166	50,782
Other financial liabilities designated at fair value	0	32,569	1,025	33,594	0	14,651	1,991	16,643
of which:								
Amounts due under unit-linked investment contracts	*0*	*21,679*	*0*	*21,679*	*0*	*11,821*	*0*	*11,821*
Securities financing transactions[5]	*0*	*9,461*	*0*	*9,461*	*0*	*382*	*4*	*385*
Over-the-counter debt instruments	*0*	*1,427*	*1,023*	*2,450*	*0*	*2,447*	*1,980*	*4,427*
Non-financial liabilities measured at fair value on a non-recurring basis								
Other non-financial liabilities	0	0	0	0	0	1	0	1
Total liabilities measured at fair value	24,992	244,465	14,260	283,717	27,119	174,539	16,157	217,814

1 Bifurcated embedded derivatives are presented on the same balance sheet lines as their host contracts and are not included in this table. The fair value of these derivatives was not material for the periods presented. 2 Financial assets for unit-linked investment contracts were reclassified from Financial assets at fair value held for trading to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 3 Comparative-period information is not disclosed for financial assets and liabilities that were measured at amortized cost prior to the adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 4 As of 31 December 2018, USD 23 billion of Financial assets at fair value not held for trading and USD 6 billion of Financial assets measured at fair value through other comprehensive income are expected to be recovered or settled after 12 months. As of 31 December 2017, USD 24 billion of Financial assets at fair value not held for trading and USD 7 billion of Financial assets measured at fair value through other comprehensive income were expected to be recovered or settled after 12 months. 5 The increases in Securities financing transactions primarily relate to the reclassification of certain balances from amortized cost to fair value through profit or loss upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 6 Upon adoption of IFRS 9 on 1 January 2018, equity instruments that were formerly classified as available for sale under IAS 39 were reclassified to Financial assets at fair value not held for trading. Refer to Note 1c for more information. 7 Other non-financial assets primarily consist of properties and other non-current assets held for sale, which are measured at the lower of their net carrying amount or fair value less costs to sell.

Valuation techniques

Valuation techniques are used to value positions for which a market price is not available from market sources. This includes certain less liquid debt and equity instruments, certain exchange-traded derivatives and all derivatives transacted in the OTC market. UBS uses widely recognized valuation techniques for determining the fair value of financial and non-financial instruments that are not actively traded and quoted. The most frequently applied valuation techniques include discounted value of expected cash flows, relative value and option pricing methodologies.

Discounted value of expected cash flows is a valuation technique that measures fair value using estimated expected future cash flows from assets or liabilities and then discounts these cash flows using a discount rate or discount margin that reflects the credit and / or funding spreads required by the market for instruments with similar risk and liquidity profiles to produce a present value. When using such valuation techniques, expected future cash flows are estimated using an observed or implied market price for the future cash flows or by using industry standard cash flow projection models. The discount factors within the calculation are generated using industry standard yield curve modeling techniques and models.

Relative value models measure fair value based on the market prices of equivalent or comparable assets or liabilities, making adjustments for differences between the characteristics of the observed instrument and the instrument being valued.

Option pricing models incorporate assumptions regarding the behavior of future price movements of an underlying referenced asset or assets to generate a probability-weighted future expected payoff for the option. The resulting probability-weighted expected payoff is then discounted using discount factors generated from industry standard yield curve modeling techniques and models. The option pricing model may be implemented using a closed-form analytical formula or other mathematical techniques (e.g., binomial tree or Monte Carlo simulation).

Where available, valuation techniques use market-observable assumptions and inputs. If such data is not available, inputs may be derived by reference to similar assets in active markets, from recent prices for comparable transactions or from other observable market data. In such cases, the inputs selected are based on historical experience and practice for similar or analogous instruments, derivation of input levels based on similar products with observable price levels and knowledge of current market conditions and valuation approaches.

For more complex instruments and instruments not traded in an active market, fair values may be estimated using a combination of observed transaction prices, consensus pricing services and relevant quotes. Consideration is given to the nature of the quotes (e.g., indicative or firm) and the relationship of recently evidenced market activity to the prices provided by consensus pricing services. UBS also uses internally developed models, which are typically based on valuation methods and techniques recognized as standard within the industry.

Assumptions and inputs used in valuation techniques include benchmark interest rate curves, credit and funding spreads used in estimating discount rates, bond and equity prices, equity index prices, foreign exchange rates, levels of market volatility and correlation. Refer to Note 24f for more information. The discount curves used by the Group incorporate the funding and credit characteristics of the instruments to which they are applied.

Financial instruments excluding derivatives: product description, valuation and classification in the fair value hierarchy

Government bills and bonds

Product description: government bills and bonds include fixed-rate, floating-rate and inflation-linked bills and bonds issued by sovereign governments.

Valuation: these instruments are generally valued using prices obtained directly from the market. Instruments that cannot be priced directly using active-market data are valued using discounted cash flow valuation techniques that incorporate market data for similar government instruments.

Fair value hierarchy: government bills and bonds are generally traded in active markets with prices that can be obtained directly from these markets, resulting in classification as Level 1, while the remaining positions are classified as Level 2.

Corporate and municipal bonds

Product description: corporate bonds include senior, junior and subordinated debt issued by corporate entities. Municipal bonds are issued by state and local governments. While most instruments are standard fixed- or floating-rate securities, some may have more complex coupon or embedded option features.

Valuation: corporate and municipal bonds are generally valued using prices obtained directly from the market for the security, or similar securities, adjusted for seniority, maturity and liquidity. When prices are not available, instruments are valued using discounted cash flow valuation techniques incorporating the credit spread of the issuer or similar issuers. For convertible bonds where no directly comparable price is available, issuances may be priced using a convertible bond model.

Fair value hierarchy: corporate and municipal bonds are generally classified as Level 1 or Level 2 depending on the depth of trading activity behind price sources. Level 3 instruments have no suitable pricing information available and also cannot be referenced to other securities issued by the same issuer. Therefore, such instruments are measured based on price levels for similar issuers adjusted for relative tenor and issuer quality.

Traded loans and loans designated at fair value

Product description: these instruments include fixed-rate loans, corporate loans, recently originated commercial real estate loans and contingent lending transactions.

Note 24 Fair value measurement (continued)

Valuation: loans are valued directly using market prices that reflect recent transactions or quoted dealer prices, where available. Where no market price data is available, loans are valued by relative value benchmarking using pricing derived from debt instruments in comparable entities or different products in the same entity, or by using a credit default swap valuation technique, which requires inputs for credit spreads, credit recovery rates and interest rates. Recently originated commercial real estate loans are measured using a securitization approach based on rating agency guidelines. The valuation of the contingent lending transactions is dependent on actuarial mortality levels and actuarial life insurance policy lapse rates. Mortality and lapse rate assumptions are based on external actuarial estimations for large homogeneous pools, and contingencies are derived from a range relative to the actuarially expected amount.

Fair value hierarchy: instruments with suitably deep and liquid pricing information are classified as Level 2, while any positions requiring the use of valuation techniques, or for which the price sources have insufficient trading depth, are classified as Level 3.

Investment fund units

Product description: investment fund units are pools of assets, generally equity instruments and bonds, broken down to redeemable units.

Valuation: investment fund units are predominantly exchange-traded, with readily available quoted prices in liquid markets. Where market prices are not available, fair value may be measured using net asset values (NAV), taking into account any restrictions imposed upon redemption.

Fair value hierarchy: listed units are classified as Level 1, provided there is sufficient trading activity to justify active-market classification, while other positions are classified as Level 2. Positions for which NAV are not available or that are not redeemable at the measurement date or shortly thereafter are classified as Level 3.

Asset-backed securities

Product description: asset-backed securities (ABS) include residential mortgage-backed securities (RMBS), commercial mortgage-backed securities (CMBS), collateralized debt obligations (CDO) and other ABS and are instruments generally issued through the process of securitization of underlying interest-bearing assets.

Valuation: for liquid securities, the valuation process will use trade and price data, updated for movements in market levels between the time of trading and the time of valuation. Less liquid instruments are measured using discounted expected cash flows incorporating price data for instruments or indices with similar risk profiles. Inputs to discounted expected cash flow techniques include asset prepayment rates, discount margin or discount yields and asset default and recovery rates.

Fair value hierarchy: CDO, RMBS, CMBS and other ABS are generally classified as Level 2. However, if significant inputs are unobservable, or if market or fundamental data is not available, they are classified as Level 3.

Auction rate securities

Product description: there are two types of auction rate securities (ARS): auction preferred securities (APS) and auction rate certificates (ARC). ARC are issued by municipalities and are used by investors as tax-exempt alternatives to money market instruments. Interest rates for these instruments are reset through a periodic Dutch auction. APS are similar to ARC with the primary difference being that they are issued from closed-end funds.

Valuation: ARS are valued using market prices that reflect recent transactions after applying an adjustment for trade size or quoted dealer prices, where available.

Fair value hierarchy: suitably deep and liquid pricing information is generally not available for ARS securities. As a result, these securities are classified as Level 3.

Equity instruments

Product description: equity instruments include stocks and shares, private equity positions and units held in hedge funds.

Valuation: listed equity instruments are generally valued using prices obtained directly from the market. Unlisted equity holdings, including private equity positions, are initially marked at their transaction price and are revalued when reliable evidence of price movement becomes available or when the position is deemed to be impaired. Fair value for units held in hedge funds is measured based on their published NAV, taking into account any restrictions imposed upon redemption.

Fair value hierarchy: the majority of equity securities are actively traded on public stock exchanges where quoted prices are readily and regularly available, resulting in Level 1 classification. Units held in hedge funds are classified as Level 2, except for positions for which published NAV are not available or that are not redeemable at the measurement date or shortly thereafter, in which case such positions are classified as Level 3.

Financial assets for unit-linked investment contracts

Product description: unit-linked investment contracts allow investors to invest in a pool of assets through issued investment units.

Valuation: the majority of assets are listed on exchanges and fair values are determined using quoted prices.

Fair value hierarchy: most assets are classified as Level 1 if actively traded, or Level 2 if trading is not active. However, instruments for which prices are not readily available are classified as Level 3.

Securities financing transactions

Product description: securities financing transactions include (reverse) repurchase agreements (securities purchased under resale agreements and securities sold under repurchase agreements) that are managed on a fair value basis.

Valuation: These instruments are valued using discounted expected cash flow techniques. The discount rate applied is based on funding curves that are relevant to the collateral eligibility terms for the contract in question.

Fair value hierarchy: Collateral funding curves for these instruments are generally observable and, as a result, these positions are classified as Level 2. Where the collateral terms are non-standard the funding curve may be considered unobservable and classified Level 3.

Brokerage receivables and payables

Product description: brokerage receivables and payables include callable, on-demand balances, including long cash credits, short cash debits, margin debit balances and short sale proceeds.

Valuation: fair value is determined based on the value of the underlying balances.

Fair value hierarchy: due to their on-demand nature, these receivables and payables are designated as Level 2.

Financial liabilities designated at fair value

Product description: debt instruments, primarily comprised of equity-, rates- and credit-linked issued notes, which are held at fair value under the fair value option. These instruments are tailored specifically to the holder's risk or investment appetite with structured coupons or payoffs.

Valuation: the risk management and the valuation approaches for these instruments are closely aligned with the equivalent derivatives business and the underlying risk, and the valuation techniques used for this component are the same as the relevant valuation techniques described below. For example, equity-linked notes should be referenced to equity / index contracts and credit-linked notes should be referenced to credit derivative contacts.

Fair value hierarchy: observability is closely aligned with the equivalent derivatives business and the underlying risk.

→ **Refer to Notes 19 and 22 for information on debt issued designated at fair value and other financial liabilities designated at fair value**

→ **Refer to Note 24d for more information on own credit adjustments related to financial liabilities designated at fair value**

Amounts due under unit-linked investment contracts

Product description: the financial liability represents the amounts due to unit holders.

Valuation: the fair values of investment contract liabilities are determined by reference to the fair value of the corresponding assets.

Fair value hierarchy: the liabilities themselves are not actively traded, but are mainly referenced to instruments that are actively traded and are therefore classified as Level 2.

Derivative instruments: product description, valuation and classification in the fair value hierarchy

The curves used for discounting expected cash flows in the valuation of collateralized derivatives reflect the funding terms associated with the relevant collateral arrangement for the instrument being valued. These collateral arrangements differ across counterparties with respect to the eligible currency and interest terms of the collateral. The majority of collateralized derivatives are measured using a discount curve that is based on funding rates derived from overnight interest in the cheapest eligible currency for the respective counterparty collateral agreement.

Uncollateralized and partially collateralized derivatives are discounted using the LIBOR (or equivalent) curve for the currency of the instrument. As described in Note 24d, the fair value of uncollateralized and partially collateralized derivatives is then adjusted by CVA, DVA and FVA as applicable, to reflect an estimation of the effect of counterparty credit risk, UBS's own credit risk and funding costs and benefits.

Interest rate contracts

Product description: interest rate swap contracts include interest rate swaps, basis swaps, cross-currency swaps, inflation swaps and interest rate forwards, often referred to as forward rate agreements (FRA). Interest rate option contracts include caps and floors, swaptions, swaps with complex payoff profiles and other more complex interest rate options.

Valuation: interest rate swap contracts are valued by estimating future interest cash flows and discounting those cash flows using a rate that reflects the appropriate funding rate for the position being measured. The yield curves used to estimate future index levels and discount rates are generated using market standard yield curve models using interest rates associated with current market activity. The key inputs to the models are interest rate swap rates, FRA rates, short-term interest rate futures prices, basis swap spreads and inflation swap rates. Interest rate option contracts are valued using various market standard option models, using inputs that include interest rate yield curves, inflation curves, volatilities and correlations. The volatility and correlation inputs within the models are implied from market data based on market-observed prices for standard option instruments trading within the market. Option models used to value more exotic products have a number of model parameter inputs that require calibration to enable the exotic model to price standard option instruments to the price levels observed in the market. When the maturity of the interest rate swap or option contract exceeds the term for which standard market quotes are observable for a significant input parameter, the contracts are valued by extrapolation from the last observable point using standard assumptions or by reference to another observable comparable input parameter to represent a suitable proxy for that portion of the term.

Note 24 Fair value measurement (continued)

Fair value hierarchy: the majority of interest rate swaps are classified as Level 2 as the standard market contracts that form the inputs for yield curve models are generally traded in active and observable markets. Options are generally treated as Level 2 as the calibration process enables the model output to be validated to active-market levels. Models calibrated in this way are then used to revalue the portfolio of both standard options and more exotic products. In most cases, there are active and observable markets for the standard market instruments that form the inputs for yield curve models as well as the financial instruments from which volatility and correlation inputs are derived. Exotic options for which appropriate volatility or correlation input levels cannot be implied from observable market data are classified as Level 3. Interest rate swap or option contracts are classified as Level 3 when the term exceeds standard market-observable quotes.

Credit derivative contracts

Product description: a credit derivative is a financial instrument that transfers credit risk related to a single underlying entity, a portfolio of underlying entities or a pool of securitized referenced assets. Credit derivative products include credit default swaps (CDS) on single names, indices and securitized products, plus first to default swaps and certain total return swaps.

Valuation: credit derivative contracts are valued using industry standard models based primarily on market credit spreads, upfront pricing points and implied recovery rates. Where a derivative credit spread is not directly available, it may be derived from the price of the reference cash bond. Asset-backed credit derivatives are valued using a similar valuation technique to the underlying security with an adjustment to reflect the funding differences between cash and synthetic form. Inputs include prepayment rates, default rates, loss severity, discount margin / rate.

Fair value hierarchy classification: single-entity and portfolio credit derivative contracts are classified as Level 2 when credit spreads and recovery rates are determined from actively traded observable market data. Where the underlying reference name(s) are not actively traded and the correlation cannot be directly mapped to actively traded tranche instruments, these contracts are classified as Level 3. Asset-backed credit derivatives follow the characteristics of the underlying security and are therefore distributed across Level 2 and Level 3.

Foreign exchange contracts

Product description: this includes open spot and forward foreign exchange (FX) contracts and OTC FX option contracts. OTC FX option contracts include standard call and put options, options with multiple exercise dates, path-dependent options, options with averaging features, options with discontinuous payoff characteristics, options on a number of underlying FX rates and multi-dimensional FX option contracts, which have a dependency on multiple FX pairs.

Valuation: open spot FX contracts are valued using the FX spot rate observed in the market. Forward FX contracts are valued using the FX spot rate adjusted for forward pricing points observed from standard market-based sources. OTC FX option contracts are valued using market standard option valuation models. The models used for shorter-dated options (i.e., maturities of five years or less) tend to be different than those used for longer-dated options because the models needed for longer-dated OTC FX contracts require additional consideration of interest rate and FX rate interdependency. Inputs to the option valuation models include spot FX rates, FX forward points, FX volatilities, interest rate yield curves, interest rate volatilities and correlations. The inputs for volatility and correlation are implied through the calibration of observed prices for standard option contracts trading within the market. The valuation for multi-dimensional FX options uses a multi-local volatility model, which is calibrated to the observed FX volatilities for all relevant FX pairs.

Fair value hierarchy: the markets for both FX spot and FX forward pricing points are both actively traded and observable and therefore such FX contracts are generally classified as Level 2. A significant proportion of OTC FX option contracts are classified as Level 2 as inputs are derived mostly from standard market contracts traded in active and observable markets. OTC FX option contracts classified as Level 3 include multi-dimensional FX options and long-dated FX exotic option contracts where there is no active market from which to derive volatility or correlation inputs.

Equity / index contracts

Product description: equity / index contracts are equity forward contracts and equity option contracts. Equity option contracts include market standard single or basket stock or index call and put options as well as equity option contracts with more complex features.

Valuation: equity forward contracts have a single stock or index underlying and are valued using market standard models. The key inputs to the models are stock prices, estimated dividend rates and equity funding rates (which are implied from prices of forward contracts observed in the market). Estimated cash flows are then discounted using market standard discounted cash flow models using a rate that reflects the appropriate funding rate for that portion of the portfolio. When no market data is available for the instrument maturity, they are valued by extrapolation of available data, use of historical dividend data, or use of data for a related equity. Equity option contracts are valued using market standard models that estimate the equity forward level as described for equity forward contracts and incorporate inputs for stock volatility and for correlation between stocks within a basket. The probability-weighted expected option payoff generated is then discounted using market standard discounted cash flow models applying a rate that reflects the appropriate funding rate for that portion of the portfolio. When volatility, forward or correlation inputs are not available, they are valued using extrapolation of available data, historical dividend, correlation or volatility data, or the equivalent data for a related equity.

Fair value hierarchy: as inputs are derived mostly from standard market contracts traded in active and observable markets, a significant proportion of equity forward contracts are classified as Level 2. Equity option positions for which inputs are derived from standard market contracts traded in active and observable markets are also classified as Level 2. Level 3 positions are those for which volatility, forward or correlation inputs are not observable.

Commodity contracts

Product description: commodity derivative contracts include forward, swap and option contracts on individual commodities and on commodity indices.

Valuation: commodity forward and swap contracts are measured using market standard models that use market forward levels on standard instruments. Commodity option contracts are measured using market standard option models that estimate the commodity forward level as described for commodity forward and swap contracts, incorporating inputs for the volatility of the underlying index or commodity. For commodity options on baskets of commodities or bespoke commodity indices, the valuation technique also incorporates inputs for the correlation between different commodities or commodity indices.

Fair value hierarchy: individual commodity contracts are typically classified as Level 2 because active forward and volatility market data is available.

→ **Refer to Note 11 for more information on derivative instruments**

d) Valuation adjustments

The output of a valuation technique is always an estimate of a fair value that cannot be measured with complete certainty. As a result, valuations are adjusted, where appropriate and when such factors would be considered by market participants in estimating fair value, to reflect close-out costs, credit exposure, model-driven valuation uncertainty, funding costs and benefits, trading restrictions and other factors. Valuation adjustments are an important component of fair value for assets and liabilities that are measured using valuation techniques. Such adjustments are applied to reflect uncertainties within the fair value measurement process, to adjust for an identified model simplification or to incorporate an aspect of fair value that requires an overall portfolio assessment rather than an evaluation based on an individual instrument level characteristic.

Deferred day-1 profit or loss reserves

For new transactions where the valuation technique used to measure fair value requires significant inputs that are not based on observable market data, the financial instrument is initially recognized at the transaction price. The transaction price may differ from the fair value obtained using a valuation technique, where any such difference is deferred and not initially recognized in the income statement. These day-1 profit or loss reserves are reflected, where appropriate, as valuation adjustments.

Deferred day-1 profit or loss related to financial instruments other than financial assets measured at fair value through other comprehensive income is released into *Other net income from fair value changes on financial instruments* when pricing of equivalent products or the underlying parameters become observable or when the transaction is closed out.

Deferred day-1 profit or loss related to financial assets measured at fair value through other comprehensive income is released into *Other comprehensive income* when pricing of equivalent products or the underlying parameters become observable and is released into *Other income* when the assets are sold.

In the second quarter of 2018, a day-1 profit or loss reserve release of USD 196 million was recognized in the income statement related to long-dated UBS-issued structured notes, which are reported within *Debt issued designated at fair value* on the balance sheet. The day-1 profit or loss reserve release was driven by increased observability of the own credit adjustment (OCA) curve used to value these positions following the issuance of a 30-year senior unsecured bond in the second quarter of 2018.

The table on the next page summarizes the changes in deferred day-1 profit or loss reserves during the respective period.

Note 24 Fair value measurement (continued)

Deferred day-1 profit or loss reserves

USD million	2018	2017	2016
Reserve balance at the beginning of the year	338	365	420
Profit / (loss) deferred on new transactions	341	247	257
(Profit) / loss recognized in the income statement	(417)	(279)	(293)
(Profit) / loss recognized in other comprehensive income			(23)
Foreign currency translation	(6)	6	4
Reserve balance at the end of the year	255	338	365

Own credit

In addition to considering the valuation of the derivative risk component, the valuation of financial liabilities designated at fair value also requires consideration of the funded component and specifically the own credit component of fair value. Own credit risk is reflected in the valuation of UBS's fair value option liabilities where this component is considered relevant for valuation purposes by UBS's counterparties and other market participants. However, own credit risk is not reflected in the valuation of UBS's liabilities that are fully collateralized or for other obligations for which it is established market practice not to include an own credit component.

Changes in the fair value of financial liabilities designated at fair value through profit or loss related to own credit are recognized in *Other comprehensive income* directly within *Retained earnings*. As the Group does not hedge changes in own credit arising on financial liabilities designated at fair value, presenting own credit within *Other comprehensive income* does not create or increase an accounting mismatch in the income statement. The unrealized and any realized own credit recognized in *Other comprehensive income* will not be reclassified to the income statement in future periods.

Own credit is estimated using an OCA curve, which incorporates observable market data, including market-observed secondary prices for UBS senior debt, UBS credit default swap (CDS) spreads and senior debt curves of peers. The table below summarizes the effects of own credit adjustments related to financial liabilities designated at fair value. The change in unrealized own credit consists of changes in fair value that are attributable to the change in UBS's credit spreads, as well as the effect of changes in fair values attributable to factors other than credit spreads, such as redemptions, effects from time decay and changes in interest and other market rates. Realized own credit is recognized when an instrument with an associated unrealized own credit adjustment is repurchased prior to the contractual maturity date. Life-to-date amounts reflect the cumulative unrealized change since initial recognition.

In June 2018, UBS AG issued a 30-year senior unsecured bond as part of its ongoing funding requirements. The market-observable secondary prices for this bond have been incorporated into the OCA curve construction, resulting in a widening of the curve at the long end. An own credit gain of USD 253 million was recognized in *Other comprehensive income* in the second quarter of 2018, mainly reflecting this OCA curve change.

→ **Refer to Note 19 for more information on debt issued designated at fair value**

Own credit adjustments on financial liabilities designated at fair value

	For the year ended		
	Included in Other comprehensive income		
USD million	31.12.18	31.12.17	31.12.16
Recognized during the year:			
Realized gain / (loss)	(3)	22	18
Unrealized gain / (loss)	519	(337)	(152)
Total gain / (loss), before tax	517	(315)	(134)

	As of		
USD million	31.12.18	31.12.17	31.12.16
Recognized on the balance sheet as of the end of the year:			
Unrealized life-to-date gain / (loss)	320	(200)	139

Credit valuation adjustments

In order to measure the fair value of OTC derivative instruments, including funded derivative instruments that are classified as *Financial assets at fair value not held for trading,* credit valuation adjustments (CVA) are necessary to reflect the credit risk of the counterparty inherent in these instruments. This amount represents the estimated fair value of protection required to hedge the counterparty credit risk of such instruments. A CVA is determined for each counterparty, considering all exposures to that counterparty, and is dependent on the expected future value of exposures, default probabilities and recovery rates, applicable collateral or netting arrangements, break clauses and other contractual factors.

Funding valuation adjustments

Funding valuation adjustments (FVA) reflect the costs and benefits of funding associated with uncollateralized and partially collateralized derivative receivables and payables and are calculated as the valuation effect from moving the discounting of the uncollateralized derivative cash flows from LIBOR to OCA using the CVA framework.

An FVA is also applied to collateralized derivative assets in cases where the collateral cannot be sold or repledged.

Debit valuation adjustments

A debit valuation adjustment (DVA) is estimated to incorporate own credit in the valuation of derivatives, effectively consistent with the CVA framework. A DVA is determined for each counterparty, considering all exposures with that counterparty and taking into account collateral netting agreements, expected future mark-to-market movements and UBS's credit default spreads.

Other valuation adjustments

Instruments that are measured as part of a portfolio of combined long and short positions are valued at mid-market levels to ensure consistent valuation of the long- and short-component risks. A liquidity valuation adjustment is then made to the overall net long or short exposure to move the fair value to bid or offer as appropriate, reflecting current levels of market liquidity. The bid-offer spreads used in the calculation of this valuation adjustment are obtained from market transactions and other relevant sources and are updated periodically.

Uncertainties associated with the use of model-based valuations are incorporated into the measurement of fair value through the use of model reserves. These reserves reflect the amounts that the Group estimates should be deducted from valuations produced directly by models to incorporate uncertainties in the relevant modeling assumptions, in the model and market inputs used, or in the calibration of the model output to adjust for known model deficiencies. In arriving at these estimates, the Group considers a range of market practices, including how it believes market participants would assess these uncertainties. Model reserves are reassessed periodically in light of data from market transactions, consensus pricing services and other relevant sources.

In the second quarter of 2018, a USD 65 million expense was recognized in the income statement reflecting the model valuation adjustment recorded to capture the spread between OCA and LIBOR volatility affecting the valuation of certain structured note issuances.

Valuation adjustments on financial instruments

	As of	
Life-to-date gain / (loss), USD million	31.12.18	31.12.17
Credit valuation adjustments[1]	(90)	(116)
Funding valuation adjustments	(85)	(51)
Debit valuation adjustments	1	2
Other valuation adjustments	(716)	(733)
of which: liquidity	*(388)*	*(477)*
of which: model uncertainty	*(327)*	*(256)*

1 Amounts do not include reserves against defaulted counterparties.

Note 24 Fair value measurement (continued)

e) Transfers between Level 1 and Level 2

The amounts provided below reflect transfers between Level 1 and Level 2 for instruments that were held for the entire reporting period.

Assets totaling approximately USD 0.6 billion, which were mainly comprised of financial assets held for trading, predominantly investment fund units as well as corporate and municipal bonds, were transferred from Level 2 to Level 1 during 2018, generally resulting from increased levels of trading activity observed within the market. Transfers of financial liabilities from Level 2 to Level 1 during 2018 were not significant.

Assets totaling approximately USD 0.7 billion, which were mainly comprised of financial assets held for trading, predominantly investment fund units and equity instruments, were transferred from Level 1 to Level 2 during 2018, generally resulting from diminished levels of trading activity observed within the market. Transfers of financial liabilities from Level 1 to Level 2 during 2018 were not significant.

Note 24 Fair value measurement (continued)

f) Level 3 instruments: valuation techniques and inputs

The table below presents material Level 3 assets and liabilities together with the valuation techniques used to measure fair value, the significant inputs used in a given valuation technique that are considered unobservable and a range of values for those unobservable inputs. Several inputs disclosed in prior periods are not disclosed in the table below because they are not considered significant to the respective valuation technique as of 31 December 2018.

The range of values represents the highest- and lowest-level input used in the valuation techniques. Therefore, the range does not reflect the level of uncertainty regarding a particular input, but rather the different underlying characteristics of the relevant assets and liabilities. The ranges will therefore vary from period to period and parameter to parameter based on characteristics of the instruments held at each balance sheet date. Further, the ranges of unobservable inputs may differ across other financial institutions, reflecting the diversity of the products in each firm's inventory.

Valuation techniques and inputs used in the fair value measurement of Level 3 assets and liabilities

	Fair value						Range of inputs						
	Assets		Liabilities				31.12.18			31.12.17			
USD billion	31.12.18	31.12.17	31.12.18	31.12.17	Valuation technique(s)	Significant unobservable input(s)[1]	low	high	weighted average[2]	low	high	weighted average[2]	unit[1]
Financial assets and liabilities at fair value held for trading and Financial assets at fair value not held for trading[3]													
Corporate and municipal bonds	*0.7*	*0.6*	*0.0*	*0.0*	Relative value to market comparable	Bond price equivalent	0	134	89	0	133	92	points
Traded loans, loans designated at fair value, loan commitments and guarantees	*2.7*	*1.7*	*0.0*	*0.0*	Relative value to market comparable	Loan price equivalent	0	100	99	50	102	98	points
					Discounted expected cash flows	Credit spread	301	513		23	124		basis points
					Market comparable and securitization model	Discount margin	1	14	2	0	14	2	%
Auction rate securities[4]	*1.7*		*0.0*		Relative value to market comparable	Bond price equivalent	79	99	89				points
Investment fund units[5]	*0.6*	*0.7*	*0.0*	*0.0*	Relative value to market comparable	Net asset value							
Equity instruments[5]	*0.6*	*0.5*	*0.0*	*0.1*	Relative value to market comparable	Price							
Debt issued designated at fair value[6]			*11.0*	*11.2*									
Other financial liabilities designated at fair value[6]			*1.0*	*2.0*									
Derivative financial instruments													
Interest rate contracts	*0.4*	*0.1*	*0.2*	*0.2*	Option model	Volatility of interest rates[7]	50	81		28	70		basis points
Credit derivative contracts	*0.5*	*0.6*	*0.5*	*0.6*	Discounted expected cash flows	Credit spreads	4	545		6	550		basis points
						Bond price equivalent	3	99		2	102		points
Equity / index contracts	*0.5*	*0.7*	*1.4*	*1.9*	Option model	Equity dividend yields	0	12		0	13		%
						Volatility of equity stocks, equity and other indices	4	93		0	172		%
						Equity-to-FX correlation	(39)	67		(39)	70		%
						Equity-to-equity correlation	(50)	97		(50)	97		%

1 The ranges of significant unobservable inputs are represented in points, percentages and basis points. Points are a percentage of par (e.g., 100 points would be 100% of par). 2 Weighted averages are provided for non-derivative financial instruments and were calculated by weighting inputs based on the fair values of the respective instruments. Weighted averages are not provided for inputs related to derivative contracts as this would not be meaningful. 3 Comparative-period information includes equity instruments that were formerly classified as available for sale under IAS 39 and have been reclassified to Financial assets at fair value not held for trading upon adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 4 Comparative-period information is not disclosed for financial assets and liabilities that were measured at amortized cost prior to the adoption of IFRS 9. Refer to Note 1c for more information. 5 The range of inputs is not disclosed as there is a dispersion of values given the diverse nature of the investments. 6 Valuation techniques, significant unobservable inputs and the respective input ranges for Debt issued designated at fair value and Other financial liabilities designated at fair value, which are primarily comprised of over-the-counter debt instruments, are the same as the equivalent derivative or structured financing instruments presented elsewhere in this table. 7 Effective in 2018, the range of inputs reported for this significant unobservable input is based on normal volatility and the unit has been updated to basis points. Log-normal volatility with the unit as points was reported previously. Prior-period information has been restated to reflect this change in presentation.

Note 24 Fair value measurement (continued)

Significant unobservable inputs in Level 3 positions

This section discusses the significant unobservable inputs used in the valuation of Level 3 instruments and assesses the potential effect that a change in each unobservable input in isolation may have on a fair value measurement, including information to facilitate an understanding of factors that give rise to the input ranges shown. Relationships between observable and unobservable inputs have not been included in the summary below.

Bond price equivalent

Where market prices are not available for a bond, fair value is measured by comparison with observable pricing data from similar instruments. Factors considered when selecting comparable instruments include credit quality, maturity and industry of the issuer. Fair value may be measured either by a direct price comparison or by conversion of an instrument price into a yield (either as an outright yield or as a spread to LIBOR). Bond prices are expressed as points of the nominal, where 100 represents a fair value equal to the nominal value (i.e., par).

For corporate and municipal bonds, the range represents the range of prices from reference issuances used in determining fair value. Bonds priced at 0 are distressed to the point that no recovery is expected, while prices significantly in excess of 100 or par relate to inflation-linked or structured issuances that pay a coupon in excess of the market benchmark as of the measurement date.

For credit derivatives, the bond price range represents the range of prices used for reference instruments that are typically converted to an equivalent yield or credit spread as part of the valuation process.

Loan price equivalent

Where market prices are not available for a traded loan, fair value is measured by comparison with observable pricing data for similar instruments. Factors considered when selecting comparable instruments include industry segment, collateral quality, maturity and issuer-specific covenants. Fair value may be measured either by a direct price comparison or by conversion of an instrument price into a yield. The range represents the range of prices derived from reference issuances of a similar credit quality used in measuring fair value for loans classified as Level 3. Loans priced at 0 are distressed to the point that no recovery is expected, while a current price of 100 represents a loan that is expected to be repaid in full.

Credit spread

Valuation models for many credit derivatives require an input for the credit spread, which is a reflection of the credit quality of the associated referenced underlying. The credit spread of a particular security is quoted in relation to the yield on a benchmark security or reference rate, typically either US Treasury or LIBOR, and is generally expressed in terms of basis points. An increase / (decrease) in credit spread will increase / (decrease) the value of credit protection offered by CDS and other credit derivative products. The income statement effect from such changes depends on the nature and direction of the positions held. Credit spreads may be negative where the asset is more creditworthy than the benchmark against which the spread is calculated. A wider credit spread represents decreasing creditworthiness. The range represents a diverse set of underlyings, with the lower end of the range representing credits of the highest quality (e.g., approximating the risk of LIBOR) and the upper end of the range representing greater levels of credit risk.

Discount margin (DM)

The DM spread represents the discount rates used to present value cash flows of an asset to reflect the market return required for uncertainty in the estimated cash flows. DM spreads are a rate or rates applied on top of a floating index (e.g., LIBOR) to discount expected cash flows. Generally, a decrease / (increase) in the DM in isolation would result in a higher / (lower) fair value.

The high end of the range relates to securities that are priced low within the market relative to the expected cash flow schedule. This indicates that the market is pricing an increased risk of credit loss into the security that is greater than what is being captured by the expected cash flow generation process. The low ends of the ranges are typical of funding rates on better-quality instruments.

Funding spread

Structured financing transactions are valued using synthetic funding curves that best represent the assets that are pledged as collateral for the transactions. They are not representative of where UBS can fund itself on an unsecured basis, but provide an estimate of where UBS can source and deploy secured funding with counterparties for a given type of collateral. The funding spreads are expressed in terms of basis points over or under LIBOR, and if funding spreads widen, this increases the effect of discounting.

A small proportion of structured debt instruments and non-structured fixed-rate bonds within financial liabilities designated at fair value had an exposure to funding spreads that was longer in duration than the actively traded market.

Volatility

Volatility measures the variability of future prices for a particular instrument and is generally expressed as a percentage, where a higher number reflects a more volatile instrument for which future price movements are more likely to occur. The minimum level of volatility is 0% and there is no theoretical maximum. Volatility is a key input into option models, where it is used to derive a probability-based distribution of future prices for the underlying instrument. The effect of volatility on individual positions within the portfolio is driven primarily by whether the option contract is a long or short position. In most cases, the fair value of an option increases as a result of an increase in volatility and is reduced by a decrease in volatility. Generally, volatility used in the measurement of fair value is derived from active-market option prices (referred to as implied volatility). A key feature of implied volatility is the volatility "smile" or "skew," which represents the effect of pricing options of different option strikes at different implied volatility levels.

The volatility of interest rates reflects the range of unobservable volatilities across different currencies and related underlying interest rate levels. Volatilities of low interest rates tend to be much higher than volatilities of high interest rates. In addition, different currencies may have significantly different implied volatilities. The volatility of equity stocks, equity and other indices reflects the range of underlying stock volatilities.

Correlation

Correlation measures the interrelationship between the movements of two variables. It is expressed as a percentage between –100% and +100%, where +100% represents perfectly correlated variables (meaning a movement of one variable is associated with a movement of the other variable in the same direction) and –100% implies the variables are inversely correlated (meaning a movement of one variable is associated with a movement of the other variable in the opposite direction). The effect of correlation on the measurement of fair value depends on the specific terms of the instruments being valued, reflecting the range of different payoff features within such instruments.

Equity-to-FX correlation is important for equity options based on a currency different than the currency of the underlying stock. Equity-to-equity correlation is particularly important for complex options that incorporate, in some manner, different equities in the projected payoff.

Equity dividend yields

The derivation of a forward price for an individual stock or index is important for measuring fair value for forward or swap contracts and for measuring fair value using option pricing models. The relationship between the current stock price and the forward price is based on a combination of expected future dividend levels and payment timings, and, to a lesser extent, the relevant funding rates applicable to the stock in question. Dividend yields are generally expressed as an annualized percentage of the share price with the lowest limit of 0% representing a stock that is not expected to pay any dividend. The dividend yield and timing represents the most significant parameter in determining fair value for instruments that are sensitive to an equity forward price.

Note 24 Fair value measurement (continued)

g) Level 3 instruments: sensitivity to changes in unobservable input assumptions

The table below summarizes those financial assets and liabilities classified as Level 3 for which a change in one or more of the unobservable inputs to reflect reasonably possible alternative assumptions would change fair value significantly, and the estimated effect thereof.

The table shown presents the favorable and unfavorable effects for each class of financial assets and liabilities for which the potential change in fair value is considered significant. The sensitivity data presented represent an estimation of valuation uncertainty based on reasonably possible alternative values for Level 3 inputs at the balance sheet date and do not represent the estimated effect of stress scenarios. Typically, these financial assets and liabilities are sensitive to a combination of inputs from Levels 1–3. Although well-defined interdependencies may exist between Levels 1–2 and Level 3 parameters (e.g., between interest rates, which are generally Level 1 or Level 2, and prepayments, which are generally Level 3), these have not been incorporated in the table. Further, direct interrelationships between the Level 3 parameters discussed below are not a significant element of the valuation uncertainty.

Sensitivity data are estimated using a number of techniques, including the estimation of price dispersion among different market participants, variation in modeling approaches and reasonably possible changes to assumptions used within the fair value measurement process. The sensitivity ranges are not always symmetrical around the fair values as the inputs used in valuations are not always precisely in the middle of the favorable and unfavorable range.

Sensitivity data are determined at a product or parameter level and then aggregated assuming no diversification benefit. The calculated sensitivity is applied to both the outright position and any related Level 3 hedge. The main interdependencies across different Level 3 products to a single unobservable input parameter have been included in the basis of netting exposures within the calculation. Aggregation without allowing for diversification involves the simple summation of individual results with the total sensitivity, therefore representing the effect of all unobservable inputs that, if moved to a reasonably possible favorable or unfavorable level at the same time, would result in a significant change in the valuation. Diversification would incorporate estimated correlations across different sensitivity results and, as such, would result in an overall sensitivity that would be less than the sum of the individual component sensitivities. The Group believes that, while there are diversification benefits within the portfolios representing these sensitivity numbers, they are not significant to this analysis.

Sensitivity of fair value measurements to changes in unobservable input assumptions

	31.12.18		31.12.17	
USD million	Favorable changes	Unfavorable changes	Favorable changes	Unfavorable changes
Traded loans, loans designated at fair value, loan commitments and guarantees	99	(44)	81	(12)
Securities financing transactions	17	(11)	35	(35)
Auction rate securities[1]	81	(81)		
Asset-backed securities	27	(23)	19	(15)
Equity instruments	155	(94)	81	(54)
Interest rate derivative contracts, net	8	(39)	13	(27)
Credit derivative contracts, net	33	(37)	66	(102)
Foreign exchange derivative contracts, net	10	(5)	12	(6)
Equity / index derivative contracts, net	213	(225)	195	(198)
Other	19	(19)	13	(13)
Total	661	(578)	515	(462)

1 Comparative-period information as of 31 December 2017 is not disclosed for financial assets that were measured at amortized cost prior to the adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information.

h) Level 3 instruments: movements during the period

Significant changes in Level 3 instruments

The table on the following pages presents additional information about Level 3 assets and liabilities measured at fair value on a recurring basis. Level 3 assets and liabilities may be hedged with instruments classified as Level 1 or Level 2 in the fair value hierarchy and, as a result, realized and unrealized gains and losses included in the table may not include the effect of related hedging activity. Furthermore, the realized and unrealized gains and losses presented within the table are not limited solely to those arising from Level 3 inputs, as valuations are generally derived from both observable and unobservable parameters.

Assets and liabilities transferred into or out of Level 3 are presented as if those assets or liabilities had been transferred at the beginning of the year.

Upon adoption of IFRS 9 on 1 January 2018, certain financial assets and liabilities were newly classified at fair value through profit or loss and were designated as Level 3 in the fair value hierarchy. These financial instruments are presented in the table on the following pages, including the associated effect upon adoption. This includes auction rate securities held in Corporate Center and certain loans held in the Investment Bank.

In addition to various financial assets and liabilities being newly classified at fair value through profit or loss, certain equity investments and investment fund units measured at fair value through other comprehensive income were reclassified to *Financial assets at fair value not held for trading* under the revised IFRS 9 classification and measurement rules, which resulted in an opening balance reclassification between reporting lines in the table on the following pages.

Assets transferred into and out of Level 3 totaled USD 1.4 billion and USD 0.4 billion, respectively. Transfers into Level 3 were primarily comprised of corporate and municipal bonds, reflecting decreased observability of the respective bond price equivalent. Transfers out of Level 3 were primarily comprised of equity / index contracts resulting from increased observability of the respective equity volatility inputs.

Liabilities transferred into and out of Level 3 totaled USD 2.5 billion and USD 4.8 billion, respectively. Transfers into Level 3 were primarily comprised of rates-linked and equity-linked issued debt instruments, reflecting decreased observability of the respective rates volatility and equity volatility inputs. Transfers out of Level 3 were primarily comprised of rates-linked fixed-rate and equity-linked issued debt instruments resulting from changes in the observability of the OCA curve and equity volatility inputs used to determine the fair value of these instruments. In the second quarter of 2018, USD 2.9 billion of UBS-issued structured notes, which are reported within *Debt issued designated at fair value* on the balance sheet, were transferred from Level 3 to Level 2 in the fair value hierarchy, reflecting increased observability of the OCA curve used to value these notes.

Note 24 Fair value measurement (continued)

Movements of Level 3 instruments

USD billion	**Balance as of 31 December 2016**	Total gains / (losses) included in comprehensive income: Net gains / (losses) included in income[1]	Total gains / (losses) included in comprehensive income: *of which: related to Level 3 instruments held at the end of the reporting period*	Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	Foreign currency translation
Financial assets at fair value held for trading	**1.7**	**(0.1)**	***0.0***	**0.7**	**(3.9)**	**2.7**	**0.0**	**1.0**	**(0.2)**	**0.1**
of which:										
Corporate and municipal bonds	*0.6*	*0.1*	*0.1*	*0.5*	*(0.7)*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*
Loans	*0.7*	*(0.1)*	*(0.1)*	*0.1*	*(2.8)*	*2.7*	*0.0*	*0.0*	*(0.1)*	*0.0*
Investment fund units	*0.1*	*(0.1)*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.6*	*0.0*	*0.0*
Other	*0.3*	*0.0*	*0.0*	*0.2*	*(0.3)*	*0.0*	*0.0*	*0.2*	*0.0*	*0.0*
Financial assets at fair value not held for trading	**2.0**	**0.2**	***0.2***	**0.0**	**0.0**	**0.4**	**(1.3)**	**0.1**	**(0.1)**	**0.1**
of which:										
Loans	*1.2*	*0.2*	*0.2*	*0.0*	*0.0*	*0.1*	*(0.7)*	*0.0*	*(0.1)*	*0.0*
Auction rate securities[3]										
Equity instruments[4]										
Other	*0.9*	*(0.1)*	*(0.1)*	*0.0*	*0.0*	*0.3*	*(0.6)*	*0.1*	*0.0*	*0.0*
Financial assets measured at fair value through other comprehensive income	**0.5**	**0.0**	***0.0***	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.0**	**0.0**
Derivative financial instruments – assets	**2.5**	**(0.3)**	***(0.4)***	**0.0**	**0.0**	**1.0**	**(1.2)**	**0.4**	**(0.9)**	**0.1**
of which:										
Interest rate contracts	*0.3*	*0.0*	*(0.1)*	*0.0*	*0.0*	*0.0*	*(0.1)*	*0.1*	*(0.1)*	*0.0*
Credit derivative contracts	*1.3*	*(0.2)*	*(0.2)*	*0.0*	*0.0*	*0.0*	*(0.3)*	*0.0*	*(0.4)*	*0.1*
Equity / index contracts	*0.7*	*(0.1)*	*(0.1)*	*0.0*	*0.0*	*0.9*	*(0.7)*	*0.3*	*(0.4)*	*0.0*
Other	*0.2*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*(0.1)*	*0.0*	*0.0*	*0.0*
Derivative financial instruments – liabilities	**3.9**	**0.3**	***0.1***	**0.0**	**0.0**	**0.7**	**(1.4)**	**0.5**	**(1.4)**	**0.2**
of which:										
Credit derivative contracts	*1.5*	*0.0*	*(0.2)*	*0.0*	*0.0*	*0.1*	*(0.4)*	*0.2*	*(0.8)*	*0.1*
Equity / index contracts	*1.8*	*0.3*	*0.3*	*0.0*	*0.0*	*0.6*	*(0.6)*	*0.2*	*(0.5)*	*0.1*
Other	*0.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*(0.4)*	*0.1*	*(0.1)*	*0.1*
Debt issued designated at fair value	**9.5**	**1.4**	***0.9***	**0.0**	**0.0**	**5.3**	**(5.0)**	**1.2**	**(1.7)**	**0.4**
Other financial liabilities designated at fair value	**1.3**	**0.0**	***0.0***	**0.0**	**0.0**	**1.5**	**(0.8)**	**0.1**	**(0.2)**	**0.1**

1 Net gains / (losses) included in comprehensive income are comprised of Net interest income, Other net income from fair value changes on financial instruments and Other income. 2 Total Level 3 assets as of 31 December 2018 were USD 7.8 billion (31 December 2017: USD 5.6 billion). Total Level 3 liabilities as of 31 December 2018 were USD 14.3 billion (31 December 2017: USD 16.2 billion). 3 Comparative-period information is not disclosed for items that were measured at amortized cost prior to the adoption of IFRS 9 on 1 January 2018. Refer to Note 1c for more information. 4 Upon adoption of IFRS 9 on 1 January 2018, equity instruments that were formerly classified as available for sale under IAS 39 were reclassified to Financial assets at fair value not held for trading. Refer to Note 1c for more information.

Note 24 Fair value measurement (continued)

			Total gains / (losses) included in comprehensive income									
Balance as of 31 December 2017	Reclassifi-cations and remeasure-ments upon adoption of IFRS 9	Balance as of 1 January 2018	Net gains / (losses) included in income[1]	*of which: related to Level 3 instruments held at the end of the reporting period*	Purchases	Sales	Issuances	Settlements	Transfers into Level 3	Transfers out of Level 3	Foreign currency translation	Balance as of 31 December 2018[2]
2.0	0.4	2.4	(0.2)	*(0.2)*	2.1	(7.1)	4.2	0.0	0.7	(0.2)	0.0	2.0
0.6		*0.6*	*0.0*	*0.0*	*0.6*	*(0.9)*	*0.0*	*0.0*	*0.5*	*0.0*	*0.0*	*0.7*
0.5	*0.4*	*0.9*	*0.1*	*0.0*	*0.9*	*(5.6)*	*4.2*	*0.0*	*0.1*	*0.0*	*0.0*	*0.7*
0.6		*0.6*	*(0.1)*	*(0.1)*	*0.2*	*(0.3)*	*0.0*	*0.0*	*0.1*	*(0.1)*	*0.0*	*0.4*
0.4		*0.4*	*(0.1)*	*(0.1)*	*0.4*	*(0.4)*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.2*
1.5	3.0	4.4	0.0	*0.0*	1.7	(1.9)	0.0	0.0	0.1	(0.1)	0.1	4.4
0.8	*0.6*	*1.4*	*(0.2)*	*(0.2)*	*1.5*	*(1.0)*	*0.0*	*0.0*	*0.1*	*0.0*	*0.0*	*1.8*
	1.9	*1.9*	*0.1*	*0.1*	*0.0*	*(0.4)*	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*	*1.7*
	0.4	*0.4*	*0.1*	*0.1*	*0.2*	*(0.2)*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.5*
0.7	*0.1*	*0.8*	*0.0*	*0.0*	*0.0*	*(0.4)*	*0.0*	*0.0*	*0.0*	*(0.1)*	*0.0*	*0.5*
0.5	(0.5)											
1.6		1.6	0.0	*0.0*	0.0	0.0	1.0	(1.5)	0.5	(0.1)	0.0	1.4
0.1		*0.1*	*0.1*	*0.1*	*0.0*	*0.0*	*0.0*	*(0.1)*	*0.3*	*0.0*	*0.0*	*0.4*
0.6		*0.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.3*	*(0.4)*	*0.0*	*0.0*	*0.0*	*0.5*
0.7		*0.7*	*0.0*	*0.0*	*0.0*	*0.0*	*0.8*	*(1.0)*	*0.1*	*(0.1)*	*0.0*	*0.5*
0.2		*0.2*	*(0.1)*	*(0.1)*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
2.9	0.0	2.9	(0.3)	*(0.2)*	0.0	0.0	1.3	(1.5)	0.3	(0.5)	0.0	2.2
0.6		*0.6*	*0.0*	*0.0*	*0.0*	*0.0*	*0.1*	*(0.2)*	*0.1*	*0.0*	*0.0*	*0.5*
2.0		*2.0*	*(0.3)*	*(0.2)*	*0.0*	*0.0*	*1.2*	*(1.2)*	*0.3*	*(0.5)*	*0.0*	*1.4*
0.3	*0.0*	*0.3*	*0.0*	*0.1*	*0.0*	*0.0*	*0.0*	*(0.1)*	*0.0*	*0.0*	*0.0*	*0.3*
11.2		11.2	0.5	*0.0*	0.0	0.0	5.8	(4.3)	2.2	(4.3)	(0.2)	11.0
2.0		2.0	0.0	*0.0*	0.0	0.0	1.1	(2.0)	0.0	0.0	0.0	1.0

Note 24 Fair value measurement (continued)

i) Maximum exposure to credit risk for financial instruments measured at fair value

The tables below provide UBS AG's maximum exposure to credit risk for financial instruments measured at fair value and the respective collateral and other credit enhancements mitigating credit risk for these classes of financial instruments.

The maximum exposure to credit risk includes the carrying amounts of financial instruments recognized on the balance sheet subject to credit risk and the notional amounts for off-balance sheet arrangements. Where information is available, collateral is presented at fair value. For other collateral, such as real estate, a reasonable alternative value is used. Credit enhancements, such as credit derivative contracts and guarantees, are included at their notional amounts. Both are capped at the maximum exposure to credit risk for which they serve as security. The "Risk management and control" section of this report describes management's view of credit risk and the related exposures, which can differ in certain respects from the requirements of IFRS.

Maximum exposure to credit risk

	31.12.18								
		Collateral				Credit enhancements			Exposure to credit risk after collateral and credit enhancements
USD billion	Maximum exposure to credit risk	Cash collateral received	Collateral-ized by securities	Secured by real estate	Other collateral[1]	Netting	Credit derivative contracts	Guarantees	
Financial assets measured at fair value on the balance sheet									
Financial assets at fair value held for trading – debt instruments[2,3]	22.0								22.0
Derivative financial instruments[4]	126.2		4.1			110.8			11.4
Brokerage receivables	16.8	0.0	16.5						0.3
Financial assets at fair value not held for trading – debt instruments[6]	59.8		16.7		0.1				43.1
Total financial assets measured at fair value	224.9	0.0	37.3	0.0	0.1	110.8	0.0	0.0	76.7
Guarantees[7]	1.6							0.2	1.4
Loan commitments[7]	3.5				2.4		0.2	0.1	0.7
Forward starting transactions, reverse repurchase and securities borrowing agreements	8.1		8.1						0.0
Total maximum exposure to credit risk not reflected on the balance sheet	13.3	0.0	8.1	0.0	2.4	0.0	0.2	0.4	2.1

	31.12.17								
		Collateral				Credit enhancements			Exposure to credit risk after collateral and credit enhancements
USD billion	Maximum exposure to credit risk	Cash collateral received	Collateral-ized by securities	Secured by real estate	Other collateral[1]	Netting	Credit derivative contracts	Guarantees	
Financial assets measured at fair value on the balance sheet									
Financial assets at fair value held for trading – debt instruments[2,5]	26.4								26.4
Derivative financial instruments[4]	121.3		4.1			102.8			14.4
Financial assets at fair value not held for trading – debt instruments[3,6]	59.9		10.1						49.8
Total financial assets measured at fair value	**207.5**	**0.0**	**14.1**	**0.0**	**0.0**	**102.8**	**0.0**	**0.0**	**90.6**
Guarantees[7]	1.7								1.7
Loan commitments[7]	8.0				3.9		1.0	0.2	2.8
Total maximum exposure to credit risk not reflected on the balance sheet	**9.6**	**0.0**	**0.0**	**0.0**	**3.9**	**0.0**	**1.0**	**0.2**	**4.5**

1 Includes but is not limited to life insurance contracts, inventory, accounts receivable, mortgage loans, patents and copyrights. 2 These positions are generally managed under the market risk framework. For the purpose of this disclosure, collateral and credit enhancements were not considered. 3 Does not include investment fund units. 4 The amount shown in the "Netting" column represents the netting potential not recognized on the balance sheet. Refer to Note 25 for more information. 5 Does not include debt instruments held for unit-linked investment contracts and investment fund units. 6 Financial assets at fair value not held for trading collateralized by securities consisted of structured loans and reverse repurchase and securities borrowing agreements. 7 The amount shown in the "Guarantees" column largely relates to sub-participations. Refer to Note 34 for more information.

j) Financial instruments not measured at fair value

The table below provides the estimated fair values of financial instruments not measured at fair value.

Financial instruments not measured at fair value

	31.12.18					31.12.17				
	Carrying value	Fair value				Carrying value	Fair value			
USD billion	Total	Total	Level 1	Level 2	Level 3	Total	Total	Level 1	Level 2	Level 3
Assets[1]										
Cash and balances at central banks	108.4	108.4	108.4	0.0	0.0	90.0	90.0	90.0	0.0	0.0
Loans and advances to banks	16.6	16.6	16.0	0.6	0.0	14.0	14.0	13.4	0.6	0.0
Receivables from securities financing transactions	95.3	95.4	0.0	91.9	3.4	92.0	92.0	0.0	89.4	2.5
Cash collateral receivables on derivative instruments	23.6	23.6	0.0	23.6	0.0	24.0	24.0	0.0	24.0	0.0
Loans and advances to customers	321.5	322.0	0.0	172.3	149.7	329.0	330.4	0.0	183.4	147.0
Other financial assets measured at amortized cost[2]	22.6	22.5	8.4	10.7	3.3	37.9	37.7	6.5	30.3	1.0
Liabilities										
Amounts due to banks	11.0	11.0	8.9	1.9	0.2	7.7	7.7	6.6	1.1	0.0
Payables from securities financing transactions	10.3	10.3	0.0	10.3	0.0	17.5	17.5	0.0	17.5	0.0
Cash collateral payables on derivative instruments	28.9	28.9	0.0	28.9	0.0	31.0	31.0	0.0	31.0	0.0
Customer deposits	422.0	422.0	0.0	421.9	0.1	423.1	423.1	0.0	423.1	0.0
Funding from UBS Group AG and its subsidiaries	41.2	41.7	0.0	41.7	0.0	35.6	37.3	0.0	37.3	0.0
Debt issued measured at amortized cost	91.2	93.5	0.0	92.0	1.4	107.5	109.8	0.0	105.3	4.5
Other financial liabilities measured at amortized cost[2]	7.6	7.6	0.0	7.5	0.1	38.0	38.0	0.0	38.0	0.0

1 As of 31 December 2018, USD 0 billion of Loans and advances to banks, USD 1 billion of Receivables from securities financing transactions, USD 139 billion of Loans and advances to customers and USD 15 billion of Other financial assets measured at amortized cost are expected to be recovered or settled after 12 months. As of 31 December 2017, USD 0 billion of Loans and advances to banks, USD 2 billion of Receivables from securities financing transactions, USD 137 billion of Loans and advances to customers and USD 7 billion of Other financial assets measured at amortized cost were expected to be recovered or settled after 12 months. 2 Upon adoption of IFRS 9 on 1 January 2018, prime brokerage receivables and payables were reclassified from amortized cost to fair value through profit or loss. Refer to Note 1c for more information.

The fair values included in the table above were calculated for disclosure purposes only. The valuation techniques and assumptions described below relate only to the fair value of UBS's financial instruments not measured at fair value. Other institutions may use different methods and assumptions for their fair value estimation, and therefore such fair value disclosures cannot necessarily be compared from one financial institution to another. The following principles were applied when determining fair value estimates for financial instruments not measured at fair value:

– For financial instruments with remaining maturities greater than three months, the fair value was determined from quoted market prices, if available.
– Where quoted market prices were not available, the fair values were estimated by discounting contractual cash flows using current market interest rates or appropriate yield curves for instruments with similar credit risk and maturity. These estimates generally include adjustments for counterparty credit risk or UBS's own credit.
– For short-term financial instruments with remaining maturities of three months or less, the carrying amount, which is net of credit loss allowances, is generally considered a reasonable estimate of fair value. The following financial instruments not measured at fair value had remaining maturities of three months or less as of 31 December 2018: 100% of cash and balances at central banks, 96% of loans and advances to banks, 89% of receivables from securities financing transactions, 100% of cash collateral receivables on derivative instruments, 48% of loans and advances to customers, 26% of other financial assets measured at amortized cost, 81% of amounts due to banks, 97% of payables from securities financing transactions, 100% of cash collateral payables on derivative instruments, 97% of customer deposits, 0% of funding from UBS Group AG and its subsidiaries, 11% of debt issued measured at amortized cost and 100% of other financial liabilities measured at amortized cost.
– The fair value estimates for repurchase and reverse repurchase agreements with variable and fixed interest rates, for all maturities, include the valuation of the interest rate component of these instruments. Credit and debit valuation adjustments have not been included in the valuation given the short-term nature of these instruments.

Note 25 Offsetting financial assets and financial liabilities

UBS AG enters into netting agreements with counterparties to manage the credit risks associated primarily with repurchase and reverse repurchase transactions, securities borrowing and lending, over-the-counter derivatives and exchange-traded derivatives. These netting agreements and similar arrangements generally enable the counterparties to set off liabilities against available assets received in the ordinary course of business and / or in the event that the counterparty to the transaction is unable to fulfill its contractual obligations. The right of setoff is a legal right to settle or otherwise eliminate all or a portion of an amount due by applying an amount receivable from the same counterparty against it, thus reducing credit exposure.

The table below provides a summary of financial assets subject to offsetting, enforceable master netting arrangements and similar agreements, as well as financial collateral received to mitigate credit exposures for these financial assets. The gross financial assets of UBS AG that are subject to offsetting, enforceable netting arrangements and similar agreements are reconciled to the net amounts presented within the associated balance sheet line, after giving effect to financial liabilities with the same counterparties that have been offset on the balance sheet and other financial assets not subject to an enforceable netting arrangement or similar agreement. Further, related amounts for financial liabilities and collateral received that are not offset on the balance sheet are shown to arrive at financial assets after consideration of netting potential.

UBS AG engages in a variety of counterparty credit mitigation strategies in addition to netting and collateral arrangements. Therefore, the net amounts presented in the tables on this and on the next page do not purport to represent their actual credit exposure.

Financial assets subject to offsetting, enforceable master netting arrangements and similar agreements

	Assets subject to netting arrangements								
	Netting recognized on the balance sheet			Netting potential not recognized on the balance sheet[4]			Assets not subject to netting arrangements[5]	Total assets	
As of 31.12.18, USD billion	Gross assets before netting	Netting with gross liabilities[3]	Net assets recognized on the balance sheet	Financial liabilities	Collateral received	Assets after consideration of netting potential	Assets recognized on the balance sheet	Total assets after consideration of netting potential	Total assets recognized on the balance sheet
Receivables from securities financing transactions[1]	88.5	(13.0)	75.5	(4.4)	(71.2)	0.0	19.8	19.8	95.3
Derivative financial instruments	124.3	(4.3)	120.0	(90.8)	(24.0)	5.2	6.2	11.4	126.2
Cash collateral receivables on derivative instruments[2]	24.6	(2.3)	22.3	(13.5)	(1.0)	7.8	1.3	9.1	23.6
Financial assets at fair value not held for trading[1]	85.4	(77.5)	7.8	(1.4)	(6.4)	0.0	74.6	74.6	82.4
of which: reverse repurchase agreements	*85.3*	*(77.5)*	*7.8*	*(1.4)*	*(6.4)*	*0.0*	*2.1*	*2.1*	*9.9*
Total assets	322.9	(97.2)	225.7	(110.0)	(102.6)	13.0	101.9	114.9	327.6
As of 31.12.17, USD billion									
Receivables from securities financing transactions[1]	147.9	(78.8)	69.1	(7.7)	(61.4)	0.0	22.8	22.8	92.0
Derivative financial instruments	117.2	(2.1)	115.1	(85.6)	(21.3)	8.2	6.2	14.4	121.3
Cash collateral receivables on derivative instruments[2]	22.2	(1.1)	21.1	(12.0)	(0.8)	8.3	2.9	11.2	24.0
Financial assets at fair value not held for trading[1]	0.4	0.0	0.4	0.0	(0.2)	0.2	59.6	59.9	60.1
Total assets	**287.8**	**(82.0)**	**205.8**	**(105.4)**	**(83.7)**	**16.8**	**91.6**	**108.3**	**297.4**

1 Certain reverse repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 as of 1 January 2018. This has resulted in an increase in amounts presented on the line "Financial assets at fair value not held for trading" and a decrease in amounts presented on the line "Receivables from securities financing transactions." Refer to Note 1c for more information. 2 The net amount of Cash collateral receivables on derivative instruments recognized on the balance sheet includes certain OTC derivatives that are net settled on a daily basis either legally or in substance under IAS 32 principles and exchange-traded derivatives that are economically settled on a daily basis. 3 The logic of the table results in amounts presented in the "Netting with gross liabilities" column corresponding directly to the amounts presented in the "Netting with gross assets" column in the liabilities table presented on the following page. Netting in this column for reverse repurchase agreements presented within the lines "Receivables from securities financing transactions" and "Financial assets at fair value not held for trading" taken together corresponds to the amounts presented for repurchase agreements in the "Payables from securities financing transactions" and "Other financial liabilities designated at fair value" lines in the liabilities table presented on the following page. 4 For the purpose of this disclosure, the amounts of financial instruments and cash collateral presented have been capped by the relevant netting agreement so as not to exceed the net amount of financial assets presented on the balance sheet; i.e., over-collateralization, where it exists, is not reflected in the table. 5 Includes assets not subject to enforceable netting arrangements and other out-of-scope items.

Note 25 Offsetting financial assets and financial liabilities (continued)

The table below provides a summary of financial liabilities subject to offsetting, enforceable master netting arrangements and similar agreements, as well as financial collateral pledged to mitigate credit exposures for these financial liabilities. The gross financial liabilities of UBS AG that are subject to offsetting, enforceable netting arrangements and similar agreements are reconciled to the net amounts presented within the associated balance sheet line, after giving effect to financial assets with the same counterparties that have been offset on the balance sheet and other financial liabilities not subject to an enforceable netting arrangement or similar agreement. Further, related amounts for financial assets and collateral pledged that are not offset on the balance sheet are shown to arrive at financial liabilities after consideration of netting potential.

Financial liabilities subject to offsetting, enforceable master netting arrangements and similar agreements

	Liabilities subject to netting arrangements						Liabilities not subject to netting arrangements[5]	Total liabilities	
	Netting recognized on the balance sheet			Netting potential not recognized on the balance sheet[4]					
As of 31.12.18, USD billion	Gross liabilities before netting	Netting with gross assets[3]	Net liabilities recognized on the balance sheet	Financial assets	Collateral pledged	Liabilities after consideration of netting potential	Liabilities recognized on the balance sheet	Total liabilities after consideration of netting potential	Total liabilities recognized on the balance sheet
Payables from securities financing transactions[1]	20.6	(12.4)	8.3	(3.6)	(4.7)	0.0	2.0	2.0	10.3
Derivative financial instruments	124.1	(4.3)	119.8	(90.8)	(20.9)	8.1	5.9	14.0	125.7
Cash collateral payables on derivative instruments[2]	29.0	(2.3)	26.7	(14.2)	(1.2)	11.3	2.2	13.5	28.9
Other financial liabilities designated at fair value[1]	86.6	(78.2)	8.4	(2.1)	(5.9)	0.4	25.2	25.6	33.6
of which: repurchase agreements	*86.1*	*(78.2)*	*7.9*	*(2.1)*	*(5.9)*	*0.0*	*1.6*	*1.6*	*9.5*
Total liabilities	260.4	(97.2)	163.2	(110.7)	(32.6)	19.8	35.4	55.2	198.5
As of 31.12.17, USD billion									
Payables from securities financing transactions[1]	92.5	(78.8)	13.7	(7.7)	(6.0)	0.0	3.8	3.8	17.5
Derivative financial instruments	114.3	(2.1)	112.2	(85.6)	(15.4)	11.2	6.9	18.1	119.1
Cash collateral payables on derivative instruments[2]	30.2	(1.1)	29.2	(16.7)	(1.2)	11.3	1.9	13.1	31.0
Other financial liabilities designated at fair value[1]	1.9	0.0	1.9	0.0	(0.1)	1.8	14.7	16.5	16.6
Total liabilities	**239.0**	**(82.0)**	**157.0**	**(110.0)**	**(22.7)**	**24.3**	**27.3**	**51.6**	**184.3**

1 Certain repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 as of 1 January 2018. This has resulted in an increase in amounts presented on the line "Other financial liabilities designated at fair value" and a decrease in amounts presented on the line "Payables from securities financing transactions." Refer to Note 1c for more information. 2 The net amount of Cash collateral payables on derivative instruments recognized on the balance sheet includes certain exchange-traded derivatives that are net settled on a daily basis either legally or in substance under IAS 32 principles and exchange-traded derivatives that are economically settled on a daily basis. 3 The logic of the table results in amounts presented in the "Netting with gross assets" column corresponding to the amounts presented in the "Netting with gross liabilities" column in the assets table presented on the previous page. Netting in this column for repurchase agreements presented within the lines "Payables from securities financing transactions" and "Other financial liabilities designated at fair value" taken together corresponds to the amounts presented for reverse repurchase agreements in the "Receivables from securities financing transactions" and "Financial assets at fair value not held for trading" lines in the assets table presented on the previous page. 4 For the purpose of this disclosure, the amounts of financial instruments and cash collateral presented have been capped by the relevant netting agreement so as not to exceed the net amount of financial liabilities presented on the balance sheet; i.e., over-collateralization, where it exists, is not reflected in the table. 5 Includes liabilities not subject to enforceable netting arrangements and other out-of-scope items.

Note 26 Restricted and transferred financial assets

This Note provides information on restricted financial assets (Note 26a), transfers of financial assets (Note 26b and 26c) and financial assets that are received as collateral with the right to resell or repledge these assets (Note 26d).

a) Restricted financial assets

Restricted financial assets consist of assets pledged as collateral against an existing liability or contingent liability and other assets that are otherwise explicitly restricted such that they cannot be used to secure funding.

Financial assets are mainly pledged as collateral in securities lending transactions, in repurchase transactions, against loans from Swiss mortgage institutions and in connection with the issuance of covered bonds. UBS AG generally enters into repurchase and securities lending arrangements under standard market agreements. For securities lending, the cash received as collateral may be more or less than the fair value of the securities loaned, depending on the nature of the transaction. For repurchase agreements, the fair value of the collateral sold under an agreement to repurchase is generally in excess of the cash borrowed. Pledged mortgage loans serve as collateral for existing liabilities against Swiss central mortgage institutions and for existing covered bond issuances of USD 12,516 million as of 31 December 2018 (31 December 2017: USD 12,779 million).

Other restricted financial assets include assets protected under client asset segregation rules, assets held by UBS AG's insurance entities to back related liabilities to the policy holders, assets held in certain jurisdictions to comply with explicit minimum local asset maintenance requirements and assets held in consolidated bankruptcy remote entities such as certain investment funds and other structured entities. The carrying value of the liabilities associated with these other restricted financial assets is generally equal to the carrying value of the assets, with the exception of assets held to comply with local asset maintenance requirements, for which the associated liabilities are greater.

Restricted financial assets

USD million	31.12.18	31.12.17
Financial assets pledged as collateral		
Financial assets at fair value held for trading	43,292	47,454
of which: assets pledged as collateral that may be sold or repledged by counterparties	*32,121*	*36,277*
Loans and advances to customers[1]	18,804	18,087
Financial assets at fair value not held for trading	0	174
Total financial assets pledged as collateral[2]	62,096	65,715
Other restricted financial assets		
Loans and advances to banks	5,140	3,364
Financial assets at fair value held for trading[3]	1,054	12,591
Cash collateral receivables on derivative instruments	3,205	3,921
Loans and advances to customers	935	1,289
Financial assets at fair value not held for trading[3]	23,212	2,282
Financial assets measured at fair value through other comprehensive income	171	253
Other	203	97
Total other restricted financial assets	33,920	23,796
Total financial assets pledged and other restricted financial assets	96,016	89,512

1 All related to mortgage loans that serve as collateral for existing liabilities against Swiss central mortgage institutions and for existing covered bond issuances. Of these pledged mortgage loans, approximately USD 3.2 billion for 31 December 2018 (31 December 2017: approximately USD 2.2 billion) could be withdrawn or used for future liabilities or covered bond issuances without breaching existing collateral requirements. 2 Does not include assets placed with central banks related to undrawn credit lines and for payment, clearing and settlement purposes (31 December 2018: USD 0.3 billion; 31 December 2017: USD 2.6 billion). 3 Financial assets for unit-linked investment contracts were reclassified from Financial assets at fair value held for trading to Financial assets at fair value not held for trading upon adoption of IFRS 9 as of 1 January 2018. Refer to Note 1c for more information.

In addition to restrictions on financial assets, UBS AG and its subsidiaries are, in certain cases, subject to regulatory requirements that affect the transfer of dividends and capital within UBS AG. Supervisory authorities also may require entities to measure capital and leverage ratios on a stressed basis, such as the Federal Reserve Board's Comprehensive Capital Analysis and Review (CCAR) process, which affects UBS Americas Holding LLC, and may limit the ability of the intermediate holding company sub-group to make distributions of capital based on the results of those tests. In June 2018, the Federal Reserve Board released the 2018 CCAR results and did not object to UBS Americas Holding LLC's capital plan.

Note 26 Restricted and transferred financial assets (continued)

Certain regulated subsidiaries are required to maintain capital and / or liquidity to comply with local regulations and may be subject to prudential limitations by regulators that limit the amount of funds that they can distribute or otherwise transfer. Supervisory authorities generally have discretion to impose higher requirements or to otherwise limit the activities of subsidiaries.

Non-regulated subsidiaries are generally not subject to such requirements and transfer restrictions. However, restrictions can also be the result of different legal, regulatory, contractual, entity- or country-specific arrangements and / or requirements.

→ **Refer to "Financial and regulatory key figures for our significant regulated subsidiaries and sub-groups" in the "Significant regulated subsidiary and sub-group information" section of this report for financial information on significant regulated subsidiaries of the Group**

b) Transferred financial assets that are not derecognized in their entirety

The table below presents information for financial assets that have been transferred but are subject to continued recognition in full, as well as recognized liabilities associated with those transferred assets.

Transferred financial assets subject to continued recognition in full

USD million	31.12.18		31.12.17	
	Carrying value of transferred assets	Carrying value of associated liabilities recognized on balance sheet	Carrying value of transferred assets	Carrying value of associated liabilities recognized on balance sheet
Financial assets at fair value held for trading that may be sold or repledged by counterparties	32,121	4,674	36,277	13,277
relating to securities lending and repurchase agreements in exchange for cash received	*4,726*	*4,674*	*13,485*	*13,277*
relating to securities lending agreements in exchange for securities received	*26,234*	*0*	*21,684*	*0*
relating to other financial asset transfers	*1,161*	*0*	*1,109*	*0*
Financial assets at fair value not held for trading that may be sold or repledged by counterparties	0	0	174	173
Total financial assets transferred	32,121	4,674	36,451	13,450

Transactions in which financial assets are transferred, but continue to be recognized in their entirety on UBS AG's balance sheet include securities lending and repurchase agreements as well as other financial asset transfers. Repurchase and securities lending arrangements are, for the most part, conducted under standard market agreements and are undertaken with counterparties subject to UBS AG's normal credit risk control processes.

→ **Refer to Note 1a item 3e for more information on repurchase and securities lending agreements**

As of 31 December 2018, approximately 14% of the transferred financial assets were assets held for trading transferred in exchange for cash, in which case the associated recognized liability represents the amount to be repaid to counterparties. For securities lending and repurchase agreements, a haircut between 0% and 15% is generally applied to the transferred assets, which results in associated liabilities having a carrying value below the carrying value of the transferred assets. The counterparties to the associated liabilities presented in the table above have full recourse to UBS AG.

In securities lending arrangements entered into in exchange for the receipt of other securities as collateral, neither the securities received nor the obligation to return them are recognized on UBS AG's balance sheet, as the risks and rewards of ownership are not transferred to UBS AG. In cases where such financial assets received are subsequently sold or repledged in another transaction, this is not considered to be a transfer of financial assets.

Other financial asset transfers primarily include securities transferred to collateralize derivative transactions, for which the carrying value of associated liabilities is not provided in the table above because those replacement values are managed on a portfolio basis across counterparties and product types, and therefore there is no direct relationship between the specific collateral pledged and the associated liability.

Transferred financial assets that are not subject to derecognition in full, but remain on the balance sheet to the extent of UBS AG's continuing involvement, were not material as of 31 December 2018 and as of 31 December 2017.

Note 26 Restricted and transferred financial assets (continued)

c) Transferred financial assets that are derecognized in their entirety with continuing involvement

Continuing involvement in a transferred and fully derecognized financial asset may result from contractual provisions in the transfer agreement or from a separate agreement with the counterparty or a third party entered into in connection with the transfer.

Purchased and retained interests in securitization vehicles

In cases where UBS AG has transferred assets into a securitization vehicle and retained or purchased interests therein, UBS AG has a continuing involvement in those transferred assets.

As of 31 December 2018, the majority of the retained continuing involvement related to securitization positions held as financial assets at fair value held for trading, primarily collateralized debt obligations, US commercial mortgage-backed securities and residential mortgage-backed securities. The fair value and carrying amount of UBS AG's continuing involvement related to these purchased and retained interests was USD 6 million as of 31 December 2018, and UBS AG recognized gains of USD 3 million in 2018 related to these positions. As of 31 December 2018, life-to-date losses of USD 1,198 million were recorded related to the positions held as of 31 December 2018.

As of 31 December 2017, the fair value and carrying amount of UBS AG's continuing involvement related to purchased and retained interests in securitization vehicles was USD 8 million, and UBS AG recognized gains of USD 4 million in 2017 related to these positions. As of 31 December 2017, life-to-date losses of USD 1,200 million were recorded related to the positions held as of 31 December 2017.

The maximum exposure to loss related to purchased and retained interests in securitization structures was USD 10 million as of 31 December 2018, compared with USD 15 million as of 31 December 2017.

Undiscounted cash outflows of USD 4 million may be payable to the transferee in future periods as a consequence of holding the purchased and retained interests. The earliest period in which payment may be required is less than one month.

d) Off-balance sheet assets received

The table below presents assets received from third parties that can be sold or repledged, that are not recognized on the balance sheet, but that are held as collateral, including amounts that have been sold or repledged.

Off-balance sheet assets received

USD million	31.12.18	31.12.17
Fair value of assets received that can be sold or repledged	483,688	481,265
received as collateral under reverse repurchase, securities borrowing and lending arrangements, derivative and other transactions[1]	*473,302*	*474,420*
received in unsecured borrowings	*10,385*	*6,845*
Thereof sold or repledged[2]	356,752	346,243
in connection with financing activities	*315,402*	*300,880*
to satisfy commitments under short sale transactions	*28,949*	*31,251*
in connection with derivative and other transactions[1]	*12,400*	*14,112*

1 Includes securities received as initial margin from its clients that UBS AG is required to remit to central counterparties, brokers and deposit banks through its exchange-traded derivative clearing and execution services. 2 Does not include off-balance sheet securities (31 December 2018: USD 24.5 billion; 31 December 2017: USD 28.8 billion) placed with central banks related to undrawn credit lines and for payment, clearing and settlement purposes for which there are no associated liabilities or contingent liabilities.

Note 27 Maturity analysis of financial liabilities

The contractual maturities for non-derivative and non-trading financial liabilities as of 31 December 2018 are based on the earliest date on which UBS could be contractually required to pay. The total amounts that contractually mature in each time band are also shown for 31 December 2017. Derivative positions and trading liabilities, predominantly made up of short sale transactions, are assigned to the column *Due within 1 month,* as this provides a conservative reflection of the nature of these trading activities. The contractual maturities may extend over significantly longer periods.

Maturity analysis of financial liabilities

	31.12.18					
USD billion	Due within 1 month	Due between 1 and 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years	Total
Financial liabilities recognized on balance sheet[1]						
Amounts due to banks	7.9	1.0	1.6	0.5	0.0	11.0
Payables from securities financing transactions	9.5	0.6	0.3		0.0	10.4
Cash collateral payables on derivative instruments	28.9					28.9
Customer deposits	396.6	13.4	6.9	5.1	0.0	422.1
Funding from UBS Group AG and its subsidiaries[2]	0.0	0.0	0.5	21.9	22.0	44.4
Debt issued measured at amortized cost[2]	4.6	5.8	39.1	34.7	12.4	96.5
Other financial liabilities measured at amortized cost	6.4					6.4
Total financial liabilities measured at amortized cost	453.9	20.8	48.4	62.3	34.3	619.7
Financial liabilities at fair value held for trading[3,4]	29.0					29.0
Derivative financial instruments[3]	125.7					125.7
Brokerage payables designated at fair value	38.4					38.4
Debt issued designated at fair value[5]	15.7	18.1	10.2	7.4	8.0	59.4
Other financial liabilities designated at fair value	30.0	0.4	1.1	1.2	1.0	33.7
Total financial liabilities measured at fair value through profit or loss	238.8	18.5	11.3	8.6	9.0	286.2
Total	692.7	39.3	59.7	70.9	43.3	905.9
Guarantees, commitments and forward starting transactions[6]						
Loan commitments[7]	34.1	0.3	0.3	0.0		34.7
Guarantees[7]	19.8					19.8
Forward starting transactions						
Reverse repurchase agreements[7]	9.0		0.0			9.0
Securities borrowing agreements	0.0					0.0
Total	62.9	0.3	0.4	0.0	0.0	63.6

	31.12.17					
Financial liabilities recognized on balance sheet[1]						
Amounts due to banks	6.3	0.4	1.0	0.1	0.0	7.7
Payables from securities financing transactions	13.9	3.1	0.6	0.0	0.0	17.7
Cash collateral payables on derivative instruments	31.0					31.0
Customer deposits	405.0	11.3	5.2	0.9	0.0	422.4
Funding from UBS Group AG and its subsidiaries[2]		0.4	0.7	21.9	19.6	42.6
Debt issued measured at amortized cost[2]	4.2	14.8	45.6	35.7	12.8	113.1
Other financial liabilities measured at amortized cost	36.8					36.8
Total financial liabilities measured at amortized cost	497.2	30.1	53.2	58.6	32.4	671.4
Financial liabilities at fair value held for trading[3,4]	31.3					31.3
Derivative financial instruments[3]	119.1					119.1
Debt issued designated at fair value[5]	18.3	10.0	8.5	7.7	6.2	50.7
Other financial liabilities designated at fair value	12.4	0.6	3.4	1.4	1.0	18.8
Total financial liabilities measured at fair value through profit or loss	181.1	10.6	11.9	9.1	7.3	219.9
Total	**678.3**	**40.7**	**65.0**	**67.6**	**39.7**	**891.3**
Guarantees, commitments and forward starting transactions[6]						
Loan commitments[7]	39.2	0.2	0.2	0.1		39.7
Guarantees[7]	19.3	0.0				19.3
Forward starting transactions						
Reverse repurchase agreements[7]	13.0					13.0
Securities borrowing agreements	0.0					0.0
Total	**71.5**	**0.2**	**0.2**	**0.1**	**0.0**	**72.0**

1 Except for financial liabilities at fair value held for trading and derivative financial instruments (see footnote 3), the amounts presented generally represent undiscounted cash flows of future interest and principal payments. 2 The time bucket Due after 5 years includes perpetual loss-absorbing additional tier 1 capital instruments. 3 Carrying value is fair value. Management believes that this best represents the cash flows that would have to be paid if these positions had to be settled or closed out. Refer to Note 28 for undiscounted cash flows of derivatives designated in hedge accounting relationships. 4 Contractual maturities of financial liabilities at fair value held for trading are: USD 28.3 billion due within one month (2017: USD 30.3 billion), USD 0.6 billion due between one month and one year (2017: USD 0.8 billion) and USD 0 billion due between 1 and 5 years (2017: USD 0.1 billion). 5 Future interest payments on variable-rate liabilities are determined by reference to the applicable interest rate prevailing as of the reporting date. Future principal payments that are variable are determined by reference to the conditions existing at the reporting date. 6 Comprises the maximum irrevocable amount of guarantees, commitments and forward starting transactions. 7 Loan commitments measured at fair value of USD 3.5 billion, guarantees measured at fair value of USD 1.6 billion and forward starting reverse repurchase agreements measured at fair value of USD 8.1 billion are under the time bucket Due within 1 month.

Note 28 Hedge accounting

Derivatives transacted for hedging purposes

UBS AG enters into derivative transactions for the purpose of hedging risks inherent in assets, liabilities and forecast transactions. The accounting treatment of hedge transactions varies according to the nature of the instrument hedged and whether the hedge qualifies as such for accounting purposes.

Derivative transactions that qualify and are designated as hedges for accounting purposes are described under the corresponding risk category headings in this Note (interest rate risk hedge accounting and structural foreign exchange risk hedge accounting). In addition, UBS designates certain non-derivative financial assets and liabilities as hedging instruments in structural foreign exchange risk hedge accounting, as described under the corresponding risk category headings of this Note.

UBS AG has also executed various hedging strategies utilizing derivatives for which hedge accounting has not been applied. These economic hedges include interest rate swaps and other interest rate derivatives (e.g., futures) for day-to-day economic interest rate risk management purposes. In addition, UBS AG has used equity futures, options and, to a lesser extent, swaps in a variety of equity trading strategies to offset underlying equity and equity volatility exposure. UBS AG has also entered into credit default swaps that provide economic hedges for credit risk exposures (refer to "Credit derivatives" in Note 11). UBS AG's accounting policies for derivatives designated and accounted for as hedging instruments or economic hedges that do not qualify for hedge accounting are described in Note 1a item 3j, where terms used in the following sections are explained.

Note 28 Hedge accounting (continued)

Interest rate risk hedge accounting

Fair value hedges: interest rate risk related to debt instruments

UBS AG issues various long-term, fixed-rate debt instruments measured at amortized cost, such as senior unsecured debt, covered bonds and subordinated debt, that are exposed to changes in fair value due to movements in market interest rates. Interest rate swaps are used as fair value hedges to protect against changes in the fair value of the issued debt.

Fair value hedges of interest rate risk related to debt instruments involve swapping fixed cash flows associated with the debt issued to floating cash flows by entering into interest rate swaps that receive fixed and pay floating cash flows. The variable future cash flows are based on the following benchmark rates: USD LIBOR, CHF LIBOR, EURIBOR, GBP LIBOR, AUD LIBOR, JPY LIBOR and SGD LIBOR.

The issued debt and interest rate swaps are designated in a fair value hedge relationship. The notional of the designated hedging instrument matches the notional of the hedged item.

The hedged risk is determined as the change in the fair value of the debt issued arising solely from changes in the designated benchmark interest rate (e.g., one-month or three-month LIBOR). Such change is usually the largest component of the overall change in the fair value of the hedged position in transaction currency.

Hedge effectiveness is assessed by comparing changes in the fair value of the debt issued attributable to changes in the designated benchmark interest rate with the changes in the fair value of the interest rate swaps.

Hedge ineffectiveness can arise from different curves used for the discounting of the hedging instruments and the hedged items, or from mismatches of critical terms between fixed-term lending products and hedging interest rate swaps.

Hedging instruments and hedged items

USD million	31.12.18	31.12.17
Hedging instruments: interest rate swaps		
Nominal amount[1]	63,816	
Carrying amount		
Derivative financial assets	27	49
Derivative financial liabilities	1	2
Hedged items: debt issued measured at amortized cost		
Carrying amount[1]	28,139	
of which: accumulated amount of fair value hedge adjustment	282	
Hedged items: funding from UBS Group AG and its subsidiaries		
Carrying amount[1]	35,647	
of which: accumulated amount of fair value hedge adjustment	*(580)*	

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

Hedge ineffectiveness

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Changes in fair value of hedging instruments[1]	(341)	(16)	166
Changes in fair value of hedged items[1]	329	(4)	(170)
Net gains / (losses) related to hedge ineffectiveness recognized in Other net income from fair value changes on financial instruments	(11)	(20)	(4)

1 For prior periods, the amounts included offsetting accrued interest, which did not have any effect on net gains / (losses) related to hedge ineffectiveness.

Profile of the timing of the nominal amount of the hedging instrument

USD billion	Due within 1 month	Due between 1 and 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years	Total
Interest rate swaps			4	43	17	64

Note 28 Hedge accounting (continued)

Fair value hedges: portfolio interest rate risk related to loans

UBS AG has a portfolio of long-term fixed-rate mortgage loans in CHF that are measured at amortized cost and exposed to changes in the fair value attributable to movements in market interest rates. Interest rate swaps that pay a fixed rate of interest and receive a floating rate of interest are used as fair value hedges to protect against changes in the fair value of the originated loans.

The portfolio of mortgage loans and interest rate swaps are designated in a fair value hedge relationship. The notional of the designated hedging instrument matches the notional of the hedged item.

The hedging strategy involves an open portfolio of hedged items, i.e., mortgage loans. Both the hedged items and the hedging instruments are adjusted on a monthly basis to reflect changes in size and the maturity profile of the hedged portfolio. The existing hedging relationship is discontinued and a new one is designated. Changes in the portfolio are driven by new loans originated or existing loans repaid.

The hedged risk is determined as the change in the fair value of the loans arising solely from changes in the designated benchmark interest rate (e.g., one-month or three-month LIBOR). Such change is usually the largest component of the overall change in the fair value of the hedged position in transaction currency.

Hedge effectiveness is assessed by comparing changes in the fair value of the hedged portfolio of loans attributable to changes in the designated benchmark interest rate with the changes in the fair value of the interest rate swaps.

Hedge ineffectiveness can arise from different curves used for the discounting of the hedging instruments and the hedged items, or from mismatches of critical terms between fixed-term lending products and hedging interest rate swaps.

Hedging instruments and hedged items

USD million	31.12.18	31.12.17
Hedging instruments: interest rate swaps		
Nominal amount[1]	10,318	
Carrying amount		
Derivative financial assets	0	0
Derivative financial liabilities	31	33
Hedged items: loans and advances to customers		
Carrying amount[1]	10,299	
of which: accumulated amount of fair value hedge adjustment on the portfolio that was subject to hedge accounting[2]	*200*	
of which: accumulated amount of fair value hedge adjustment, subject to amortization attributable to the portion of the portfolio that ceased to be part of hedge accounting[2]	*89*	

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively. 2 Amounts presented within Other financial assets measured at amortized cost and Other financial liabilities measured at amortized cost.

Hedge ineffectiveness

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Changes in fair value of hedging instruments[1]	(22)	(10)	(132)
Changes in fair value of hedged items[1]	16	3	119
Net gains / (losses) related to hedge ineffectiveness recognized in Other net income from fair value changes on financial instruments	(6)	(7)	(13)

1 For prior periods, the amounts included offsetting accrued interest, which had no effect on net gains / (losses) related to hedge ineffectiveness.

Note 28 Hedge accounting (continued)

Cash flow hedges of forecast transactions

UBS AG is exposed to variability in future interest cash flows on non-trading financial assets and liabilities that bear interest at variable rates or are expected to be refinanced or reinvested in the future, due to movements in future market rates. The amounts and timing of future cash flows, representing both principal and interest flows, are projected on the basis of contractual terms and other relevant factors, including estimates of prepayments and defaults. The aggregate principal balances and interest cash flows across all portfolios over time form the basis for identifying the non-trading interest rate risk of UBS AG, which is hedged with interest rate swaps, the maximum maturity of which is 10 years.

The group of forecast cash flows and interest rate swaps are designated in cash flow hedge relationships. The notional of the designated hedging instrument matches the notional of the hedged item for newly transacted swaps. For swaps that are re-designated, the ratio of the designation is determined based on the swap sensitivity.

The hedging strategy involves designation of each interest rate swap in a separate hedge relationship against a group of hedged items that share the same risk. The hedged items giving rise to the hedged cash flows are fungible and could be substituted for each other over the lifetime of the hedge. Cash flow forecasts and risk exposures are monitored and adjusted on an ongoing basis, and consequently hedging instruments are added or taken out of the program accordingly.

The hedged risk is determined as the variability of future cash flows arising solely from changes in the designated benchmark interest rate, i.e., overnight index swap rate / one-month or three-month LIBOR. Hedge effectiveness is assessed by comparing changes in the fair value of the hedged cash flows attributable to changes in the designated benchmark interest rate with the changes in the fair value of the interest rate swaps.

Hedge ineffectiveness can arise from differences in the reference index of the hedging instruments and hedged items, or from inception of the hedge relationship after the trade date of the hedging derivative.

Hedging instruments

USD million	31.12.18	31.12.17
Hedging instruments: interest rate swaps		
Nominal amount[1]	70,149	
Carrying amount		
Derivative financial assets	24	31
Derivative financial liabilities	1	2

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

Hedge ineffectiveness

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Changes in fair value of hedging instruments[1]	97		
Changes in fair value of hedged items	(73)		
Effective portion of changes in fair value of hedging instruments recognized as Other comprehensive income	(42)	45	234
Ineffectiveness recognized as Other net income from fair value changes on financial instruments	25	8	11

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

Other comprehensive income recognized directly in equity related to cash flow hedges

USD million	2018	2017	2016
Balance at the beginning of the year	360	955	1,635
Effective portion of changes in fair value of hedging instruments recognized in OCI	(42)	45	234
Amount reclassified to Net interest income when the hedged item affected net profit / (loss)	(294)	(843)	(1,094)
of which: reclassified to interest income on amortized-cost instruments[1]	*(293)*		
of which: reclassified to interest income on FVTPL instruments[1]	*(1)*		
Translation effects recognized directly in retained earnings	18	39	4
Income tax related to cash flow hedges	67	163	176
Balance at the end of the year	109	360	955
of which: related to hedging relationships for which hedge accounting continues to be applied[1,2]	*74*		
of which: related to hedging relationships for which hedge accounting is no longer applied[1,2]	*73*		

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively. 2 Amounts are disclosed on a pre-tax basis.

Note 28 Hedge accounting (continued)

Structural foreign exchange risk hedge accounting

Hedges of net investments in foreign operations

UBS AG applies hedge accounting for certain net investments in foreign operations. For this purpose, foreign exchange (FX) derivatives, mainly FX forwards and FX swaps, as well as non-derivative financial assets or liabilities are used and designated as hedging instruments. The notional of the designated hedging instrument matches the notional of the hedged item.

Based on UBS's risk management strategy, the hedges are adjusted on at least a monthly basis to reflect the changes in the hedged position.

The hedged risk is determined as the change in the carrying amount of net assets of foreign operations arising solely from changes in spot foreign exchange rates. Consequently, UBS AG only designates the spot element of the FX forwards as hedging instruments. Changes in the fair value of the hedging instruments attributable to changes in forward points and the effect of discounting are not part of a hedge accounting designation. These amounts, therefore, do not form part of the effectiveness assessment and are recognized directly in profit or loss.

The effective portion of gains and losses of these FX swaps, i.e., the spot element, is transferred directly to OCI to offset foreign currency translation (FCT) gains and losses on the net investments in foreign branches and subsidiaries. As such, these FX swaps hedge the structural FX exposure, resulting in the accumulation of FCT at the level of individual foreign branches and subsidiaries, which make up the total FCT OCI of UBS AG.

When UBS designates as hedging instruments certain non-derivative foreign currency financial assets and liabilities of foreign branches or subsidiaries, the FX translation difference recorded in FCT OCI of the non-derivative hedging instrument of one foreign entity offsets the structural FX exposure of another foreign entity. Therefore, the aggregated FCT OCI of UBS AG is unchanged from this hedge designation.

Due to the fact that only the spot element of hedging instruments is designated in hedging relationships, ineffectiveness is unlikely unless the hedged net assets fall below the designated hedged amount. The exceptions are hedges where the hedging currency is not the same as the currency of the foreign operation, where the currency basis may cause ineffectiveness.

As of 31 December 2017, the notional amount of hedging instruments exceeded the underlying hedged structural FX exposures, due to the fact that non-US dollar structural FX exposures were hedged against the US dollar first and then against Swiss francs, the former functional currency of the parent entity. As of 31 December 2018 all structural FX exposures are hedged directly against the US dollar.

Hedging instruments

USD million	31.12.18	31.12.17
Hedging instruments: derivative financial instruments		
Nominal amount	11,432	13,237
Carrying amount		
Derivative financial assets	56	79
Derivative financial liabilities	45	132
Hedging instruments: non-derivative foreign currency assets and liabilities		
Nominal amount	229	2,970
Carrying amount[1]		
Receivables from securities financing transactions	115	
Payables from securities financing transactions	115	

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

Hedge ineffectiveness

	For the year ended
USD million	31.12.18
Changes in fair value of hedging instruments[1]	199
Changes in fair value of hedged items[1]	(199)
Effective portion of changes in fair value of hedging instruments recognized in Foreign currency translation OCI[1]	181
Ineffectiveness recognized as Other net income from fair value changes on financial instruments[1]	18

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

Note 28 Hedge accounting (continued)

Foreign currency translation reserve

USD million	31.12.18	31.12.17	31.12.16
Foreign currency translation reserve	3,940	4,455	2,933
of which: effective portion of changes in fair value of hedging instruments related to investment in subsidiaries	*770*		
of which: for which hedge accounting continues to be applied[1]	*515*		
of which: for which hedge accounting is no longer applied[1]	*255*		
Effective portion of changes in fair value of hedging instruments reclassified to Other income upon disposal of investment for the year ended[1]	2		

1 This Note addresses the requirement of IFRS 7 effective from 1 January 2018, for which data is provided prospectively.

Undiscounted cash flows

The table below provides undiscounted cash flow information for derivative instruments designated in hedge accounting relationships.

Derivatives designated in hedge accounting relationships (undiscounted cash flows)

USD billion	On demand	Due within 1 month	Due between 1 and 3 months	Due between 3 and 12 months	Due between 1 and 5 years	Due after 5 years	Total
Interest rate swaps[1]							
FX swaps / forwards							
Cash inflows	0	9	2	0	0	0	11
Cash outflows	0	9	2	0	0	0	11
Net cash flows	0	0	0	0	0	0	0

1 Undiscounted cash inflows and cash outflows of interest rate swaps as of 31 December 2018 were not material as the majority of interest rate swaps designated in hedge accounting relationships are legally settled on a daily basis.

Note 29 Pension and other post-employment benefit plans

The table below provides a breakdown of expenses related to pension and other post-employment benefit plans recognized in the income statement within *Personnel expenses*.

Income statement – expenses related to pension and other post-employment benefit plans

USD million	31.12.18	31.12.17	31.12.16
Net periodic expenses for defined benefit plans	140	365	438
of which: related to major pension plans[1]	*141*	*354*	*417*
of which: Swiss plan[2]	*108*	*307*	*386*
of which: UK plan	*11*	*15*	*(2)*
of which: US and German plans	*22*	*31*	*34*
of which: related to post-employment medical insurance plans[3]	*(11)*	*3*	*4*
of which: UK plan	*1*	*1*	*1*
of which: US plans	*(12)*	*2*	*3*
of which: related to remaining plans and other expenses[4]	*10*	*8*	*17*
Expenses for defined contribution plans[5]	223	236	238
of which: UK plans	*35*	*65*	*78*
of which: US plan	*127*	*110*	*107*
of which: remaining plans	*61*	*61*	*53*
Total pension and other post-employment benefit plan expenses[6]	363	601	677

1 Refer to Note 29a for more information. 2 Changes to the Swiss pension plan in 2018 resulted in a pre-tax gain of USD 132 million related to past service. Refer to Note 29a for more information on these changes. 3 Refer to Note 29b for more information. 4 Other expenses include differences between actual and estimated performance award accruals. 5 Refer to Note 29c for more information. 6 Refer to Note 6.

The table below provides a breakdown of amounts recognized in *Other comprehensive income* for defined benefit plans.

Other comprehensive income – gains / (losses) on defined benefit plans

USD million	31.12.18	31.12.17	31.12.16
Major pension plans[1]	(79)	276	(842)
of which: Swiss plan	*(201)*	*(56)*	*(94)*
of which: UK plan	*130*	*304*	*(623)*
of which: US and German plans	*(8)*	*28*	*(126)*
Post-employment medical insurance plans[2]	7	1	(13)
of which: UK plan	*3*	*1*	*(5)*
of which: US plans	*4*	*0*	*(7)*
Remaining plans	3	31	(26)
Gains / (losses) recognized in other comprehensive income, before tax	(70)	308	(880)
Tax (expense) / benefit relating to defined benefit plans recognized in other comprehensive income	245	6	51
Gains / (losses) recognized in other comprehensive income, net of tax[3]	175	314	(829)

1 Refer to Note 29a for more information. 2 Refer to Note 29b for more information. 3 Refer to the "Statement of comprehensive income."

Note 29 Pension and other post-employment benefit plans (continued)

UBS AG recognizes assets and liabilities with respect to defined benefit plans within *Other non-financial assets* and *Other non-financial liabilities*.

As of 31 December 2018 and 31 December 2017, the Swiss pension plan was in a surplus situation. However, a surplus is only recognized on the balance sheet to the extent that it does not exceed the estimated future economic benefit. Since the estimated future economic benefit was zero as of 31 December 2018 and 31 December 2017, no net defined benefit pension asset was recognized on the balance sheet.

The table below provides a breakdown of liabilities recognized on the balance sheet within *Other non-financial liabilities* related to defined benefit plans.

Balance sheet – net defined benefit pension and post-employment liability

USD million	31.12.18	31.12.17
Major pension plans[1]	671	825
of which: Swiss plan	*0*	*0*
of which: UK plan	*160*	*275*
of which: US and German plans[2]	*511*	*550*
Post-employment medical insurance plans[3]	62	88
of which: UK plan	*22*	*27*
of which: US plans	*40*	*61*
Remaining plans	40	35
Total net defined benefit pension and post-employment liability[4]	773	948

1 Refer to Note 29a for more information. 2 Of the total liability recognized as of 31 December 2018, USD 137 million related to US plans and USD 374 million related to German plans (31 December 2017: USD 153 million and USD 398 million, respectively). 3 Refer to Note 29b for more information. 4 Refer to Note 22.

a) Defined benefit pension plans

UBS AG has established defined benefit pension plans for its employees in various jurisdictions, with the major plans located in Switzerland, the UK, the US and Germany.

The overall investment policy and strategy for UBS AG's defined benefit pension plans is guided by the objective of achieving an investment return that, together with contributions, ensures that there will be sufficient assets to pay pension benefits as they fall due while also mitigating various risks. For the plans with assets, i.e. funded plans, the investment strategies are managed under local laws and regulations in each jurisdiction. The asset allocation is determined by the governance body with reference to the current and expected economic and market conditions and in consideration of specific asset class risk in the risk profile. Within this framework, UBS AG ensures that the fiduciaries consider how the asset investment strategy correlates with the maturity profile of the plan liabilities and the respective potential effect on the funded status of the plans, including potential short-term liquidity requirements.

The defined benefit obligations (DBOs) for all of UBS AG's defined benefit pension plans are directly affected by changes in yields of high-quality corporate bonds quoted in an active market in the currency of the respective pension plan, as the applicable discount rate used to determine the DBO is based on these yields. For the funded plans, the pension assets are invested in a diversified portfolio of financial assets, including real estate, bonds, investment funds and cash, across geographic regions, to ensure a balance of risk and return. Under IFRS, volatility arises in each pension plan's net asset / liability position because the fair value of the plan's financial assets is not fully correlated to movements in the value of the plan's DBO. Specific asset-liability matching strategies for each pension plan are independently determined by the responsible governance body. The net asset / liability volatility for each plan is dependent on the specific financial assets chosen by each plan's governance body. For certain pension plans, a liability-driven investment approach is applied to a portion of the plan assets to reduce potential volatility.

Note 29 Pension and other post-employment benefit plans (continued)

Swiss pension plan

The Swiss pension plan covers employees of UBS AG and employees of companies having close economic or financial ties with UBS AG, and exceeds the minimum benefit requirements under Swiss pension law.

In 2017, a significant number of employees transferred from UBS AG to UBS Business Solutions AG, which is a directly held subsidiary of UBS Group AG. There continues to be one pooled pension plan in Switzerland covering the employees of UBS AG and those transferred to UBS Business Solutions AG. UBS AG and UBS Business Solutions AG both are legal sponsors of UBS's Swiss pension plan. Since the date of the employee transfer, UBS AG and UBS Business Solutions AG apply proportionate defined benefit accounting, i.e., the net pension cost, any OCI impacts from remeasurements and the net pension asset / liability of the Swiss pension plan are allocated proportionally between UBS AG and UBS Business Solutions AG based on the aggregated net pension cost and defined benefit obligations related to their employees.

Contributions to the pension plan are paid by both the employer and the employees. The Swiss pension plan allows employees to choose the level of contributions paid by them. Employee contributions are calculated as a percentage of the contributory salary and are deducted monthly. The percentages deducted from salary depend on age and choice of contribution category and vary between 1% and 13.5% of contributory base salary and between 0% and 9% of contributory variable compensation. Depending on the age of the employee, UBS AG pays a contribution that ranges between 6.5% and 27.5% of contributory base salary and between 3.6% and 9% of contributory variable compensation. UBS AG also pays risk contributions that are used to finance benefits paid out in the event of death and disability, as well as to finance bridging pensions.

The plan benefits include retirement, disability and survivor benefits. The pension plan offers to members at the normal retirement age of 64 a choice between a lifetime pension with or without full restitution and a partial or full lump sum payment. Members can draw early retirement benefits starting from the age of 58. Employees have the opportunity to make additional purchases of benefits to fund early retirement benefits (Plan 58+).

The pension amount payable is a result of the conversion rate applied on the accumulated balance of the individual plan participant's pension account at the retirement date. The accumulated balance of each individual plan participant's pension account is based on credited vested benefits transferred from previous employers, purchases of benefits, and the employee and employer contributions that have been made to the pension account of each individual plan participant, as well as the interest accrued on the accumulated balance. The interest rate accrued is defined annually by the Pension Foundation Board.

Although the Swiss pension plan is based on a defined contribution promise under Swiss pension law, it is accounted for as a defined benefit plan under IFRS, primarily because of the obligation to accrue interest on the pension accounts and the payment of lifetime pension benefits.

The Swiss pension plan is governed by a Pension Foundation Board. The responsibilities of this board are defined by Swiss pension law and by the plan rules. An actuarial valuation under Swiss pension law is performed regularly. According to Swiss pension law, a temporary limited underfunding is permitted. However, should an underfunded situation occur, the Pension Foundation Board is required to take the necessary measures to ensure that full funding can be expected to be restored within a maximum period of 10 years. If a Swiss pension plan were to become significantly underfunded on a Swiss pension law basis, additional employer and employee contributions could be required. In this situation, the risk is shared between employer and employees, and the employer is not legally obliged to cover more than 50% of the additional contributions required. As of 31 December 2018, the Swiss pension plan had a technical funding ratio under Swiss pension law of 124.2% (31 December 2017: 131.9%).

The investment strategy of the Swiss plan is implemented on the basis of a multi-level investment and risk management process and complies with Swiss pension law, including the rules and regulations relating to diversification of plan assets. These rules, among others, specify restrictions on the composition of plan assets; e.g., there is a limit of 50% for investments in equities. The investment strategy of the Swiss plan is aligned with the defined risk budget set out by the Pension Foundation Board. The risk budget is determined on the basis of regularly performed asset and liability management analyses. In order to implement the risk budget, the Swiss plan may use direct investments, investment funds and derivatives. To mitigate foreign currency risk, a specific currency hedging strategy is in place. The Pension Foundation Board strives for a medium- and long-term balance between assets and liabilities.

As of 31 December 2018, the Swiss pension plan was in a surplus situation on an IFRS measurement basis, as the fair value of plan assets exceeded the DBO by USD 1,998 million (31 December 2017: surplus of USD 1,990 million). However, a surplus is only recognized on the balance sheet to the extent that it does not exceed the estimated future economic benefit, which equals the difference between the present value of the estimated future net service cost and the present value of the estimated future employer contributions. The maximum future economic benefit is highly variable based on changes in the discount rate. As of both 31 December 2018 and 31 December 2017, the estimated future economic benefit was zero and hence no net defined benefit asset was recognized on the balance sheet. As of 31 December 2018, the difference between the pension plan surplus and the estimated future economic benefit, i.e., the asset ceiling effect, was USD 1,998 million (31 December 2017: USD 1,990 million).

Changes to the Swiss pension plan

As a result of the effects of continuing low and in some cases negative interest rates, diminished investment return expectations and increasing life expectancy, the pension fund of UBS AG in Switzerland and UBS AG agreed to measures that have taken effect from the start of 2019 to support the long-term financial stability of the Swiss pension fund. As a result, the conversion rate was lowered, the regular retirement age was increased to 65, employee contributions were increased to vary between 2.5% and 13.5% of the contributory base salary, and savings contributions start from age 20 instead of the previous starting age of 25. Pensions already in payment on 1 January 2019 were not affected by these measures.

To mitigate the effects of the reduction of the conversion rate on future pensions, UBS AG will make a payment to employees' retirement assets in the Swiss pension fund of up to USD 448 million in three installments in 2020, 2021 and 2022.

In accordance with IFRS, these measures led to a reduction in the pension obligation recognized by UBS AG, resulting in a pre-tax gain of USD 132 million in 2018. In addition, 2018 service costs were lower by USD 34 million due to the decrease in benefits. These effects were recognized as a reduction in *Personnel expenses* within the income statement across the business divisions and Corporate Center, with a corresponding effect in *Other comprehensive income*, as the Swiss pension plan was in a surplus situation that could not be recognized due to the IFRS asset ceiling restriction. If the Swiss pension plan remains in an asset ceiling position, the three annual payments, adjusted for expected forfeitures, are expected to reduce total equity by approximately USD 130 million per year over the installment period, with no effect on the income statement.

The employer contributions expected to be made to the Swiss pension plan in 2019 are estimated to be USD 275 million.

Non-Swiss pension plans

UBS AG locations outside of Switzerland established various defined benefit pension plans in accordance with local regulations and practices. The non-Swiss locations with major defined benefit pension plans are the UK, the US and Germany. Defined benefit pension plans in other locations are not material to the financial results of UBS AG and hence not separately disclosed.

The non-Swiss plans provide benefits in the event of retirement, death or disability. The level of benefits provided depends on the specific rate of benefit accrual and the level of employee compensation. UBS AG's general principle is to ensure that the plans are adequately funded on the basis of actuarial valuations. Local pension regulations and tax requirements are the primary drivers for determining when contributions are required.

UK pension plan

The UK plan is a career-average revalued earnings scheme, and benefits increase automatically based on UK price inflation. The normal retirement age for participants in the UK plan is 60. Since 2000, the UK plan has been closed to new entrants and, since 2013, pension plan participants are no longer accruing benefits for current or future service. Employees instead participate in the UK defined contribution plan.

The governance responsibility for the UK plan lies jointly with the Pension Trustee Board, which is required under local pension laws, and UBS AG. The employer contributions to the pension fund reflect agreed-upon deficit funding contributions, which are determined on the basis of the most recent actuarial valuation using assumptions agreed by the Pension Trustee Board and UBS AG. In the event of underfunding, UBS AG and the Pension Trustee Board must agree on a deficit recovery plan within statutory deadlines. In 2018 and 2017, UBS AG did not make any deficit funding contributions.

Note 29 Pension and other post-employment benefit plans (continued)

The plan assets are invested in a diversified portfolio of financial assets. A liability-driven investment approach is applied, as a portion of the plan assets is invested in inflation-indexed bonds that provide a partial hedge against price inflation. If price inflation increases, the DBO is likely to increase by more than the change in the fair value of plan assets, which would result in an increase in the net defined benefit liability. Plan rules and local pension legislation cap the level of inflationary increase that can be applied to plan benefits.

As the plan is obligated to provide guaranteed lifetime pension benefits to plan participants upon retirement, increases in life expectancy will result in an increase in the plan's liabilities. The sensitivity to changes in life expectancy is particularly high in the UK plan as the pension benefits are indexed to price inflation.

As of 31 December 2018, the UK plan was in a deficit situation on an IFRS measurement basis as the DBO exceeded the fair value of plan assets by USD 160 million (31 December 2017: deficit of USD 275 million).

Following the most recent triennial statutory actuarial valuation as of 30 June 2017, UBS AG agreed to minimum cash contributions of USD 26 million in 2019 and USD 13 million in 2020. Total contributions expected to be made to the UK defined benefit pension plan in 2019 are estimated at USD 128 million, subject to regular funding reviews during the year.

In addition, UBS AG and the Pension Trustee Board have entered into an arrangement whereby a collateral pool was established to provide security for the pension fund, effective 31 January 2019, at a value of USD 574 million. The collateral pool includes corporate bonds and government-related debt instruments. The Pension Trustee Board and UBS AG may agree adjustments to the collateral pool value in the future. The arrangement provides the Pension Trustee Board dedicated access to a pool of assets in the event of UBS AG insolvency or not paying a required deficit funding contribution.

Following a UK High Court ruling requiring pension trustees to equalize benefits for men and women in relation to guaranteed minimum pensions (GMP), UBS AG recorded an increase of USD 4 million in the DBO, resulting in a corresponding loss recognized in the income statement in 2018.

US pension plans

There are two distinct major defined benefit pension plans in the US, both with a normal retirement age of 65. Since 1998 and 2001, respectively, the plans have been closed to new entrants, who instead can participate in defined contribution plans.

One of the major defined benefit pension plans is a contribution-based plan in which each participant accrues a percentage of salary in a pension account. The pension account is credited annually with interest based on a rate that is linked to the average yield on one-year US government bonds. For the other major defined benefit pension plan, retirement benefits accrue based on the career-average earnings of each individual plan participant. Former employees with vested benefits have the option to take a lump sum payment or a lifetime annuity commencing early or at retirement age.

As required under local state pension laws, both plans have fiduciaries who, together with UBS AG, are responsible for the governance of the plans. UBS AG regularly reviews the contribution strategy for these plans, considering local statutory funding rules and the cost of any premiums that must be paid to the Pension Benefit Guaranty Corporation for having an underfunded plan. In 2018, the contributions made by UBS AG were USD 42 million (2017: USD 92 million).

The plan assets for both plans are invested in a diversified portfolio of financial assets. Each pension plan's fiduciaries are responsible for the investment decisions with respect to the plan assets. Both US plans apply a liability-driven investment approach to support the volatility management in the net asset / liability position. Derivative instruments may also be employed to manage volatility.

The employer contributions expected to be made to the US defined benefit pension plans in 2019 are estimated at USD 9 million.

German pension plans

There are two different defined benefit pension plans in Germany, and both are contribution-based plans. No plan assets are set aside to fund these plans, and benefits are paid directly by UBS AG. The normal retirement age for the participants in the German plans is 65. Within the larger of the two plans, each participant accrues a percentage of salary in a pension account. The accumulated account balance of the plan participant is credited on an annual basis with guaranteed interest at a rate of 5%. In the other plan, amounts are accrued annually based on employee elections. For this plan, the accumulated account balance is credited on an annual basis with a guaranteed interest rate of 6% for amounts accrued before 2010, of 4% for amounts accrued from 2010 to 2017 and of 0.9% for amounts accrued after 2017. Both plans are regulated under German pension law, under which the responsibility to pay pension benefits when they are due rests entirely with UBS AG. For these plans, a portion of the pension payments is directly increased in line with price inflation.

The benefits expected to be paid by UBS AG to the participants of the German plans in 2019 are estimated at USD 11 million.

Financial information by plan

The tables on the following pages provide an analysis of the movement in the net asset / liability recognized on the balance sheet for defined benefit pension plans, as well as an analysis of amounts recognized in net profit and in *Other comprehensive income*.

Note 29 Pension and other post-employment benefit plans (continued)

Defined benefit pension plans

USD million	Swiss plan		UK plan		US and German plans		Total	
	2018	2017	2018	2017	2018	2017	2018	2017
Defined benefit obligation at the beginning of the year	14,398	22,465	3,744	3,639	1,816	1,725	19,957	27,830
Current service cost	251	330	0	0	7	9	258	338
Interest expense	93	119	93	102	55	63	241	284
Plan participant contributions	137	157	0	0	0	0	137	157
Remeasurements	(263)	47	(266)	(88)	(69)	82	(598)	40
of which: actuarial (gains) / losses due to changes in demographic assumptions	*0*	*4*	*(18)*	*(82)*	*(5)*	*(5)*	*(23)*	*(84)*
of which: actuarial (gains) / losses due to changes in financial assumptions	*(391)*	*135*	*(257)*	*44*	*(69)*	*86*	*(716)*	*265*
of which: experience (gains) / losses[1]	*128*	*(92)*	*8*	*(50)*	*5*	*2*	*142*	*(140)*
Past service cost related to plan amendments	(132)	0	4	0	0	0	(128)	0
Curtailments	(17)	(28)	0	0	0	0	(17)	(28)
Benefit payments	(586)	(782)	(202)	(256)	(112)	(109)	(900)	(1,147)
Other movements[2]	0	(8,728)	0	0	0	0	0	(8,728)
Foreign currency translation	(108)	818	(181)	347	(18)	47	(307)	1,211
Defined benefit obligation at the end of the year	13,774	14,398	3,192	3,744	1,679	1,816	18,645	19,957
of which: amounts owed to active members	*6,380*	*6,604*	*146*	*180*	*226*	*255*	*6,751*	*7,038*
of which: amounts owed to deferred members	*0*	*0*	*1,434*	*1,930*	*606*	*645*	*2,040*	*2,575*
of which: amounts owed to retirees	*7,394*	*7,794*	*1,612*	*1,634*	*847*	*916*	*9,854*	*10,344*
Fair value of plan assets at the beginning of the year	16,388	24,184	3,469	3,120	1,265	1,124	21,122	28,428
Return on plan assets excluding amounts included in interest income	(434)	1,003	(136)	215	(77)	110	(647)	1,329
Interest income	109	130	86	88	44	44	238	262
Employer contributions	308	356	0	0	51	100	360	456
Plan participant contributions	137	157	0	0	0	0	137	157
Benefit payments	(586)	(782)	(202)	(256)	(112)	(109)	(900)	(1,147)
Administration expenses, taxes and premiums paid	(7)	(7)	0	0	(3)	(4)	(10)	(12)
Other movements[2]	0	(9,541)	0	0	0	0	0	(9,541)
Foreign currency translation	(144)	889	(185)	302	0	0	(328)	1,191
Fair value of plan assets at the end of the year	15,772	16,388	3,032	3,469	1,168	1,265	19,972	21,122
Asset ceiling effect at the beginning of the year	1,990	1,718	0	0	0	0	1,990	1,718
Interest expense on asset ceiling effect	14	9	0	0	0	0	14	9
Asset ceiling effect excluding interest expense and foreign currency translation on asset ceiling effect	30	1,013	0	0	0	0	30	1,013
Other movements[2]	0	(821)	0	0	0	0	0	(821)
Foreign currency translation	(36)	71	0	0	0	0	(36)	71
Asset ceiling effect at the end of the year	1,998	1,990	0	0	0	0	1,998	1,990
Net defined benefit asset / (liability)	0	0	(160)	(275)	(511)	(550)	(671)	(825)
Movement in the net asset / (liability) recognized on the balance sheet								
Net asset / (liability) recognized on the balance sheet at the beginning of the year	0	0	(275)	(519)	(550)	(601)	(825)	(1,120)
Net periodic expenses recognized in net profit	(108)	(307)	(11)	(15)	(22)	(31)	(141)	(354)
Gains / (losses) recognized in other comprehensive income	(201)	(56)	130	304	(8)	28	(79)	276
Employer contributions	308	356	0	0	51	100	360	456
Other movements	0	8	0	0	0	0	0	8
Foreign currency translation	0	0	(4)	(45)	18	(47)	14	(91)
Net asset / (liability) recognized on the balance sheet at the end of the year	0	0	(160)	(275)	(511)	(550)	(671)	(825)
Funded and unfunded plans								
Defined benefit obligation from funded plans	13,774	14,398	3,192	3,744	1,219	1,324	18,184	19,466
Defined benefit obligation from unfunded plans	0	0	0	0	460	492	460	492
Plan assets	15,772	16,388	3,032	3,469	1,168	1,265	19,972	21,122
Surplus / (deficit)	1,998	1,990	(160)	(275)	(511)	(550)	1,327	1,165
Asset ceiling effect	1,998	1,990	0	0	0	0	1,998	1,990
Net defined benefit asset / (liability)	0	0	(160)	(275)	(511)	(550)	(671)	(825)

1 Experience (gains) / losses are a component of actuarial remeasurements of the defined benefit obligation that reflect the effects of differences between the previous actuarial assumptions and what has actually occurred. 2 Primarily reflects the transfer of employees from UBS AG to UBS Business Solutions AG.

Note 29 Pension and other post-employment benefit plans (continued)

Analysis of amounts recognized in net profit

USD million	Swiss plan		UK plan		US and German plans		Total	
For the year ended	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
Current service cost	251	330	0	0	7	9	258	338
Interest expense related to defined benefit obligation	93	119	93	102	55	63	241	284
Interest income related to plan assets	(109)	(130)	(86)	(88)	(44)	(44)	(238)	(262)
Interest expense on asset ceiling effect	14	9	0	0	0	0	14	9
Administration expenses, taxes and premiums paid	7	7	0	0	3	4	10	12
Past service cost related to plan amendments	(132)	0	4	0	0	0	(128)	0
Curtailments	(17)	(28)	0	0	0	0	(17)	(28)
Net periodic expenses recognized in net profit	108	307	11	15	22	31	141	354

Analysis of amounts recognized in other comprehensive income (OCI)

USD million	Swiss plan		UK plan		US and German plans		Total	
For the year ended	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
Remeasurement of defined benefit obligation	263	(47)	266	88	69	(82)	598	(40)
Return on plan assets excluding amounts included in interest income	(434)	1,003	(136)	215	(77)	110	(647)	1,329
Asset ceiling effect excluding interest expense and foreign currency translation on asset ceiling effect	(30)	(1,013)	0	0	0	0	(30)	(1,013)
Total gains / (losses) recognized in other comprehensive income, before tax	(201)	(56)	130	304	(8)	28	(79)	276

The table below provides information on the duration of the DBO and the timing for expected benefit payments.

	Swiss plan		UK plan		US and German plans[1]	
	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
Duration of the defined benefit obligation (in years)	14.5	15.1	19.5	20.0	9.8	10.6
Maturity analysis of benefits expected to be paid						
USD million						
Benefits expected to be paid within 12 months	704	707	82	83	108	108
Benefits expected to be paid between 1 and 3 years	1,439	1,425	187	182	216	217
Benefits expected to be paid between 3 and 6 years	2,170	2,139	345	337	336	330
Benefits expected to be paid between 6 and 11 years	3,446	3,412	701	717	566	572
Benefits expected to be paid between 11 and 16 years	3,140	3,170	770	806	494	514
Benefits expected to be paid in more than 16 years	10,253	10,723	3,927	4,325	798	887

1 The duration of the defined benefit obligation represents a weighted average across US and German plans.

Actuarial assumptions

The measurement of each pension plan's DBO considers different actuarial assumptions. Changes in those assumptions lead to volatility in the DBO. The following significant actuarial assumptions are applied:

- Discount rate: the discount rate is based on the yield of high-quality corporate bonds quoted in an active market in the currency of the respective pension plan. Consequently, a decrease in the yield of high-quality corporate bonds increases the DBO. Conversely, an increase in the yield of high-quality corporate bonds decreases the DBO.
- Rate of salary increase: an increase in the salary of plan participants generally increases the DBO, specifically for the Swiss and German plans. For the UK plan, as the plan is closed for future service, UBS AG employees no longer accrue future service benefits and thus salary increases have no effect on the DBO. For the US plans, only a small percentage of the total population continues to accrue benefits for future service and therefore the effect of a salary increase on the DBO is minimal.
- Rate of pension increase: for the Swiss plan, there is no automatic indexing of pensions. Any increase would be decided by the Pension Foundation Board. For the US plans, there is also no automatic indexing of pensions. For the UK plan, pensions are automatically indexed to price inflation as per plan rules and local pension legislation. The German plans are also automatically indexed and a portion of the pensions are directly increased by price inflation. An increase in price inflation in the UK or Germany increases the respective plan's DBO.
- Rate of interest credit on retirement savings: the Swiss plan and one of the US plans have retirement saving balances that are increased annually by an interest credit rate. For each of these plans, an increase in the interest credit rate increases the plan's DBO.
- Life expectancy: most of UBS AG's defined benefit pension plans are obligated to provide guaranteed lifetime pension benefits. The DBO for all plans is calculated using an underlying best estimate of the life expectancy of plan participants. An increase in the life expectancy of plan participants increases the plan's DBO.

The actuarial assumptions used for the pension plans are based on the economic conditions prevailing in the jurisdiction in which they are offered.

→ **Refer to Note 1a item 7 for a description of the accounting policy for defined benefit pension plans**

Changes in actuarial assumptions

UBS AG regularly reviews the actuarial assumptions used in calculating its DBO to determine their continuing relevance.

Swiss pension plan

In 2018, a net gain of USD 263 million was recognized in *Other comprehensive income* (OCI) related to the remeasurement of the DBO. This was primarily due to a market-driven increase in the discount rate, which resulted in an OCI gain of USD 478 million. This effect was partly offset by experience losses of USD 128 million, reflecting differences between the previous actuarial assumptions and what actually occurred, and market-driven changes to the assumed rate of interest credit on retirement savings, which resulted in a loss of USD 77 million. Changes in other assumptions were not significant.

In 2017, a net loss of USD 47 million was recognized in OCI related to the remeasurement of the DBO. This was primarily due to a market-driven decrease in the discount rate, which resulted in an OCI loss of USD 159 million. This effect was partially offset by experience gains of USD 92 million and market-driven changes to the assumed rate of interest credit on retirement savings, which resulted in a gain of USD 25 million. Changes in other assumptions were not significant.

UK pension plan

In 2018, a net gain of USD 266 million was recognized in OCI related to the remeasurement of the DBO for the UK plan. This was primarily due to a market-driven increase in the discount rate, which resulted in an OCI gain of USD 219 million, as well as changes in the pension increase assumption, which resulted in an OCI gain of USD 37 million.

In 2017, a net gain of USD 88 million was recognized in OCI related to the remeasurement of the DBO for the UK plan. This was primarily driven by changes in the life expectancy assumption, which resulted in a gain of USD 82 million. In addition, market-driven changes in the inflation rate assumption resulted in a gain of USD 60 million and experience gains were USD 50 million. These gains were partly offset by a market-driven decrease in the discount rate, which resulted in a loss of USD 102 million.

US and German pension plans

In 2018, a net gain of USD 69 million was recognized in OCI related to the remeasurement of the DBO for the US and German plans, compared with a net loss of USD 82 million in 2017. OCI gains and losses in both years were primarily driven by market-driven movements in discount rates.

Note 29 Pension and other post-employment benefit plans (continued)

The tables below show the significant actuarial assumptions used in calculating the DBO at the end of the year.

Significant actuarial assumptions used

	Swiss plan		UK plan		US and German plans[1]	
In %	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
Discount rate	0.92	0.67	2.90	2.55	3.69	3.14
Rate of salary increase	1.50	1.30	0.00	0.00	2.81	2.83
Rate of pension increase	0.00	0.00	3.10	3.11	1.50	1.50
Rate of interest credit on retirement savings	0.92	0.67	0.00	0.00	3.70	2.56

1 Represents weighted average assumptions across US and German plans.

Mortality tables and life expectancies for major plans

		Life expectancy at age 65 for a male member currently			
		aged 65		aged 45	
Country	Mortality table	31.12.18	31.12.17	31.12.18	31.12.17
Switzerland	BVG 2015 G with CMI 2016 projections	21.6	21.6	23.1	23.0
UK	S2PA with CMI 2017 projections[1]	23.4	23.4	24.6	24.6
USA	RP2014 WCHA with MP2018 projection scale[2]	22.8	22.8	24.3	24.4
Germany	Dr. K. Heubeck 2018 G[3]	20.5	20.3	23.3	22.9

		Life expectancy at age 65 for a female member currently			
		aged 65		aged 45	
Country	Mortality table	31.12.18	31.12.17	31.12.18	31.12.17
Switzerland	BVG 2015 G with CMI 2016 projections	23.5	23.4	25.0	24.9
UK	S2PA with CMI 2017 projections[1]	25.2	25.2	26.5	26.5
USA	RP2014 WCHA with MP2018 projection scale[2]	24.4	24.4	26.0	26.0
Germany	Dr. K. Heubeck 2018 G[3]	24.1	24.3	26.3	26.8

1 In 2017, the mortality table S2PA with CMI 2016 projections was used. 2 In 2017, the mortality table RP2014 WCHA with MP2017 projection scale was used. 3 In 2017, the mortality table Dr. K. Heubeck 2005 G was used.

Sensitivity analysis of significant actuarial assumptions

The table below presents a sensitivity analysis for each significant actuarial assumption, showing how the DBO would have been affected by changes in the relevant actuarial assumption that were reasonably possible at the balance sheet date. Unforeseen circumstances may arise, which could result in variations that are outside the range of alternatives deemed reasonably possible. Caution should be used in extrapolating the sensitivities below on the DBO as the sensitivities may not be linear.

Sensitivity analysis of significant actuarial assumptions[1]

Increase / (decrease) in defined benefit obligation	Swiss plan		UK plan		US and German plans	
USD million	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17
Discount rate						
Increase by 50 basis points	(797)	(898)	(292)	(350)	(77)	(90)
Decrease by 50 basis points	904	1,021	333	401	84	98
Rate of salary increase						
Increase by 50 basis points	45	61	–[2]	–[2]	1	1
Decrease by 50 basis points	(43)	(58)	–[2]	–[2]	(1)	(1)
Rate of pension increase						
Increase by 50 basis points	643	726	260	380	6	7
Decrease by 50 basis points	–[3]	–[3]	(262)	(336)	(6)	(7)
Rate of interest credit on retirement savings						
Increase by 50 basis points	141	168	–[4]	–[4]	9	9
Decrease by 50 basis points	(134)	(159)	–[4]	–[4]	(9)	(9)
Life expectancy						
Increase in longevity by one additional year	446	497	122	143	42	48

1 The sensitivity analyses are based on a change in one assumption while holding all other assumptions constant, so that interdependencies between the assumptions are excluded. 2 As the plan is closed for future service, a change in assumption is not applicable. 3 As the assumed rate of pension increase was 0% as of 31 December 2018 and as of 31 December 2017, a downward change in assumption is not applicable. 4 As the UK plan does not provide interest credits on retirement savings, a change in assumption is not applicable.

Note 29 Pension and other post-employment benefit plans (continued)

Fair value of plan assets

The tables below provide information on the composition and fair value of plan assets of the Swiss, the UK and the US pension plans.

Composition and fair value of plan assets

Swiss plan

	31.12.18				31.12.17			
	Fair value			Plan asset allocation %	Fair value			Plan asset allocation %
USD million	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
Cash and cash equivalents	83	0	83	1	74	0	74	0
Real estate / property								
Domestic	0	1,808	1,808	11	0	1,758	1,758	11
Investment funds								
Equity								
Domestic	383	0	383	2	410	0	410	3
Foreign	3,492	925	4,417	28	4,615	818	5,433	33
Bonds[1]								
Domestic, AAA to BBB–	1,569	0	1,569	10	1,401	0	1,401	9
Foreign, AAA to BBB–	3,781	0	3,781	24	3,919	0	3,919	24
Foreign, below BBB–	544	0	544	3	355	0	355	2
Real estate								
Foreign	0	7	7	0	0	14	14	0
Other	316	2,528	2,844	18	529	2,486	3,016	18
Other investments	324	11	335	2	0	8	8	0
Total fair value of plan assets	10,493	5,279	15,772	100	11,304	5,084	16,388	100

	31.12.18	31.12.17
Total fair value of plan assets	15,772	16,388
of which:[2]		
Bank accounts at UBS AG	*80*	*120*
UBS AG debt instruments	*8*	*3*
UBS Group AG shares	*15*	*34*
Securities lent to UBS AG[3]	*957*	*2,030*
Property occupied by UBS AG	*54*	*85*
Derivative financial instruments, counterparty UBS AG[3]	*21*	*23*

1 The bond credit ratings are primarily based on Standard & Poor's credit ratings. Ratings AAA to BBB– and below BBB– represent investment grade and non-investment grade ratings, respectively. In cases where credit ratings from other rating agencies were used, these were converted to the equivalent rating in Standard & Poor's rating classification. 2 Bank accounts at UBS AG encompass accounts in the name of the Swiss pension fund. The other positions disclosed in the table encompass both direct investments in UBS AG instruments and UBS Group AG shares and indirect investments, i.e., those made through funds that the pension fund invests in. 3 Securities lent to UBS AG and derivative financial instruments are presented gross of any collateral. Securities lent to UBS AG were fully covered by collateral as of 31 December 2018 and 31 December 2017. Net of collateral, derivative financial instruments amounted to USD 6 million as of 31 December 2018 (31 December 2017: USD 12 million).

Note 29 Pension and other post-employment benefit plans (continued)

Composition and fair value of plan assets (continued)

UK plan

	31.12.18				31.12.17			
	Fair value			Plan asset allocation %	Fair value			Plan asset allocation %
USD million	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
Cash and cash equivalents	143	0	143	5	163	0	163	5
Bonds[1]								
Domestic, AAA to BBB–	1,604	0	1,604	53	1,709	0	1,709	49
Domestic, below BBB–	0	0	0	0	1	0	1	0
Investment funds								
Equity								
Domestic	26	0	26	1	31	0	31	1
Foreign	658	0	658	22	1,046	0	1,046	30
Bonds[1]								
Domestic, AAA to BBB–	587	93	680	22	641	83	724	21
Domestic, below BBB–	15	0	15	0	21	0	21	1
Foreign, AAA to BBB–	258	0	258	9	147	0	147	4
Foreign, below BBB–	51	0	51	2	57	0	57	2
Real estate								
Domestic	102	28	131	4	103	28	131	4
Other	0	0	0	0	(4)	5	1	0
Asset-backed securities	21	2	22	1	0	0	0	0
Other investments[2]	(565)	9	(556)	(18)	(575)	11	(563)	(16)
Total fair value of plan assets	2,900	132	3,032	100	3,341	127	3,469	100

1 The bond credit ratings are primarily based on Standard & Poor's credit ratings. Ratings AAA to BBB– and below BBB– represent investment grade and non-investment grade ratings, respectively. In cases where credit ratings from other rating agencies were used, these were converted to the equivalent rating in Standard & Poor's rating classification. 2 Mainly relates to repurchase arrangements on UK treasury bonds.

Note 29 Pension and other post-employment benefit plans (continued)

Composition and fair value of plan assets (continued)

US plans

	31.12.18				31.12.17			
	Fair value			Plan asset allocation %	Fair value			Plan asset allocation %
USD million	Quoted in an active market	Other	Total		Quoted in an active market	Other	Total	
Cash and cash equivalents	27	0	27	2	76	0	76	6
Bonds[1]								
Domestic, AAA to BBB–	462	0	462	40	200	0	200	16
Domestic, below BBB–	2	0	2	0	10	0	10	1
Foreign, AAA to BBB–	92	0	92	8	46	0	46	4
Foreign, below BBB–	3	0	3	0	1	0	1	0
Investment funds								
Equity								
Domestic	143	0	143	12	298	0	298	24
Foreign	157	0	157	13	277	0	277	22
Bonds[1]								
Domestic, AAA to BBB–	104	0	104	9	216	0	216	17
Domestic, below BBB–	23	0	23	2	20	0	20	2
Foreign, AAA to BBB–	56	0	56	5	47	0	47	4
Foreign, below BBB–	6	0	6	1	5	0	5	0
Real estate								
Domestic	0	13	13	1	0	13	13	1
Other	64	0	64	5	21	0	21	2
Insurance contracts	0	17	17	1	0	18	18	1
Asset-backed securities	0	0	0	0	15	0	15	1
Other investments	0	0	0	0	4	0	4	0
Total fair value of plan assets	1,139	29	1,168	100	1,235	31	1,265	100

1 The bond credit ratings are primarily based on Standard & Poor's credit ratings. Ratings AAA to BBB– and below BBB– represent investment grade and non-investment grade ratings, respectively. In cases where credit ratings from other rating agencies were used, these were converted to the equivalent rating in Standard & Poor's rating classification.

Note 29 Pension and other post-employment benefit plans (continued)

b) Post-employment medical insurance plans

In the US and the UK, UBS AG offers post-employment medical insurance benefits that contribute to the health care coverage of certain employees and their beneficiaries after retirement. The UK post-employment medical insurance plan is closed to new entrants. In the US, retiree medical premiums are subsidized for eligible participants who retired before 2014.

These plans are not prefunded. In the US, the retirees also contribute to the cost of the post-employment medical benefits.

In 2018, UBS AG announced changes to one of the US post-employment medical insurance plans that replaced the UBS AG retiree medical subsidy with a new subsidy to purchase medical coverage through a private Medicare exchange. This change reduced the post-employment benefit obligation by USD 14 million, resulting in a corresponding gain recognized in the income statement in 2018.

The benefits expected to be paid by UBS AG to the post-employment medical insurance plans in 2019 are estimated at USD 5 million.

The table below provides an analysis of the movement in the net asset / liability recognized on the balance sheet for post-employment medical insurance plans, as well as an analysis of amounts recognized in net profit and in *Other comprehensive income*.

Post-employment medical insurance plans

USD million	UK plan		US plans		Total	
	2018	2017	2018	2017	2018	2017
Post-employment benefit obligation at the beginning of the year	27	26	61	64	88	90
Current service cost	0	0	0	0	0	0
Interest expense	1	1	2	2	3	3
Plan participant contributions	0	0	3	3	3	3
Remeasurements	(3)	(1)	(4)	0	(7)	(1)
of which: actuarial (gains) / losses due to changes in demographic assumptions	*0*	*0*	*0*	*0*	*0*	*(1)*
of which: actuarial (gains) / losses due to changes in financial assumptions	*(1)*	*(1)*	*(4)*	*2*	*(5)*	*2*
of which: experience (gains) / losses[1]	*(2)*	*0*	*0*	*(2)*	*(2)*	*(2)*
Past service cost related to plan amendments	0	0	(14)	0	(14)	0
Benefit payments[2]	(1)	(1)	(7)	(8)	(9)	(9)
Foreign currency translation	(1)	2	0	0	(1)	2
Post-employment benefit obligation at the end of the year	22	27	40	61	62	88
of which: amounts owed to active members	*6*	*6*	*0*	*0*	*6*	*6*
of which: amounts owed to deferred members	*0*	*0*	*0*	*0*	*0*	*0*
of which: amounts owed to retirees	*17*	*21*	*40*	*61*	*56*	*81*
Fair value of plan assets at the end of the year	0	0	0	0	0	0
Net post-employment benefit asset / (liability)	(22)	(27)	(40)	(61)	(62)	(88)
Analysis of amounts recognized in net profit						
Current service cost	0	0	0	0	0	0
Interest expense related to post-employment benefit obligation	1	1	2	2	3	3
Past service cost related to plan amendments	0	0	(14)	0	(14)	0
Net periodic expenses	1	1	(12)	2	(11)	3
Analysis of amounts recognized in other comprehensive income (OCI)						
Remeasurement of post-employment benefit obligation	3	1	4	0	7	1
Total gains / (losses) recognized in other comprehensive income, before tax	3	1	4	0	7	1

1 Experience (gains) / losses are a component of actuarial remeasurements of the post-employment benefit obligation that reflect the effects of differences between the previous actuarial assumptions and what has actually occurred. 2 Benefit payments are funded by employer contributions and plan participant contributions.

Actuarial assumptions

The measurement of each medical insurance plan's post-employment benefit obligation considers different actuarial assumptions. Changes in assumptions lead to volatility in the post-employment benefit obligation. The following significant actuarial assumptions are applied:

– Discount rate: discount rates used for post-employment medical insurance plans are the same as those used for defined benefit pension plans. A decrease in the yield of high-quality corporate bonds increases the post-employment benefit obligation. Conversely, an increase in the yield of high-quality corporate bonds decreases the post-employment benefit obligation.
– Average health care cost trend rate: an increase in health care costs generally increases the post-employment benefit obligation.
– Life expectancy: as some plan participants have lifetime benefits under these plans, an increase in life expectancy increases the post-employment benefit obligation.

UBS AG regularly reviews the actuarial assumptions used in calculating its post-employment benefit obligations to determine their continuing relevance. Significant actuarial assumptions used to determine post-employment benefit obligations at the end of the year were:

Significant actuarial assumptions used[1]

	UK plan		US plans[2]	
In %	31.12.18	31.12.17	31.12.18	31.12.17
Discount rate	2.90	2.55	4.20	3.54
Average health care cost trend rate – initial	5.10	5.10	7.79	7.99
Average health care cost trend rate – ultimate	5.10	5.10	4.50	4.50

1 The assumptions for life expectancies are provided within Note 29a. 2 Represents weighted average assumptions across US plans.

Sensitivity analysis of significant actuarial assumptions

The table below presents a sensitivity analysis for each significant actuarial assumption showing how the post-employment benefit obligation would have been affected by changes in the relevant actuarial assumption that were reasonably possible at the balance sheet date. Unforeseen circumstances may arise, which could result in variations that are outside the range of alternatives deemed reasonably possible. Caution should be used in extrapolating the sensitivities below on the post-employment benefit obligation, as the sensitivities may not be linear.

Sensitivity analysis of significant actuarial assumptions[1]

Increase / (decrease) in post-employment benefit obligation	UK plan		US plans	
USD million	31.12.18	31.12.17	31.12.18	31.12.17
Discount rate				
Increase by 50 basis points	(1)	(2)	(2)	(3)
Decrease by 50 basis points	1	2	2	3
Average health care cost trend rate				
Increase by 100 basis points	3	4	1	1
Decrease by 100 basis points	(3)	(3)	0	(1)
Life expectancy				
Increase in longevity by one additional year	2	2	2	4

1 The sensitivity analyses are based on a change in one assumption while holding all other assumptions constant, so that interdependencies between the assumptions are excluded.

c) Defined contribution plans

UBS AG sponsors a number of defined contribution plans in locations outside Switzerland. The locations with significant defined contribution plans are the US and the UK. Certain plans allow employees to make contributions and earn matching or other contributions from UBS AG. Employer contributions to defined contribution plans are recognized as an expense, which, for the years ended 31 December 2018, 2017 and 2016, amounted to USD 223 million, USD 236 million and USD 238 million, respectively.

Note 29 Pension and other post-employment benefit plans (continued)

d) Related-party disclosure

UBS AG is the principal provider of banking services for the pension fund of UBS AG in Switzerland. In this capacity, UBS AG is engaged to execute most of the pension fund's banking activities. These activities can include, but are not limited to, trading, securities lending and borrowing and derivative transactions. The non-Swiss UBS AG pension funds do not have a similar banking relationship with UBS AG.

Also, UBS AG leases certain properties that are owned by the Swiss pension fund. As of 31 December 2018, the minimum commitment toward the Swiss pension fund under the related leases was approximately USD 10 million (31 December 2017: USD 5 million).

→ **Refer to the "Composition and fair value of plan assets" table in Note 29a for more information on fair value of investments in UBS AG and UBS Group AG instruments held by the Swiss pension fund**

The following amounts have been received or paid by UBS AG from and to the pension and other post-employment benefit plans located in Switzerland, the UK and the US in respect of these banking activities and arrangements.

Related-party disclosure

	For the year ended		
USD million	31.12.18	31.12.17	31.12.16
Received by UBS AG			
Fees	22	36	36
Paid by UBS AG			
Rent	3	5	5
Dividends, capital repayments and interest	10	10	14

The transaction volumes in UBS Group AG shares and UBS AG debt instruments and the balances of UBS Group AG shares held as of 31 December were:

Transaction volumes – UBS Group AG shares and UBS AG debt instruments

	For the year ended	
	31.12.18	31.12.17
Financial instruments bought by pension funds		
UBS Group AG shares (in thousands of shares)	831	905
UBS AG debt instruments (par values, USD million)	9	2
Financial instruments sold by pension funds or matured		
UBS Group AG shares (in thousands of shares)	547	2,897
UBS AG debt instruments (par values, USD million)	2	4

UBS Group AG shares held by pension and other post-employment benefit plans

	31.12.18	31.12.17
Number of shares (in thousands of shares)	15,934	16,370
Fair value (USD million)	197	301

Note 30 Employee benefits: variable compensation

a) Plans offered

UBS has several share-based and other compensation plans that align the interests of Group Executive Board (GEB) members and other employees with the interests of investors. These compensation plans are also designed to meet regulatory requirements. The most significant compensation plans are described below.

For the majority of variable compensation awards granted under such plans to employees of UBS AG, the grantor entity is UBS Group AG. Expenses associated with these awards are charged by UBS Group AG to UBS AG. For the purpose of this Note, references to shares refer to UBS Group AG shares.

→ **Refer to Note 1a item 6 for a description of the accounting policy related to share-based and other deferred compensation plans**

Mandatory deferred compensation plans

Equity Ownership Plan (EOP)

The EOP is a mandatory deferred share-based compensation plan for all employees with total annual compensation greater than USD / CHF 300,000.

EOP awards granted to GEB members and certain other employees will only vest if both Group and business division performance conditions are met. For all awards granted for the performance year 2017 (awarded in early 2018) and before, the Group performance condition is based on the average adjusted return on tangible equity (RoTE) excluding deferred tax assets over the performance period. Starting with the EOP awards granted in 2019 for the performance year 2018, the Group performance condition is based on the average reported return on common equity tier 1 capital (RoCET1). Business division performance is measured on the basis of their average adjusted return on attributed equity (RoAE). For Corporate Center employees, it is measured on the basis of the average operating businesses' adjusted RoAE.

Certain awards, such as replacement awards issued outside the normal performance year cycle, may take the form of deferred cash under the EOP plan rules.

Notional shares represent a promise to receive UBS shares at vesting and do not carry voting rights during the vesting period. Notional shares granted prior to February 2014 have no rights to dividends, whereas awards granted since February 2014 carry a dividend equivalent that may be paid in notional shares or cash and that vests on the same terms and conditions as the awards. However, starting with awards granted for the performance year 2017, European Banking Authority guidelines do not permit individuals who are deemed to be Material Risk Takers (MRTs) to receive dividend or interest payments on instruments awarded as deferred variable remuneration. Where dividend payments are not permitted, the grant price of the EOP award is adjusted for the expected dividend yield over the vesting period to reflect the fair value of the non-dividend-bearing award.

Awards are settled by delivering UBS shares at vesting, except in jurisdictions where this is not permitted for legal or tax reasons. EOP awards generally vest in equal installments after two and three years following grant (for GEB members, generally after three, four and five years). The awards are generally forfeitable upon, among other circumstances, voluntary termination of employment with UBS.

Deferred Contingent Capital Plan (DCCP)

The DCCP is a mandatory deferred compensation plan for all employees with total annual compensation greater than USD / CHF 300,000.

DCCP awards granted up to January 2015 represent a right to receive a cash payment at vesting. For awards granted since February 2015, DCCP takes the form of notional additional tier 1 (AT1) capital instruments, which at the discretion of UBS can be settled in either a cash payment or a perpetual, marketable AT1 capital instrument. DCCP awards vest in full after five years, and up to seven years for UK senior management functions, unless there is a trigger event.

Awards are forfeited if a viability event occurs, that is, if FINMA notifies the firm in writing that the DCCP awards must be written down to prevent an insolvency, bankruptcy or failure of UBS, or if UBS receives a commitment of extraordinary support from the public sector that is necessary to prevent such an event. Additionally, they are written down if the Group's common equity tier 1 capital ratio falls below 10% for GEB members and below 7% for all other employees. As an additional performance condition, GEB members forfeit 20% of their award for each loss-making year during the vesting period.

For awards granted up to January 2015, interest on the awards is paid annually, provided that UBS achieved an adjusted profit before tax in the preceding year. For awards granted since February 2015, interest payments are discretionary. Where interest payments are not permitted, such as for MRTs, the DCCP award reflects the fair value of the granted non-interest-bearing award.

The awards are generally forfeitable upon, among other circumstances, voluntary termination of employment with UBS.

Note 30 Employee benefits: variable compensation (continued)

Asset Management EOP
In order to align deferred compensation of certain Asset Management employees with the performance of the investment funds they manage, awards are granted to such employees in the form of cash-settled notional investment funds. The amount delivered depends on the value of the underlying investment funds at the time of vesting. The awards are generally forfeitable upon, among other circumstances, voluntary termination of employment with UBS.

Financial advisor variable compensation

In line with market practice for US wealth management businesses, the compensation for US financial advisors in Global Wealth Management is comprised of production payout and deferred compensation awards. Production payout is primarily based on compensable revenue and is paid monthly.

Financial advisors may also qualify for deferred compensation awards, which generally vest over a six-year period. The awards are based on strategic performance measures, including production, length of service with the firm and net new business. Production payout rates and deferred compensation awards may be reduced for, among other things, errors, negligence or carelessness, or a failure to comply with the firm's rules, standards, practices and policies or applicable laws and regulations.

Strategic objective awards
Strategic objective awards are deferred compensation awards based on strategic performance measures, including production, length of service with the firm and net new business. These awards are granted in the form of both deferred share-based and deferred cash-based awards, with a vesting period of up to six years.

Through performance year 2016, strategic objective awards were partly granted under the PartnerPlus deferred cash plan. In addition to such granted awards (UBS company contributions), participants were allowed to voluntarily contribute additional amounts otherwise payable as production payout up to a certain percentage, which vested upon contribution. Company contributions and voluntary contributions were credited with interest in accordance with the terms of the plan. Rather than being credited with interest, a participant could elect to have voluntary contributions, along with vested company contributions, credited with notional earnings based on the performance of various mutual funds. Company contributions and interest on both company and voluntary contributions ratably vest in 20% installments six to 10 years following grant date. Company contributions and interest on notional earnings on both company and voluntary contributions are forfeitable under certain circumstances.

GrowthPlus
GrowthPlus is a compensation plan for selected financial advisors whose revenue production and length of service exceed defined thresholds from 2010 through 2017. Awards were granted in 2010, 2011, 2015 and 2018. The awards are cash-based and are distributed over seven years, with the exception of 2018 awards, which are distributed over five years.

Other compensation plans

Equity Plus Plan (Equity Plus)
Equity Plus is a voluntary share-based compensation plan that provides eligible employees with the opportunity to purchase UBS shares at market value and receive one notional share for every three shares purchased, up to a maximum annual limit. Share purchases may be made annually from the performance award and / or monthly through deductions from salary. If the shares purchased are held until three years from the start of the associated plan year and, in general, if the employee remains employed by UBS, the notional shares vest. For notional shares granted since April 2014, employees are entitled to receive a dividend equivalent, which may be paid in notional shares and / or cash.

Role-based allowances (RBAs)
Certain employees of legal entities regulated in the EU may receive an RBA in addition to their base salary. This allowance reflects the market value of a specific role and is fixed, non-forfeitable compensation. Unlike salary, an RBA is paid only as long as the employee is in such a role. RBAs consist of a cash portion and, where applicable, a blocked UBS share award. Such shares will be unblocked in equal installments after two and three years. The compensation expense is recognized in the year of grant.

Discontinued deferred compensation plans

The following plans have been discontinued. Expenses related to these plans were fully recognized in the income statement in periods prior to 2018. Any remaining outstanding options and stock appreciation rights under these awards will expire during 2019.

Senior Executive Equity Ownership Plan (SEEOP)

Up to February 2012, GEB members and selected senior executives received a portion of their mandatory deferral in UBS shares or notional shares, which vested in equal installments over a five-year vesting period and were forfeitable if certain conditions had not been met. The employee's business division or the Group as a whole had to be profitable in the financial year preceding scheduled vesting. Awards granted under SEEOP were settled by delivering UBS shares at vesting. No SEEOP awards have been granted since 2012.

Senior Executive Stock Option Plan (SESOP)

Up to February 2008, GEB members and selected senior executives were granted UBS options with a strike price set at 110% of the market value of a UBS share on the grant date. These awards vested in full following a three-year vesting period and generally expired 10 years from the grant date. No SESOP awards have been granted since 2008.

Long-Term Deferred Retention Senior Incentive Scheme (LTDRSIS)

Awards under the LTDRSIS were granted to employees in Australia up to and including 2014 and represented a profit share amount based on the profitability of the Australian business. Awards vested after three years and included an arrangement that allowed for unpaid installments to be reduced if the business recorded a loss for the calendar year preceding vesting. The awards were generally forfeitable upon voluntary termination of employment with UBS.

Key Employee Stock Appreciation Rights Plan (KESAP) and Key Employee Stock Option Plan (KESOP)

Until 2009, certain key and high-potential employees were granted discretionary share-settled stock appreciation rights (SARs) or options on UBS shares with a strike price not less than the market value of a UBS share on the date of grant. A SAR gives employees the right to receive a number of UBS shares equal to the value of any market price increase of a UBS share between the grant date and the exercise date. One option entitles the holder to acquire one registered UBS share at the option's strike price. SARs and options are settled by delivering UBS shares, except in jurisdictions where this is not permitted for legal reasons. No options or SARs awards have been granted since 2009.

Note 30 Employee benefits: variable compensation (continued)

b) Effect on the income statement

Effect on the income statement for the financial year and future periods

The table below provides information on compensation expenses related to total variable compensation, including financial advisor variable compensation, that were recognized in the financial year ended 31 December 2018, as well as expenses that were deferred and will be recognized in the income statement for 2019 and later. The majority of expenses deferred to 2019 and later that are related to the performance year 2018 relates to awards granted in March 2019. The total compensation expense for unvested share-based awards granted up to 31 December 2018 will be recognized in future periods over a weighted average period of 2.3 years.

Variable compensation including financial advisor variable compensation

	Expenses recognized in 2018			Expenses deferred to 2019 and later		
USD million	Related to the performance year 2018	Related to prior performance years	Total	Related to the performance year 2018	Related to prior performance years	Total
Non-deferred cash	1,896	(26)	1,870	0	0	0
Deferred compensation awards	360	564	924	570	638	1,208
of which: Equity Ownership Plan	*208*	*299*	*507*	*316*	*238*	*554*
of which: Deferred Contingent Capital Plan	*126*	*235*	*361*	*232*	*373*	*605*
of which: Asset Management EOP	*25*	*28*	*53*	*22*	*26*	*48*
of which: Other performance awards	*0*	*2*	*2*	*0*	*1*	*1*
Total variable compensation – performance awards	**2,256**	**538**	**2,794**	**570**	**638**	**1,208**
Replacement payments	7	61	68	58	40	99
Forfeiture credits	0	(136)	(136)	0	0	0
Severance payments	106	0	106	0	0	0
Retention plan and other payments	31	33	64	23	33	56
Deferred Contingent Capital Plan: interest expense	0	116	116	96	191	288
Total variable compensation – other	**144**	**75**	**220**	**178**	**264**	**442**
Financial advisor variable compensation	3,233	237	3,470	128	639	767
of which: non-deferred cash	*3,089*	*0*	*3,089*	*0*	*0*	*0*
of which: deferred share-based awards	*51*	*44*	*95*	*52*	*131*	*183*
of which: deferred cash-based awards	*93*	*193*	*286*	*76*	*507*	*584*
Compensation commitments with recruited financial advisors[1]	33	551	584	357	1,883	2,240
Total financial advisor variable compensation	**3,266**	**789**	**4,054**	**484**	**2,522**	**3,006**
Total variable compensation including FA variable compensation	**5,666**	**1,402**	**7,068[2]**	**1,233**	**3,424**	**4,656**

1 Reflects expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. Amounts reflected as deferred expenses represent the maximum deferred exposure as of the balance sheet date. 2 Includes USD 612 million in expenses related to share-based compensation (performance awards: USD 507 million; other variable compensation: USD 10 million; financial advisor compensation: USD 95 million). A further USD 44 million in expenses related to share-based compensation was recognized within other Note 6 expense categories (Salaries: USD 15 million, related to role-based allowances; Social security: USD 7 million; Other personnel expenses: USD 22 million, related to the Equity Plus Plan).

Note 30 Employee benefits: variable compensation (continued)

Variable compensation including financial advisor variable compensation (continued)

	Expenses recognized in 2017			Expenses deferred to 2018 and later		
USD million	Related to the performance year 2017	Related to prior performance years	Total	Related to the performance year 2017	Related to prior performance years	Total
Non-deferred cash	1,982	(24)	1,958	0	0	0
Deferred compensation awards	392	704	1,096	589	685	1,274
of which: Equity Ownership Plan	*235*	*364*	*599*	*322*	*286*	*608*
of which: Deferred Contingent Capital Plan	*132*	*304*	*436*	*240*	*369*	*609*
of which: Asset Management EOP	*25*	*32*	*57*	*27*	*27*	*54*
of which: Other performance awards	*0*	*4*	*4*	*0*	*3*	*3*
Total variable compensation – performance awards	**2,373**	**680**	**3,054**	**589**	**685**	**1,274**
Replacement payments	12	58	70	82	41	123
Forfeiture credits	0	(106)	(106)	0	0	0
Severance payments	95	0	95	0	0	0
Retention plan and other payments	24	38	62	30	32	62
Deferred Contingent Capital Plan: interest expense	0	110	110	80	218	297
Total variable compensation – other	**131**	**99**	**231**	**191**	**291**	**482**
Financial advisor variable compensation	3,050	260	3,310	156	795	951
of which: non-deferred cash	*2,891*	*0*	*2,891*	*0*	*0*	*0*
of which: deferred share-based awards	*54*	*48*	*102*	*70*	*121*	*191*
of which: deferred cash-based awards	*104*	*212*	*316*	*86*	*674*	*760*
Compensation commitments with recruited financial advisors[1]	31	723	754	369	2,058	2,429
Total financial advisor variable compensation	**3,080**	**984**	**4,064**	**526**	**2,853**	**3,379**
Total variable compensation including FA variable compensation	**5,585**	**1,764**	**7,349[2]**	**1,306**	**3,829**	**5,135**

1 Reflects expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. Amounts reflected as deferred expenses represent the maximum deferred exposure as of the balance sheet date. 2 Includes USD 726 million in expenses related to share-based compensation (performance awards: USD 599 million; other variable compensation: USD 25 million; financial advisor compensation: USD 102 million). A further USD 97 million in expenses related to share-based compensation was recognized within other Note 6 expense categories (Salaries: USD 25 million, related to role-based allowances; Social security: USD 49 million; Other personnel expenses: USD 23 million, related to the Equity Plus Plan).

Note 30 Employee benefits: variable compensation (continued)

Variable compensation including financial advisor variable compensation (continued)

	Expenses recognized in 2016			Expenses deferred to 2017 and later		
USD million	Related to the performance year 2016	Related to prior performance years	Total	Related to the performance year 2016	Related to prior performance years	Total
Non-deferred cash	1,833	(42)	1,791	0	0	0
Deferred compensation awards	379	835	1,214	646	840	1,486
of which: Equity Ownership Plan	*217*	*491*	*708*	*256*	*349*	*605*
of which: Deferred Contingent Capital Plan	*136*	*299*	*435*	*358*	*460*	*818*
of which: Asset Management EOP	*26*	*39*	*66*	*32*	*26*	*58*
of which: Other performance awards	*0*	*6*	*6*	*0*	*5*	*5*
Total variable compensation – performance awards	**2,212**	**793**	**3,005**	**646**	**840**	**1,486**
Replacement payments	25	62	87	40	30	70
Forfeiture credits	0	(74)	(74)	0	0	0
Severance payments	220	0	220	0	0	0
Retention plan and other payments	26	51	78	23	26	50
Deferred Contingent Capital Plan: interest expense	0	113	113	96	239	335
Total variable compensation – other	**271**	**153**	**425**	**159**	**296**	**455**
Financial advisor variable compensation	2,682	250	2,931	194	877	1,071
of which: non-deferred cash	*2,534*	*0*	*2,534*	*0*	*0*	*0*
of which: deferred share-based awards	*34*	*49*	*82*	*57*	*117*	*174*
of which: deferred cash-based awards	*114*	*201*	*315*	*137*	*760*	*897*
Compensation commitments with recruited financial advisors[1]	43	765	808	596	2,084	2,679
Total financial advisor variable compensation	**2,725**	**1,015**	**3,740**	**790**	**2,961**	**3,750**
Total variable compensation including FA variable compensation	**5,208**	**1,961**	**7,170[2]**	**1,595**	**4,096**	**5,691**

1 Reflects expenses related to compensation commitments with financial advisors entered into at the time of recruitment that are subject to vesting requirements. Amounts reflected as deferred expenses represent the maximum deferred exposure as of the balance sheet date. 2 Includes USD 830 million in expenses related to share-based compensation (performance awards: USD 708 million; other variable compensation: USD 40 million; financial advisor compensation: USD 82 million). A further USD 90 million in expenses related to share-based compensation was recognized within other Note 6 expense categories (Salaries: USD 39 million, related to role-based allowances; Social security: USD 27 million; Other personnel expenses: USD 24 million, related to the Equity Plus Plan).

Note 30 Employee benefits: variable compensation (continued)

c) Outstanding share-based compensation awards

Share and performance share awards

Movements in outstanding share-based awards under the EOP during 2018 and 2017 are provided in the table below. The awards presented are granted by UBS AG, but are based on UBS Group AG shares.

Movements in outstanding share and performance share awards granted under the EOP

	Number of shares 2018	Weighted average grant date fair value (USD)	Number of shares 2017	Weighted average grant date fair value (USD)
Outstanding, at the beginning of the year	404,720	15	512,185	16
Shares awarded during the year	26,005	13	117,082	14
Distributions during the year	(228,932)	15	(212,984)	17
Forfeited during the year	0	0	(11,563)	15
Outstanding, at the end of the year	201,793	15	404,720	15
of which: shares vested for accounting purposes	*133,225*		*132,117*	

The total carrying amount of the liability related to cash-settled share-based awards as of 31 December 2018 and 31 December 2017 was USD 2 million and USD 5 million, respectively.

d) Valuation

Share awards

UBS AG measures compensation expense based on the average market price of the UBS share on the grant date as quoted on the SIX Swiss Exchange, taking into consideration post-vesting sale and hedge restrictions, non-vesting conditions and market conditions, where applicable. The fair value of the share awards subject to post-vesting sale and hedge restrictions is discounted on the basis of the duration of the post-vesting restriction and is referenced to the cost of purchasing an at-the-money European put option for the term of the transfer restriction. The weighted average discount for share and performance share awards granted during 2018 was approximately 18.0% (2017: 20.2%) of the market price of the UBS share. The grant date fair value of notional shares without dividend entitlements also includes a deduction for the present value of future expected dividends to be paid between the grant date and distribution.

Note 31 Interests in subsidiaries and other entities

a) Interests in subsidiaries

UBS AG defines its significant subsidiaries as those entities that, either individually or in aggregate, contribute significantly to UBS AG's financial position or results of operations, based on a number of criteria, including the subsidiaries' equity and their contribution to UBS AG's total assets and profit or loss before tax, in accordance with the requirements set by IFRS 12, Swiss regulations and the rules of the US Securities and Exchange Commission (SEC).

Individually significant subsidiaries

The table below lists UBS AG's individually significant subsidiaries as of 31 December 2018. Unless otherwise stated, the subsidiaries listed below have share capital consisting solely of ordinary shares that are held fully by UBS AG, and the proportion of ownership interest held is equal to the voting rights held by UBS AG.

The country where the respective registered office is located is also the principal place of business. UBS AG operates through a global network of branches and a significant proportion of its business activity is conducted outside Switzerland in the UK, US, Singapore, Hong Kong and other countries. UBS Europe SE has branches and offices in a number of EU member states, including Germany, Italy, Luxembourg, Spain and Austria. Share capital is provided in the currency of the legally registered office.

Individually significant subsidiaries as of 31 December 2018[1]

Company	Registered office	Primary business division	Share capital in million		Equity interest accumulated in %
UBS Americas Holding LLC	Wilmington, Delaware, USA	Corporate Center	USD	2,250.0[2]	100.0
UBS Asset Management AG	Zurich, Switzerland	Asset Management	CHF	43.2	100.0
UBS Bank USA	Salt Lake City, Utah, USA	Global Wealth Management	USD	0.0	100.0
UBS Europe SE	Frankfurt, Germany	Global Wealth Management	EUR	446.0	100.0
UBS Financial Services Inc.	Wilmington, Delaware, USA	Global Wealth Management	USD	0.0	100.0
UBS Limited	London, United Kingdom	Investment Bank	GBP	226.6	100.0
UBS Securities LLC	Wilmington, Delaware, USA	Investment Bank	USD	1,283.1[3]	100.0
UBS Switzerland AG	Zurich, Switzerland	Personal & Corporate Banking	CHF	10.0	100.0

1 Includes direct and indirect subsidiaries of UBS AG. 2 Comprised of common share capital of USD 1,000 and non-voting preferred share capital of USD 2,250,000,000. 3 Comprised of common share capital of USD 100,000 and non-voting preferred share capital of USD 1,283,000,000.

Note 31 Interests in subsidiaries and other entities (continued)

Other subsidiaries

The table below lists other direct and indirect subsidiaries of UBS AG that are not individually significant but that contribute to UBS AG's total assets and aggregated profit before tax thresholds and are thereby disclosed in accordance with the requirements set by the SEC.

Other subsidiaries as of 31 December 2018

Company	Registered office	Primary business division	Share capital in million		Equity interest accumulated in %
UBS Americas Inc.	Wilmington, Delaware, USA	Corporate Center	USD	0.0	100.0
UBS Asset Management (Hong Kong) Limited	Hong Kong, Hong Kong	Asset Management	HKD	254.0	100.0
UBS Asset Management (Japan) Ltd	Tokyo, Japan	Asset Management	JPY	2,200.0	100.0
UBS Business Solutions US LLC	Wilmington, Delaware, USA	Corporate Center	USD	0.0	100.0
UBS Credit Corp.	Wilmington, Delaware, USA	Global Wealth Management	USD	0.0	100.0
UBS (France) S.A.	Paris, France	Global Wealth Management	EUR	133.0	100.0
UBS Fund Advisor, L.L.C.	Wilmington, Delaware, USA	Global Wealth Management	USD	0.0	100.0
UBS Fund Management (Luxembourg) S.A.	Luxembourg, Luxembourg	Asset Management	EUR	13.0	100.0
UBS Fund Management (Switzerland) AG	Basel, Switzerland	Asset Management	CHF	1.0	100.0
UBS (Monaco) S.A.	Monte Carlo, Monaco	Global Wealth Management	EUR	49.2	100.0
UBS Realty Investors LLC	Boston, Massachusetts, USA	Asset Management	USD	9.0	100.0
UBS Securities (Thailand) Ltd	Bangkok, Thailand	Investment Bank	THB	500.0	100.0
UBS Securities Australia Ltd	Sydney, Australia	Investment Bank	AUD	0.3[1]	100.0
UBS Securities Japan Co., Ltd.	Tokyo, Japan	Investment Bank	JPY	32,100.0	100.0
UBS Securities Pte. Ltd.	Singapore, Singapore	Investment Bank	SGD	420.4	100.0
UBS Asset Management Life Ltd	London, United Kingdom	Asset Management	GBP	15.0	100.0

1 Includes a nominal amount relating to redeemable preference shares.

Consolidated structured entities

UBS AG consolidates a structured entity (SE) if it has power over the relevant activities of the entity, exposure to variable returns and the ability to use its power to affect its returns. Consolidated SEs include certain investment funds, securitization vehicles and client investment vehicles. UBS AG has no individually significant subsidiaries that are SEs.

Investment fund SEs are generally consolidated when UBS AG's aggregate exposure combined with its decision-making rights indicate the ability to use such power in a principal capacity. Typically UBS AG will have decision-making rights as fund manager, earning a management fee, and will provide seed capital at the inception of the fund or hold a significant percentage of the fund units. Where other investors do not have the substantive ability to remove UBS as decision maker, UBS AG is deemed to have control and therefore consolidates the fund.

Securitization SEs are generally consolidated when UBS AG holds a significant percentage of the asset-backed securities issued by the SE and has the power to remove without cause the servicer of the asset portfolio.

Client investment SEs are generally consolidated when UBS AG has a substantive liquidation right over the SE or a decision right over the assets held by the SE and has exposure to variable returns through derivatives traded with the SE or holding notes issued by the SE.

In 2018 and 2017, UBS AG did not enter into any contractual obligation that could require UBS AG to provide financial support to consolidated SEs. In addition, UBS AG did not provide support, financial or otherwise, to a consolidated SE when UBS AG was not contractually obligated to do so, nor has UBS AG an intention to do so in the future. Further, UBS AG did not provide support, financial or otherwise, to a previously unconsolidated SE that resulted in UBS AG controlling the SE during the reporting period.

Note 31 Interests in subsidiaries and other entities (continued)

b) Interests in associates and joint ventures

As of 31 December 2018 and 2017, no associate or joint venture was individually material to UBS AG. In addition, there were no significant restrictions on the ability of associates or joint ventures to transfer funds to UBS AG or its subsidiaries in the form of cash dividends or to repay loans or advances made. There were no quoted market prices for any associates or joint ventures of UBS AG.

UBS Securities China is no longer recognized as an investment in associate as of 31 December 2018 as this entity was consolidated following an increase in stake from 24.99% to 51% and UBS AG acquiring control in December 2018.

→ **Refer to Note 32 for more information**

In November 2018, SIX and Worldline entered into a strategic partnership in the cards business under which SIX transferred its existing cards business to Worldline and received a 27% stake in Worldline. UBS AG recognized a gain of USD 460 million in the income statement, proportional to UBS AG's 17.31% equity ownership in SIX.

Investments in associates and joint ventures

USD million	31.12.18	31.12.17
Carrying amount at the beginning of the year	1,045	947
Additions	3	3
Disposals[1]	(431)	0
Reclassifications[2]	(21)	0
Share of comprehensive income	529	100
of which: share of net profit[3]	*529*	*76*
of which: share of other comprehensive income[4]	*1*	*24*
Dividends received	(42)	(53)
Impairment	0	(7)
Foreign currency translation	16	55
Carrying amount at the end of the year	1,099	1,045
of which: associates	*1,066*	*1,014*
of which: UBS Securities China[1]	*0*	*412*
of which: SIX Group AG, Zurich[5]	*952*	*476*
of which: other associates	*114*	*127*
of which: joint ventures	*33*	*30*

1 In December 2018, UBS AG increased its shareholding in UBS Securities China from 24.99% to 51%, acquiring control of the entity in accordance with IFRS 10, Consolidated Financial Statements. Upon acquisition of control, UBS AG derecognized its former investment in associate. Refer to Note 32 for more information. 2 Reflects reclassifications to Properties and other non-current assets held for sale. 3 For 2018, consists of USD 511 million from associates, of which USD 460 million reflected a valuation gain on the equity ownership in SIX related to the sale of SIX Payment Services to Worldline, and USD 18 million from joint ventures. For 2017, consists of USD 61 million from associates and USD 15 million from joint ventures. 4 For 2018, the total of USD 1 million is from associates. For 2017, consists of USD 24 million from associates and negative USD 1 million from joint ventures. 5 In 2018, UBS AG's equity interest amounts to 17.31%. UBS AG is represented on the Board of Directors.

c) Interests in unconsolidated structured entities

During 2018, UBS AG sponsored the creation of various SEs and interacted with a number of non-sponsored SEs, including securitization vehicles, client vehicles as well as certain investment funds, that UBS did not consolidate as of 31 December 2018 because it did not control these entities.

The table below presents UBS AG's interests in and maximum exposure to loss from unconsolidated SEs as well as the total assets held by the SEs in which UBS had an interest as of year-end, except for investment funds sponsored by third parties, for which the carrying value of UBS's interest as of year-end has been disclosed.

Interests in unconsolidated structured entities

	31.12.18				
USD million, except where indicated	Securitization vehicles	Client vehicles	Investment funds	Total	Maximum exposure to loss[1]
Financial assets at fair value held for trading	420	174	7,297	7,890	7,890
Derivative financial instruments	8	35	1	44	44
Loans and advances to customers			179	179	179
Financial assets at fair value not held for trading	87	48[2]	85[3]	220	1,796
Financial assets measured at fair value through other comprehensive income		3,931		3,931	3,931
Other financial assets measured at amortized cost	312	25[2]		337	1,423
Total assets	826[4]	4,212	7,562	12,600	
Derivative financial instruments	3[5]	123	32	158	3
Total liabilities	3	123	32	158	
Assets held by the unconsolidated structured entities in which UBS had an interest (USD billion)	63[6]	69[7]	385[8]		

	31.12.17				
USD million, except where indicated	Securitization vehicles	Client vehicles	Investment funds	Total	Maximum exposure to loss[1]
Financial assets at fair value held for trading	373	316	6,302	6,991	6,991
Derivative financial instruments	22	70	23	114	114
Loans and advances to customers			100	100	100
Financial assets at fair value not held for trading	86	68[2]		154	1,718
Financial assets measured at fair value through other comprehensive income		3,965	46[3]	4,011	4,011
Other financial assets measured at amortized cost	299	30[2]		328	1,443
Total assets	779[4]	4,449	6,470	11,698	
Derivative financial instruments	21[5]	54	208	283	14
Total liabilities	21	54	208	283	
Assets held by the unconsolidated structured entities in which UBS had an interest (USD billion)[9]	58[6]	80[7]	422[8]		

1 For the purpose of this disclosure, maximum exposure to loss amounts do not consider the risk-reducing effects of collateral or other credit enhancements. 2 Represents the carrying value of loan commitments. The maximum exposure to loss for these instruments is equal to the notional amount. 3 Upon adoption of IFRS 9 on 1 January 2018, investment fund units that were formerly classified as available for sale under IAS 39 were reclassified to Financial assets at fair value not held for trading. Refer to Note 1c for more information. 4 As of 31 December 2018, USD 0.6 billion of the USD 0.8 billion (31 December 2017: USD 0.7 billion of the USD 0.8 billion) was held in Corporate Center – Non-core and Legacy Portfolio. 5 Comprised of credit default swap liabilities and other swap liabilities. The maximum exposure to loss for credit default swap liabilities is equal to the sum of the negative carrying value and the notional amount. For other swap liabilities, no maximum exposure to loss is reported. 6 Represents the principal amount outstanding. 7 Represents the market value of total assets. 8 Represents the net asset value of the investment funds sponsored by UBS and the carrying value of UBS's interests in the investment funds not sponsored by UBS. 9 In 2018 UBS has refined the methodology applied to identify significant interests in the scope of disclosure under IFRS 12, Disclosure of Interests in Other Entities. This change has been applied prospectively as the effect on interests disclosed was not material in prior periods. Had this methodology been applied in 2017, the interests in unconsolidated structured entities at 31 December 2017 would have been USD 0.3 million and USD 0.2 million lower for securitization vehicles and client vehicles, respectively. Assets held by the unconsolidated structured entities in which UBS had an interest at 31 December 2017 would have been USD 26 billion lower for securitization vehicles and USD 22 billion lower for client vehicles.

Note 31 Interests in subsidiaries and other entities (continued)

UBS AG retains or purchases interests in unconsolidated SEs in the form of direct investments, financing, guarantees, letters of credit, derivatives and through management contracts.

UBS AG's maximum exposure to loss is generally equal to the carrying value of UBS AG's interest in the SE, with the exception of guarantees, letters of credit and credit derivatives, for which the contract's notional amount, adjusted for losses already incurred, represents the maximum loss that UBS AG is exposed to. In addition, the current fair value of derivative swap instruments with a positive replacement value only, such as total return swaps, is presented as the maximum exposure to loss. Risk exposure for these swap instruments could change over time with market movements.

The maximum exposure to loss disclosed in the table on the previous page does not reflect UBS AG's risk management activities, including effects from financial instruments that may be used to economically hedge the risks inherent in the unconsolidated SE or the risk-reducing effects of collateral or other credit enhancements.

In 2018 and 2017, UBS AG did not provide support, financial or otherwise, to an unconsolidated SE when not contractually obligated to do so, nor has UBS AG an intention to do so in the future.

In 2018 and 2017, income and expenses from interests in unconsolidated SEs primarily resulted from mark-to-market movements recognized in other net income from fair value changes on financial instruments, which have generally been hedged with other financial instruments, as well as fee and commission income received from UBS-sponsored funds.

Interests in securitization vehicles

As of 31 December 2018 and 31 December 2017, UBS AG held interests, both retained and acquired, in various securitization vehicles, a majority of which are held within Corporate Center – Non-core and Legacy Portfolio. The Investment Bank also retained interests in securitization vehicles related to financing, underwriting, secondary market and derivative trading activities. In some cases UBS AG may be required to absorb losses from an unconsolidated SE before other parties because UBS AG's interest is subordinated to others in the ownership structure.

An overview of UBS AG's interests in unconsolidated securitization vehicles and the relative ranking and external credit rating of those interests is presented in the table on the following pages. The numbers outlined in this table may differ from the securitization positions presented in the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors*, for the following reasons: (i) exclusion from the table on the following pages of synthetic securitizations transacted with entities that are not SEs and transactions in which UBS AG did not have an interest because it did not absorb any risk, (ii) a different measurement basis in certain cases (e.g., IFRS carrying value within the table above compared with net exposure amount at default for Pillar 3 disclosures) and (iii) different classification of vehicles viewed as sponsored by UBS AG versus sponsored by third parties.

→ **Refer to Note 1a item 1 for more information on the Group's accounting policies regarding consolidation and sponsorship of securitization vehicles and other structured entities**

→ **Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at *www.ubs.com/investors* for more information**

Interests in client vehicles

As of 31 December 2018 and 31 December 2017, UBS AG retained interests in client vehicles sponsored by UBS and third parties that relate to financing and derivative activities, and to hedge structured product offerings. Included within these investments are securities guaranteed by US government agencies.

Interests in investment funds

UBS AG holds interests in a number of investment funds, primarily resulting from seed investments or in order to hedge structured product offerings. In addition to the interests disclosed in the table on the previous page, UBS AG manages the assets of various pooled investment funds and receives fees that are based, in whole or part, on the net asset value of the fund and / or the performance of the fund. The specific fee structure is determined on the basis of various market factors and considers the nature of the fund and the jurisdiction of incorporation, as well as fee schedules negotiated with clients. These fee contracts represent an interest in the fund as they align UBS AG's exposure with investors, providing a variable return that is based on the performance of the entity. Depending on the structure of the fund, these fees may be collected directly from the fund assets and / or from the investors. Any amounts due are collected on a regular basis and are generally backed by the assets of the fund. UBS AG did not have any material exposure to loss from these interests as of 31 December 2018 or as of 31 December 2017.

Note 31 Interests in subsidiaries and other entities (continued)

Interests in unconsolidated securitization vehicles[1]

	31.12.18				
USD million, except where indicated	Residential mortgage-backed securities	Commercial mortgage-backed securities	Other asset-backed securities[2]	Re-securitization[3]	Total
Sponsored by UBS					
Interests in senior tranches	87	196		8	291
of which: rated investment grade		*196*			*196*
of which: rated sub-investment grade	*87*			*8*	*95*
of which: not rated		*0*			*0*
Interests in mezzanine tranches		13			13
of which: rated investment grade		*12*			*12*
of which: not rated		*0*			*0*
Interests in junior tranches	8	1			9
of which: not rated	*8*	*1*			*9*
Total	95	210		8	313
of which: financial assets at fair value held for trading	*8*	*210*		*8*	*226*
of which: financial assets at fair value not held for trading	*87*				*87*
Total assets held by the vehicles in which UBS had an interest (USD billion)	0	24		1	25
Not sponsored by UBS					
Interests in senior tranches	1	33	25	126	185
of which: rated investment grade	*1*	*33*	*0*	*126*	*160*
of which: not rated		*0*	*25*		*25*
Interests in mezzanine tranches	1	7			8
of which: rated investment grade		*2*			*2*
of which: rated sub-investment grade	*1*				*1*
of which: defaulted	*0*				*0*
of which: not rated	*0*	*5*			*5*
Interests in junior tranches	1				1
of which: rated sub-investment grade	*1*				*1*
of which: defaulted	*0*				*0*
Total	3	41	25	126	194
of which: financial assets at fair value held for trading	*3*	*41*	*25*	*126*	*194*
Total assets held by the vehicles in which UBS had an interest (USD billion)	2	12	22	1	37

Note 31 Interests in subsidiaries and other entities (continued)

Interests in unconsolidated securitization vehicles (continued)[1]

	31.12.17				
USD million, except where indicated	Residential mortgage-backed securities	Commercial mortgage-backed securities	Other asset-backed securities[2]	Re-securiti-zation[3]	Total
Sponsored by UBS					
Interests in senior tranches	86	24	0	11	121
of which: rated investment grade	*0*	*24*	*0*		*24*
of which: rated sub-investment grade	*86*				*86*
of which: defaulted				*11*	*11*
Interests in junior tranches		9			9
of which: rated investment grade		*9*			*9*
Total	86	33	0	11	130
of which: financial assets at fair value held for trading		*33*	*0*	*11*	*44*
of which: financial assets at fair value not held for trading	*86*				*86*
Total assets held by the vehicles in which UBS had an interest (USD billion)	1	10	0	1	12
Not sponsored by UBS					
Interests in senior tranches	77	7	169	66	319
of which: rated investment grade	*77*	*7*	*169*	*66*	*319*
Interests in mezzanine tranches	9	1			9
of which: rated investment grade		*1*			*1*
of which: defaulted	*9*				*9*
Interests in junior tranches	1				1
of which: rated sub-investment grade	*1*				*1*
Tranche information not available	0				0
of which: rated investment grade	*0*				*0*
of which: not rated	*0*				*0*
Total	87	7	169	66	330
of which: financial assets at fair value held for trading	*87*	*7*	*169*	*66*	*330*
Total assets held by the vehicles in which UBS had an interest (USD billion)[4]	19	5	20	0	44

1 This table excludes receivables and derivative transactions with securitization vehicles. 2 Includes credit card, auto and student loan structures. 3 Includes collateralized debt obligations. 4 In 2018 UBS has refined the methodology applied to identify significant interests in the scope of disclosure under IFRS 12, Disclosure of Interests in Other Entities. This change has been applied prospectively as the effect on interests disclosed was not material in prior periods. Had this methodology been applied in 2017, the interests in unconsolidated securitization vehicles at 31 December 2017 would have been USD 0.3 million lower and the assets held by these unconsolidated securitization vehicles would have been USD 26 billion lower.

Sponsored unconsolidated structured entities in which UBS did not have an interest

For several sponsored SEs, no interest was held by UBS AG at year-end. However, during the respective reporting period UBS AG transferred assets, provided services and held instruments that did not qualify as an interest in these sponsored SEs, and accordingly earned income or incurred expenses from these entities. The table below presents the income earned and expenses incurred directly from these entities during the year as well as corresponding asset information. The table does not include income earned and expenses incurred from risk management activities, including income and expenses from financial instruments used to economically hedge instruments transacted with the unconsolidated SEs.

The majority of the fee income arose from investment funds that are sponsored and administrated by UBS AG, but managed by third parties. As UBS AG does not provide any active management services, UBS AG was not exposed to risk from the performance of these entities and was therefore deemed not to have an interest in them. In certain structures, the fees receivable may be collected directly from the investors and have therefore not been included in the table below.

UBS AG also recorded other net income from fair value changes on financial instruments from mark-to-market movements arising primarily from derivatives, such as interest rate and currency swaps as well as credit derivatives, through which UBS AG purchases protection, and financial liabilities designated at fair value, which do not qualify as interests because UBS AG does not absorb variability from the performance of the entity. Total income reported does not reflect economic hedges or other mitigating effects from UBS AG's risk management activities.

During 2018, UBS AG and third parties transferred assets of USD 1 billion and USD 1 billion, respectively, into sponsored securitization vehicles created in the year (2017: USD 2 billion and USD 8 billion, respectively). UBS and third parties also transferred assets of USD 2 billion and USD 0 billion, respectively, into sponsored client vehicles created in the year (2017: USD 3 billion and USD 1 billion, respectively). For sponsored investment funds, transfers arose during the period as investors invested and redeemed positions, thereby changing the overall size of the funds, which, when combined with market movements, resulted in a total closing net asset value of USD 18 billion (31 December 2017: USD 15 billion).

Sponsored unconsolidated structured entities in which UBS did not have an interest at year-end[1]

	As of or for the year ended			
	31.12.18			
USD million, except where indicated	Securitization vehicles	Client vehicles	Investment funds	Total
Net interest income	0	(6)	1	(5)
Net fee and commission income		16	39	54
Other net income from fair value changes on financial instruments	0	8	20	29
Total income	1	18	60	78
Asset information (USD billion)	2[2]	2[3]	18[4]	

	As of or for the year ended			
	31.12.17			
USD million, except where indicated	Securitization vehicles	Client vehicles	Investment funds	Total
Net interest income	2	(9)	0	(7)
Net fee and commission income			41	41
Other net income from fair value changes on financial instruments	(8)	(50)	2	(56)
Total income	(6)	(59)	43	(22)
Asset information (USD billion)	10[2]	4[3]	15[4]	

1 For the year ended 31 December 2018, no profit attributable to non-controlling interests was excluded from the table (31 December 2017: USD 73 million). 2 Represents the amount of assets transferred to the respective securitization vehicles. 3 Represents the amount of assets transferred to the respective client vehicles. Information in the comparative period has been restated. Asset information as of 31 December 2017 has decreased by USD 3 billion as a result. 4 Represents the total net asset value of the respective investment funds.

Note 32 Changes in organization and acquisitions and disposals of subsidiaries and businesses

Changes in Group structure and organization

UBS Business Solutions AG

In 2015, UBS Business Solutions AG was established as a direct subsidiary of UBS Group AG to act as the Group service company and UBS AG transferred the ownership of the majority of its existing service subsidiaries outside the US to UBS Business Solutions AG. In 2017, shared services functions in Switzerland and the UK were transferred from UBS AG to UBS Business Solutions AG. In 2017, UBS AG also completed the transfer of the shared services employees in the US to its US service company, UBS Business Solutions US LLC, a wholly owned subsidiary of UBS Americas Holding LLC.

UBS Europe SE

In 2016, UBS AG merged its Wealth Management subsidiaries in Italy, Luxembourg (including its branches in Austria, Denmark and Sweden), the Netherlands and Spain into UBS Deutschland AG, which was renamed to UBS Europe SE, in order to establish UBS AG's new European legal entity, which is headquartered in Frankfurt, Germany.

The previously announced combined UK business transfer and cross-border merger of UBS Limited into UBS Europe SE took place on 1 March 2019.

Transfer of assets and liabilities from UBS Limited to UBS AG, London Branch

In the fourth quarter of 2018, clients and other counterparties of UBS Limited who can be serviced by UBS AG, London Branch were generally migrated to UBS AG, London Branch. Transactions affecting the businesses that were transferred which occurred on or after the transfer date were recorded in UBS AG, London Branch.

UBS Asset Management AG

In 2016, UBS AG transferred the majority of the operating subsidiaries of Asset Management to UBS Asset Management AG.

Increase of stake in and consolidation of UBS Securities China

In December 2018, UBS AG increased its shareholding in UBS Securities China from 24.99% to 51%, acquiring control of the entity in accordance with IFRS 10, *Consolidated Financial Statements*. Upon acquisition of control, UBS AG remeasured its former 24.99% holding at fair value, resulting in a pre-tax loss of USD 270 million, recognized in *Other income*. In addition, a net foreign currency translation gain of USD 46 million was recognized upon derecognition of the former investment in associate, also in *Other income*.

The cost of acquisition of the additional 26.01% stake was USD 125 million. Upon consolidation, UBS AG recognized USD 102 million of goodwill and USD 278 million of other net assets. In addition, a non-controlling interest of USD 136 million was recognized.

Acquisitions

In October 2018, UBS AG acquired certain assets and liabilities from Nordea's Luxembourg-based private banking business for a consideration of approximately EUR 120 million. As a result of the transaction, UBS AG recognized a total of EUR 1.1 billion of loans (mortgages, Lombard loans, overdrafts), EUR 1.3 billion of cash and EUR 2.4 billion of deposits, as well as approximately EUR 75 million of intangible assets and approximately EUR 50 million of goodwill, recognized in Global Wealth Management. In addition, UBS AG reported an increase of approximately EUR 9.5 billion in client assets, of which approximately EUR 6.1 billion count as invested assets.

Sales and disposals of subsidiaries and businesses

In 2018, 2017 and 2016, no significant subsidiaries were removed from the scope of consolidation as a result of sales or disposals.

In the third quarter of 2018, UBS AG completed the sale of Widder Hotel, resulting in a pre-tax gain on sale of subsidiaries and businesses of USD 25 million and a pre-tax gain on sale of real estate of USD 31 million.

In 2017, UBS AG completed the sale of Asset Management's fund administration servicing units in Luxembourg and Switzerland to Northern Trust, resulting in a pre-tax gain on sale of USD 153 million. Also in 2017, UBS AG completed the sale of a life insurance subsidiary within Global Wealth Management. A loss on sale of USD 24 million was recognized in 2016 relating to this transaction.

Note 33 Operating leases and finance leases

Information on lease contracts classified as operating leases where UBS AG is the lessee is provided in Note 33a and information on finance leases where UBS AG acts as a lessor is provided in Note 33b.

a) Operating lease commitments

As of 31 December 2018, UBS AG was obligated under a number of non-cancelable operating leases for premises and equipment used primarily for banking purposes. The significant premises leases usually include renewal options and escalation clauses in line with general office rental market conditions, as well as rent adjustments based on price indices. However, the lease agreements do not contain contingent rent payment clauses and purchase options, nor do they impose any restrictions on UBS AG's ability to pay dividends, engage in debt financing transactions or enter into further lease agreements.

→ **Refer to Note 1d for more information on the expected effects of adoption of IFRS 16, *Leases*, effective 1 January 2019**

USD million	31.12.18
Expenses for operating leases to be recognized in:	
2019	658
2020	622
2021	528
2022	474
2023	434
2024 and thereafter	1,830
Subtotal commitments for minimum payments under operating leases	4,546
Less: Sublease rental income commitments	250
Net commitments for minimum payments under operating leases	**4,296**

USD million	31.12.18	31.12.17	31.12.16
Gross operating lease expense recognized in the income statement	663	697	745
Sublease rental income	52	68	79
Net operating lease expense recognized in the income statement	611	629	666

b) Finance lease receivables

UBS AG leases a variety of assets to third parties under finance leases, such as commercial vehicles, production lines, medical equipment, construction equipment and aircraft. At the end of the respective lease term, assets may be sold to third parties or further leased. Lessees may participate in any sales proceeds achieved. Lease expenses cover the cost of the assets less their residual value as well as financing costs.

As of 31 December 2018, unguaranteed residual values of USD 156 million had been accrued, and the ECL stage 3 allowance for uncollectible minimum lease payments receivable amounted to USD 7 million. No contingent rents were received in 2018. Amounts in the table below are disclosed on a gross basis. The finance lease receivable in Note 17a of USD 1,091 million is presented net of expected credit loss allowances.

Lease receivables

USD million	31.12.18		
	Total minimum lease payments	Unearned finance income	Present value
2019	359	22	337
2020–2023	703	35	669
Thereafter	103	2	102
Total	1,166	58	1,107

Note 34 Guarantees, commitments and forward starting transactions

The table below shows the maximum irrevocable amount of guarantees, commitments and forward starting transactions.

USD million	31.12.18				31.12.17			
	Gross		Sub-partici-pations	Net	Gross		Sub-partici-pations	Net
	Measured at fair value	Not measured at fair value			Measured at fair value	Not measured at fair value		
Total guarantees	1,639	18,146	(2,803)	16,982	1,662	17,680	(2,942)	16,400
Loan commitments	3,535	31,212	(647)	34,099	7,954	32,125	(1,102)	38,977
Forward starting transactions[1]								
Reverse repurchase agreements	8,117	925				13,011		
Securities borrowing agreements		12				24		
Repurchase agreements	7,926	400				8,399		

1 Cash to be paid in the future by either UBS AG or the counterparty. Certain reverse repurchase agreements and repurchase agreements were reclassified from amortized cost to fair value through profit or loss upon adoption of IFRS 9 as of 1 January 2018. Refer to Note 1c for more information.

Note 35 Related parties

UBS AG defines related parties as associates (entities that are significantly influenced by UBS), joint ventures (entities in which UBS shares control with another party), post-employment benefit plans for UBS AG employees, key management personnel, close family members of key management personnel and entities that are, directly or indirectly, controlled or jointly controlled by key management personnel or their close family members. Key management personnel is defined as members of the Board of Directors (BoD) and Executive Board (EB).

a) Remuneration of key management personnel

The Chairman of the BoD has a specific management employment contract and receives pension benefits upon retirement. Total remuneration of the Chairman of the Board of Directors and all EB members is included in the table below.

Remuneration of key management personnel

USD million, except where indicated	31.12.18	31.12.17	31.12.16
Base salaries and other cash payments[1]	25	24	24
Incentive awards – cash[2]	14	13	10
Annual incentive award under DCCP	21	20	20
Employer's contributions to retirement benefit plans	3	3	2
Benefits in kind, fringe benefits (at market value)	2	2	2
Equity-based compensation[3]	38	36	39
Total	102	98	98
Total (CHF million)[4]	100	98	97

1 Includes role-based allowances in line with market practice in response to regulatory requirements. 2 The cash portion may also include blocked shares in line with regulatory requirements. 3 Expenses for shares granted are calculated at grant date of the respective award and allocated over the vesting period of generally 5 years. Refer to Note 30 for more information. In 2018, 2017 and 2016, equity-based compensation was entirely comprised of EOP awards. 4 Swiss franc amounts disclosed represent the respective US dollar amounts translated at the applicable performance award currency exchange rates (2018: CHF / USD 0.98; 2017: CHF / USD 1.00; 2016: CHF / USD 0.99).

The independent members of the BoD do not have employment or service contracts with UBS AG, and thus are not entitled to benefits upon termination of their service on the BoD. Payments to these individuals for their services as external board members amounted to USD 7.6 million (CHF 7.4 million) in 2018, USD 7.1 million (CHF 7.1 million) in 2017 and USD 7.2 million (CHF 7.2 million) in 2016.

b) Equity holdings of key management personnel

Equity holdings of key management personnel

	31.12.18	31.12.17
Number of stock options from equity participation plans held by non-independent members of the BoD and the EB members[1]	0	398,867
Number of shares held by members of the BoD, EB and parties closely linked to them[2]	5,676,989	3,709,539

1 Refer to Note 30 for more information. 2 Excludes shares granted under variable compensation plans with forfeiture provisions.

Of the share totals above, 95,597 shares were held by close family members of key management personnel on 31 December 2018 and 31 December 2017. No shares were held by entities that are directly or indirectly controlled or jointly controlled by key management personnel or their close family members on 31 December 2018 and 31 December 2017. Refer to Note 30 for more information. As of 31 December 2018, no member of the BoD or EB was the beneficial owner of more than 1% of UBS Group AG's shares.

Note 35 Related parties (continued)

c) Loans, advances and mortgages to key management personnel

The non-independent members of the BoD and EB members are granted loans, fixed advances and mortgages in the ordinary course of business on substantially the same terms and conditions that are available to other employees, including interest rates and collateral, and neither involve more than the normal risk of collectibility nor contain any other unfavorable features for the firm. Independent BoD members are granted loans and mortgages in the ordinary course of business at general market conditions.

Movements in the loan, advances and mortgage balances are as follows.

Loans, advances and mortgages to key management personnel[1]

USD million, except where indicated	2018	2017
Balance at the beginning of the year	34	34
Additions	15	2
Reductions	(22)	(1)
Balance at the end of the year[2]	28	35
Balance at the end of the year (CHF million)[2, 3]	27	34

1 All loans are secured loans. 2 Excludes unused uncommitted credit facilities for one EB member of USD 3,000,000 (CHF 2,949,690) as of 31 December 2018 and for two EB and one BoD member of USD 5,330,670 (CHF 5,196,294) as of 31 December 2017. 3 Swiss franc amounts disclosed represent the respective US dollar amounts translated at the relevant year-end closing exchange rate.

d) Other related-party transactions with entities controlled by key management personnel

In 2018 and 2017, UBS AG did not enter into transactions with entities that are directly or indirectly controlled or jointly controlled by UBS AG's key management personnel or their close family members and as of 31 December 2018, 31 December 2017 and 31 December 2016, there were no outstanding balances related to such transactions. Furthermore, in 2018 and 2017, entities controlled by key management personnel did not sell any goods or provide any services to UBS AG, and therefore did not receive any fees from UBS AG. UBS AG also did not provide services to such entities in 2018 and 2017, and therefore also received no fees.

Note 35 Related parties (continued)

e) Transactions with associates and joint ventures

Loans to and outstanding receivables from associates and joint ventures

USD million	2018	2017
Carrying value at the beginning of the year	565	464
Additions	276	83
Reductions	(13)	(3)
Foreign currency translation	0	21
Carrying value at the end of the year	829	565
of which: unsecured loans	*818*	*554*

Other transactions with associates and joint ventures

	As of or for the year ended	
USD million	31.12.18	31.12.17
Payments to associates and joint ventures for goods and services received	177	180
Fees received for services provided to associates and joint ventures	4	2
Commitments and contingent liabilities to associates and joint ventures	4	4

→ **Refer to Note 31 for an overview of investments in associates and joint ventures**

f) Receivables and payables from / to UBS Group AG and other subsidiaries of UBS Group AG

USD million	31.12.18	31.12.17
Receivables		
Loans and advances to customers	1,161	2,208
Financial assets at fair value held for trading	139	101
Other financial assets measured at amortized cost	105	116
Payables		
Customer deposits	2,152	3,489
Funding from UBS Group AG and its subsidiaries	41,202	35,648
Other financial liabilities measured at amortized cost	1,711	1,587

Note 36 Invested assets and net new money

Invested assets

Invested assets include all client assets managed by or deposited with UBS AG for investment purposes. Invested assets include managed fund assets, managed institutional assets, discretionary and advisory wealth management portfolios, fiduciary deposits, time deposits, savings accounts and wealth management securities or brokerage accounts. All assets held for purely transactional purposes and custody-only assets, including corporate client assets held for cash management and transactional purposes, are excluded from invested assets as UBS AG only administers the assets and does not offer advice on how the assets should be invested. Also excluded are non-bankable assets (e.g., art collections) and deposits from third-party banks for funding or trading purposes.

Discretionary assets are defined as client assets that UBS AG decides how to invest. Other invested assets are those where the client ultimately decides how the assets are invested. When a single product is created in one business division and sold in another, it is counted in both the business division that manages the investment and the one that distributes it. This results in double counting within UBS AG total invested assets, as both business divisions are independently providing a service to their respective clients, and both add value and generate revenue.

Net new money

Net new money in a reporting period is the amount of invested assets that are entrusted to UBS AG by new and existing clients, less those withdrawn by existing clients and clients who terminated their relationship with UBS AG.

Net new money is calculated using the direct method, under which inflows and outflows to / from invested assets are determined at the client level based on transactions. Interest and dividend income from invested assets are not counted as net new money inflows. Market and currency movements as well as fees, commissions and interest on loans charged are excluded from net new money, as are the effects resulting from any acquisition or divestment of a UBS AG subsidiary or business. Reclassifications between invested assets and custody-only assets as a result of a change in the service level delivered are generally treated as net new money flows; however, where such change in service level directly results from a new externally imposed regulation, the one-time net effect of the implementation is reported as an asset reclassification without net new money impact.

The Investment Bank does not track invested assets and net new money. However, when a client is transferred from the Investment Bank to another business division, this produces net new money even though client assets were already with UBS AG. There were no such transfers between the Investment Bank and other business divisions in 2018 and 2017.

Invested assets and net new money

	As of or for the year ended	
USD billion	31.12.18	31.12.17
Fund assets managed by UBS	342	339
Discretionary assets	999	1,052
Other invested assets	1,760	1,871
Total invested assets[1]	3,101	3,262
of which: double counts	*213*	*209*
Net new money[1]	59	106

1 Includes double counts.

Development of invested assets

USD billion	2018	2017
Total invested assets at the beginning of the year[1]	3,262	2,761
Net new money	59	106
Market movements[2]	(180)	322
Foreign currency translation	(35)	77
Other effects	(5)	(3)
of which: acquisitions / (divestments)	*7*	*4*
Total invested assets at the end of the year[1]	3,101	3,262

1 Includes double counts. 2 Includes interest and dividend income.

Note 37 Currency translation rates

The following table shows the rates of the main currencies used to translate the financial information of UBS AG's operations with a functional currency other than the US dollar into US dollars.

	Closing exchange rate		Average rate[1]		
	As of		For the year ended		
	31.12.18	31.12.17	31.12.18	31.12.17	31.12.16
1 CHF	1.02	1.03	1.02	1.02	1.01
1 EUR	1.15	1.20	1.18	1.14	1.10
1 GBP	1.28	1.35	1.33	1.30	1.34
100 JPY	0.91	0.89	0.91	0.89	0.92

1 Monthly income statement items of operations with a functional currency other than the US dollar are translated with month-end rates into US dollars. Disclosed average rates for a year represent an average of 12 month-end rates, weighted according to the income and expense volumes of all operations of UBS AG with the same functional currency for each month. Weighted average rates for individual business divisions may deviate from the weighted average rates for UBS AG.

Note 38 Events after the reporting period

Events subsequent to the publication of the unaudited fourth quarter 2018 report

The 2018 results and the balance sheet as of 31 December 2018 differ from those presented in the unaudited fourth quarter 2018 report published on 22 January 2019 as a result of events adjusted for after the balance sheet date. Provisions for litigation, regulatory and similar matters increased, which reduced 2018 operating profit before tax and 2018 net profit attributable to shareholders each by USD 382 million.

→ **Refer to Note 21 for more information on provisions for litigation, regulatory and similar matters**

Note 39 Main differences between IFRS and Swiss GAAP

The consolidated financial statements of UBS AG are prepared in accordance with International Financial Reporting Standards (IFRS). The Swiss Financial Market Supervisory Authority (FINMA) requires financial groups that present their financial statements under IFRS to provide a narrative explanation of the main differences between IFRS and Swiss GAAP (FINMA Circular 2015 / 1 and the Banking Ordinance). Included in this Note are the significant differences in the recognition and measurement between IFRS and the provisions of the Banking Ordinance and the guidelines of FINMA governing true and fair view financial statement reporting pursuant to article 25 through article 42 of the Banking Ordinance.

1. Consolidation

Under IFRS, all entities that are controlled by the holding entity are consolidated.

Under Swiss GAAP, controlled entities that are deemed immaterial to UBS AG or that are held temporarily only are exempt from consolidation, but instead are recorded as participations accounted for under the equity method of accounting or as financial investments measured at the lower of cost or market value.

2. Classification and measurement of financial assets

Under IFRS, financial assets are classified as measured at amortized cost, fair value through other comprehensive income (FVOCI) or fair value through profit or loss (FVTPL). Whereas all equity instruments are accounted for at FVTPL by UBS AG, the classification and measurement of debt instruments depends on the nature of the business model within which the asset is held and the characteristics of the contractual cash flows of the asset.

Under Swiss GAAP, debt instruments are generally measured at amortized cost. The classification and measurement of financial assets in the form of securities depend on the nature of the asset: debt instruments that are not held to maturity (available for sale), as well as equity instruments with no permanent holding intent, are classified as *Financial investments* and measured at the lower of (amortized) cost or market value. Market value adjustments up to the original cost amount and realized gains or losses upon disposal of the investment are recorded in the income statement as *Other income from ordinary activities*. Equity instruments with a permanent holding intent are classified as participations in *Non-consolidated investments in subsidiaries and other participations* and measured at cost less impairment.

Impairment losses are recorded in the income statement as *Impairment of investments in non-consolidated subsidiaries and other participations*. Reversals of impairments up to the original cost amount as well as realized gains or losses upon disposal of the investment are recorded as *Extraordinary income / Extraordinary expenses* in the income statement.

3. Fair value option applied to financial liabilities

Under IFRS, UBS AG applies the fair value option to certain financial liabilities not held for trading. Instruments for which the fair value option is applied are accounted for at FVTPL. The amount of change in the fair value that is attributable to changes in UBS AG's own credit is presented in *Other comprehensive income* directly within *Retained earnings*. The fair value option is applied primarily to issued structured debt instruments; certain non-structured debt instruments; certain payables under repurchase agreements and cash collateral on securities lending agreements; amounts due under unit-linked investment contracts; brokerage payables; and certain loan commitments.

Under Swiss GAAP, the fair value option can only be applied to structured debt instruments that consist of a debt host contract and one or more embedded derivatives that do not relate to own equity. Furthermore, unrealized changes in fair value attributable to changes in UBS AG's own credit are not recognized, whereas realized own credit is recognized in *Net trading income*.

4. Allowances and provisions for credit losses

Under IFRS, allowances and provisions for credit losses are estimated based on an expected credit loss model. Expected credit losses (ECL) are recognized for financial assets measured at amortized cost, financial assets measured at FVOCI, fee and lease receivables, financial guarantees, loan commitments and certain other credit facilities. Maximum 12-month ECL are recognized from initial recognition of instruments in stage 1. Lifetime ECL are recognized for instruments in stage 2 if a significant increase in credit risk is detected subsequent to the instrument's initial recognition. Lifetime ECL are also recognized for credit-impaired financial instruments, referred to as instruments in stage 3. Determination of whether an instrument is credit impaired is based on the occurrence of one or more loss events.

Under Swiss GAAP, a claim is impaired and an allowance or provision for credit losses is recognized when objective evidence demonstrates that a loss event has occurred after the initial recognition and that the loss event has an effect on future cash flows that can be reliably estimated (incurred loss approach). UBS AG considers a claim to be impaired if it will be unable to collect all amounts due on it based on the original contractual terms as a result of credit deterioration of the issuer or counterparty. Impairment under the incurred loss approach is in line with ECL for credit-impaired claims in stage 3 under IFRS. A claim can be a loan or receivable or other debt instrument held to maturity carried at amortized cost, a debt instrument available for sale carried at the lower of amortized cost or market value, or a commitment, such as a letter of credit, a guarantee or a similar instrument.

An allowance for credit losses is reported as a decrease in the carrying value of a financial asset. For an off-balance sheet item, such as a commitment, a provision for credit loss is reported in *Provisions*. Changes to allowances and provisions for credit losses are recognized in *Credit loss (expense) / recovery*.

5. Hedge accounting

Under IFRS, when cash flow hedge accounting is applied, the fair value gain or loss on the effective portion of the derivative designated as a cash flow hedge is recognized in equity. When fair value hedge accounting is applied, the fair value gains or losses of the derivative and the hedged item are recognized in the income statement.

Under Swiss GAAP, the effective portion of the fair value change of the derivative instrument designated as a cash flow or as fair value hedge is deferred on the balance sheet as *Other assets* or *Other liabilities*. The carrying value of the hedged item designated in fair value hedges is not adjusted for fair value changes attributable to the hedged risk.

6. Goodwill and intangible assets

Under IFRS, goodwill acquired in a business combination is not amortized but tested annually for impairment. Intangible assets with an indefinite useful life are also not amortized but tested annually for impairment.

Under Swiss GAAP, goodwill and intangible assets with indefinite useful lives are amortized over a period not exceeding five years, unless a longer useful life, which may not exceed 10 years, can be justified. In addition, these assets are tested annually for impairment.

7. Pension and other post-employment benefit plans

Swiss GAAP permits the use of IFRS or Swiss accounting standards for pension and other post-employment benefit plans, with the election made on a plan-by-plan basis.

UBS AG has elected to apply IFRS (IAS 19) for the non-Swiss defined benefit plans and Swiss GAAP (FER 16) for the Swiss pension plan in its standalone financial statements. The requirements of Swiss GAAP are better aligned with the specific nature of Swiss pension plans, which are hybrid in that they combine elements of defined contribution and defined benefit plans, but are treated as defined benefit plans under IFRS. Key differences between Swiss GAAP and IFRS include the treatment of dynamic elements, such as future salary increases and future interest credits on retirement savings, which are not considered under the static method used in accordance with Swiss GAAP. Also, the discount rate used to determine the defined benefit obligation in accordance with IFRS is based on the yield of high-quality corporate bonds of the market in the respective pension plan country. The discount rate used in accordance with Swiss GAAP (i.e., the technical interest rate) is determined by the Pension Foundation Board based on the expected returns of the Board's investment strategy.

For defined benefit plans, IFRS requires the full defined benefit obligation net of the plan assets to be recorded on the balance sheet, with changes resulting from remeasurements recognized directly in equity. However, for non-Swiss defined benefit plans for which IFRS accounting is elected, changes due to remeasurements are recognized in the income statement of UBS AG standalone under Swiss GAAP.

Swiss GAAP requires that employer contributions to the pension fund are recognized as personnel expenses in the income statement. Further, Swiss GAAP requires an assessment as to whether, based on the financial statements of the pension fund prepared in accordance with Swiss accounting standards (FER 26), an economic benefit to, or obligation of, the employer arises from the pension fund which is recognized in the balance sheet when conditions are met. Conditions for recording a pension asset or liability would be met if, for example, an employer contribution reserve is available or the employer is required to contribute to the reduction of a pension deficit (on an FER 26 basis).

Note 39 Main differences between IFRS and Swiss GAAP (continued)

8. Netting of replacement values

Under IFRS, replacement values and related cash collateral are reported on a gross basis unless the restrictive IFRS netting requirements are met: i) existence of master netting agreements and related collateral arrangements that are unconditional and legally enforceable, both in the normal course of business and in the event of default, bankruptcy or insolvency of UBS AG and its counterparties; and ii) UBS AG's intention to either settle on a net basis or to realize the asset and settle the liability simultaneously.

Under Swiss GAAP, replacement values and related cash collateral are generally reported on a net basis, provided the master netting and the related collateral agreements are legally enforceable in the event of default, bankruptcy or insolvency of UBS AG's counterparties.

9. Negative interest

Under IFRS, negative interest income arising on a financial asset does not meet the definition of interest income and, therefore, negative interest on financial assets and negative interest on financial liabilities are presented within interest expense and interest income, respectively.

Under Swiss GAAP, negative interest on financial assets is presented within interest income and negative interest on financial liabilities is presented within interest expense.

10. Extraordinary income and expense

Certain non-recurring and non-operating income and expense items, such as realized gains or losses from the disposal of participations, fixed and intangible assets, as well as reversals of impairments of participations and fixed assets, are classified as extraordinary items under Swiss GAAP. This distinction is not available under IFRS. ▲

Note 40 Supplemental guarantor information required under SEC regulations

Joint liability of UBS Switzerland AG

In 2015, the Personal & Corporate Banking and Wealth Management businesses booked in Switzerland were transferred from UBS AG to UBS Switzerland AG through an asset transfer in accordance with the Swiss Merger Act. Under the terms of the asset transfer agreement, UBS Switzerland AG assumed joint liability for contractual obligations of UBS AG existing on the asset transfer date, including the full and unconditional guarantee of certain registered debt securities issued by UBS AG. To reflect this joint liability, UBS Switzerland AG is presented in a separate column as a subsidiary co-guarantor.

The joint liability of UBS Switzerland AG for contractual obligations of UBS AG decreased by USD 45 billion in 2018 to USD 26 billion as of 31 December 2018, mainly as the joint liability related to demand obligations booked in foreign branches expired three years after the effective date of the asset transfer.

Guarantee of PaineWebber securities

Prior to its acquisition by UBS in 2000, Paine Webber Group Inc. (PaineWebber) was an SEC registrant. Upon acquisition, PaineWebber was merged into UBS Americas Inc., a wholly owned subsidiary of UBS AG. Following the acquisition, UBS AG entered into a full and unconditional guarantee of the senior notes (Debt Securities) issued by PaineWebber. Under the guarantee, if UBS Americas Inc. failed to make any timely payment under the Debt Securities agreements, the holders of the Debt Securities or the Debt Securities trustee could have demanded payment from UBS AG without first proceeding against UBS Americas Inc. These Debt Securities matured in May 2018 and the guarantee ceased to exist. UBS Americas Inc. is therefore no longer presented in a separate column in the tables on the following pages.

Adoption of IFRS 9

Effective 1 January 2018, UBS AG adopted IFRS 9, *Financial Instruments*. The adoption of IFRS 9 has resulted in changes to the classification and measurement of certain financial instruments, which have been applied prospectively in the balance sheet from 1 January 2018.

Although the effect of IFRS 9 classification and measurement changes has been applied prospectively, UBS AG has made a series of changes to the presentation of its IFRS balance sheet to facilitate comparability and prior-period information is presented for periods ending before 1 January 2018 in this revised structure.

→ **Refer to "Note 1c Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9 *Financial Instruments*" in the "Consolidated financial statements" section of this report for more information**

Transfer of shared services functions to Group service companies

Amounts presented in the following pages for UBS AG standalone for the years ended 31 December 2017 and 2016 include the results of shared services functions in Switzerland, the UK and the US, which were substantially transferred to Group service companies during 2017. Following the transfer, these Group service companies charge other legal entities within the Group for services provided, including a markup on costs incurred.

→ **Refer to the 2017 standalone financial statements of UBS AG, available under "Holding company and significant regulated subsidiaries and sub-groups" at *www.ubs.com/investors* for more information on the transfer of shared services functions in 2017**

Note 40 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated income statement

USD million For the year ended 31 December 2018	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Operating income					
Interest income	10,259	4,266	5,533	(2,963)	17,095
Interest expense	(9,924)	(901)	(3,323)	3,001	(11,147)
Net interest income	336	3,365	2,210	38	5,949
Other net income from fair value changes on financial instruments	4,372	887	828	(110)	5,977
Credit loss (expense) / recovery	(37)	(52)	(9)	(19)	(117)
Fee and commission income	2,655	4,474	13,159	(656)	19,632
Fee and commission expense	(851)	(391)	(1,109)	648	(1,703)
Net fee and commission income	1,804	4,083	12,050	(8)	17,930
Other income	4,722	198	2,110	(6,125)	905
Total operating income	11,196	8,480	17,189	(6,223)	30,642
Operating expenses					
Personnel expenses	3,592	1,890	8,510	0	13,992
General and administrative expenses	4,691	3,471	5,403	(3,490)	10,075
Depreciation and impairment of property, equipment and software	715	21	316	0	1,052
Amortization and impairment of intangible assets	3	0	62	0	65
Total operating expenses	9,001	5,382	14,291	(3,490)	25,184
Operating profit / (loss) before tax	2,195	3,098	2,898	(2,733)	5,458
Tax expense / (benefit)	25	670	577	73	1,345
Net profit / (loss)	2,170	2,428	2,321	(2,806)	4,113
Net profit / (loss) attributable to non-controlling interests	0	0	7	0	7
Net profit / (loss) attributable to shareholders	2,170	2,428	2,314	(2,806)	4,107

1 Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the UBS AG standalone and UBS Switzerland AG standalone financial statements under "Complementary financial information for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

Note 40 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of comprehensive income

USD million For the year ended 31 December 2018	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Comprehensive income attributable to shareholders					
Net profit / (loss)	2,170	2,428	2,314	(2,806)	4,107
Other comprehensive income					
Other comprehensive income that may be reclassified to the income statement					
Foreign currency translation, net of tax	(369)	(109)	215	(252)	(515)
Financial assets measured at fair value through other comprehensive income, net of tax	0	0	(45)	0	(45)
Cash flow hedges, net of tax	(277)	2	19	(13)	(269)
Total other comprehensive income that may be reclassified to the income statement, net of tax	(646)	(107)	189	(265)	(829)
Other comprehensive income that will not be reclassified to the income statement					
Defined benefit plans, net of tax	89	(126)	212	0	175
Own credit on financial liabilities designated at fair value, net of tax	509				509
Total other comprehensive income that will not be reclassified to the income statement, net of tax	598	(126)	212	0	684
Total other comprehensive income	(48)	(233)	401	(265)	(145)
Total comprehensive income attributable to shareholders	2,122	2,195	2,715	(3,071)	3,961
Total comprehensive income attributable to non-controlling interests			5		5
Total comprehensive income	2,122	2,195	2,721	(3,071)	3,967

1 Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the UBS AG standalone and UBS Switzerland AG standalone financial statements under "Complementary financial information for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

Note 40 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated balance sheet

USD million As of 31 Dec 2018	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Assets					
Cash and balances at central banks	36,350	53,490	18,530	0	108,370
Loans and advances to banks	34,063	7,405	21,151	(45,978)	16,642
Receivables from securities financing transactions	70,028	28,637	51,617	(54,932)	95,349
Cash collateral receivables on derivative instruments	23,136	559	12,148	(12,240)	23,603
Loans and advances to customers	93,141	188,013	62,166	(21,838)	321,482
Other financial assets measured at amortized cost	4,696	8,564	11,247	(1,869)	22,637
Total financial assets measured at amortized cost	261,415	286,667	176,858	(136,857)	588,084
Financial assets at fair value held for trading	92,784	62	15,578	(3,911)	104,513
of which: assets pledged as collateral that may be sold or repledged by counterparties	*49,509*	*0*	*7,326*	*(24,714)*	*32,121*
Derivative financial instruments	119,590	3,834	38,760	(35,972)	126,212
Brokerage receivables	11,063		5,779	(2)	16,840
Financial assets at fair value not held for trading	50,592	7,177	41,184	(16,566)	82,387
Total financial assets measured at fair value through profit or loss	274,030	11,073	101,300	(56,451)	329,953
Financial assets measured at fair value through other comprehensive income	171	0	6,495	0	6,667
Investments in subsidiaries and associates	50,971	20	31	(49,922)	1,099
Property, equipment and software	6,546	242	1,714	(24)	8,479
Goodwill and intangible assets	308		6,395	(56)	6,647
Deferred tax assets	533	198	9,282	52	10,066
Other non-financial assets	4,623	1,659	766	14	7,062
Total assets	598,598	299,860	302,842	(243,244)	958,055
Liabilities					
Amounts due to banks	36,430	24,774	44,377	(94,618)	10,962
Payables from securities financing transactions	36,840	1,167	27,297	(55,008)	10,296
Cash collateral payables on derivative instruments	28,096	35	12,894	(12,118)	28,906
Customer deposits	77,180	245,452	82,360	16,994	421,986
Funding from UBS Group AG and its subsidiaries	41,202				41,202
Debt issued measured at amortized cost	82,653	8,578	587	(573)	91,245
Other financial liabilities measured at amortized cost	4,170	1,454	3,790	(1,838)	7,576
Total financial liabilities measured at amortized cost	306,571	281,460	171,305	(147,161)	612,174
Financial liabilities at fair value held for trading	23,455	493	8,829	(3,828)	28,949
Derivative financial instruments	119,131	3,510	39,107	(36,025)	125,723
Brokerage payables designated at fair value	26,559		11,875	(14)	38,420
Debt issued designated at fair value	55,378		1,670	(17)	57,031
Other financial liabilities designated at fair value	10,936		28,618	(5,959)	33,594
Total financial liabilities measured at fair value through profit or loss	235,458	4,004	90,098	(45,843)	283,717
Provisions	1,361	163	1,850	83	3,457
Other non-financial liabilities	1,676	929	3,623	47	6,275
Total liabilities	545,067	286,556	266,876	(192,875)	905,624
Equity attributable to shareholders	53,531	13,304	35,790	(50,369)	52,256
Equity attributable to non-controlling interests			176		176
Total equity	53,531	13,304	35,966	(50,369)	52,432
Total liabilities and equity	598,598	299,860	302,842	(243,244)	958,055

1 Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the UBS AG standalone and UBS Switzerland AG standalone financial statements under "Complementary financial information for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

Note 40 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of cash flows

USD million For the year ended 31 December 2018[1]	UBS AG[2]	UBS Switzerland AG[2]	Other subsidiaries[2]	UBS AG (consolidated)
Net cash flow from / (used in) operating activities	(652)	14,887	13,509	27,744
Cash flow from / (used in) investing activities				
Purchase of subsidiaries, associates and intangible assets	(124)	(5)	(158)	(287)
Disposal of subsidiaries, associates and intangible assets[3]	97	0	40	137
Purchase of property, equipment and software	(822)	(170)	(481)	(1,473)
Disposal of property, equipment and software	111	0	3	114
Purchase of financial assets measured at fair value through other comprehensive income	(170)	0	(1,829)	(1,999)
Disposal and redemption of financial assets measured at fair value through other comprehensive income	20	15	1,325	1,361
Net (purchase) / redemption of debt securities measured at amortized cost	(1,000)	2,111	(4,881)	(3,770)
Net cash flow from / (used in) investing activities	(1,888)	1,951	(5,982)	(5,918)
Cash flow from / (used in) financing activities				
Net short-term debt issued / (repaid)	(12,295)	(3)	53	(12,245)
Distributions paid on UBS AG shares	(3,098)	0	0	(3,098)
Issuance of long-term debt, including debt issued designated at fair value	53,294	872	560	54,726
Repayment of long-term debt, including debt issued designated at fair value	(42,759)	(812)	(772)	(44,344)
Funding from UBS Group AG and its subsidiaries	5,956			5,956
Net changes in non-controlling interests	0	0	(31)	(31)
Net activity related to group internal capital transactions and dividends	3,000	(2,372)	(628)	0
Net cash flow from / (used in) financing activities	4,098	(2,315)	(820)	963
Total cash flow				
Cash and cash equivalents at the beginning of the year	41,570	40,961	22,256	104,787
Net cash flow from / (used in) operating, investing and financing activities	1,559	14,523	6,707	22,789
Effects of exchange rate differences on cash and cash equivalents	(234)	(726)	(762)	(1,722)
Cash and cash equivalents at the end of the year[4]	42,895	54,757	28,201	125,853
of which: cash and balances at central banks	*36,248*	*53,490*	*18,530*	*108,268*
of which: loans and advances to banks	*4,849*	*1,249*	*9,354*	*15,452*
of which: money market paper[5]	*1,798*	*18*	*318*	*2,133*

1 Upon adoption of IFRS 9 on 1 January 2018, cash flows from certain financial assets previously classified as available-for-sale assets have been reclassified from investing to operating activities as the assets are accounted for at fair value through profit or loss effective 1 January 2018. Refer to Note 1c for more information. 2 Cash flows generally represent a third-party view from a UBS AG consolidated perspective. 3 Includes dividends received from associates. 4 USD 5,245 million of cash and cash equivalents were restricted. 5 Money market paper is included in the balance sheet under Financial assets at fair value held for trading, Financial assets measured at fair value through other comprehensive income, Financial assets at fair value not held for trading and Other financial assets measured at amortized cost.

Note 40 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated income statement

USD million For the year ended 31 December 2017	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Operating income					
Interest income	8,806	4,065	3,959	(2,338)	14,492
Interest expense	(7,259)	(680)	(2,192)	2,245	(7,886)
Net interest income	1,547	3,385	1,767	(93)	6,607
Other net income from fair value changes on financial instruments	3,397	918	688	64	5,067
Credit loss (expense) / recovery	(139)	(23)	(9)	40	(131)
Fee and commission income	2,561	4,424	13,315	(911)	19,390
Fee and commission expense	(968)	(380)	(1,357)	865	(1,840)
Net fee and commission income	1,594	4,045	11,958	(46)	17,550
Other income	4,382	170	3,017	(6,616)	952
Total operating income	10,780	8,495	17,420	(6,651)	30,044
Operating expenses					
Personnel expenses	4,488	2,060	8,403	0	14,952
General and administrative expenses	4,922	3,400	5,760	(5,081)	9,001
Depreciation and impairment of property, equipment and software	664	11	270	0	945
Amortization and impairment of intangible assets	8	0	63	0	71
Total operating expenses	10,082	5,472	14,496	(5,081)	24,969
Operating profit / (loss) before tax	698	3,023	2,924	(1,570)	5,076
Tax expense / (benefit)	458	628	3,156	0	4,242
Net profit / (loss)	240	2,395	(232)	(1,570)	834
Net profit / (loss) attributable to preferred noteholders	73	0	0	0	73
Net profit / (loss) attributable to non-controlling interests	0	0	4	0	4
Net profit / (loss) attributable to shareholders	168	2,395	(236)	(1,569)	758

1 Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the UBS AG standalone and UBS Switzerland AG standalone financial statements under "Complementary financial information for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

Note 40 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of comprehensive income

USD million For the year ended 31 December 2017	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Comprehensive income attributable to shareholders					
Net profit / (loss)	168	2,395	(236)	(1,569)	758
Other comprehensive income					
Other comprehensive income that may be reclassified to the income statement					
Foreign currency translation, net of tax	2,177	500	(2,473)	1,318	1,522
Financial assets measured at fair value through other comprehensive income, net of tax	(10)	2	11	(93)	(91)
Cash flow hedges, net of tax	(474)	(162)	(1)	2	(635)
Total other comprehensive income that may be reclassified to the income statement, net of tax	1,693	340	(2,463)	1,226	797
Other comprehensive income that will not be reclassified to the income statement					
Defined benefit plans, net of tax	284	(22)	27	26	314
Own credit on financial liabilities designated at fair value, net of tax	(317)				(317)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	(33)	(22)	27	26	(3)
Total other comprehensive income	1,660	318	(2,436)	1,252	794
Total comprehensive income attributable to shareholders	1,828	2,713	(2,672)	(317)	1,552
Total comprehensive income attributable to preferred noteholders	320				320
Total comprehensive income attributable to non-controlling interests			6		6
Total comprehensive income	2,148	2,713	(2,665)	(317)	1,878

1 Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the UBS AG standalone and UBS Switzerland AG standalone financial statements under "Complementary financial information for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

Note 40 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated balance sheet

USD million As of 31 Dec 2017	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Assets					
Cash and balances at central banks	37,497	39,461	13,086	0	90,045
Loans and advances to banks	31,254	4,080	73,206	(94,494)	14,047
Receivables from securities financing transactions	62,783	35,731	58,481	(65,043)	91,951
Cash collateral receivables on derivative instruments	22,924	714	13,292	(12,890)	24,040
Loans and advances to customers	109,196	188,038	77,781	(46,064)	328,952
Other financial assets measured at amortized cost	17,460	10,610	13,197	(3,376)	37,890
Total financial assets measured at amortized cost	281,115	278,634	249,044	(221,868)	586,925
Financial assets at fair value held for trading	103,799	94	33,540	(7,923)	129,509
of which: assets pledged as collateral that may be sold or repledged by counterparties	*60,038*	*0*	*9,966*	*(33,727)*	*36,277*
Derivative financial instruments	116,993	4,229	34,947	(34,883)	121,286
Financial assets at fair value not held for trading	34,982	13,098	14,535	(2,546)	60,070
Total financial assets measured at fair value through profit or loss	255,775	17,421	83,021	(45,352)	310,865
Financial assets measured at fair value through other comprehensive income	3,698	810	7,608	(3,226)	8,889
Investments in subsidiaries and associates	50,915	16	29	(49,916)	1,045
Property, equipment and software	6,550	94	1,548	0	8,191
Goodwill and intangible assets	302	0	6,320	(59)	6,563
Deferred tax assets	1,285	432	8,276	0	9,993
Other non-financial assets	5,179	1,758	711	(101)	7,548
Total assets	604,818	299,166	356,559	(320,522)	940,020
Liabilities					
Amounts due to banks	24,991	21,264	56,499	(95,027)	7,728
Payables from securities financing transactions	49,407	1,687	31,435	(65,043)	17,485
Cash collateral payables on derivative instruments	28,486	62	15,371	(12,890)	31,029
Customer deposits	86,105	247,554	137,590	(48,192)	423,058
Funding from UBS Group AG and its subsidiaries	35,648				35,648
Debt issued measured at amortized cost	99,069	8,583	535	(730)	107,458
Other financial liabilities measured at amortized cost	29,178	1,453	10,850	(3,388)	38,092
Total financial liabilities measured at amortized cost	352,885	280,604	252,280	(225,270)	660,498
Financial liabilities at fair value held for trading	24,988	257	13,336	(7,329)	31,251
Derivative financial instruments	114,331	3,770	35,920	(34,883)	119,138
Debt issued designated at fair value	48,743		2,327	(288)	50,782
Other financial liabilities designated at fair value	6,173		13,015	(2,546)	16,643
Total financial liabilities measured at fair value through profit or loss	194,235	4,027	64,598	(45,046)	217,814
Provisions	1,084	149	1,930	0	3,164
Other non-financial liabilities	2,039	851	3,736	(128)	6,499
Total liabilities	550,243	285,631	322,544	(270,443)	887,974
Equity attributable to shareholders	54,574	13,536	33,956	(50,078)	51,987
Equity attributable to non-controlling interests			59		59
Total equity	54,574	13,536	34,015	(50,078)	52,046
Total liabilities and equity	604,818	299,166	356,559	(320,522)	940,020

1 Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the "UBS AG standalone financial information" section of this report for UBS AG standalone financial information prepared in accordance with Swiss GAAP. Refer to "Holding company and significant regulated subsidiaries and sub-groups" at www.ubs.com/investors for UBS Switzerland AG standalone interim financial statements prepared in accordance with Swiss GAAP. 2 Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

Note 40 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of cash flows

USD million For the year ended 31 December 2017	UBS AG[1]	UBS Switzerland AG[1]	Other subsidiaries[1]	UBS AG (consolidated)
Net cash flow from / (used in) operating activities	(35,057)	(8,742)	(9,348)	(53,147)
Cash flow from / (used in) investing activities				
Purchase of subsidiaries, associates and intangible assets	0	(2)	(104)	(106)
Disposal of subsidiaries, associates and intangible assets[2]	291	0	48	339
Purchase of property, equipment and software	(1,054)	(86)	(393)	(1,532)
Disposal of property, equipment and software	1	0	209	210
Purchase of financial assets measured at fair value through other comprehensive income	(234)	0	(8,393)	(8,626)
Disposal and redemption of financial assets measured at fair value through other comprehensive income	3,489	1,580	10,181	15,250
Net (purchase) / redemption of financial assets held to maturity	(455)	364	0	(91)
Net cash flow from / (used in) investing activities	2,039	1,856	1,548	5,444
Cash flow from / (used in) financing activities				
Net short-term debt issued / (repaid)	24,556	(5)	(50)	24,500
Distributions paid on UBS AG shares	(2,219)	0	0	(2,219)
Issuance of long-term debt, including debt issued designated at fair value	39,232	631	409	40,270
Repayment of long-term debt, including debt issued designated at fair value	(43,605)	(589)	(993)	(45,187)
Funding from UBS Group AG and its subsidiaries	11,180			11,180
Dividends paid and repayments of preferred notes	(782)	0	0	(782)
Net changes in non-controlling interests	0	0	(5)	(5)
Net activity related to group internal capital transactions and dividends	1,264	(194)	(1,071)	0
Net cash flow from / (used in) financing activities	29,625	(158)	(1,710)	27,758

Total cash flow

Cash and cash equivalents at the beginning of the year	43,495	45,815	29,674	118,984
Net cash flow from / (used in) operating, investing and financing activities	(3,393)	(7,043)	(9,510)	(19,944)
Effects of exchange rate differences on cash and cash equivalents	1,466	2,189	2,094	5,749
Cash and cash equivalents at the end of the year[3]	41,570	40,961	22,256	104,787
of which: cash and balances at central banks	*37,420*	*39,461*	*13,086*	*89,968*
of which: loans and advances to banks	*2,344*	*1,492*	*8,890*	*12,726*
of which: money market paper[4]	*1,806*	*7*	*280*	*2,093*

1 Cash flows generally represent a third-party view from a UBS AG consolidated perspective. 2 Includes dividends received from associates. 3 USD 2,497 million of cash and cash equivalents were restricted. 4 Money market paper is included in the balance sheet under Financial assets at fair value held for trading, Financial assets measured at fair value through other comprehensive income, Financial assets at fair value not held for trading and Other financial assets measured at amortized cost.

Note 40 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated income statement

USD million For the year ended 31 December 2016	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Operating income					
Interest income	8,605	4,207	3,229	(2,086)	13,954
Interest expense	(6,778)	(724)	(1,895)	1,900	(7,497)
Net interest income	1,827	3,483	1,334	(187)	6,457
Other net income from fair value changes on financial instruments	3,774	790	777	(323)	5,018
Credit loss (expense) / recovery	(25)	(3)	(10)	0	(38)
Fee and commission income	2,356	4,192	12,681	(804)	18,425
Fee and commission expense	(839)	(363)	(1,342)	763	(1,781)
Net fee and commission income	1,517	3,828	11,339	(41)	16,644
Other income	8,305	352	1,917	(9,825)	749
Total operating income	15,399	8,450	15,357	(10,375)	28,831
Operating expenses					
Personnel expenses	5,761	2,070	7,952	0	15,782
General and administrative expenses	5,278	3,549	5,659	(6,710)	7,776
Depreciation and impairment of property, equipment and software	708	12	272	0	992
Amortization and impairment of intangible assets	22	0	70	0	93
Total operating expenses	11,769	5,631	13,953	(6,710)	24,643
Operating profit / (loss) before tax	3,630	2,819	1,404	(3,665)	4,188
Tax expense / (benefit)	917	597	(753)	(7)	753
Net profit / (loss)	2,713	2,222	2,157	(3,658)	3,435
Net profit / (loss) attributable to preferred noteholders	80	0	0	0	80
Net profit / (loss) attributable to non-controlling interests	0	0	4	0	4
Net profit / (loss) attributable to shareholders	2,633	2,222	2,153	(3,658)	3,351

1 Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the UBS AG standalone and UBS Switzerland AG standalone financial statements under "Complementary financial information for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

Note 40 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of comprehensive income

USD million For the year ended 31 December 2016	UBS AG (standalone)[1]	UBS Switzerland AG (standalone)[1]	Other subsidiaries[2]	Elimination entries	UBS AG (consolidated)
Comprehensive income attributable to shareholders					
Net profit / (loss)	2,633	2,222	2,153	(3,658)	3,351
Other comprehensive income					
Other comprehensive income that may be reclassified to the income statement					
Foreign currency translation, net of tax	(467)	(228)	765	(474)	(404)
Financial assets measured at fair value through other comprehensive income, net of tax	0	(36)	(25)	3	(58)
Cash flow hedges, net of tax	(815)	102	0	30	(684)
Total other comprehensive income that may be reclassified to the income statement, net of tax	(1,282)	(163)	739	(441)	(1,146)
Other comprehensive income that will not be reclassified to the income statement					
Defined benefit plans, net of tax	(659)	(49)	(97)	(25)	(829)
Own credit on financial liabilities designated at fair value, net of tax	(130)				(130)
Total other comprehensive income that will not be reclassified to the income statement, net of tax	(788)	(49)	(97)	(25)	(959)
Total other comprehensive income	(2,070)	(211)	643	(467)	(2,105)
Total comprehensive income attributable to shareholders	563	2,011	2,796	(4,124)	1,246
Total comprehensive income attributable to preferred noteholders	59				59
Total comprehensive income attributable to non-controlling interests			3		3
Total comprehensive income	622	2,011	2,799	(4,124)	1,308

1 Amounts presented for UBS AG standalone and UBS Switzerland AG standalone represent IFRS standalone information. Refer to the UBS AG standalone and UBS Switzerland AG standalone financial statements under "Complementary financial information for legal entities and sub-groups" at www.ubs.com/investors for information prepared in accordance with Swiss GAAP. 2 Following the maturity of the remaining outstanding debt securities issued by PaineWebber in May 2018, we no longer present UBS Americas Inc. separately from other subsidiaries. The column "Other subsidiaries" includes consolidated information for the significant sub-groups UBS Americas Holding LLC, UBS Europe SE, UBS Asset Management AG and UBS Limited, as well as standalone information for other subsidiaries.

Note 40 Supplemental guarantor information required under SEC regulations (continued)

Supplemental guarantor consolidated statement of cash flows

USD million For the year ended 31 December 2016	UBS AG[1]	UBS Switzerland AG[1]	Other subsidiaries[1]	UBS AG (consolidated)
Net cash flow from / (used in) operating activities	(28,636)	(3,918)	13,383	(19,172)
Cash flow from / (used in) investing activities				
Purchase of subsidiaries, associates and intangible assets	0	(3)	(24)	(27)
Disposal of subsidiaries, associates and intangible assets[2]	94	0	0	95
Purchase of property, equipment and software	(1,351)	(16)	(414)	(1,782)
Disposal of property, equipment and software	178	0	3	182
Purchase of financial assets measured at fair value through other comprehensive income	(568)	(988)	(5,465)	(7,022)
Disposal and redemption of financial assets measured at fair value through other comprehensive income	25,034	22,136	7,263	54,433
Net (purchase) / redemption of financial assets held to maturity	(518)	(8,706)		(9,224)
Net cash flow from / (used in) investing activities	22,868	12,424	1,364	36,655
Cash flow from / (used in) financing activities				
Net short-term debt issued / (repaid)	8,454	(7)	(2,973)	5,474
Distributions paid on UBS AG shares	(3,589)	0	0	(3,589)
Issuance of long-term debt, including debt issued designated at fair value	17,991	742	1,053	19,786
Repayment of long-term debt, including debt issued designated at fair value	(32,219)	(677)	(1,006)	(33,902)
Funding from UBS Group AG and its subsidiaries	13,917			13,917
Dividends paid and repayments of preferred notes	(1,382)	0	0	(1,382)
Net changes in non-controlling interests	0	0	(5)	(5)
Net activity related to group internal capital transactions and dividends	(1,356)	(2,019)	3,374	0
Net cash flow from / (used in) financing activities	1,817	(1,961)	444	299

Total cash flow

Cash and cash equivalents at the beginning of the year	47,822	40,180	14,795	102,797
Net cash flow from / (used in) operating, investing and financing activities	(3,951)	6,544	15,190	17,783
Effects of exchange rate differences on cash and cash equivalents	(378)	(909)	(310)	(1,596)
Cash and cash equivalents at the end of the year[3]	43,495	45,815	29,674	118,984
of which: cash and balances at central banks	*39,779*	*43,750*	*22,304*	*105,832*
of which: loans and advances to banks	*2,787*	*2,058*	*6,874*	*11,719*
of which: money market paper[4]	*930*	*7*	*497*	*1,433*

1 Cash flows generally represent a third-party view from a UBS AG consolidated perspective. 2 Includes dividends received from associates. 3 USD 2,615 million of cash and cash equivalents were restricted. 4 Money market paper is included in the balance sheet under Financial assets at fair value held for trading, Financial assets measured at fair value through other comprehensive income, Financial assets at fair value not held for trading and Other financial assets measured at amortized cost.

Significant regulated subsidiary and sub-group information

Financial and regulatory key figures for our significant regulated subsidiaries and sub-groups

	UBS AG (standalone)[1]		UBS Switzerland AG (standalone)		UBS Limited (standalone)		UBS Americas Holding LLC (consolidated)	
	USD million, except where indicated		*CHF million, except where indicated*		*GBP million, except where indicated*		*USD million, except where indicated*	
As of or for the year ended	31.12.18	31.12.17	31.12.18	31.12.17	31.12.18	31.12.17[2]	31.12.18	31.12.17[2]
Financial information[3,4,5]								
Income statement								
Total operating income	12,040	10,563	8,257	8,350	638	796	12,953	12,026
Total operating expenses	9,539	10,091	6,439	6,419	621	599	11,162	10,709
Operating profit / (loss) before tax	2,501	472	1,818	1,931	17	197	1,791	1,317
Net profit / (loss)	3,333	932	1,401	1,513	18	114	3,969	(1,674)
Balance sheet								
Total assets	480,238	489,313	293,034	290,310	31,014	35,569	142,701	140,797
Total liabilities	429,130	438,074	279,200	275,525	28,345	32,760	115,280	117,950
Total equity	51,107	51,239	13,834	14,785	2,669	2,809	27,421	22,847
Capital[6,7]								
Common equity tier 1 capital	49,411	49,625	10,225	10,160	2,377	2,529	11,746	10,851
Additional tier 1 capital	7,805	3,761	4,243	3,000	235	235	2,141	1,196
Tier 1 capital	57,217	53,386	14,468	13,160	2,612	2,764	13,887	12,047
Total going concern capital	63,225	61,464	14,468	13,160				
Tier 2 capital					255	685	714	722
Total gone concern loss-absorbing capacity			10,932	8,400				
Total capital					2,867	3,449	14,601	12,769
Total loss-absorbing capacity			25,400	21,560				
Risk-weighted assets and leverage ratio denominator[6,7]								
Risk-weighted assets	292,888	284,707	95,646	92,894	8,486	10,473	52,581	49,587
Leverage ratio denominator	601,013	615,238	306,487	302,987	28,661	36,409	122,829	135,718
Capital and leverage ratios (%)[6,7]								
Common equity tier 1 capital ratio	16.9	17.4	10.7	10.9	28.0	24.2	22.3	21.9
Tier 1 capital ratio					30.8	26.4	26.4	24.3
Going concern capital ratio	21.6	21.6	15.1	14.2				
Total capital ratio					33.8	32.9	27.8	25.8
Total loss-absorbing capacity ratio			26.6	23.2				
Leverage ratio[8]	10.5	10.0			9.1	7.6	11.3	8.9
Total loss-absorbing capacity leverage ratio			8.3	7.1				
Liquidity[7,9,10]								
High-quality liquid assets (billion)	76	88	67	69	6	6		
Net cash outflows (billion)	55	67	53	48	1	1		
Liquidity coverage ratio (%)[11,12]	139	132	128	144	429	454		
Other								
Joint and several liability between UBS AG and UBS Switzerland AG (billion)[13]		0	26	69				

1 As of 1 October 2018, UBS AG prospectively changed the presentation currency of its financial statements from Swiss francs to US dollars. Refer to "Note 2b Changes in accounting policies" in the "UBS AG standalone financial statements (audited)" section of the UBS AG standalone financial statements and regulatory information for the year ended 31 December 2018 under "Holding company and significant regulated subsidiaries and sub-groups" at www.ubs.com/investors for more information. 2 Figures as of or for the year ended 31 December 2017 have been adjusted for consistency with the full-year audited financial statements and / or local regulatory reporting, which were finalized after the publication of the UBS Group AG Annual Report 2017 and the 31 December 2017 Pillar 3 report on 9 March 2018. 3 UBS AG and UBS Switzerland AG financial information is prepared in accordance with Swiss GAAP (FINMA Circular 2015/1 and Banking Ordinance), but does not represent financial statements under Swiss GAAP. 4 UBS Limited financial information is prepared in accordance with International Financial Reporting Standards (IFRS), as endorsed by the EU, but does not represent financial statements under IFRS. 5 UBS Americas Holding LLC financial information is prepared in accordance with accounting principles generally accepted in the US (US GAAP), but does not represent financial statements under US GAAP. 6 For UBS AG and UBS Switzerland AG, based on applicable transitional arrangements for Swiss systemically relevant banks (SRBs). For UBS Limited, based on Directive 2013/36/EU and Regulation 575/2013 (together known as CRD IV) and their related technical standards, as implemented within the UK by the Prudential Regulation Authority (PRA). For UBS Americas Holding LLC, based on applicable US Basel III rules, with total loss-absorbing capacity requirements effective from 1 January 2019 only. 7 Refer to the 31 December 2018 Pillar 3 report under "Pillar 3 disclosures" at www.ubs.com/investors for more information. 8 For UBS AG, on the basis of going concern capital. On the basis of tier 1 capital for UBS Limited and UBS Americas Holding LLC. 9 There was no local disclosure requirement for UBS Americas Holding LLC as of 31 December 2018 and 31 December 2017. 10 For UBS Limited, the values represent an average of the month-end balances for the twelve months ending 31 December 2018 and 31 December 2017 in line with the European Banking Authority guidelines on the liquidity coverage ratio disclosure (EBA/GL/2017/01). Including PRA Pillar 2 requirements, the equivalent average ratios were 179% and 187% for 31 December 2018 and 31 December 2017, respectively. 11 UBS AG is required to maintain a minimum liquidity coverage ratio of 105% as communicated by FINMA. 12 UBS Switzerland AG, as a Swiss SRB, is required to maintain a minimum liquidity coverage ratio of 100%. 13 Refer to the "Capital management" section of this report for more information on the joint and several liability. Under certain circumstances, the Swiss Banking Act and FINMA's Banking Insolvency Ordinance authorize FINMA to modify, extinguish or convert to common equity liabilities of a bank in connection with a resolution or insolvency of such bank.

UBS Group AG is a holding company and conducts substantially all of its operations through UBS AG and its subsidiaries. UBS Group AG and UBS AG have contributed a significant portion of their respective capital and provide substantial liquidity to subsidiaries. Many of these subsidiaries are subject to regulations requiring compliance with minimum capital, liquidity and similar requirements. The table in this section summarizes the regulatory capital components and capital ratios of our significant regulated subsidiaries and sub-groups determined under the regulatory framework of each subsidiary's or sub-group's home jurisdiction.

→ **Refer to "Capital and capital ratios of our significant regulated subsidiaries" in the "Capital management" section of this report for more information**

→ **Refer to "Note 26 Restricted and transferred financial assets" in the "Consolidated financial statements" section of this report for more information.**

Supervisory authorities generally have discretion to impose higher requirements or to otherwise limit the activities of subsidiaries. Supervisory authorities also may require entities to measure capital and leverage ratios on a stressed basis and may limit the ability of the entity to engage in new activities or take capital actions based on the results of those tests.

In June 2018, the Federal Reserve Board released the results of its Comprehensive Capital Analysis and Review (CCAR) and did not object to UBS Americas Holding LLC's capital plan.

Standalone regulatory information for UBS AG, UBS Switzerland AG and UBS Limited as well as consolidated regulatory information for UBS Americas Holding LLC is provided in the 31 December 2018 Pillar 3 report, which is available under "Pillar 3 disclosures" at *www.ubs.com/investors*. Standalone financial statements for UBS Group AG as well as standalone financial statements and regulatory information for UBS AG and UBS Switzerland AG are available under "Holding company and significant regulatory subsidiaries and sub-groups" at *www.ubs.com/investors*.

Asset transfer from UBS Limited to UBS AG and merger of UBS Limited into UBS Europe SE

On 1 March 2019, the previously announced combined UK business transfer and cross-border merger of UBS Limited into UBS Europe SE took place.

Former clients and other counterparties of UBS Limited who can be serviced by UBS AG's London Branch were migrated to UBS AG's London Branch prior to the merger. This business transfer included a transfer of net assets against cash consideration of USD 0.7 billion, with no effect on the equity or profit or loss of UBS AG. Total assets of UBS AG increased by USD 4.4 billion, and total liabilities increased by USD 3.7 billion.

As a result of the cross-border merger, we expect that UBS Europe SE will become subject to direct supervision by the European Central Bank and will be considered a significant regulated subsidiary from a Group reporting perspective. Starting with the first quarter of 2019, we will include financial and regulatory information of UBS Europe SE in our quarterly reports and Pillar 3 reports.

→ **Refer to the "Regulatory and legal developments" and "Risk factors" sections of this report for more information**

Additional regulatory information

Table of contents

UBS Group AG consolidated supplemental disclosures required under SEC regulations

A – Introduction

The following pages contain supplemental UBS Group AG disclosures that are required under SEC regulations. UBS Group AG's consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB) and are denominated in US dollars (USD), which is also the functional currency of UBS Group AG, UBS AG's Head Office, UBS AG's London Branch and UBS's US-based operations.

Effective 1 January 2018, UBS adopted IFRS 9, *Financial Instruments*. The adoption of IFRS 9 has resulted in changes to the classification and measurement of certain financial instruments, which have been applied prospectively in the balance sheet from 1 January 2018.

Although the effect of IFRS 9 classification and measurement changes has been applied prospectively, UBS has made a series of changes to the presentation of its IFRS balance sheet to facilitate comparability and prior-period information is presented for periods ending before 1 January 2018 in this revised structure.

→ **Refer to "Note 1c Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9 *Financial Instruments*" in the "Consolidated financial statements" section of this report for more information**

B – Selected financial data

Key figures

	As of or for the year ended				
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Group results					
Operating income	30,213	29,622	28,729	31,727	30,564
Operating expenses	24,222	24,272	24,519	26,026	27,752
Operating profit / (loss) from continuing operations before tax	5,991	5,351	4,209	5,701	2,811
Net profit / (loss) attributable to shareholders	4,516	969	3,348	6,473	3,795
Diluted earnings per share (USD)[1]	1.18	0.25	0.88	1.71	1.00
Profitability and growth[2]					
Return on equity (%)[3]	8.6	1.8	6.1	12.0	7.0
Return on tangible equity (%)[4]	10.0	2.2	7.1	13.9	8.2
Adjusted return on tangible equity excluding deferred tax expense / benefit and deferred tax assets (%)[5]	12.9	13.7	11.3	12.6	5.9
Return on common equity tier 1 capital (%)[6]	13.1	3.0	10.9	20.9	11.6
Return on risk-weighted assets, gross (%)[7]	11.8	12.6	13.1	14.5	12.5
Return on leverage ratio denominator, gross (%)[7]	3.3	3.3	3.2		
Cost / income ratio (%)[8]	79.9	81.6	85.2	81.7	90.6
Adjusted cost / income ratio (%)[9]	79.5	78.2	80.8	80.4	89.4
Net profit growth (%)[10]	366.0	(71.1)	(48.3)	70.6	
Resources					
Total assets	958,489	939,279	918,906	941,380	1,068,376
Equity attributable to shareholders	52,928	52,495	52,916	55,336	50,889
Common equity tier 1 capital[11]	34,119	33,516	30,156	29,994	29,102
Risk-weighted assets[11]	263,747	243,636	218,785	207,189	217,664
Common equity tier 1 capital ratio (%)[12]	12.9	13.8	13.8	14.5	13.4
Going concern capital ratio (%)[11,14]	17.5	17.6	17.9		
Total loss-absorbing capacity ratio (%)[11,14]	31.7	33.0	31.1		
Leverage ratio denominator[11,13]	904,598	909,032	855,255	896,129	1,003,361
Common equity tier 1 leverage ratio (%)[12,13]	3.77	3.69	3.53	3.35	2.90
Going concern leverage ratio (%)[13,14]	5.1	4.7	4.6		
Total loss-absorbing capacity leverage ratio (%)[11,13,14]	9.3	8.8	7.9		
Average equity / average assets ratio (%)[15]	5.0	5.4	5.3	4.9	4.7

Key figures (continued)

	As of or for the year ended				
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Other					
Invested assets (USD billion)[16]	3,101	3,262	2,761	2,674	2,738
Personnel (full-time equivalents)	66,888	61,253	59,387	60,099	60,155
Americas	21,309	20,770	20,522	20,816	20,951
of which: USA	*20,495*	*19,944*	*19,695*	*19,897*	*19,715*
Asia Pacific	12,119	8,959	7,539	7,539	7,385
Europe, Middle East and Africa	12,620	11,097	10,746	10,505	10,254
of which: UK	*5,782*	*5,274*	*5,206*	*5,373*	*5,425*
of which: rest of Europe	*6,670*	*5,662*	*5,373*	*4,957*	*4,663*
of which: Middle East and Africa	*168*	*161*	*167*	*176*	*166*
Switzerland	20,840	20,427	20,581	21,238	21,564
Market capitalization[17,18]	45,907	68,477	58,177	73,099	62,368
Total book value per share (USD)[17]	14.35	14.11	14.25	14.75	14.02
Tangible book value per share (USD)[17]	12.55	12.34	12.52	13.00	12.20
Registered ordinary shares (number)[17]	3,855,634,749	3,853,096,603	3,850,766,389	3,849,731,535	3,717,128,324
Treasury shares (number)[17]	166,467,802	132,301,550	138,441,772	98,706,275	87,871,737

1 Refer to "Note 9 Earnings per share (EPS) and shares outstanding" in the "Consolidated financial statements" section of this report for more information. 2 Refer to the "Performance targets and measurement" section of this report for more information on our performance targets. 3 Calculated as net profit attributable to shareholders / average equity attributable to shareholders. 4 Calculated as net profit attributable to shareholders before amortization and impairment of goodwill and intangible assets / average equity attributable to shareholders less average goodwill and intangible assets. 5 Calculated as adjusted net profit attributable to shareholders before amortization and impairment of goodwill and intangible assets and before deferred tax expense or benefit / average equity attributable to shareholders less average goodwill and intangible assets and less average deferred tax assets that do not qualify as common equity tier 1 capital. 6 Calculated as net profit attributable to shareholders before amortization and impairment of goodwill and intangible assets / average common equity tier 1 capital. 7 Calculated as operating income before credit loss expense or recovery / average risk-weighted assets and average leverage ratio denominator, respectively. 8 Calculated as operating expenses / operating income before credit loss expense or recovery. 9 Calculated as adjusted operating expenses / adjusted operating income before credit loss expense or recovery. 10 Calculated as change in net profit attributable to shareholders from continuing operations between current and comparison periods / net profit attributable to shareholders from continuing operations of comparison period. 11 Based on the Swiss systemically relevant bank (SRB) framework as of 1 January 2020 and the fully applied Basel III framework. Refer to the "Capital management" section of the report for the respective period for more information. 12 Based on the Swiss SRB framework as of 1 January 2020. Refer to the "Capital management" section of this report for more information. 13 From 31 December 2015 onward, the leverage ratio denominator calculation is aligned with the Basel III rules. Figures for periods prior to 31 December 2015 are calculated in accordance with former Swiss SRB rules and are therefore not fully comparable. 14 Based on the revised Swiss SRB framework that became effective on 1 July 2016, therefore figures for periods prior to 31 December 2015 are not available. Refer to the "Capital management" section of this report for more information. 15 Calculated as average equity / average assets. 16 Includes invested assets for Global Wealth Management, Asset Management and Personal & Corporate Banking. 17 Refer to "UBS shares" in the "Capital management" section of this report for more information. 18 The calculation of market capitalization has been amended to reflect total shares outstanding multiplied by the share price at the end of the period. The calculation was previously based on total shares issued multiplied by the share price at the end of the period. Market capitalization has been reduced by USD 2.1 billion as of 31 December 2018, by USD 2.4 billion as of 31 December 2017, by USD 2.2 billion as of 31 December 2016, by USD 1.9 billion as of 31 December 2015 and by USD 1.5 billion as of 31 December 2014 as a result.

Income statement data

	For the year ended				
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	10,100	10,422	10,379	10,360	10,625
Interest expense from financial instruments measured at amortized cost	(6,391)	(5,404)	(4,976)	(4,187)	(4,263)
Interest income from financial instruments measured at fair value through profit or loss	6,968	4,056	3,579	3,406	3,744
Interest expense from financial instruments measured at fair value through profit or loss	(4,653)	(2,418)	(2,495)	(2,606)	(2,992)
Net interest income	6,025	6,656	6,487	6,973	7,113
Other net income from fair value changes on financial instruments	5,984	5,065	5,023	6,008	4,240
Credit loss (expense) / recovery	(118)	(131)	(38)	(118)	(77)
Fee and commission income	19,598	19,362	18,374	19,738	20,608
Fee and commission expense	(1,703)	(1,840)	(1,781)	(1,948)	(2,025)
Net fee and commission income	17,895	17,522	16,593	17,790	18,583
Other income	427	511	663	1,074	705
Total operating income	30,213	29,622	28,729	31,727	30,564
Total operating expenses	24,222	24,272	24,519	26,026	27,752
Operating profit / (loss) before tax	5,991	5,351	4,209	5,701	2,811
Tax expense / (benefit)	1,468	4,305	777	(967)	(1,172)
Net profit / (loss)	4,522	1,046	3,432	6,668	3,984
Net profit / (loss) attributable to preferred noteholders					156
Net profit / (loss) attributable to non-controlling interests	7	77	84	195	32
Net profit / (loss) attributable to shareholders	4,516	969	3,348	6,473	3,795
Cost / income ratio (%)[1]	79.9	81.6	85.2	81.7	90.6
Per share data					
Basic earnings per share (USD)[2]	1.21	0.26	0.90	1.75	1.02
Diluted earnings per share (USD)[2]	1.18	0.25	0.88	1.71	1.00
Ordinary cash dividends declared per share (CHF)[3,4]	0.70	0.65	0.60	0.60	0.50
Ordinary cash dividends declared per share (USD)[3,4]		0.65	0.61	0.62	0.54
Special cash dividends declared per share (CHF)[3,4]				0.25	0.25
Special cash dividends declared per share (USD)[3,4]				0.26	0.26
Dividend payout ratio (%)	60[5]	260	69	51	54[6]
Rates of return (%)					
Return on equity attributable to shareholders	8.6	1.8	6.1	12.0	7.0
Return on average equity	8.6	1.8	6.1	11.9	7.0
Return on average assets	0.4	0.1	0.3	0.6	0.3

1 Calculated as operating expenses / operating income before credit loss expense or recovery. 2 Refer to "Note 9 Earnings per share (EPS) and shares outstanding" in the "Consolidated financial statements" section of this report for more information. 3 Dividends and / or distribution of the capital contribution reserve are normally approved and paid in the year subsequent to the reporting period. 4 Refer to "Proposed dividend distribution out of capital contribution reserve" in the UBS Group AG standalone financial statements for more information. 5 The dividend payout ratio for the year ended 31 December 2018 was calculated based on the proposed dividend per share in Swiss francs translated to US dollars using the closing exchange rate as of 31 December 2018. 6 The calculation of the dividend payout ratio for the year ended 31 December 2014 excludes the supplementary distribution of a dividend upon the completion of the acquisition of all shares in UBS AG by means of the SESTA procedure. Refer to the Annual Report 2015 for more information on the SESTA procedure.

Cash dividends received from investments in subsidiaries

In 2018, UBS Group AG received cash dividends of USD 3,180 million (2017: USD 2,256 million; 2016: USD 3,457 million) from its subsidiaries. Dividends disclosed were translated to US dollar from the functional currency of the entity paying the dividend, using the closing exchange rate of the month the dividend was received.

Balance sheet data

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Assets					
Cash and balances at central banks	108,370	90,045	105,883	91,156	104,651
Loans and advances to banks	16,868	14,094	12,926	11,939	13,420
Receivables from securities financing transactions	95,349	91,951	79,936	93,323	92,991
Cash collateral receivables on derivative instruments	23,602	24,040	26,198	23,724	31,151
Loans and advances to customers	320,352	326,746	300,010	310,369	316,421
Other financial assets measured at amortized cost	22,563	37,815	27,115	19,739	20,999
Total financial assets measured at amortized cost	587,104	584,691	552,068	550,250	579,632
Financial assets at fair value held for trading	104,370	129,407	90,416	120,194	133,127
of which: assets pledged as collateral that may be sold or repledged by counterparties	*32,121*	*36,277*	*29,731*	*51,858*	*56,329*
Derivative financial instruments	126,210	121,285	155,642	167,159	258,404
Brokerage receivables	16,840				
Financial assets at fair value not held for trading	82,690	60,457	64,210	6,135	4,978
Total financial assets measured at fair value through profit or loss	330,110	311,148	310,269	293,489	396,510
Financial assets measured at fair value through other comprehensive income	6,667	8,889	15,402	62,440	57,476
Investments in associates	1,099	1,045	947	952	932
Property, equipment and software	9,348	9,057	8,186	7,682	6,887
Goodwill and intangible assets	6,647	6,563	6,442	6,557	6,823
Deferred tax assets	10,105	10,056	13,158	12,928	11,122
Other non-financial assets	7,410	7,830	12,434	7,081	8,995
Total Assets	958,489	939,279	918,906	941,380	1,068,376
Liabilities					
Amounts due to banks	10,962	7,728	10,459	11,816	10,550
Payables from securities financing transactions	10,296	17,485	9,266	17,653	21,114
Cash collateral payables on derivative instruments	28,906	31,029	34,852	38,219	42,607
Customer deposits	419,838	419,577	416,267	389,543	412,484
Debt issued measured at amortized cost	132,271	143,160	101,837	92,994	91,714
Other financial liabilities measured at amortized cost	6,885	37,276	37,729	51,245	45,643
Total financial liabilities measured at amortized cost	609,158	656,255	610,410	601,470	624,113
Financial liabilities at fair value held for trading	28,943	31,251	22,425	29,089	28,113
Derivative financial instruments	125,723	119,137	151,121	162,163	255,512
Brokerage payables designated at fair value	38,420				
Debt issued designated at fair value	57,031	50,782	49,057	56,441	68,755
Other financial liabilities designated at fair value	33,594	16,643	14,122	22,142	24,701
Total financial liabilities measured at fair value through profit or loss	283,711	217,813	236,725	269,835	377,081
Provisions	3,494	3,214	4,101	4,157	4,390
Other non-financial liabilities	9,022	9,443	14,083	8,591	8,122
Total Liabilities	905,386	886,725	865,320	884,052	1,013,706
Equity attributable to shareholders	52,928	52,495	52,916	55,336	50,889
Equity attributable to non-controlling interests	176	59	670	1,992	3,781
Total equity	53,103	52,554	53,586	57,328	54,670
Total liabilities and equity	958,489	939,279	918,906	941,380	1,068,376

C – Information on the company

Property, plant and equipment

As of 31 December 2018, UBS operated about 790 business and banking locations worldwide, of which approximately 41% were in Switzerland, 41% in the Americas, 10% in the rest of Europe, Middle East and Africa and 8% in Asia Pacific. Of the business and banking locations in Switzerland, 32% were owned directly by UBS, with the remainder, along with most of UBS's offices outside Switzerland, being held under commercial leases. These premises are subject to continuous maintenance and upgrading and are considered suitable and adequate for current and anticipated operations.

D – Information required by industry guide 3

Selected statistical information

The following tables set forth select statistical information regarding the Group's banking operations extracted from the financial statements. Unless otherwise indicated, average balances for the years ended 31 December 2018, 31 December 2017 and 31 December 2016 are calculated from monthly data.

The distinction between domestic (Swiss) and foreign (non-Swiss) is generally based on the booking location. For loans, this method is not significantly different from an analysis based on the domicile of the borrower.

Average balances and interest rates

The following table sets forth average interest-earning assets and average interest-bearing liabilities, along with the average yield, for 2018, 2017 and 2016. Refer to "Note 3 Net interest income and other net income from fair value changes on financial instruments" in the "Consolidated financial statements" section of this report for more information on interest income and interest expense.

	31.12.18			31.12.17			31.12.16		
USD million, except where indicated	Average balance	Interest income	Average yield (%)	Average balance	Interest income	Average yield (%)	Average balance	Interest income	Average yield (%)
Assets									
Balances at central banks									
Domestic	66,278	(168)	(0.3)	59,456	(142)	(0.2)	56,419	(108)	(0.2)
Foreign	35,088	191	0.5	41,514	142	0.3	43,373	85	0.2
Loans and advances to banks									
Domestic	2,700	25	0.9	3,564	15	0.4	3,487	17	0.5
Foreign	12,365	11	0.1	10,704	35	0.3	9,641	18	0.2
Receivables from securities financing transactions									
Domestic	8,989	(42)	(0.5)	10,291	(39)	(0.4)	10,401	(22)	(0.2)
Foreign[1]	93,615	1,237	1.3	160,333	811	0.5	149,618	574	0.4
Cash collateral receivables on derivative instruments									
Domestic	303	2	0.7	772	(3)	(0.4)	497	0	0.0
Foreign	24,497	286	1.2	24,196	133	0.5	26,180	118	0.5
Loans and advances to customers									
Domestic	190,854	3,249	1.7	189,258	3,230	1.7	189,001	3,433	1.8
Foreign	133,463	3,792	2.8	126,634	3,066	2.4	120,638	2,643	2.2
Financial assets at fair value held for trading									
Domestic	984	7	0.7	595	14	2.4	428	10	2.3
Foreign[3]	25,295	887	3.5	27,273	827	3.0	28,975	935	3.2
of which: taxable	*25,295*	*887*	*3.5*	*27,273*	*827*	*3.0*	*28,975*	*935*	*3.2*
Brokerage receivables									
Domestic	0	0	0.0						
Foreign[2]	19,658	981	5.0						
Financial assets at fair value not held for trading									
Domestic	11,366	45	0.4	14,252	26	0.2	10,759	13	0.1
Foreign[1,3]	123,537	1,549	1.3	41,526	486	1.2	42,549	311	0.7
of which: taxable	*123,537*	*1,549*	*1.3*	*41,526*	*486*	*1.2*	*42,549*	*311*	*0.7*
Financial assets measure at fair value through other comprehensive income									
Domestic	49	1	2.0	1,118	4	0.4	8,426	30	0.4
Foreign	6,936	141	2.0	12,018	141	1.2	17,174	158	0.9
of which: taxable	*6,936*	*141*	*2.0*	*12,018*	*141*	*1.2*	*17,174*	*158*	*0.9*
Other interest-earning assets									
Domestic	8,669	209	2.4	8,384	189	2.3	4,635	151	3.3
Foreign[2]	7,367	167	2.3	18,317	771	4.2	17,052	683	4.0
Total interest-earning assets[4]	772,013	12,569	1.6	750,204	9,706	1.3	739,252	9,051	1.2
Net interest income on swaps		632			1,486			2,244	
Interest income on off-balance sheet securities and other		492			457			450	
Interest income and average interest-earning assets	772,013	13,692[5]	1.8	750,204	11,648[5]	1.6	739,252	11,746[5]	1.6
Non-interest-earning assets									
Derivative financial instruments	129,286			132,356			178,550		
Fixed assets	9,216			8,656			8,070		
Other	139,028			119,281			113,370		
Total average assets	1,049,544			1,010,498			1,039,243		

1 Certain reverse repurchase agreements with an average balance of USD 73 billion in 2017 and USD 51 billion in 2016 were reclassified from amortized cost (presented under Receivables from securities financing transactions) to measured at fair value through profit or loss (presented under Financial assets at fair value not held for trading) upon adoption of IFRS 9, Financial instruments on 1 January 2018. Prior period information is still presented under IAS 39 requirements and therefore may not be comparable. 2 In 2017 and 2016 Other interest-earning assets included prime brokerage receivables, which mainly included margin lending receivables. Upon adoption of IFRS 9, Financial instruments on 1 January 2018, prime brokerage receivables are measured at fair value and are presented separately on the balance sheet under Brokerage receivables. Gross receivable and payable balances within a single prime brokerage arrangement are presented as either a net receivable or a net payable on the balance sheet. 3 Upon adoption of IFRS 9, Financial instruments effective 1 January 2018, UBS has elected to reclassify assets held to hedge unit-linked investment contracts of USD 12 billion from Financial assets at fair value held for trading to Financial assets at fair value not held for trading. 4 Interest income and average interest-earning assets have been adjusted to exclude dividend income and the associated equity instruments that generate dividend income, respectively. Interest income has been reduced by USD 1,775 million for 2017 and by USD 1,568 million for 2016. Average interest earning assets have been reduced by USD 84 billion in 2017 and USD 77 billion in 2016 as a result. 5 For the purpose of this disclosure, negative interest income on assets is presented as a reduction to interest income, while in the consolidated income statement negative interest income on assets is presented as interest expense. Refer to Note 3 in the "Consolidated financial statements" section of this report for more information.

Average balances and interest rates

	31.12.18			31.12.17			31.12.16		
USD million, except where indicated	Average balance	Interest expense	Average interest rate (%)	Average balance	Interest expense	Average interest rate (%)	Average balance	Interest expense	Average interest rate (%)
Liabilities and equity									
Amount due to banks									
Domestic	7,477	20	0.3	7,821	14	0.2	9,139	17	0.2
Foreign	2,763	15	0.5	2,392	13	0.5	2,550	14	0.5
Payables from securities financing transactions									
Domestic	3,626	5	0.1	2,513	6	0.2	2,388	4	0.2
Foreign	26,111	341	1.3	89,713	357	0.4	77,693	321	0.4
Cash collateral payables on derivative instruments									
Domestic	1,285	4	0.3	826	1	0.1	978	4	0.4
Foreign[1]	29,806	259	0.9	31,485	147	0.5	35,366	83	0.2
Customer deposits									
Domestic	247,619	(27)	0.0	249,592	(31)	0.0	243,089	18	0.0
of which: demand deposits	*128,395*	*(51)*	*0.0*	*134,737*	*(52)*	*0.0*	*130,805*	*(38)*	*0.0*
of which: savings deposits	*110,560*	*26*	*0.0*	*104,759*	*34*	*0.0*	*100,069*	*56*	*0.1*
of which: time deposits	*8,664*	*(2)*	*0.0*	*10,096*	*(13)*	*(0.1)*	*12,216*	*0*	*0.0*
Foreign	165,406	1,214	0.7	168,166	491	0.3	169,594	312	0.2
Short-term debt issued measured at amortized cost									
Domestic	126	1	0.8	649	(1)	(0.2)	621	1	0.2
Foreign	47,655	604	1.3	42,435	321	0.8	28,361	207	0.7
Long-term debt issued measured at amortized cost									
Domestic	52,702	1,827	3.5	40,107	1,420	3.5	22,106	901	4.1
Foreign	41,279	1,012	2.5	42,204	1,330	3.2	53,682	1,780	3.3
Financial liabilities at fair value held for trading									
Domestic	684	7	1.0	523	10	1.9	402	6	1.5
Foreign	8,872	305	3.4	11,539	323	2.8	10,714	352	3.3
Brokerage payables designated at fair value									
Domestic	0	0	0.0						
Foreign[2]	38,346	638	1.7						
Debt issued designated at fair value									
Domestic	2,568	13	0.5	2,127	13	0.6	1,591	6	0.4
Foreign	54,446	1,270	2.3	48,359	775	1.6	51,781	745	1.4
Other financial liabilities designated at fair value									
Domestic	13	0	0.0	37	0	0.0	57	0	0.0
Foreign[1]	73,676	652	0.9	6,224	46	0.7	5,783	59	1.0
Other interest-bearing liabilities									
Domestic	0	0	0.0	0	0	0.0	0	0	0.0
Foreign[2]	0	0	0.0	31,685	317	1.0	39,053	113	0.3
Total interest-bearing liabilities[3]	804,462	8,161	1.0	778,396	5,553	0.7	754,945	4,945	0.7
Swap interest on hedged debt issued and other swap		(176)			(547)				
Interest expense on off-balance sheet securities		659			572			595	
Interest expense and average interest-bearing liabilities	804,462	8,645[4]	1.1	778,396	5,578[4]	0.7	754,945	5,540[4]	0.7
Non-interest-bearing liabilities									
Derivative financial instruments	127,760			129,551			174,727		
Other	64,801			47,802			53,534		
Total liabilities	997,024			955,750			983,206		
Total equity	52,520			54,748			56,037		
Total average liabilities and equity	1,049,544			1,010,498			1,039,243		
Net interest income		5,048			6,070			6,206	
Net yield on interest-earning assets			0.7			0.8			0.8

1 Certain repurchase agreements with an average balance of USD 73 billion in 2017 and USD 51 billion in 2016 were reclassified from amortized cost (presented under Payables from securities financing transactions) to measured at fair value through profit or loss (presented under Other financial liabilities designated at fair value) upon adoption of IFRS 9, Financial instruments on 1 January 2018. Prior period information is still presented under IAS 39 requirements and therefore may not be comparable. 2 In 2017 and 2016 Other interest-bearing liabilities included prime brokerage payables, which mainly included client securities financing and deposits. Upon adoption of IFRS 9, Financial instruments on 1 January 2018, prime brokerage payables are measured at fair value and are presented separately on the balance sheet under Brokerage payables designated at fair value. Gross receivable and payable balances within a single prime brokerage arrangement are presented as either a net receivable or a net payable on the balance sheet. 3 Interest expense and average interest-bearing liabilities have been adjusted to exclude dividend expense and the associated liabilities that generate dividend expense, respectively. Interest expense has been reduced by USD 1,190 million for 2017 and by USD 1,286 million for 2016. Average interest-bearing liabilities have been reduced by USD 17 billion in 2017 and USD 20 billion in 2016 as a result. 4 For the purpose of this disclosure, negative interest expense on liabilities is presented as a reduction to interest expense, while in the consolidated income statement negative interest income on liabilities is presented as interest income. Refer to Note 3 in the "Consolidated financial statements" section of this report for more information.

Average balances and interest rates (continued)

The percentage of total average interest-earning assets attributable to foreign activities was 62% for 2018 (62% for 2017 and 62% for 2016). The percentage of total average interest-bearing liabilities attributable to foreign activities was 61% for 2018 (61% for 2017 and 63% for 2016). All assets and liabilities are translated into USD at uniform month-end rates. Interest income and expense are translated at monthly average rates.

Average rates earned and paid on assets and liabilities can change from period to period based on the changes in interest rates in general, but are also affected by changes in the currency mix included in the assets and liabilities. Tax-exempt income is not recorded on a tax-equivalent basis. For all three years presented, tax-exempt income is considered to be insignificant and the impact from such income is therefore negligible.

Analysis of changes in interest income and expense

The following tables provide information by categories of interest-earning assets and interest-bearing liabilities on the changes in interest income and expense due to changes in volume and interest rates for the year ended 31 December 2018 compared with the year ended 31 December 2017, and for the year ended 31 December 2017 compared with the year ended 31 December 2016. Volume and rate variances have been calculated on movements in average balances and changes in interest rates. Changes due to a combination of volume and rates have been allocated proportionally.

	2018 compared with 2017			2017 compared with 2016		
	Increase / (decrease) due to changes in			Increase / (decrease) due to changes in		
USD million	Average volume	Average interest rate	Net change	Average volume	Average interest rate	Net change
Interest income from interest-earning assets						
Balances at central banks						
Domestic	(14)	(12)	(26)	(6)	(28)	(34)
Foreign	(19)	68	49	(4)	61	57
Loans and advances to banks						
Domestic	(3)	14	11	0	(2)	(2)
Foreign	5	(29)	(24)	2	15	17
Receivables from securities financing transactions						
Domestic	5	(8)	(3)	0	(17)	(17)
Foreign[1]	(334)	760	426	43	193	236
Cash collateral receivables on derivative instruments						
Domestic	2	2	4	0	(3)	(3)
Foreign	2	151	153	(10)	26	16
Loans and advances to customers						
Domestic	27	(8)	19	5	(208)	(203)
Foreign	164	562	726	132	291	423
Financial assets at fair value held for trading						
Domestic	9	(16)	(7)	4	0	4
Foreign[3]	(59)	119	60	(54)	(54)	(108)
of which: taxable	*(59)*	*119*	*60*	*(54)*	*(54)*	*(108)*
Brokerage receivables						
Domestic	0	0	0			
Foreign[2]	981	0	981			
Financial assets at fair value not held for trading						
Domestic	(6)	24	18	3	10	13
Foreign[1,3]	984	79	1,063	(7)	181	174
of which: taxable	*984*	*79*	*1,063*	*(7)*	*181*	*174*
Financial assets measured at fair value through other comprehensive income						
Domestic	(4)	1	(3)	(29)	3	(26)
Foreign	(61)	61	0	(46)	29	(17)
of which: taxable	*(61)*	*61*	*0*	*(46)*	*29*	*(17)*
Other interest-earning assets						
Domestic	7	14	21	124	(86)	38
Foreign[2]	(460)	(143)	(603)	51	37	88
Interest income						
Domestic	23	10	33	101	(331)	(230)
Foreign	1,203	1,627	2,830	107	778	885
Total interest income from interest-earning assets	1,226	1,637	2,863	208	447	655
Net interest income on swaps			(854)			(759)
Interest income on off-balance sheet securities and other			35			6
Total interest income			2,044			(98)

Analysis of changes in interest income and expense (continued)

	2018 compared with 2017			2017 compared with 2016		
	Increase / (decrease) due to changes in			Increase / (decrease) due to changes in		
USD million	Average volume	Average interest rate	Net change	Average volume	Average interest rate	Net change
Interest expense on interest-bearing liabilities						
Amount due to banks						
Domestic	(1)	7	6	(3)	0	(3)
Foreign	2	0	2	(1)	1	0
Payables from securities financing transactions						
Domestic	2	(3)	(1)	0	3	3
Foreign[4]	(254)	238	(16)	48	(13)	35
Cash collateral payables on derivative instruments						
Domestic	0	3	3	(1)	(2)	(3)
Foreign	(8)	120	112	(8)	72	64
Customer deposits						
Domestic	1	2	3	5	(54)	(49)
of which: demand deposits	*0*	*1*	*1*	*0*	*(14)*	*(14)*
of which: savings deposits	*0*	*(8)*	*(8)*	*5*	*(27)*	*(22)*
of which: time deposits	*1*	*10*	*11*	*0*	*(13)*	*(13)*
Foreign	(8)	730	722	(3)	182	179
Short-term debt issued measured at amortized cost						
Domestic	1	1	2	0	(2)	(2)
Foreign	42	242	284	99	15	114
Long-term debt issued measured at amortized cost						
Domestic	441	(33)	408	738	(219)	519
Foreign	(30)	(287)	(317)	(379)	(72)	(451)
Financial liabilities at fair value held for trading						
Domestic	3	(6)	(3)	2	2	4
Foreign	(75)	57	(18)	27	(55)	(28)
Brokerage payables designated at fair value						
Domestic	0	0	0			
Foreign[5]	638	0	638			
Debt issued designated at fair value						
Domestic	3	(3)	0	2	5	7
Foreign	97	398	495	(48)	77	29
Other financial liabilities designated at fair value						
Domestic	0	0	0	0	0	0
Foreign[4]	472	134	606	4	(17)	(13)
Other interest-bearing liabilities						
Domestic	0	0	0	0	0	0
Foreign[5]	(317)	0	(317)	(22)	226	204
Interest expense						
Domestic	450	(33)	417	743	(267)	476
Foreign	559	1,632	2,191	(283)	415	132
Total interest expense on interest-bearing liabilities	1,009	1,599	2,608	460	148	608
Swap interest on hedged debt issued			371			(547)
Interest expense on off-balance sheet securities and other			88			(24)
Total interest expense			3,066			38

Deposits

The following table analyzes average deposits and average rates on each deposit category for the years ended 31 December 2018, 2017 and 2016. The geographic allocation is based on the location of the office or branch where the deposit is made. Deposits by foreign depositors in domestic offices were USD 63,174 million, USD 67,633 million and USD 75,407 million at 31 December 2018, 31 December 2017 and 31 December 2016, respectively.

	31.12.18		31.12.17		31.12.16	
USD million, except where indicated	Average deposits	Average rate (%)	Average deposits	Average rate (%)	Average deposits	Average rate (%)
Banks						
Domestic offices						
Demand deposits	4,155	(0.5)	4,013	(0.5)	5,112	(0.3)
Time deposits	3,323	1.2	3,808	0.9	4,027	0.8
Total domestic offices	7,477	0.3	7,821	0.2	9,139	0.2
Foreign offices						
Interest-bearing deposits	2,763	0.5	2,392	0.5	2,550	0.5
Total due to banks[1]	10,240	0.3	10,213	0.3	11,689	0.3
Customer accounts						
Domestic offices						
Demand deposits	128,395	0.0	134,737	0.0	130,805	0.0
Savings deposits	110,560	0.0	104,759	0.0	100,069	0.1
Time deposits	8,664	0.0	10,096	(0.1)	12,216	0.0
Total domestic offices	247,619	0.0	249,592	0.0	243,089	0.0
Foreign offices						
Demand deposits	55,846	0.2	59,982	0.1	56,279	0.0
Time and savings deposits	109,560	1.0	108,183	0.4	113,315	0.3
Total foreign offices	165,406	0.7	168,166	0.3	169,594	0.2
Total due to customers	413,025	0.3	417,758	0.1	412,683	0.1

1 Due to banks is considered to represent short-term borrowings to the extent that the total Due to banks exceeds total Due from banks, without differentiating between domestic and foreign offices. The remainder of total Due to banks is considered to represent deposits for the purpose of this disclosure.

As of 31 December 2018, the maturity of time deposits was as follows:

USD million	Domestic	Foreign
Within 3 months	9,686	54,965
3 to 6 months	739	3,764
6 to 12 months	997	2,346
1 to 5 years	127	4,469
Over 5 years	41	22
Total time deposits	11,591	65,567

Short-term borrowings

The table below presents the period-end, average and maximum month-end outstanding amounts for short-term borrowings, along with average and period-end interest rates.

	Short-term debt[1]			Due to banks[2]			Repurchase agreements[3]		
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.18	31.12.17	31.12.16	31.12.18	31.12.17	31.12.16
Period-end balance	39,025	52,270	25,720	0	0	0	108,584	94,437	76,718
Average balance	47,782	43,084	28,982	0	0	181	96,338	88,995	74,683
Maximum month-end balance	57,860	56,588	32,832	0	0	2,355	115,395	108,265	85,321
Average interest rate during the period (%)	1.3	0.7	0.7	0.0	0.0	0.3	1.0	0.2	0.0
Average interest rate at period end (%)	1.9	0.7	0.9	0.0	0.0	0.0	1.5	0.2	(0.1)

1 Short-term debt is comprised of certificates of deposit, commercial paper, acceptances and promissory notes, and other money market paper reported within Debt issued measured at amortized cost. 2 Amounts due to banks are presented net of amounts due from banks in order to reflect short-term borrowings. The difference between the gross Due to banks amount and the amount disclosed here is presented as deposits from banks on the preceding page. 3 Repurchase agreements are presented on a gross basis and therefore, for the purpose of this disclosure, do not reflect the effect of netting permitted under IFRS.

Investments in debt instruments

The table below presents the carrying value and yield of debt instruments (presented within Financial assets measured at fair value not held for trading, Financial assets measured at fair value through other comprehensive income and Other financial assets measured at amortized cost on the balance sheet) by contractual maturity bucket. The maturity information presented does not consider any early redemption features and debt instruments without fixed maturities are not included.

	Within 1 year		1 up to 5 years		5 to 10 years		Over 10 years		Total carrying value
USD million, except percentages	Carrying value	Yield (%)	Carrying value	Yield (%)	Carrying value	Yield (%)	Carrying value	Yield (%)	
Financial assets at fair value not held for trading									
Swiss national government and agencies	203	(0.80)	73	(0.54)	13	0.14			290
US Treasury and agencies	7,725	2.15	3,444	1.93	87	2.13	140	2.34	11,396
Foreign governments and official institutions	15,534	0.83	4,747	1.56	40	0.24			20,321
Corporate debt securities	3,765	0.93	3,749	1.02	1,092	1.35	5,354	2.98	13,960
Mortgage-backed securities							87	1.97	87
Subtotal as of 31 December 2018	27,227		12,013		1,233		5,581		46,053
Financial assets measured at fair value through other comprehensive income									
Swiss national government and agencies									0
US Treasury and agencies	734	1.22	1,237	1.31	249	2.46			2,220
Foreign governments and official institutions	317	3.15	45	3.79					362
Corporate debt securities	26	4.02	127	3.62					153
Mortgage-backed securities					1,356	1.52	2,575	2.47	3,931
Subtotal as of 31 December 2018	1,077		1,409		1,605		2,575		6,667
Debt securities measured at amortized cost									
Swiss national government and agencies			1	4.00					1
US Treasury and agencies	1,334	1.16	2,846	1.83	4,152	2.13			8,332
Foreign governments and official institutions	573	1.38	685	1.92					1,258
Corporate debt securities	220	1.11	892	1.63					1,112
Mortgage-backed securities							2,859	3.09	2,859
Subtotal as of 31 December 2018	2,127		4,424		4,152		2,859		13,562
Total as of 31 December 2018[1]	30,432		17,846		6,990		11,015		66,282

Investments in debt instruments (continued)

USD million, except percentages	Within 1 year Carrying value	Within 1 year Yield (%)	1 up to 5 years Carrying value	1 up to 5 years Yield (%)	5 to 10 years Carrying value	5 to 10 years Yield (%)	Over 10 years Carrying value	Over 10 years Yield (%)	Total carrying value
Financial assets at fair value not held for trading									
Swiss national government and agencies	924	(0.25)							924
US Treasury and agencies	8,714	1.20	3,345	1.64	2	1.51			12,061
Foreign governments and official institutions	18,218	0.27	7,612	1.04	328	0.12			26,158
Corporate debt securities	2,578	0.12	6,377	1.03	556	0.16			9,512
Mortgage-backed securities							86	1.62	86
Subtotal as of 31 December 2017	**30,434**		**17,335**		**886**		**86**		**48,741**
Financial assets measured at fair value through other comprehensive income									
Swiss national government and agencies					1	4.00			1
US Treasury and agencies	870	0.57	1,741	1.24	147	0.70			2,758
Foreign governments and official institutions	363	3.86	77	2.43					441
Corporate debt securities	391	1.06	509	0.97	52	0.18			953
Mortgage-backed securities			0	1.42	617	1.35	3,363	1.53	3,980
Subtotal as of 31 December 2017	**1,625**		**2,328**		**818**		**3,363**		**8,134**
Debt securities measured at amortised cost									
US Treasury and agencies			1,828	1.32	3,130	1.71			4,958
Foreign governments and official institutions	1,919	(0.08)	793	1.36					2,712
Corporate debt securities	748	0.95	985	1.41					1,733
Subtotal as of 31 December 2017	**2,667**		**3,606**		**3,130**		**0**		**9,403**
Total as of 31 December 2017[1]	**34,726**		**23,268**		**4,834**		**3,449**		**66,277**

Investments in debt instruments (continued)

	Within 1 year		1 up to 5 years		5 to 10 years		Over 10 years		Total carrying value
USD million, except percentages	Carrying value	Yield (%)	Carrying value	Yield (%)	Carrying value	Yield (%)	Carrying value	Yield (%)	
Financial assets at fair value not held for trading									
Swiss national government and agencies	1,730	(0.23)							1,730
US Treasury and agencies	14,461	0.49	6,569	0.82	2	1.38			21,032
Other foreign governments and official institutions	15,318	0.06	12,579	0.24	266	0.58			28,163
Corporate debt securities	2,247	0.56	6,105	0.82	314	0.29			8,666
Mortgage-backed securities							101	1.65	101
Subtotal as of 31 December 2016	**33,756**		**25,253**		**582**		**101**		**59,692**
Financial assets measured at fair value through other comprehensive income									
Swiss national government and agencies					1	4.00			1
US Treasury and agencies	1,588	0.31	2,733	0.94					4,321
Other foreign governments and official institutions	2,191	1.21	1,595	0.66	15	0.32			3,802
Corporate debt securities	1,217	0.50	1,887	0.56	50	0.18	5	0.00	3,159
Mortgage-backed securities			0	5.52	0	1.96	3,321	1.65	3,321
Total as of 31 December 2016[1]	**4,996**		**6,216**		**66**		**3,326**		**14,605**
Debt securities measured at amortised cost									
US Treasury and agencies	399	0.59	1,117	1.04	3,090	1.59			4,606
Other foreign governments and official institutions	958	(0.54)	1,722	0.85					2,680
Corporate debt securities	240	0.89	1,600	1.15					1,841
Subtotal as of 31 December 2016	**1,597**		**4,440**		**3,090**		**0**		**9,127**
Total as of 31 December 2016[1]	**40,349**		**35,908**		**3,738**		**3,427**		**83,423**

1 Includes investments in debt instruments as of 31 December 2018 issued by US government and government agencies of USD 34,285 million (31 December 2017: USD 23,758 million, 31 December 2016: USD 33,281 million), the German government of USD 9,026 million (31 December 2017: USD 7,043 million, 31 December 2016: USD 11,752 million), the Japanese government of USD 5,588 million (31 December 2017: USD 3,589 million, 31 December 2016: USD 3,750 million) and the French government of USD 2,844 million (31 December 2017: USD 6,098 million, 31 December 2016: USD 3,949 million).

Loans and advances to banks and customers by industry (gross)

The Group's lending portfolio is widely diversified across industry sectors. An amount of USD 197 billion (58% of the total) relates to loans to thousands of private households, predominantly in Switzerland, and mostly secured by mortgages, financial collateral or other assets. Exposure to banks and financial institutions amounted to USD 81 billion (24% of the total). Exposure to banks includes money market deposits with highly rated institutions. Excluding banks and financial institutions, the largest industry sector exposure as of 31 December 2018 was USD 21 billion (6% of the total) to Services. For further discussion of the loan portfolio, refer to the "Risk management and control" section of this report.

The table below illustrates the diversification of the loan portfolio among industry sectors. The industry categories presented are consistent with the classification of loans for reporting to the Swiss Financial Market Supervisory Authority (FINMA) and the Swiss National Bank. Loans presented within the balance sheet reporting lines "Financial assets at fair value held for trading" and "Financial assets at fair value not held for trading" are excluded from the tables below.

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Domestic					
Banks	265	723	764	538	1,163
Chemicals	442	437	257	308	394
Construction	1,273	1,467	1,453	1,517	1,426
Electricity, gas and water supply	193	213	197	233	261
Financial services	6,754	5,265	5,050	5,317	6,502
Food and beverages	251	447	216	208	207
Hotels and restaurants	1,478	1,537	1,528	1,644	1,705
Manufacturing	1,916	2,331	1,965	2,009	2,332
Mining	11	15	19	23	34
Private households	127,761	127,585	121,582	123,763	126,157
Public authorities	888	1,053	1,340	1,606	2,109
Real estate and rentals	12,212	12,736	12,581	13,685	14,630
Retail and wholesale	4,278	4,122	3,938	3,681	4,192
Services	4,810	5,051	5,307	5,242	4,820
Transport, storage and communication	1,891	1,871	1,886	1,873	1,975
Other	730	750	696	696	736
Total domestic	165,153	165,601	158,778	162,341	168,644
Foreign					
Banks	16,610	13,374	12,165	11,394	12,258
Chemicals	158	61	138	113	75
Construction	746	838	540	634	649
Electricity, gas and water supply	587	691	576	705	1,106
Financial services	57,217	60,247	49,385	56,283	57,965
Food and beverages	48	59	67	65	56
Hotels and restaurants	340	1,494	168	148	120
Manufacturing	1,570	1,867	1,684	1,955	1,972
Mining	640	1,037	989	1,464	1,352
Private households	68,887	69,246	61,504	62,591	60,802
Public authorities	1,487	2,264	2,506	1,269	1,421
Real estate and rentals	2,886	3,213	2,030	2,209	2,531
Retail and wholesale	2,717	2,657	2,184	1,972	1,935
Services	16,279	17,173	19,158	17,899	17,567
Transport, storage and communication	2,149	2,215	2,398	2,853	3,033
Other	528	566	214	163	143
Total foreign	172,847	177,002	155,707	161,718	162,985
Total gross	338,000	342,604	314,485	324,059	331,630

Loans and advances to banks and customers by industry (gross) (continued)

The table below presents the percentage of loans and advances to banks and customers in each industry sector and geographic location in relation to total loans and advances to banks and customers.

In %	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Domestic					
Banks	0.1	0.2	0.2	0.2	0.4
Chemicals	0.1	0.1	0.1	0.1	0.1
Construction	0.4	0.4	0.5	0.5	0.4
Electricity, gas and water supply	0.1	0.1	0.1	0.1	0.1
Financial services	2.0	1.5	1.6	1.6	2.0
Food and beverages	0.1	0.1	0.1	0.1	0.1
Hotels and restaurants	0.4	0.4	0.5	0.5	0.5
Manufacturing	0.6	0.7	0.6	0.6	0.7
Private households	37.8	37.2	38.7	38.2	38.0
Public authorities	0.3	0.3	0.4	0.5	0.6
Real estate and rentals	3.6	3.7	4.0	4.2	4.4
Retail and wholesale	1.3	1.2	1.3	1.1	1.3
Services	1.4	1.5	1.7	1.6	1.5
Transport, storage and communication	0.6	0.5	0.6	0.6	0.6
Other	0.2	0.2	0.2	0.2	0.2
Total domestic	48.9	48.3	50.5	50.1	50.9
Foreign					
Banks	4.9	3.9	3.9	3.5	3.7
Construction	0.2	0.2	0.2	0.2	0.2
Electricity, gas and water supply	0.2	0.2	0.2	0.2	0.3
Financial services	16.9	17.6	15.7	17.4	17.5
Hotels and restaurants	0.1	0.4	0.1	0.0	0.0
Manufacturing	0.5	0.5	0.5	0.6	0.6
Mining	0.2	0.3	0.3	0.5	0.4
Private households	20.4	20.2	19.6	19.3	18.3
Public authorities	0.4	0.7	0.8	0.4	0.4
Real estate and rentals	0.9	0.9	0.6	0.7	0.8
Retail and wholesale	0.8	0.8	0.7	0.6	0.6
Services	4.8	5.0	6.1	5.5	5.3
Transport, storage and communication	0.6	0.6	0.8	0.9	0.9
Other	0.2	0.2	0.1	0.1	0.0
Total foreign	51.1	51.7	49.5	49.9	49.1
Total gross	100.0	100.0	100.0	100.0	100.0

Loans and advances to banks and customers – mortgages (gross)

The table below provides more information on the Group's mortgage portfolio by client domicile and type of mortgage. Mortgages are included in the industry categories in the table on the previous page.

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Mortgages					
Domestic	145,464	145,276	139,558	143,993	147,450
Foreign	24,771	22,092	19,573	18,856	18,212
Total gross mortgages	170,235	167,367	159,130	162,849	165,663
Mortgages					
Residential	150,999	148,167	139,711	141,375	143,170
Commercial	19,236	19,201	19,419	21,474	22,493
Total gross mortgages	170,235	167,367	159,130	162,849	165,663

Loans and advances to banks and customers – maturity profile (gross)

The table below provides the maturity profile of loans and advances to banks and customers. The maturity information presented does not consider any early redemption features.

USD million	Within 1 year	1 to 5 years	Over 5 years	Total
Domestic				
Banks	265	0	0	265
Mortgages	53,226	62,431	29,807	145,464
Other loans	13,332	4,572	1,519	19,424
Total domestic	66,823	67,003	31,327	165,153
Foreign				
Banks	16,557	35	19	16,610
Mortgages	4,068	5,526	15,177	24,771
Other loans	114,528	16,210	728	131,466
Total foreign	135,152	21,771	15,924	172,847
Total gross	201,975	88,774	47,251	338,000

As of 31 December 2018, total loans and advances to banks and customers granted at fixed and floating interest rates were as follows:

USD million	Within 1 year	1 to 5 years	Over 5 years	Total
Fixed-rate loans	135,586	66,944	35,004	237,534
Adjustable or floating-rate loans	66,390	21,829	12,247	100,466
Total	201,975	88,774	47,251	338,000

Non-performing loans

A claim is considered as non-performing when (i) it is more than 90 days past due; (ii) it is subject to restructuring proceedings, where preferential conditions concerning interest rates, subordination, tenor etc. have been granted in order to avoid default of the counterparty (forbearance); or (iii) the counterparty is subject to bankruptcy / enforced liquidation proceedings in any form, even if there is sufficient collateral to cover the due payment.

Refer to "Credit policies for distressed assets" in the "Risk management and control" section in the UBS Group AG Annual Report 2018 for comprehensive information on UBS's distressed asset definitions, of which non-performing is a component.

Also, refer to Note 1 and Note 23 of the consolidated financial statements for more information on the various risk factors that are considered to be indicative of credit-impairment.

The table below provides the Group's non-performing loans and advances to banks and customers.

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Non-performing loans and advances to banks and customers:					
Domestic	1,548	1,374	1,497	1,172	1,300
Foreign	871	776	859	455	311
Total non-performing loans and advances to banks and customers	2,419	2,150	2,357	1,627	1,611

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Gross interest income not collected on non-performing loans and advances to banks and customers:[1]					
Domestic	12	8	5	6	8
Foreign	36	25	22	7	5
Interest income included in Net profit for non-performing loans and advances to banks and customers:					
Domestic	20	32	36	25	20
Foreign	15	6	10	5	6

1 For credit impaired financial assets, interest income is determined by applying the effective interest rate (EIR) to the amortized cost of the instrument, which represents the gross carrying amount adjusted for any loss allowance.

Forbearance (Credit Restructuring)

Under imminent payment default or where default has already occurred, UBS may grant concessions to borrowers in financial difficulties that it would otherwise not consider in the normal course of its business, such as preferential interest rates, extension of maturity, modifying the schedule of repayments, debt / equity swap, subordination, etc. When a forbearance measure takes place, each case is considered individually and the exposure is generally classified in default. Forbearance classification will remain until the loan is collected or written off, non-preferential conditions are granted that supersede the preferential conditions or until the counterparty has recovered and the preferential conditions no longer exceed UBS's risk appetite.

Contractual adjustments when there is no evidence of imminent payment default, or where changes to terms and conditions are within UBS's usual risk appetite, are not considered to be forborne.

Gross interest income not collected that relates to restructured non-performing loans and advances to banks and customers was not material to the results of operations in 2018, 2017, 2016, 2015 or 2014.

Cross-border outstandings

Cross-border outstandings consist of balances with central banks and other financial institutions, loans and advances to banks and customers and receivables from securities financing transactions with counterparties domiciled outside Switzerland. Guarantees and commitments are provided separately in the table below.

The following tables list those countries for which cross-border outstandings exceeded 0.75% of total IFRS assets at 31 December 2018, 2017 and 2016. As of 31 December 2018, there were no outstandings that exceeded 0.75% of total IFRS assets in any country currently facing debt restructuring or liquidity problems that the Group expects would materially impact the country's ability to service its obligations. Aggregate country risk exposures are monitored and reported on an ongoing basis. The internal risk view is not directly comparable to the cross-border outstandings in the table below due to different approaches to netting, differing trade populations and differing approach to allocation of exposures to countries. For more information on the country framework within risk control, refer to the "Risk management and control" section of this report.

	31.12.18					
USD million	Banks	Private sector	Public sector	Total outstandings	% of total assets	Guarantees and commitments[1]
USA	20,298	95,274	16,135	131,707	13.7	21,686
UK	2,459	50,280	2,839	55,578	5.8	6,666
Japan	13,863	2,726	6,135	22,724	2.4	56
Germany	1,082	5,182	13,405	19,669	2.1	897
Hong Kong	1,148	15,388	125	16,661	1.7	984
France	2,404	5,503	393	8,299	0.9	5,402

	31.12.17					
USD million	Banks	Private sector	Public sector	Total outstandings	% of total assets	Guarantees and commitments[1]
USA	21,829	89,662	16,342	127,833	13.6	23,819
UK	2,342	54,552	6,563	63,457	6.8	12,457
Japan	1,725	8,354	9,148	19,228	2.0	82
Germany	1,515	8,488	9,345	19,348	2.1	1,375
France	2,516	5,841	5,142	13,500	1.4	6,002
Hong Kong	621	16,846	336	17,804	1.9	442
Singapore	169	4,518	3,036	7,724	0.8	522

	31.12.16					
USD million	Banks	Private sector	Public sector	Total outstandings	% of total assets	Guarantees and commitments[1]
USA	19,309	77,567	22,459	119,335	13.0	35,387
UK	2,550	47,402	9,596	59,548	6.5	10,175
Japan	5,106	5,572	9,005	19,683	2.1	233
Germany	687	4,886	12,835	18,408	2.0	1,487
France	2,343	5,543	2,820	10,706	1.2	4,190
Hong Kong	410	8,028	343	8,781	1.0	152

1 Includes irrevocable forward starting transactions (reverse repurchase agreements and securities borrowing agreements).

Summary of movements in expected credit loss allowances and provisions[1]

The following table provides more information on the movements in ECL allowances and provisions. Refer to "Credit risk" in the "Risk management and control" section of this report for more information.

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Balance at beginning of year	1,146[2]	642	726	739	840
Domestic					
Write-offs					
Banks	0	0	0	0	1
Construction	(9)	(5)	(1)	(2)	(1)
Electricity, gas and water supply	(1)	0	0	(1)	0
Financial services	(4)	(3)	(3)	(3)	0
Manufacturing	(3)	(2)	(7)	(9)	(4)
Private households	(22)	(18)	(20)	(35)	(43)
Real estate and rentals	0	0	0	0	(1)
Retail and wholesale	(3)	(11)	(10)	(47)	(30)
Services	(4)	(11)	(3)	(3)	(16)
Transport, storage and communications	(4)	(3)	(4)	(9)	(3)
Total gross domestic write-offs	(51)	(53)	(49)	(110)	(98)
Foreign					
Write-offs					
Banks	0	0	0	(9)	(17)
Construction	0	(1)	0	0	(1)
Electricity, gas and water supply	0	0	0	0	(1)
Financial services	(4)	(24)	(4)	(3)	(13)
Manufacturing	(78)	0	(21)	0	(7)
Mining	(5)	(17)	(24)	(1)	0
Private households	(6)	(22)	(8)	(12)	(7)
Public authorities	0	0	0	0	(1)
Real estate and rentals	0	0	0	0	(2)
Retail and wholesale	(1)	0	0	(19)	(2)
Services	(10)	(4)	(16)	(10)	(16)
Transport, storage and communications	(36)	0	(20)	0	(1)
Other	(18)	0	0	0	0
Total gross foreign write-offs	(158)	(68)	(94)	(54)	(68)
Total usage of ECL provisions	0	0	0	0	(1)
Total write-offs / usage of ECL provisions	(210)	(121)	(143)	(164)	(168)
Recoveries					
Domestic	9	19	11	41	32
Foreign	0	1	11	7	0
Total recoveries	9	20	22	48	32
Total net write-offs / usage of ECL provisions	(201)	(101)	(121)	(116)	(135)
Increase / (decrease) in ECL allowances and provisions recognized in the income statement	118	128	31	118	89
Increase / (decrease) in ECL collective allowances recognized in the income statement	0	3	7	0	(11)
Foreign currency translation	(9)	21	(12)	(18)	(55)
Other	0	38	12	2	12
Balance at end of year[3]	1,054	731	642	726	739

1 Prior-period information is presented under IAS 39 requirements. 2 Includes stage 1 and stage 2 expected credit losses and additional stage 3 expected credit losses. Refer to Note 1c "Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9 Financial Instruments" in the "Consolidated financial statements" section of this report for more information on IFRS 9. 3 Includes ECL allowances for receivables from securities financing transactions.

Allocation of the expected credit loss allowances and provisions[1]

The following table provides a breakdown of ECL allowances and provisions by industry sector and geographic location.

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Domestic					
Banks	4	3	3	3	2
Chemicals	14	0	0	0	0
Construction	14	16	17	13	14
Electricity, gas and water supply	2	3	1	2	1
Financial services	36	23	12	17	18
Food and beverages	10	0	0	3	4
Hotels and restaurants	12	9	10	13	16
Manufacturing	75	58	59	77	73
Private households	180	46	45	47	53
Public authorities	1	0	0	0	0
Real estate and rentals	23	11	11	13	18
Retail and wholesale	94	76	66	78	124
Services	30	25	28	23	25
Transport, storage and communication	18	13	15	32	29
Other	2	0	0	0	0
Total domestic ECL specific allowances	515	285	268	320	376
Foreign					
Banks	5	0	0	0	10
Construction	0	0	1	1	1
Financial services	49	42	63	90	35
Manufacturing	28	85	7	13	9
Mining	26	52	30	46	11
Private households	154	39	58	60	66
Public authorities	8	11	11	14	14
Real estate and rentals	38	24	2	1	1
Retail and wholesale	87	85	78	80	112
Services	23	23	17	19	29
Transport, storage and communication	3	39	40	40	43
Other	1	0	0	0	0
Total foreign ECL specific allowances	422	399	309	365	332
ECL collective allowances	0	13	11	6	8
ECL provisions	116	34	54	35	23
Total ECL allowances and provisions	1,054	731	642	726	739

1 Prior-period information is presented under IAS 39 requirements.

UBS AG consolidated supplemental disclosures required under SEC regulations

A – Introduction

The following pages contain supplemental UBS AG disclosures that are required under SEC regulations. UBS AG's consolidated financial statements have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB) and are denominated in US dollars (USD), which is also the functional currency of UBS AG's Head Office, UBS AG's London Branch and UBS AG's US-based operations.

Effective 1 January 2018, UBS AG adopted IFRS 9, *Financial Instruments*. The adoption of IFRS 9 has resulted in changes to the classification and measurement of certain financial instruments, which have been applied prospectively in the balance sheet from 1 January 2018.

Although the effect of IFRS 9 classification and measurement changes has been applied prospectively, UBS AG has made a series of changes to the presentation of its IFRS balance sheet to facilitate comparability and prior-period information is presented for periods ending before 1 January 2018 in this revised structure.

→ **Refer to "Note 1c Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9 *Financial Instruments*" in the "Consolidated financial statements" section of this report for more information**

B – Selected financial data

Key figures

	As of or for the year ended				
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Results					
Operating income	30,642	30,044	28,831	31,727	30,564
Operating expenses	25,184	24,969	24,643	26,113	27,744
Operating profit / (loss) from continuing operations before tax	5,458	5,076	4,188	5,614	2,820
Net profit / (loss) attributable to shareholders	4,107	758	3,351	6,506	3,831
Profitability and growth[1]					
Return on equity (%)[2]	7.9	1.4	6.0	11.8	7.0
Return on tangible equity (%)[3]	9.2	1.8	7.0	13.7	8.3
Return on common equity tier 1 capital (%)[4]	11.9	2.3	10.2	19.5	11.7
Return on risk-weighted assets, gross (%)[5]	12.0	12.8	13.1	14.4	12.5
Return on leverage ratio denominator, gross (%)[5]	3.4	3.4	3.2		
Cost / income ratio (%)[6]	81.9	82.7	85.4	82.0	90.5
Net profit growth (%)[7]	441.9	(77.4)	(48.5)	69.8	
Resources					
Total assets	958,055	940,020	919,236	941,817	1,068,224
Equity attributable to shareholders	52,256	51,987	52,957	55,272	52,397
Common equity tier 1 capital[8]	34,608	34,100	31,879	31,989	30,976
Risk-weighted assets[8]	262,840	242,725	219,330	207,843	218,363
Common equity tier 1 capital ratio (%)[9]	13.2	14.0	14.5	15.4	14.2
Going concern capital ratio (%)[8,11]	16.1	15.6	16.3		
Total loss-absorbing capacity ratio (%)[8,11]	31.3	31.4	29.6		
Leverage ratio denominator[8,10]	904,458	910,133	855,718	896,771	1,004,670
Common equity tier 1 leverage ratio (%)[9,10]	3.83	3.75	3.73	3.57	3.08
Going concern leverage ratio (%)[10,11]	4.7	4.2	4.2		
Total loss-absorbing capacity leverage ratio (%)[8,10,11]	9.1	8.4	7.6		
Average equity / average assets ratio (%)[12]	4.9	5.3	5.3	5.0	4.8

Key figures (continued)

	As of or for the year ended				
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Other					
Invested assets (USD billion)[13]	3,101	3,262	2,761	2,674	2,738
Personnel (full-time equivalents)[14]	47,643	46,009	56,208	58,131	60,155
Americas	21,309	20,770	20,522	20,816	20,951
of which: USA	*20,495*	*19,944*	*19,695*	*19,897*	*19,715*
Asia Pacific	7,987	6,891	6,633	7,348	7,385
Europe, Middle East and Africa	8,942	8,249	8,473	8,730	10,254
of which: UK	*5,782*	*5,274*	*5,206*	*5,373*	*5,425*
of which: rest of Europe	*2,992*	*2,814*	*3,100*	*3,181*	*4,663*
of which: Middle East and Africa	*168*	*161*	*167*	*176*	*166*
Switzerland	9,405	10,098	20,581	21,238	21,564
Registered ordinary shares (number)	3,858,408,466	3,858,408,466	3,858,408,466	3,858,408,466	3,844,560,913
Treasury shares (number)	0	0	0	0	2,115,255

1 Refer to the "Performance targets and measurement" section of this report for more information on our performance targets. 2 Calculated as net profit attributable to shareholders / average equity attributable to shareholders. 3 Calculated as net profit attributable to shareholders before amortization and impairment of goodwill and intangible assets / average equity attributable to shareholders less average goodwill and intangible assets. 4 Calculated as net profit attributable to shareholders before amortization and impairment of goodwill and intangible assets / average common equity tier 1 capital. 5 Calculated as operating income before credit loss expense or recovery / average risk-weighted assets and average leverage ratio denominator, respectively. 6 Calculated as operating expenses / operating income before credit loss expense or recovery. 7 Calculated as change in net profit attributable to shareholders from continuing operations between current and comparison periods / net profit attributable to shareholders from continuing operations of comparison period. 8 Based on the Swiss systemically relevant bank (SRB) framework as of 1 January 2020 and the fully applied Basel III framework. Refer to the "Capital management" section of the report for the respective period for more information. 9 Based on the Swiss SRB framework as of 1 January 2020. Refer to the "Capital management" section of this report for more information. 10 From 31 December 2015 onward, the leverage ratio denominator calculation is aligned with the Basel III rules. Figures for periods prior to 31 December 2015 are calculated in accordance with former Swiss SRB rules and are therefore not fully comparable. 11 Based on the revised Swiss SRB framework that became effective on 1 July 2016, therefore figures for periods prior to 31 December 2015 are not available. Refer to the "Capital management" section of this report for more information. 12 Calculated as average equity / average assets. 13 Includes invested assets for Global Wealth Management, Asset Management and Personal & Corporate Banking. 14 As of 31 December 2018, the breakdown of personnel by business division and Corporate Center unit was: Global Wealth Management: 23,554; Personal & Corporate Banking: 5,100; Asset Management: 2,273; Investment Bank: 4,928; Corporate Center – Services: 11,576; Corporate Center – Group ALM: 169; Corporate Center – Non-core and Legacy Portfolio: 44.

Income statement data

	For the year ended				
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Interest income from financial instruments measured at amortized cost and fair value through other comprehensive income	10,121	10,437	10,375	10,361	10,625
Interest expense from financial instruments measured at amortized cost	(6,494)	(5,468)	(5,002)	(4,191)	(4,263)
Interest income from financial instruments measured at fair value through profit or loss	6,974	4,056	3,579	3,406	3,744
Interest expense from financial instruments measured at fair value through profit or loss	(4,653)	(2,418)	(2,495)	(2,606)	(2,992)
Net interest income	5,949	6,607	6,457	6,970	7,114
Other net income from fair value changes on financial instruments	5,977	5,067	5,018	5,960	4,239
Credit loss (expense) / recovery	(117)	(131)	(38)	(118)	(77)
Fee and commission income	19,632	19,390	18,425	19,784	20,608
Fee and commission expense	(1,703)	(1,840)	(1,781)	(1,948)	(2,025)
Net fee and commission income	17,930	17,550	16,644	17,836	18,583
Other income	905	952	749	1,080	706
Total operating income	30,642	30,044	28,831	31,727	30,564
Total operating expenses	25,184	24,969	24,643	26,113	27,744
Operating profit / (loss) before tax	5,458	5,076	4,188	5,614	2,820
Tax expense / (benefit)	1,345	4,242	753	(977)	(1,172)
Net profit / (loss)	4,113	834	3,435	6,591	3,992
Net profit / (loss) attributable to preferred noteholders		73	80	82	156
Net profit / (loss) attributable to non-controlling interests	7	4	4	3	5
Net profit / (loss) attributable to shareholders	4,107	758	3,351	6,506	3,831
Cost / income ratio (%)[1]	81.9	82.7	85.4	82.0	90.5
Rates of return (%)					
Return on equity attributable to shareholders	7.9	1.4	6.0	11.8	7.0
Return on average equity	8.0	1.4	6.1	11.8	7.0
Return on average assets	0.4	0.1	0.3	0.6	0.3

1 Calculated as operating expenses / operating income before credit loss expense or recovery.

Cash dividends received from investments in subsidiaries and associates

In 2018, UBS AG received cash dividends of USD 3,683 million (2017: USD 1,299 million; 2016: USD 3,022 million) from its subsidiaries and associates. Dividends disclosed were translated to US dollar from the functional currency of the entity paying the dividend, using the closing exchange rate of the month the dividend was received.

Balance sheet data

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Assets					
Cash and balances at central banks	108,370	90,045	105,883	91,156	104,651
Loans and advances to banks	16,642	14,047	12,896	11,857	13,420
Receivables from securities financing transactions	95,349	91,951	79,936	93,323	92,991
Cash collateral receivables on derivative instruments	23,603	24,040	26,198	23,724	31,151
Loans and advances to customers	321,482	328,952	300,678	311,137	316,649
Other financial assets measured at amortized cost	22,637	37,890	27,130	19,830	21,080
Total financial assets measured at amortized cost	588,084	586,925	552,721	551,027	579,941
Financial assets at fair value held for trading	104,513	129,509	90,501	120,207	133,127
of which: assets pledged as collateral that may be sold or repledged by counterparties	*32,121*	*36,277*	*29,731*	*51,858*	*56,329*
Derivative financial instruments	126,212	121,286	155,642	167,159	258,404
Brokerage receivables	16,840				
Financial assets at fair value not held for trading	82,387	60,070	63,888	5,799	4,518
Total financial assets measured at fair value through profit or loss	329,953	310,865	310,031	293,164	396,049
Financial assets measured at fair value through other comprehensive income	6,667	8,889	15,402	62,440	57,476
Investments in associates	1,099	1,045	947	952	932
Property, equipment and software	8,479	8,191	8,152	7,671	6,887
Goodwill and intangible assets	6,647	6,563	6,442	6,557	6,823
Deferred tax assets	10,066	9,993	13,147	12,926	11,122
Other non-financial assets	7,062	7,548	12,395	7,079	8,995
Total assets	958,055	940,020	919,236	941,817	1,068,224
Liabilities					
Amounts due to banks	10,962	7,728	10,459	11,816	10,550
Payables from securities financing transactions	10,296	17,485	9,266	17,653	21,114
Cash collateral payables on derivative instruments	28,906	31,029	34,852	38,219	42,607
Customer deposits	421,986	423,058	418,129	391,037	413,260
Funding from UBS Group AG and its subsidiaries	41,202	35,648	24,201	10,821	
Debt issued measured at amortized cost	91,245	107,458	77,617	82,224	91,714
Other financial liabilities measured at amortized cost	7,576	38,092	38,361	51,925	46,245
Total financial liabilities measured at amortized cost	612,174	660,498	612,884	603,696	625,491
Financial liabilities at fair value held for trading	28,949	31,251	22,426	29,089	28,113
Derivative financial instruments	125,723	119,138	151,121	162,163	255,512
Brokerage payables designated at fair value	38,420				
Debt issued designated at fair value	57,031	50,782	49,057	56,441	68,755
Other financial liabilities designated at fair value	33,594	16,643	14,122	22,142	24,701
Total financial liabilities measured at fair value through profit or loss	283,717	217,814	236,727	269,835	377,081
Provisions	3,457	3,164	4,097	4,156	4,390
Other non-financial liabilities	6,275	6,499	11,902	6,866	6,796
Total Liabilities	905,624	887,974	865,610	884,553	1,013,758
Equity attributable to shareholders	52,256	51,987	52,957	55,272	52,397
Preferred note holders			631	1,951	2,024
Equity attributable to non-controlling interests	176	59	39	41	45
Total equity	52,432	52,046	53,627	57,264	54,466
Total liabilities and equity	958,055	940,020	919,236	941,817	1,068,224

C – Information on the company

Property, plant and equipment

As of 31 December 2018, UBS AG operated about 759 business and banking locations worldwide, of which approximately 40% were in Switzerland, 43% in the Americas, 10% in the rest of Europe, Middle East and Africa and 7% in Asia Pacific. Of the business and banking locations in Switzerland, 29% were owned directly by UBS AG, with the remainder, along with most of UBS AG's offices outside Switzerland, being held under commercial leases. These premises are subject to continuous maintenance and upgrading and are considered suitable and adequate for current and anticipated operations.

D – Information required by industry guide 3

Selected statistical information

The following tables set forth select statistical information regarding the UBS AG's banking operations extracted from the financial statements. Unless otherwise indicated, average balances for the years ended 31 December 2018, 31 December 2017 and 31 December 2016 are calculated from monthly data.

The distinction between domestic (Swiss) and foreign (non-Swiss) is generally based on the booking location. For loans, this method is not significantly different from an analysis based on the domicile of the borrower.

Average balances and interest rates

The following table sets forth average interest-earning assets and average interest-bearing liabilities, along with the average yield, for 2018, 2017 and 2016. Refer to "Note 3 Net interest income and other net income from fair value changes on financial instruments" in the "Consolidated financial statements" section of this report for more information on interest income and interest expense.

	31.12.18			31.12.17			31.12.16		
USD million, except where indicated	Average balance	Interest income	Average yield (%)	Average balance	Interest income	Average yield (%)	Average balance	Interest income	Average yield (%)
Assets									
Balances at central banks									
Domestic	66,278	(168)	(0.3)	59,456	(142)	(0.2)	56,419	(108)	(0.2)
Foreign	35,088	191	0.5	41,514	142	0.3	43,373	85	0.2
Loans and advances to banks									
Domestic	2,700	25	0.9	3,592	18	0.5	3,487	13	0.4
Foreign	12,293	11	0.1	10,668	35	0.3	9,562	18	0.2
Receivables from securities financing transactions									
Domestic	8,989	(42)	(0.5)	10,291	(39)	(0.4)	10,401	(22)	(0.2)
Foreign[1]	93,615	1,237	1.3	160,333	811	0.5	149,618	574	0.4
Cash collateral receivables on derivative instruments									
Domestic	303	2	0.7	772	(3)	(0.4)	497	0	0.0
Foreign	24,497	286	1.2	24,196	133	0.5	26,180	118	0.5
Loans and advances to customers									
Domestic	193,030	3,268	1.7	190,975	3,233	1.7	189,879	3,434	1.8
Foreign	133,451	3,789	2.8	126,672	3,065	2.4	120,693	2,642	2.2
Financial assets at fair value held for trading									
Domestic	984	7	0.7	597	14	2.3	429	10	2.3
Foreign[3]	25,451	887	3.5	27,377	827	3.0	29,039	935	3.2
of which: taxable	*25,451*	*887*	*3.5*	*27,377*	*827*	*3.0*	*29,039*	*935*	*3.2*
Brokerage receivables									
Domestic	0	0							
Foreign[2]	19,658	981	5.0						
Financial assets at fair value not held for trading									
Domestic	11,366	45	0.4	14,252	26	0.2	10,759	13	0.1
Foreign[1,3]	123,537	1,549	1.3	41,526	486	1.2	42,549	311	0.7
of which: taxable	*123,537*	*1,549*	*1.3*	*41,526*	*486*	*1.2*	*42,549*	*311*	*0.7*
Financial assets measure at fair value through other comprehensive income									
Domestic	49	1	2.0	1,118	4	0.4	8,426	30	0.4
Foreign	6,936	141	2.0	12,018	141	1.2	17,174	158	0.9
of which: taxable	*6,936*	*141*	*2.0*	*12,018*	*141*	*1.2*	*17,174*	*158*	*0.9*
Other interest-earning assets									
Domestic	8,669	209	2.4	8,384	189	2.3	4,635	151	3.3
Foreign[2]	7,367	167	2.3	18,317	771	4.2	17,052	683	4.0
Total interest-earning assets[4]	774,260	12,585	1.6	752,057	9,712	1.3	740,170	9,047	1.2
Net interest income on swaps		637			1,486			2,244	
Interest income on off-balance sheet securities and other		492			457			450	
Interest income and average interest-earning assets	774,260	13,714[5]	1.8	752,057	11,654[5]	1.5	740,170	11,742[5]	1.6
Non-interest-earning assets									
Positive replacement values	129,288			132,356			178,550		
Fixed assets	8,337			8,141			8,046		
Other	138,360			118,848			113,063		
Total average assets	1,050,245			1,011,403			1,039,829		

1 Certain reverse repurchase agreements with an average balance of USD 73 billion in 2017 and USD 51 billion in 2016 were reclassified from amortized cost (presented under Receivables from securities financing transactions) to measured at fair value through profit or loss (presented under Financial assets at fair value not held for trading) upon adoption of IFRS 9, Financial instruments on 1 January 2018. Prior period information is still presented under IAS 39 requirements and therefore may not be comparable. 2 In 2017 and 2016 Other interest-earning assets included prime brokerage receivables, which mainly included margin lending receivables. Upon adoption of IFRS 9, Financial instruments on 1 January 2018, prime brokerage receivables are measured at fair value and are presented separately on the balance sheet under Brokerage receivables. Gross receivable and payable balances within a single prime brokerage arrangement are presented as either a net receivable or a net payable on the balance sheet. 3 Upon adoption of IFRS 9, Financial instruments effective 1 January 2018, UBS has elected to reclassify assets held to hedge unit-linked investment contracts of USD 12 billion from Financial assets at fair value held for trading to Financial assets at fair value not held for trading. 4 Interest income and average interest-earning assets have been adjusted to exclude dividend income and the associated equity instruments that generate dividend income, respectively. Interest income has been reduced by USD 1,775 million for 2017 and by USD 1,568 million for 2016. Average interest earning assets have been reduced by USD 84 billion in 2017 and USD 77 billion in 2016 as a result. 5 For the purpose of this disclosure, negative interest income on assets is presented as a reduction to interest income, while in the consolidated income statement negative interest income on assets is presented as interest expense. Refer to Note 3 in the "Consolidated financial statements" section of this report for more information.

Average balances and interest rates

	31.12.18			31.12.17			31.12.16		
USD million, except where indicated	Average balance	Interest expense	Average interest rate (%)	Average balance	Interest expense	Average interest rate (%)	Average balance	Interest expense	Average interest rate (%)
Liabilities and equity									
Amount due to banks									
Domestic	7,477	20	0.3	7,829	16	0.2	9,139	17	0.2
Foreign	2,763	15	0.5	2,392	17	0.7	2,550	14	0.5
Payables from securities financing transactions									
Domestic	3,626	5	0.1	2,513	6	0.2	2,388	4	0.2
Foreign[1]	26,111	341	1.3	89,713	357	0.4	77,693	321	0.4
Cash collateral payables on derivative instruments									
Domestic	1,285	4	0.3	826	1	0.1	978	4	0.4
Foreign	29,806	259	0.9	31,485	147	0.5	35,366	83	0.2
Customer deposits and Funding from UBS Group AG and its subsidiaries									
Domestic	290,056	1,555	0.5	278,040	903	0.3	251,610	304	0.1
of which: demand deposits	*130,674*	*(39)*	*0.0*	*136,588*	*(47)*	*0.0*	*132,412*	*(38)*	*0.0*
of which: savings deposits	*110,560*	*26*	*0.0*	*104,759*	*34*	*0.0*	*100,069*	*56*	*0.1*
of which: time deposits	*48,822*	*1,567*	*3.2*	*36,693*	*916*	*2.5*	*19,130*	*285*	*1.5*
Foreign	165,405	1,214	0.7	174,632	654	0.4	181,452	875	0.5
Short-term debt issued measured at amortized cost									
Domestic	126	1	0.8	649	(1)	(0.2)	621	1	0.2
Foreign	47,655	604	1.3	42,435	321	0.8	28,361	207	0.7
Long-term debt issued measured at amortized cost									
Domestic	14,143	374	2.6	14,876	413	2.8	15,240	621	4.1
Foreign	41,279	1,012	2.5	35,793	1,135	3.2	41,907	1,239	3.0
Financial liabilities at fair value held for trading									
Domestic	684	7	1.0	523	10	1.9	402	6	1.5
Foreign	8,872	305	3.4	11,539	323	2.8	10,714	352	3.3
Brokerage payables designated at fair value									
Domestic	0	0	0.0						
Foreign[2]	38,346	638	1.7						
Debt issued designated at fair value									
Domestic	2,568	13	0.5	2,127	13	0.6	1,591	6	0.4
Foreign	54,446	1,270	2.3	48,359	775	1.6	51,781	745	1.4
Other financial liabilities designated at fair value									
Domestic	13	0	0.0	37	0	0.0	57	0	0.0
Foreign[1]	73,676	652	0.9	6,224	46	0.7	5,783	59	1.0
Other interest-bearing liabilities									
Domestic	0	0	0.0	0	0	0.0	0	0	0.0
Foreign[2]	0	0	0.0	31,685	317	1.0	39,053	113	0.3
Total interest-bearing liabilities[3]	808,338	8,290	1.0	781,676	5,455	0.7	756,685	4,971	0.7
Swap interest on hedged debt instruments		(206)			(393)				
Interest expense on off-balance sheet securities and other		659			572			595	
Interest expense and average interest-bearing liabilities	808,338	8,743[4]	1.1	781,676	5,633[4]	0.7	756,685	5,567[4]	0.7
Non-interest-bearing liabilities									
Negative replacement values	127,762			129,551			174,727		
Other	62,655			45,807			52,109		
Total liabilities	998,755			957,034			983,521		
Total equity	51,490			54,369			56,308		
Total average liabilities and equity	1,050,245			1,011,403			1,039,829		
Net interest income		4,971			6,021			6,175	
Net yield on interest-earning assets			0.6			0.8			0.8

1 Certain repurchase agreements with an average balance of USD 73 billion in 2017 and USD 51 billion in 2016 were reclassified from amortized cost (presented under Payables from securities financing transactions) to measured at fair value through profit or loss (presented under Other financial liabilities designated at fair value) upon adoption of IFRS 9, Financial instruments on 1 January 2018. Prior period information is still presented under IAS 39 requirements and therefore may not be comparable. 2 In 2017 and 2016 Other interest-bearing liabilities included prime brokerage payables, which mainly included client securities financing and deposits. Upon adoption of IFRS 9, Financial instruments on 1 January 2018, prime brokerage payables are measured at fair value and are presented separately on the balance sheet under Brokerage payables designated at fair value. Gross receivable and payable balances within a single prime brokerage arrangement are presented as either a net receivable or a net payable on the balance sheet. 3 Interest expense and average interest-bearing liabilities have been adjusted to exclude dividend expense and the associated liabilities that generate dividend expense, respectively. Interest expense has been reduced by USD 1,190 million for 2017 and by USD 1,286 million for 2016. Average interest-bearing liabilities have been reduced by USD 17 billion in 2017 and USD 20 billion in 2016 as a result. 4 For the purpose of this disclosure, negative interest expense on liabilities is presented as a reduction to interest expense, while in the consolidated income statement negative interest income on liabilities is presented as interest income. Refer to Note 3 in the "Consolidated financial statements" section of this report for more information.

Average balances and interest rates (continued)

The percentage of total average interest-earning assets attributable to foreign activities was 62% for 2018 (62% for 2017 and 62% for 2016). The percentage of total average interest-bearing liabilities attributable to foreign activities was 60% for 2018 (61% for 2017 and 63% for 2016). All assets and liabilities are translated into USD at uniform month-end rates. Interest income and expense are translated at monthly average rates.

Average rates earned and paid on assets and liabilities can change from period to period based on the changes in interest rates in general, but are also affected by changes in the currency mix included in the assets and liabilities. Tax-exempt income is not recorded on a tax-equivalent basis. For all three years presented, tax-exempt income is considered to be insignificant and the impact from such income is therefore negligible.

Analysis of changes in interest income and expense

The following tables provide information by categories of interest-earning assets and interest-bearing liabilities on the changes in interest income and expense due to changes in volume and interest rates for the year ended 31 December 2018 compared with the year ended 31 December 2017, and for the year ended 31 December 2017 compared with the year ended 31 December 2016. Volume and rate variances have been calculated on movements in average balances and changes in interest rates. Changes due to a combination of volume and rates have been allocated proportionally.

	2018 compared with 2017			2017 compared with 2016		
	Increase / (decrease) due to changes in			Increase / (decrease) due to changes in		
USD million	Average volume	Average interest rate	Net change	Average volume	Average interest rate	Net change
Interest income from interest-earning assets						
Balances at central banks						
Domestic	(14)	(12)	(26)	(6)	(28)	(34)
Foreign	(19)	68	49	(4)	61	57
Loans and advances to banks						
Domestic	(4)	11	7	0	6	6
Foreign	5	(29)	(24)	2	15	17
Receivables from securities financing transactions						
Domestic	5	(8)	(3)	0	(17)	(17)
Foreign[1]	(334)	760	426	43	193	236
Cash collateral receivables on derivative instruments						
Domestic	2	2	4	0	(3)	(3)
Foreign	2	151	153	(10)	26	16
Loans and advances to customers						
Domestic	35	0	35	20	(221)	(201)
Foreign	163	561	724	132	291	423
Financial assets at fair value held for trading						
Domestic	9	(16)	(7)	4	0	4
Foreign[3]	(58)	118	60	(53)	(55)	(108)
of which: taxable	*(58)*	*118*	*60*	*(53)*	*(55)*	*(108)*
Brokerage receivables						
Domestic	0	0	0			
Foreign[2]	981	0	981			
Financial assets at fair value not held for trading						
Domestic	(6)	24	18	3	10	13
Foreign[1,3]	984	79	1,063	(7)	181	174
of which: taxable	*984*	*79*	*1,063*	*(7)*	*181*	*174*
Financial assets measured at fair value through other comprehensive income						
Domestic	(4)	1	(3)	(29)	3	(26)
Foreign	(61)	61	0	(46)	29	(17)
of which: taxable	*(61)*	*61*	*0*	*(46)*	*29*	*(17)*
Other interest-earning assets						
Domestic	7	14	21	124	(86)	38
Foreign[2]	(460)	(143)	(603)	51	37	88
Interest income						
Domestic	30	15	45	116	(336)	(220)
Foreign	1,203	1,625	2,828	108	777	885
Total interest income from interest-earning assets	1,233	1,640	2,873	224	441	665
Net interest income on swaps			(848)			(759)
Interest income on off-balance sheet securities and other			35			6
Total interest income			**2,060**			**(87)**

Analysis of changes in interest income and expense (continued)

	2018 compared with 2017			2017 compared with 2016		
	Increase / (decrease) due to changes in			Increase / (decrease) due to changes in		
USD million	Average volume	Average interest rate	Net change	Average volume	Average interest rate	Net change
Interest expense on interest-bearing liabilities						
Amount due to banks						
Domestic	(1)	5	4	(3)	2	(1)
Foreign	3	(5)	(2)	(1)	5	4
Payables from securities financing transactions						
Domestic	2	(3)	(1)	0	3	3
Foreign[4]	(254)	238	(16)	48	(13)	35
Cash collateral payables on derivative instruments						
Domestic	0	3	3	(1)	(2)	(3)
Foreign	(8)	120	112	(8)	72	64
Customer deposits and Funding from UBS Group AG and its subsidiaries						
Domestic	303	349	652	268	332	600
of which: demand deposits	*0*	*8*	*8*	*0*	*(9)*	*(9)*
of which: savings deposits	*0*	*(8)*	*(8)*	*5*	*(27)*	*(22)*
of which: time deposits	*303*	*349*	*652*	*263*	*368*	*631*
Foreign	(37)	596	559	(34)	(186)	(220)
Short-term debt issued measured at amortized cost						
Domestic	1	1	2	0	(2)	(2)
Foreign	42	242	284	99	15	114
Long-term debt issued measured at amortized cost						
Domestic	(21)	(18)	(39)	(15)	(193)	(208)
Foreign	176	(299)	(123)	(183)	80	(103)
Financial liabilities at fair value held for trading						
Domestic	3	(6)	(3)	2	2	4
Foreign	(75)	57	(18)	27	(55)	(28)
Brokerage payables designated at fair value						
Domestic	0	0	0			
Foreign[5]	638	0	638			
Debt issued designated at fair value						
Domestic	3	(3)	0	2	5	7
Foreign	97	398	495	(48)	77	29
Other financial liabilities designated at fair value						
Domestic	0	0	0	0	0	0
Foreign[4]	472	134	606	4	(17)	(13)
Other interest-bearing liabilities						
Domestic	0	0	0	0	0	0
Foreign[5]	(317)	0	(317)	(22)	226	204
Interest expense						
Domestic	290	327	617	253	146	399
Foreign	737	1,481	2,218	(118)	202	84
Total interest expense on interest-bearing liabilities	1,027	1,808	2,835	135	348	483
Swap interest on hedged debt instruments			187			(393)
Interest expense on off-balance sheet securities and other			88			(24)
Total interest expense			3,109			67

Deposits

The following table analyzes average deposits and average rates on each deposit category for the years ended 31 December 2018, 2017 and 2016. The geographic allocation is based on the location of the office or branch where the deposit is made. Deposits by foreign depositors in domestic offices were USD 63,184 million, USD 67,644 million and USD 75,417 million at 31 December 2018, 31 December 2017 and 31 December 2016, respectively.

	31.12.18		31.12.17		31.12.16	
USD million, except where indicated	Average deposits	Average rate (%)	Average deposits	Average rate (%)	Average deposits	Average rate (%)
Banks						
Domestic offices						
Demand deposits	4,155	(0.5)	4,021	(0.4)	5,112	(0.3)
Time deposits	3,323	1.2	3,808	0.9	4,027	0.8
Total domestic offices	7,477	0.3	7,829	0.2	9,139	0.2
Foreign offices						
Interest-bearing deposits	2,763	0.5	2,392	0.7	2,550	0.5
Total due to banks[1]	10,240	0.3	10,221	0.3	11,689	0.3
Customer accounts						
Domestic offices						
Demand deposits	130,674	0.0	136,588	0.0	132,412	0.0
Savings deposits	110,560	0.0	104,759	0.0	100,069	0.1
Time deposits	48,822	3.2	36,693	2.5	19,130	1.5
Total domestic offices	290,056	0.5	278,040	0.3	251,610	0.1
Foreign offices						
Demand deposits	55,846	0.2	59,992	0.1	56,279	0.0
Time and savings deposits	109,560	1.0	114,640	0.5	125,173	0.7
Total foreign offices	165,406	0.7	174,632	0.4	181,452	0.5
Total due to customers	455,461	0.6	452,672	0.3	433,063	0.3

1 Due to banks is considered to represent short-term borrowings to the extent that the total Due to banks exceeds total Due from banks, without differentiating between domestic and foreign offices. The remainder of total Due to banks is considered to represent deposits for the purpose of this disclosure.

As of 31 December 2018, the maturity of time deposits was as follows:

USD million	Domestic	Foreign
Within 3 months	10,070	54,965
3 to 6 months	739	3,764
6 to 12 months	997	2,346
1 to 5 years	21,231	4,469
Over 5 years	21,129	22
Total time deposits	54,167	65,567

Short-term borrowings

The table below presents the period-end, average and maximum month-end outstanding amounts for short-term borrowings, along with average and period-end interest rates.

	Short-term debt[1]			Due to banks[2]			Repurchase agreements[3]		
USD million, except where indicated	31.12.18	31.12.17	31.12.16	31.12.18	31.12.17	31.12.16	31.12.18	31.12.17	31.12.16
Period-end balance	39,025	52,270	25,720	0	0	0	108,584	94,437	76,718
Average balance	47,782	43,084	28,982	0	0	189	96,338	88,995	74,683
Maximum month-end balance	57,860	56,588	32,832	0	0	2,451	115,395	108,265	85,321
Average interest rate during the period (%)	1.3	0.7	0.7	0.0	0.0	0.3	1.0	0.2	0.0
Average interest rate at period end (%)	1.9	0.7	0.9	0.0	0.0	0.0	1.5	0.2	(0.1)

1 Short-term debt is comprised of certificates of deposit, commercial paper, acceptances and promissory notes, and other money market paper reported within Debt issued measured at amortized cost. 2 Amounts due to banks are presented net of amounts due from banks in order to reflect short-term borrowings. The difference between the gross Due to banks amount and the amount disclosed here is presented as deposits from banks on the preceding page. 3 Repurchase agreements are presented on a gross basis and therefore, for the purpose of this disclosure, do not reflect the effect of netting permitted under IFRS.

Investments in debt instruments

The table below presents the carrying value and yield of debt instruments (presented within Financial assets measured at fair value not held for trading, Financial assets measured at fair value through other comprehensive income and Other financial assets measured at amortized cost on the balance sheet) by contractual maturity bucket. The maturity information presented does not consider any early redemption features and debt instruments without fixed maturities are not included.

	Within 1 year		1 up to 5 years		5 to 10 years		Over 10 years		Total carrying value
USD million, except percentages	Carrying value	Yield (%)	Carrying value	Yield (%)	Carrying value	Yield (%)	Carrying value	Yield (%)	
Financial assets at fair value not held for trading									
Swiss national government and agencies	203	(0.80)	73	(0.54)	13	0.14			290
US Treasury and agencies	7,725	2.15	3,444	1.93	87	2.13	140	2.34	11,396
Other foreign governments and official institutions	15,534	0.83	4,747	1.56	40	0.24			20,321
Corporate debt securities	3,765	0.93	3,749	1.02	1,092	1.35	5,354	2.98	13,960
Mortgage-backed securities							87	1.97	87
Subtotal as of 31 December 2018	27,227		12,013		1,233		5,581		46,053
Financial assets measured at fair value through other comprehensive income									
Swiss national government and agencies									0
US Treasury and agencies	734	1.22	1,237	1.31	249	2.46			2,220
Other foreign governments and official institutions	317	3.15	45	3.79					362
Corporate debt securities	26	4.02	127	3.62					153
Mortgage-backed securities					1,356	1.52	2,575	2.47	3,931
Subtotal as of 31 December 2018	1,077		1,409		1,605		2,575		6,667
Debt securities measured at amortized cost									
Swiss national government and agencies			1	4.00					1
US Treasury and agencies	1,334	1.16	2,846	1.83	4,152	2.13			8,332
Other foreign governments and official institutions	573	1.38	685	1.92					1,258
Corporate debt securities	220	1.11	892	1.63					1,112
Mortgage-backed securities							2,859	3.09	2,859
Subtotal as of 31 December 2018	2,127		4,424		4,152		2,859		13,562
Total as of 31 December 2018[1]	30,432		17,846		6,990		11,015		66,282

Investments in debt instruments (continued)

	Within 1 year		1 up to 5 years		5 to 10 years		Over 10 years		Total carrying value
USD million, except percentages	Carrying value	Yield (%)	Carrying value	Yield (%)	Carrying value	Yield (%)	Carrying value	Yield (%)	
Financial assets at fair value not held for trading									
Swiss national government and agencies	924	(0.25)							924
US Treasury and agencies	8,714	1.20	3,345	1.64	2	1.51			12,061
Other foreign governments and official institutions	18,218	0.27	7,612	1.04	328	0.12			26,158
Corporate debt securities	2,578	0.12	6,377	1.03	556	0.16			9,512
Mortgage-backed securities							86	1.62	86
Subtotal as of 31 December 2017	30,434		17,335		886		86		48,741
Financial assets measured at fair value through other comprehensive income									
Swiss national government and agencies					1	4.00			1
US Treasury and agencies	870	0.57	1,741	1.24	147	0.70			2,758
Other foreign governments and official institutions	363	3.86	77	2.43					441
Corporate debt securities	391	1.06	509	0.97	52	0.18			953
Mortgage-backed securities			0	1.42	617	1.35	3,363	1.53	3,980
Subtotal as of 31 December 2017	1,625		2,328		818		3,363		8,134
Debt securities measured at amortised cost									
US Treasury and agencies			1,828	1.32	3,130	1.71			4,958
Other foreign governments and official institutions	1,919	(0.08)	793	1.36					2,712
Corporate debt securities	748	0.95	985	1.41					1,733
Subtotal as of 31 December 2017	2,667		3,606		3,130		0		9,403
Total as of 31 December 2017[1]	34,726		23,268		4,834		3,449		66,277

Investments in debt instruments (continued)

	Within 1 year		1 up to 5 years		5 to 10 years		Over 10 years		Total carrying value
USD million, except percentages	Carrying value	Yield (%)	Carrying value	Yield (%)	Carrying value	Yield (%)	Carrying value	Yield (%)	
Financial assets at fair value not held for trading									
Swiss national government and agencies	1,730	(0.23)							1,730
US Treasury and agencies	14,461	0.49	6,569	0.82	2	1.38			21,032
Other foreign governments and official institutions	15,318	0.06	12,579	0.24	266	0.58			28,163
Corporate debt securities	2,247	0.56	6,105	0.82	314	0.29			8,666
Mortgage-backed securities							101	1.65	101
Subtotal as of 31 December 2016	**33,756**		**25,253**		**582**		**101**		**59,692**
Financial assets measured at fair value through other comprehensive income									
Swiss national government and agencies					1	4.00			1
US Treasury and agencies	1,588	0.31	2,733	0.94					4,321
Other foreign governments and official institutions	2,191	1.21	1,595	0.66	15	0.32			3,802
Corporate debt securities	1,217	0.50	1,887	0.56	50	0.18	5	0.00	3,159
Mortgage-backed securities			0	5.52	0	1.96	3,321	1.65	3,321
Total as of 31 December 2016[1]	**4,996**		**6,216**		**66**		**3,326**		**14,605**
Debt securities measured at amortised cost									
US Treasury and agencies	399	0.59	1,117	1.04	3,090	1.59			4,606
Other foreign governments and official institutions	958	(0.54)	1,722	0.85					2,680
Corporate debt securities	240	0.89	1,600	1.15					1,841
Subtotal as of 31 December 2016	**1,597**		**4,440**		**3,090**		**0**		**9,127**
Total as of 31 December 2016[1]	**40,349**		**35,908**		**3,738**		**3,427**		**83,423**

1 Includes investments in debt instruments as of 31 December 2018 issued by US government and government agencies of USD 34,285 million (31 December 2017: USD 23,758 million, 31 December 2016: USD 33,281 million), the German government of USD 9,026 million (31 December 2017: USD 7,043 million, 31 December 2016: USD 11,752 million), the Japanese government of USD 5,588 million (31 December 2017: USD 3,589 million, 31 December 2016: USD 3,750 million) and the French government of USD 2,844 million (31 December 2017: USD 6,098 million, 31 December 2016: USD 3,949 million).

Loans and advances to banks and customers by industry (gross)

UBS AG's lending portfolio is widely diversified across industry sectors. An amount of USD 197 billion (58% of the total) relates to loans to thousands of private households, predominantly in Switzerland, and mostly secured by mortgages, financial collateral or other assets. Exposure to banks and financial institutions amounted to USD 82 billion (24% of the total). Exposure to banks includes money market deposits with highly rated institutions. Excluding banks and financial institutions, the largest industry sector exposure as of 31 December 2018 was USD 21 billion (6% of the total) to Services. For further discussion of the loan portfolio, refer to the "Risk management and control" section of this report.

The table below illustrates the diversification of the loan portfolio among industry sectors. The industry categories presented are consistent with the classification of loans for reporting to the Swiss Financial Market Supervisory Authority (FINMA) and the Swiss National Bank. Loans presented within the balance sheet reporting lines "Financial assets at fair value held for trading" and "Financial assets at fair value not held for trading" are excluded from the tables below.

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Domestic					
Banks	265	723	764	771	1,163
Chemicals	442	437	257	308	394
Construction	1,273	1,467	1,453	1,517	1,426
Electricity, gas and water supply	193	213	197	233	261
Financial services	7,744	7,343	5,619	6,051	6,730
Food and beverages	251	447	216	208	207
Hotels and restaurants	1,478	1,537	1,528	1,644	1,705
Manufacturing	1,916	2,331	1,965	2,009	2,332
Mining	11	15	19	23	34
Private households	127,761	127,585	121,582	123,763	126,157
Public authorities	888	1,053	1,340	1,606	2,109
Real estate and rentals	12,212	12,736	12,581	13,685	14,630
Retail and wholesale	4,278	4,122	3,938	3,681	4,192
Services	4,810	5,051	5,307	5,242	4,820
Transport, storage and communication	1,891	1,871	1,886	1,873	1,975
Other	730	750	696	696	736
Total domestic	166,143	167,680	159,347	163,309	168,872
Foreign					
Banks	16,384	13,327	12,134	11,078	12,258
Chemicals	158	61	138	113	75
Construction	746	838	540	634	649
Electricity, gas and water supply	587	691	576	705	1,106
Financial services	57,388	60,377	49,486	56,321	57,965
Food and beverages	48	59	67	65	56
Hotels and restaurants	340	1,494	168	148	120
Manufacturing	1,570	1,867	1,684	1,955	1,972
Mining	640	1,037	989	1,464	1,352
Private households	68,887	69,246	61,504	62,591	60,802
Public authorities	1,487	2,264	2,506	1,269	1,421
Real estate and rentals	2,886	3,213	2,030	2,209	2,531
Retail and wholesale	2,717	2,657	2,184	1,972	1,935
Services	16,248	17,171	19,157	17,895	17,567
Transport, storage and communication	2,149	2,215	2,398	2,853	3,033
Other	528	566	214	163	143
Total foreign	172,761	177,083	155,776	161,437	162,985
Total gross	338,904	344,763	315,122	324,746	331,859

Loans and advances to banks and customers by industry (gross) (continued)

The table below presents the percentage of loans and advances to banks and customers in each industry sector and geographic location in relation to total loans and advances to banks and customers.

In %	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Domestic					
Banks	0.1	0.2	0.2	0.2	0.4
Chemicals	0.1	0.1	0.1	0.1	0.1
Construction	0.4	0.4	0.5	0.5	0.4
Electricity, gas and water supply	0.1	0.1	0.1	0.1	0.1
Financial services	2.3	2.1	1.8	1.9	2.0
Food and beverages	0.1	0.1	0.1	0.1	0.1
Hotels and restaurants	0.4	0.4	0.5	0.5	0.5
Manufacturing	0.6	0.7	0.6	0.6	0.7
Private households	37.7	37.0	38.6	38.1	38.0
Public authorities	0.3	0.3	0.4	0.5	0.6
Real estate and rentals	3.6	3.7	4.0	4.2	4.4
Retail and wholesale	1.3	1.2	1.2	1.1	1.3
Services	1.4	1.5	1.7	1.6	1.5
Transport, storage and communication	0.6	0.5	0.6	0.6	0.6
Other	0.2	0.2	0.2	0.2	0.2
Total domestic	49.0	48.6	50.6	50.3	50.9
Foreign					
Banks	4.8	3.9	3.9	3.4	3.7
Construction	0.2	0.2	0.2	0.2	0.2
Electricity, gas and water supply	0.2	0.2	0.2	0.2	0.3
Financial services	16.9	17.5	15.7	17.3	17.5
Hotels and restaurants	0.1	0.4	0.1	0.0	0.0
Manufacturing	0.5	0.5	0.5	0.6	0.6
Mining	0.2	0.3	0.3	0.5	0.4
Private households	20.3	20.1	19.5	19.3	18.3
Public authorities	0.4	0.7	0.8	0.4	0.4
Real estate and rentals	0.9	0.9	0.6	0.7	0.8
Retail and wholesale	0.8	0.8	0.7	0.6	0.6
Services	4.8	5.0	6.1	5.5	5.3
Transport, storage and communication	0.6	0.6	0.8	0.9	0.9
Other	0.2	0.2	0.1	0.1	0.0
Total foreign	51.0	51.4	49.4	49.7	49.1
Total gross	100.0	100.0	100.0	100.0	100.0

Loans and advances to banks and customers – mortgages (gross)

The table below provides more information on UBS AG's mortgage portfolio by client domicile and type of mortgage. Mortgages are included in the industry categories in the table on the previous page.

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Mortgages					
Domestic	145,464	145,276	139,558	143,993	147,450
Foreign	24,771	22,092	19,573	18,856	18,212
Total gross mortgages	170,235	167,367	159,130	162,849	165,663
Mortgages					
Residential	150,999	148,167	139,711	141,375	143,170
Commercial	19,236	19,201	19,419	21,474	22,493
Total gross mortgages	170,235	167,367	159,130	162,849	165,663

Loans and advances to banks and customers – maturity profile (gross)

The table below provides the maturity profile of loans and advances to banks and customers. The maturity information presented does not consider any early redemption features.

USD million	Within 1 year	1 to 5 years	Over 5 years	Total
Domestic				
Banks	265	0	0	265
Mortgages	53,226	62,431	29,807	145,464
Other loans	13,862	4,878	1,674	20,413
Total domestic	67,353	67,308	31,482	166,143
Foreign				
Banks	16,330	35	19	16,384
Mortgages	4,068	5,526	15,177	24,771
Other loans	114,668	16,210	728	131,606
Total foreign	135,066	21,771	15,924	172,761
Total gross	202,419	89,079	47,406	338,904

As of 31 December 2018, total loans and advances to banks and customers granted at fixed and floating interest rates were as follows:

USD million	Within 1 year	1 to 5 years	Over 5 years	Total
Fixed-rate loans	135,716	67,181	35,122	238,020
Adjustable or floating-rate loans	66,703	21,898	12,284	100,884
Total	202,419	89,079	47,406	338,904

Non-performing loans

A claim is considered as non-performing when (i) it is more than 90 days past due; (ii) it is subject to restructuring proceedings, where preferential conditions concerning interest rates, subordination, tenor etc. have been granted in order to avoid default of the counterparty (forbearance); or (iii) the counterparty is subject to bankruptcy / enforced liquidation proceedings in any form, even if there is sufficient collateral to cover the due payment.

Refer to "Credit policies for distressed assets" in the "Risk management and control" section in the UBS Group AG Annual Report 2018 for comprehensive information on UBS AG's distressed asset definitions, of which non-performing is a component.

Also, refer to Note 1 and Note 23 of the consolidated financial statements for more information on the various risk factors that are considered to be indicative of credit-impairment.

The table below provides UBS AG's non-performing loans and advances to banks and customers.

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Non-performing loans and advances to banks and customers:					
Domestic	1,548	1,374	1,497	1,172	1,300
Foreign	871	776	859	455	311
Total non-performing loans and advances to banks and customers	2,419	2,150	2,357	1,627	1,611

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Gross interest income not collected on non-performing loans and advances to banks and customers:[1]					
Domestic	12	8	5	6	8
Foreign	36	25	22	7	5
Interest income included in Net profit for non-performing loans and advances to banks and customers:					
Domestic	20	32	36	25	20
Foreign	15	6	10	5	6

1 For credit impaired financial assets, interest income is determined by applying the effective interest rate (EIR) to the amortized cost of the instrument, which represents the gross carrying amount adjusted for any loss allowance.

Forbearance (Credit Restructuring)

Under imminent payment default or where default has already occurred, UBS AG may grant concessions to borrowers in financial difficulties that it would otherwise not consider in the normal course of its business, such as preferential interest rates, extension of maturity, modifying the schedule of repayments, debt / equity swap, subordination, etc. When a forbearance measure takes place, each case is considered individually and the exposure is generally classified in default. Forbearance classification will remain until the loan is collected or written off, non-preferential conditions are granted that supersede the preferential conditions or until the counterparty has recovered and the preferential conditions no longer exceed UBS AG's risk appetite.

Contractual adjustments when there is no evidence of imminent payment default, or where changes to terms and conditions are within UBS AG's usual risk appetite, are not considered to be forborne.

Gross interest income not collected that relates to restructured non-performing loans and advances to banks and customers was not material to the results of operations in 2018, 2017, 2016, 2015 or 2014.

Cross-border outstandings

Cross-border outstandings consist of balances with central banks and other financial institutions, loans and advances to banks and customers and receivables from securities financing transactions with counterparties domiciled outside Switzerland. Guarantees and commitments are provided separately in the table below.

The following tables list those countries for which cross-border outstandings exceeded 0.75% of total IFRS assets at 31 December 2018, 2017 and 2016. As of 31 December 2018, there were no outstandings that exceeded 0.75% of total IFRS assets in any country currently facing debt restructuring or liquidity problems that UBS AG expects would materially impact the country's ability to service its obligations. Aggregate country risk exposures are monitored and reported on an ongoing basis. The internal risk view is not directly comparable to the cross-border outstandings in the table below due to different approaches to netting, differing trade populations and differing approach to allocation of exposures to countries. For more information on the country framework within risk control, refer to the "Risk management and control" section of this report.

	31.12.18					
USD million	Banks	Private sector	Public sector	Total outstandings	% of total assets	Guarantees and commitments[1]
USA	20,142	95,274	16,135	131,551	13.7	21,686
UK	2,455	50,248	2,839	55,543	5.8	6,666
Japan	13,863	2,726	6,135	22,724	2.4	56
Germany	1,082	5,182	13,405	19,669	2.1	897
Hong Kong	1,132	15,388	125	16,645	1.7	984
France	2,404	5,503	393	8,299	0.9	5,402

	31.12.17					
USD million	Banks	Private sector	Public sector	Total outstandings	% of total assets	Guarantees and commitments[1]
USA	21,829	89,662	16,342	127,833	13.6	23,819
UK	2,342	54,550	6,563	63,454	6.8	12,457
Japan	1,725	8,354	9,148	19,228	2.0	82
Germany	1,515	8,488	9,345	19,348	2.1	1,375
France	2,516	5,841	5,142	13,500	1.4	6,002
Hong Kong	609	16,846	336	17,791	1.9	442
Singapore	169	4,518	3,036	7,724	0.8	522

	31.12.16					
USD million	Banks	Private sector	Public sector	Total outstandings	% of total assets	Guarantees and commitments[1]
USA	19,309	77,567	22,459	119,335	13.0	35,387
UK	2,550	47,402	9,596	59,548	6.5	10,175
Japan	5,106	5,572	9,005	19,683	2.1	233
Germany	687	4,886	12,835	18,408	2.0	1,487
France	2,343	5,543	2,820	10,706	1.2	4,190
Hong Kong	403	8,028	343	8,774	1.0	152

1 Includes irrevocable forward starting transactions (reverse repurchase agreements and securities borrowing agreements).

Summary of movements in expected credit loss allowances and provisions[1]

The following table provides more information on the movements in ECL allowances and provisions. Refer to "Credit risk" in the "Risk management and control" section of this report for more information.

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Balance at beginning of year	1,146[2]	642	726	739	840
Domestic					
Write-offs					
Banks	0	0	0	0	1
Construction	(9)	(5)	(1)	(2)	(1)
Electricity, gas and water supply	(1)	0	0	(1)	0
Financial services	(4)	(3)	(3)	(3)	0
Manufacturing	(3)	(2)	(7)	(9)	(4)
Private households	(22)	(18)	(20)	(35)	(43)
Real estate and rentals	0	0	0	0	(1)
Retail and wholesale	(3)	(11)	(10)	(47)	(30)
Services	(4)	(11)	(3)	(3)	(16)
Transport, storage and communications	(4)	(3)	(4)	(9)	(3)
Total gross domestic write-offs	(51)	(53)	(49)	(110)	(98)
Foreign					
Write-offs					
Banks	0	0	0	(9)	(17)
Construction	0	(1)	0	0	(1)
Electricity, gas and water supply	0	0	0	0	(1)
Financial services	(4)	(24)	(4)	(3)	(13)
Manufacturing	(78)	0	(21)	0	(7)
Mining	(5)	(17)	(24)	(1)	0
Private households	(6)	(22)	(8)	(12)	(7)
Public authorities	0	0	0	0	(1)
Real estate and rentals	0	0	0	0	(2)
Retail and wholesale	(1)	0	0	(19)	(2)
Services	(10)	(4)	(16)	(10)	(16)
Transport, storage and communications	(36)	0	(20)	0	(1)
Other	(18)	0	0	0	0
Total gross foreign write-offs	(158)	(68)	(94)	(54)	(68)
Total usage of ECL provisions	0	0	0	0	(1)
Total write-offs / usage of ECL provisions	(210)	(121)	(143)	(164)	(168)
Recoveries					
Domestic	9	19	11	41	32
Foreign	0	1	11	7	0
Total recoveries	9	20	22	48	32
Total net write-offs / usage of ECL provisions	(201)	(101)	(121)	(116)	(135)
Increase / (decrease) in ECL allowances and provisions recognized in the income statement	118	128	31	118	89
Increase / (decrease) in ECL collective allowances recognized in the income statement	0	3	7	0	(11)
Foreign currency translation	(9)	21	(12)	(18)	(55)
Other	0	38	12	2	12
Balance at end of year[3]	1,054	731	642	726	739

1 Prior-period information is presented under IAS 39 requirements. 2 Includes stage 1 and stage 2 expected credit losses and additional stage 3 expected credit losses. Refer to Note 1c "Changes in accounting policies and comparability and transition effects from the adoption of IFRS 9 Financial Instruments" in the "Consolidated financial statements" section of this report for more information on IFRS 9. 3 Includes ECL allowances for receivables from securities financing transactions.

Allocation of the expected credit loss allowances and provisions[1]

The following table provides a breakdown of ECL allowances and provisions by industry sector and geographic location.

USD million	31.12.18	31.12.17	31.12.16	31.12.15	31.12.14
Domestic					
Banks	4	3	3	3	2
Chemicals	14	0	0	0	0
Construction	14	16	17	13	14
Electricity, gas and water supply	2	3	1	2	1
Financial services	36	23	12	17	18
Food and beverages	10	0	0	3	4
Hotels and restaurants	12	9	10	13	16
Manufacturing	75	58	59	77	73
Private households	180	46	45	47	53
Public authorities	1	0	0	0	0
Real estate and rentals	23	11	11	13	18
Retail and wholesale	94	76	66	78	124
Services	30	25	28	23	25
Transport, storage and communication	18	13	15	32	29
Other	2	0	0	0	0
Total domestic ECL specific allowances	515	285	268	320	376
Foreign					
Banks	5	0	0	0	10
Construction	0	0	1	1	1
Financial services	49	42	63	90	35
Manufacturing	28	85	7	13	9
Mining	26	52	30	46	11
Private households	154	39	58	60	66
Public authorities	8	11	11	14	14
Real estate and rentals	38	24	2	1	1
Retail and wholesale	87	85	78	80	112
Services	23	23	17	19	29
Transport, storage and communication	3	39	40	40	43
Other	1	0	0	0	0
Total foreign ECL specific allowances	422	399	309	365	332
ECL collective allowances	0	13	11	6	8
ECL provisions	116	34	54	35	23
Total ECL allowances and provisions	1,054	731	642	726	739

1 Prior-period information is presented under IAS 39 requirements.

Abbreviations frequently used in our financial reports

A

ABS	asset-backed security
AEI	automatic exchange of information
AGM	annual general meeting of shareholders
A-IRB	advanced internal ratings-based
AI	artificial intelligence
AIV	alternative investment vehicle
ALCO	Asset and Liability Management Committee
AMA	advanced measurement approach
AML	anti-money laundering
AoA	Articles of Association of UBS Group AG
ASF	available stable funding
ASFA	advanced supervisory formula approach
AT1	additional tier 1
AuM	assets under management

B

BCBS	Basel Committee on Banking Supervision
BD	business division
BEAT	base erosion and anti-abuse tax
BIS	Bank for International Settlements
BoD	Board of Directors
BSC	Business Solutions Center
BVG	Swiss occupational pension plan

C

CAO	Capital Adequacy Ordinance
CC	Corporate Center
CCAR	Comprehensive Capital Analysis and Review
CCB	countercyclical buffer
CCF	credit conversion factor
CCP	central counterparty
CCR	counterparty credit risk
CCRC	Corporate Culture and Responsibility Committee
CDO	collateralized debt obligation
CDR	constant default rate
CDS	credit default swap
CEA	Commodity Exchange Act
CECL	current expected credit loss
CEM	current exposure method
CEO	Chief Executive Officer
CET1	common equity tier 1
CFO	Chief Financial Officer
CFTC	US Commodity Futures Trading Commission
CHF	Swiss franc
CIC	Corporate Institutional Clients
CIO	Chief Investment Office
CLN	credit-linked note
CLO	collateralized loan obligation
CLS	continuous linked settlement
CMBS	commercial mortgage-backed security
COP	close-out period
C&ORC	Compliance & Operational Risk Control
CRD IV	EU Capital Requirements Directive of 2013
CRM	credit risk mitigation (credit risk) or comprehensive risk measure (market risk)
CSO	Client Strategy Office
CST	combined stress test
CVA	credit valuation adjustment

D

DBO	defined benefit obligation
DCCP	Deferred Contingent Capital Plan
DJSI	Dow Jones Sustainability Indices
DOJ	US Department of Justice
DOL	US Department of Labor
D-SIB	domestic systemically important bank
DTA	deferred tax asset
DVA	debit valuation adjustment

E

EAD	exposure at default
EBA	European Banking Authority
EC	European Commission
ECAI	external credit assessment institution
ECB	European Central Bank
ECL	expected credit loss(es)
EEPE	effective expected positive exposure
EIR	effective interest rate
EL	expected loss
EMEA	Europe, Middle East and Africa
EOP	Equity Ownership Plan
EPE	expected positive exposure
EPS	earnings per share
ERISA	Employee Retirement Income Security Act of 1974
ESG	environmental, social and governance
ESMA	European Securities and Markets Authority
ESR	environmental and social risk
ETD	exchange-traded derivative
ETF	exchange-traded fund
EU	European Union
EUR	euro
EURIBOR	Euro Interbank Offered Rate

F

FCA	UK Financial Conduct Authority
FCT	foreign currency translation
FDIC	US Federal Deposit Insurance Corporation
FINMA	Swiss Financial Market Supervisory Authority
FINRA	US Financial Industry Regulatory Authority
FMIA	Swiss Federal Act on Financial Market Infrastructures and Market Conduct in Securities and Derivatives Trading

Abbreviations frequently used in our financial reports (continued)

FMIO FINMA Ordinance on Financial Market Infrastructure
FRA forward rate agreement
FSA UK Financial Services Authority
FSB Financial Stability Board
FTA Swiss Federal Tax Administration
FTD first to default
FTP funds transfer pricing
FVA funding valuation adjustment
FVOCI fair value through other comprehensive income
FVTPL fair value through profit or loss
FX foreign exchange

G
GAAP generally accepted accounting principles
GBP British pound
GEB Group Executive Board
GFA Group Franchise Awards
GHG greenhouse gas
GIA Group Internal Audit
GIIPS Greece, Italy, Ireland, Portugal and Spain
GMD Group Managing Director
GRI Global Reporting Initiative
Group ALM Group Asset and Liability Management
G-SIB global systemically important bank

H
HQLA high-quality liquid assets
HR human resources

I
IAA internal assessment approach
IAS International Accounting Standards
IASB International Accounting Standards Board
IBOR interbank offered rates
IFRIC International Financial Reporting Interpretations Committee
IFRS International Financial Reporting Standards
IHC intermediate holding companies
IMA internal models approach
IMM internal model method
IPS Investment Platforms and Solutions
IRB internal ratings-based
IRC incremental risk charge
ISDA International Swaps and Derivatives Association

K
KRT Key Risk Taker

L
LAC loss-absorbing capacity
LAS liquidity-adjusted stress
LCR liquidity coverage ratio
LGD loss given default
LIBOR London Interbank Offered Rate
LLC limited liability company
LRD leverage ratio denominator
LTV loan-to-value

M
MiFID II Markets in Financial Instruments Directive II
MiFIR Markets in Financial Instruments associated Regulation
MRT Material Risk Taker
MTN medium-term note

N
NAV net asset value
NII net interest income
NPA non-prosecution agreement
NRV negative replacement value
NSFR net stable funding ratio
NYSE New York Stock Exchange

O
OCA own credit adjustment
OCI other comprehensive income
OECD Organisation for Economic Co-operation and Development
OIS overnight index swap
OTC over-the-counter

P
PD probability of default
PFE potential future exposure
PIT point in time
P&L profit or loss
POCI purchased or originated credit-impaired
PRA UK Prudential Regulation Authority PRVpositive replacement value

Q
QRRE qualifying revolving retail exposures

R
RBA ratings-based approach
RBC risk-based capital
RLN reference-linked note
RMBS residential mortgage-backed security
RniV risks not in VaR
RoAE return on attributed equity
RoCET1 return on CET1
RoE return on equity
RoTE return on tangible equity
RV replacement value
RW risk weight
RWA risk-weighted assets

Abbreviations frequently used in our financial reports (continued)

S

SA	standardized approach
SA-CCR	standardized approach for counterparty credit risk
SAR	stock appreciation right
SBC	Swiss Bank Corporation
SCCL	single-counterparty credit limit
SDGs	Sustainable Development Goals
SE	structured entity
SEC	US Securities and Exchange Commission
SEEOP	Senior Executive Equity Ownership Plan
SESTA	Swiss Federal Act on Stock Exchanges and Securities Trading
SESTO	FINMA Ordinance on Stock Exchanges and Securities Trading
SFA	supervisory formula approach
SFT	securities financing transaction
SI	sustainable investing
SICR	significant increase in credit risk
SIX	SIX Swiss Exchange
SMA	standardized measurement approach
SME	small and medium-sized enterprises
SMF	Senior Management Function
SNB	Swiss National Bank
SPPI	solely payments of principal and interest
SRB	systemically relevant bank
SRM	specific risk measure
SSFA	simplified supervisory formula approach
SVaR	stressed value-at-risk

T

TBTF	too big to fail
TCJA	US Tax Cuts and Jobs Act
TLAC	total loss-absorbing capacity
TRS	total return swap
TTC	through the cycle

U

UoM	units of measure
USD	US dollar
US IHC	US intermediate holding company

V

VaR	value-at-risk

This is a general list of the abbreviations frequently used in our financial reporting. Not all of the listed abbreviations may appear in this particular report.

Information sources

Reporting publications

Annual publications: *Annual Report (SAP no. 80531):* Published in English, this single-volume report provides descriptions of: our Group strategy and performance; the strategy and performance of the business divisions and Corporate Center; risk, treasury and capital management; corporate governance, corporate responsibility and our compensation framework, including information on compensation for the Board of Directors and the Group Executive Board members; and financial information, including the financial statements. *Auszug aus dem Geschäftsbericht (SAP no. 80531):* This publication provides the translation into German of selected sections of the Annual Report. *Annual Review (SAP no. 80530):* This booklet contains key information on our strategy and performance, with a focus on corporate responsibility at UBS. It is published in English, German, French and Italian. *Compensation Report (SAP no. 82307):* The report discusses our compensation framework and provides information on compensation for the Board of Directors and the Group Executive Board members. It is available in English and German.

Quarterly publications: The quarterly financial report provides an update on our strategy and performance for the respective quarter. It is available in English.

How to order publications: The annual and quarterly publications are available in PDF at *www.ubs.com/investors* in the "UBS Group AG and UBS AG consolidated financial information" section, and printed copies can be requested from UBS free of charge. For annual publications refer to *www.ubs.com/investors* in the "Investor services" section, which can be accessed via the link on the left-hand side of the screen. Alternatively, they can be ordered by quoting the SAP number and the language preference, where applicable, from UBS AG, F4UK–AUL, P.O. Box, CH-8098 Zurich, Switzerland.

Other information

Website: The "Investor Relations" website at *www.ubs.com/investors* provides the following information on UBS: news releases; financial information, including results-related filings with the US Securities and Exchange Commission; information for shareholders, including UBS share price charts as well as data and dividend information, and for bondholders; the UBS corporate calendar; and presentations by management for investors and financial analysts. Information on the internet is available in English, with some information also available in German.

Results presentations: Our quarterly results presentations are webcast live. A playback of most presentations is downloadable at *www.ubs.com/presentations*.

Messaging service: Email alerts to news about UBS can be subscribed to under "UBS news alert" at *www.ubs.com/investors*. Messages are sent in English, German, French or Italian, with an option to select theme preferences for such alerts.

Form 20-F and other submissions to the US Securities and Exchange Commission: We file periodic reports and submit other information about UBS to the US Securities and Exchange Commission (SEC). Principal among these filings is the annual report on Form 20-F, filed pursuant to the US Securities Exchange Act of 1934. The filing of Form 20-F is structured as a wrap-around document. Most sections of the filing can be satisfied by referring to parts of the annual report. However, there is a small amount of additional information in Form 20-F that is not presented elsewhere and is particularly targeted at readers in the US. Readers are encouraged to refer to this additional disclosure. Any document that we file with the SEC is available on the SEC's website *www.sec.gov*. Refer to *www.ubs.com/investors* for more information.

Cautionary Statement Regarding Forward-Looking Statements | This report contains statements that constitute "forward-looking statements," including but not limited to management's outlook for UBS's financial performance and statements relating to the anticipated effect of transactions and strategic initiatives on UBS's business and future development. While these forward-looking statements represent UBS's judgments and expectations concerning the matters described, a number of risks, uncertainties and other important factors could cause actual developments and results to differ materially from UBS's expectations. These factors include, but are not limited to: (i) the degree to which UBS is successful in the ongoing execution of its strategic plans, including its cost reduction and efficiency initiatives and its ability to manage its levels of risk-weighted assets (RWA) and leverage ratio denominator (LRD), including to counteract regulatory-driven increases, liquidity coverage ratio and other financial resources, and the degree to which UBS is successful in implementing changes to its businesses to meet changing market, regulatory and other conditions; (ii) the continuing low or negative interest rate environment in Switzerland and other jurisdictions, developments in the macroeconomic climate and in the markets in which UBS operates or to which it is exposed, including movements in securities prices or liquidity, credit spreads, and currency exchange rates, and the effects of economic conditions, market developments, and geopolitical tensions on the financial position or creditworthiness of UBS's clients and counterparties as well as on client sentiment and levels of activity; (iii) changes in the availability of capital and funding, including any changes in UBS's credit spreads and ratings, as well as availability and cost of funding to meet requirements for debt eligible for total loss-absorbing capacity (TLAC); (iv) changes in or the implementation of financial legislation and regulation in Switzerland, the US, the UK, the European Union and other financial centers that have imposed, or resulted in, or may do so in the future, more stringent or entity-specific capital, TLAC, leverage ratio, liquidity and funding requirements, incremental tax requirements, additional levies, limitations on permitted activities, constraints on remuneration, constraints on transfers of capital and liquidity and sharing of operational costs across the Group or other measures, and the effect these will or would have on UBS's business activities; (v) the degree to which UBS is successful in implementing further changes to its legal structure to improve its resolvability and meet related regulatory requirements and the potential need to make further changes to the legal structure or booking model of UBS Group in response to legal and regulatory requirements, proposals in Switzerland and other jurisdictions for mandatory structural reform of banks or systemically important institutions or to other external developments, and the extent to which such changes will have the intended effects; (vi) UBS's ability to maintain and improve its systems and controls for the detection and prevention of money laundering and compliance with sanctions to meet evolving regulatory requirements and expectations, in particular in the US; (vii) the uncertainty arising from the timing and nature of the UK exit from the EU; (viii) changes in UBS's competitive position, including whether differences in regulatory capital and other requirements among the major financial centers will adversely affect UBS's ability to compete in certain lines of business; (ix) changes in the standards of conduct applicable to our businesses that may result from new regulation or new enforcement of existing standards, including recently enacted and proposed measures to impose new and enhanced duties when interacting with customers and in the execution and handling of customer transactions; (x) the liability to which UBS may be exposed, or possible constraints or sanctions that regulatory authorities might impose on UBS, due to litigation, contractual claims and regulatory investigations, including the potential for disqualification from certain businesses, potentially large fines or monetary penalties, or the loss of licenses or privileges as a result of regulatory or other governmental sanctions, as well as the effect that litigation, regulatory and similar matters have on the operational risk component of our RWA as well as the amount of capital available for return to shareholders; (xi) the effects on UBS's cross-border banking business of tax or regulatory developments and of possible changes in UBS's policies and practices relating to this business; (xii) UBS's ability to retain and attract the employees necessary to generate revenues and to manage, support and control its businesses, which may be affected by competitive factors; (xiii) changes in accounting or tax standards or policies, and determinations or interpretations affecting the recognition of gain or loss, the valuation of goodwill, the recognition of deferred tax assets and other matters; (xiv) UBS's ability to implement new technologies and business methods, including digital services and technologies and ability to successfully compete with both existing and new financial service providers, some of which may not be regulated to the same extent; (xv) limitations on the effectiveness of UBS's internal processes for risk management, risk control, measurement and modeling, and of financial models generally; (xvi) the occurrence of operational failures, such as fraud, misconduct, unauthorized trading, financial crime, cyberattacks, and systems failures; (xvii) restrictions on the ability of UBS Group AG to make payments or distributions, including due to restrictions on the ability of its subsidiaries to make loans or distributions, directly or indirectly, or, in the case of financial difficulties, due to the exercise by FINMA or the regulators of UBS's operations in other countries of their broad statutory powers in relation to protective measures, restructuring and liquidation proceedings; (xviii) the degree to which changes in regulation, capital or legal structure, financial results or other factors may affect UBS's ability to maintain its stated capital return objective; and (xix) the effect that these or other factors or unanticipated events may have on our reputation and the additional consequences that this may have on our business and performance. The sequence in which the factors above are presented is not indicative of their likelihood of occurrence or the potential magnitude of their consequences. Our business and financial performance could be affected by other factors identified in our past and future filings and reports, including those filed with the SEC. More detailed information about those factors is set forth in documents furnished by UBS and filings made by UBS with the SEC, including UBS's Annual Report on Form 20-F for the year ended 31 December 2018. UBS is not under any obligation to (and expressly disclaims any obligation to) update or alter its forward-looking statements, whether as a result of new information, future events, or otherwise.

Rounding | Numbers presented throughout this report may not add up precisely to the totals provided in the tables and text. Starting in 2018, percentages, percent changes, and adjusted results are calculated on the basis of unrounded figures. Information on absolute changes between reporting periods, which is provided in text and that can be derived from figures displayed in the tables, is calculated on a rounded basis.

Tables | Within tables, blank fields generally indicate that the field is not applicable or not meaningful, or that information is not available as of the relevant date or for the relevant period. Zero values generally indicate that the respective figure is zero on an actual or rounded basis. Percentage changes are presented as a mathematical calculation of the change between periods.

UBS Group AG
P.O. Box, CH-8098 Zurich

UBS AG
P.O. Box, CH-8098 Zurich
P.O. Box, CH-4002 Basel

ubs.com

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Exhibit 1.1

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Articles of Association UBS AG

26 April 2018

The present text is a translation of the original German Articles of Association ("Statuten") which constitute the definitive text and are binding in law.

In these Articles of Association, references to the generic masculine equally apply to both sexes.

Contents

Section 1
Name, registered office, business object and duration of the Corporation

Article 1

Name, registered office

A corporation limited by shares under the name of UBS AG / UBS SA / UBS Inc. is established with a registered office in Zurich and Basel.

Article 2

Business object

[1] The purpose of the Corporation is the operation of a bank. Its scope of operations extends to all types of banking, financial, advisory, trading and service activities in Switzerland and abroad.

[2] The Corporation may establish branches and representative offices as well as banks, finance companies and other enterprises of any kind in Switzerland and abroad, hold equity interests in these companies, and conduct their management.

[3] The Corporation is authorized to acquire, mortgage and sell real estate and building rights in Switzerland and abroad.

[4] The Corporation may borrow and invest money on the capital markets.

[5] The Corporation is part of the group of companies controlled by the group parent company UBS Group AG. It may promote the interests of the group parent company or other group companies. It may provide loans, guarantees and other kinds of financing and security for group companies.

Article 3

Duration

The duration of the Corporation shall not be limited by time.

Section 2
Share capital

Article 4

Share capital

The share capital of the Corporation is CHF 385,840,846.60, divided into 3,858,408,466 registered shares with a par value of CHF 0.10 each. The share capital is fully paid up.

Article 4a

Conditional capital

[1] The share capital may be increased in an amount not to exceed CHF 38,000,000 by the issuance of up to 380,000,000 fully paid registered shares with a nominal value of CHF 0.10 each through the voluntary or mandatory exercise of conversion rights and / or warrants granted in connection with the issuance of bonds or similar financial instruments by the Corporation or one of its group companies on national or international capital markets. The preemptive rights of the shareholders shall be excluded. The then current owners of conversion rights and / or warrants shall be entitled to subscribe for the new shares. The conditions of the conversion rights and / or warrants shall be determined by the Board of Directors.
The acquisition of shares through voluntary or mandatory exercise of conversion rights and / or warrants, as well as each subsequent transfer of the shares, shall be subject to the registration requirements set forth in Article 5 of the Articles of Association.
In connection with the issuance of convertible bonds or bonds with warrants or similar financial instruments, the Board of Directors shall be authorized to restrict or exclude the advance subscription rights of shareholders if such instruments are issued (i) on national or international capital markets or (ii) to one or more financial investors. If the advance subscription rights are restricted or excluded by the Board of Directors, the following shall apply: the issuance of such instrument shall be made at prevailing market conditions, and the new shares shall be issued pursuant to the relevant conditions of that financial instrument. Conversion rights may be exercised during a maximum 10-year period, and warrants may be exercised during a maximum 7-year pe-

riod, in each case from the date of the respective issuance. The issuance of the new shares upon voluntary or mandatory exercise of conversion rights and / or warrants shall be made at conditions taking into account the market price of the shares and / or comparable instruments with a market price at the time of the issuance of the relevant financial instrument.

Article 5

Share register and nominees

[1] A share register is maintained for the registered shares, in which owners' and usufructuaries' family and given names or the name of legal entities are entered, with their complete address and nationality or, in case of legal entities with their registered office. Shares held in joint accounts may be registered jointly with voting rights if all registered owners of the shares provide the declaration requested in paragraph 3 below.
[2] If the mailing address or registered office of a shareholder changes, the new address must be communicated to the Corporation. As long as this has not been done, all written communications will be sent to the address entered in the share register, this being valid according to the requirements of the law.
[3] Those who acquire registered shares shall, upon request, be entered in the share register as shareholders with voting rights if they expressly declare that they acquired these registered shares in their own names and for their own account. If the party acquiring the shares is not prepared to provide such a declaration, the Board of Directors may refuse to allow the shares to be entered with voting rights.
[4] The restriction on registration under paragraph 3 above also applies to shares acquired by the exercise of preemptive, option or conversion rights.
[5] The Board of Directors is authorized, after hearing the position of the registered shareholder or nominee affected, to strike the entry of a shareholder with voting rights from the share register retroactively with effect to the date of the entry, if it was obtained under false pretences. The party affected must be informed of the action immediately.
[6] The Board of Directors formulates general principles relating to the registration of fiduciaries / nominees and issues the necessary regulations to ensure compliance with the above provisions.

Article 6

Form of shares

[1] Registered shares of the Corporation will be, subject to paragraph 2, in the form of uncertificated securities (in the sense of the Swiss Code of Obligations) and intermediary-held securities (in the sense of the Intermediary-Held Securities Act).

[2] Following his registration in the share register, the shareholder may request the Corporation to issue a written statement in respect of his registered shares at any time; however, he has no entitlement to the printing and delivery of share certificates. In contrast, the Corporation may print and deliver share certificates for registered shares (single certificates, certificates representing multiples of shares or global certificates) at any time. It may withdraw registered shares issued as intermediary-held securities from the respective custody system. With the consent of the shareholder, the Corporation may cancel issued certificates which are returned to it without replacement.

Article 7

Exercise of rights

[1] The Corporation recognizes only one representative per share.

[2] Voting rights and associated rights may only be exercised in relation to the Corporation by a party entered in the share register as having the right to vote.

Section 3
Corporate bodies

A. General Meeting of Shareholders

Article 8

Authority

The General Meeting of Shareholders is the Corporation's supreme corporate body.

Article 9

Types of General Meetings
a. Annual General Meeting

The Annual General Meeting takes place every year within six months after the close of the financial year. The annual report and the report of the Auditors must be available for inspection by shareholders at the Corporation's registered offices at least twenty days before the meeting.

Article 10

b. Extraordinary General Meeting

[1] Extraordinary General Meetings are convened whenever the Board of Directors or the Auditors consider it necessary.
[2] Such a meeting must also be convened if demanded by a resolution of the shareholders in General Meeting or by a written request from one or more shareholders, representing together at least one tenth of the share capital, specifying the items to be included on the agenda and the proposals to be put forward.

Article 11

Convening

[1] The General Meeting shall be called by the Board of Directors, or if need be by the Statutory Auditors, at least twenty days before the meeting is to take place. The meeting is called by publishing a single notice in the publication of record designated by the Corporation. An invitation will be sent to all shareholders registered.
[2] The notice to convene the General Meeting shall specify the agenda with the proposals of the Board of Directors and proposals from shareholders, and, in the event of elections, the names of the proposed candidates.
[3] However, unless there is any opposition, the owners of all shares or their duly authorized representatives are empowered to hold a General Meeting without observance of the said formalities of notice. As long as the owners of all

shares are present in person or by proxy, such meeting may discuss or validly pass resolutions on all matters within the powers of a General Meeting.

Placing of items on the agenda

Article 12

[1] Shareholders representing shares with an aggregate par value of at least CHF 62,500 may submit proposals for matters to be placed on the agenda for consideration by the General Meeting, provided that their proposals are submitted in writing within the deadline published by the Corporation and include the actual motions to be put forward.
[2] No resolutions may be passed concerning matters which have not been duly placed on the agenda, except on a motion put forward at the General Meeting to call an Extraordinary General Meeting or a motion for a special audit to be carried out.

Chairmanship, tellers, minutes

Article 13

[1] The Chairman of the Board of Directors or, if the Chairman cannot attend, a Vice Chairman or another member designated by the Board of Directors, shall preside over the General Meeting and appoint a secretary and the necessary tellers.
[2] Minutes are kept of the proceedings and must be signed by the presiding chair of the meeting and the secretary.

Shareholder proxies

Article 14

[1] The Board of Directors issues procedural rules for participation and representation of shareholders at the General Meeting.
[2] A shareholder may be represented at the General Meeting by his legal representative or, under a written power of attorney, by another person who need not be a shareholder.
[3] The presiding chair of the meeting decides whether to recognize the power of attorney.

Voting right

Article 15

Each share conveys the right to cast one vote.

Resolutions, elections

Article 16

[1] Resolutions and elections are decided at the General Meeting by an absolute majority of the votes cast, excluding blank and invalid ballots, subject to these Articles of Association and the compulsory provisions of the law.

[2] A resolution to change article 18 of the Articles of Association, to remove one fourth or more of the members of the Board of Directors, or to delete or modify this article 16 paragraph 2 of the Articles of Association, must receive at least two thirds of the votes represented.
[3] The presiding chair of the meeting shall decide how voting on resolutions and elections are conducted.

Article 17

Powers

The General Meeting has the following powers:
a) to establish and amend the Articles of Association;
b) to elect the members and the Chairman of the Board of Directors;
c) to elect the Auditors;
d) to approve the annual report and to decide upon the appropriation of the net profit shown in the balance sheet;
e) to give the members of the Board of Directors and of the Executive Board a discharge; and
f) to take decisions on all matters reserved to the General Meeting by law or by the Articles of Association, or which are placed before it by the Board of Directors.

B. Board of Directors

Article 18

Number of Board members

The Board of Directors shall consist of at least five and no more than twelve members.

Article 19

Term of office

[1] The members of the Board of Directors and its Chairman are individually elected for a term of office which ends with the completion of the next Annual General Meeting.
[2] Members whose term of office has expired are immediately eligible for re-election.

Article 20

Organization

[1] Except for the election of the Chairman by the General Meeting, the Board of Directors shall constitute itself. It shall elect at least one Vice Chairman from among its members.
[2] The Board of Directors shall appoint its secretary, who need not be a member of the Board.
[3] If the office of the Chairman is vacant, the Board of Directors shall appoint a new Chairman from among its members for the remaining term of office.

Article 21

Convening, participation

[1] The Chairman shall convene the Board of Directors as often as business requires.
[2] The Board of Directors shall also be convened if one of its members or the President of the Executive Board submits a written request to the Chairman to hold such a meeting.

Article 22

Decisions

[1] Decisions of the Board of Directors are taken by an absolute majority of the votes present. In case of a tie, the presiding chair of the meeting shall cast the deciding vote.
[2] The number of members who must be present to constitute a quorum, and the modalities for the passing of resolutions shall be laid down by the Board of Directors in the Organization Regulations. No such quorum is required for decisions implementing, confirming and amending resolutions relating to capital increases.

Article 23

Duties, powers

[1] The Board of Directors has ultimate responsibility for the management of the Corporation and the supervision and control of its executive management.
[2] The Board of Directors may also take decisions on all matters which are not expressly reserved to the General Meeting or to another corporate body by law or by the Articles of Association.

Article 24

Ultimate responsibility for the management of the Corporation

The ultimate responsibility for the management of the Corporation comprises in particular:

a) preparing of and deciding on proposals to be placed before the General Meeting;
b) issuing the regulations necessary for the conduct of business and for the delineation of authority, in particular the Organization Regulations and the regulations governing the Internal Audit;
c) laying down the principles for the accounting, financial and risk controls and financial planning, in particular the allocation of equity resources and risk capital for business operations;
d) decisions on the strategy and other matters reserved to the Board of Directors under the Organization Regulations;
e) appointment and removal of (i) the President of the Executive Board, (ii) such other members of the Executive Board as the Organization Regulations require to be appointed by the Board of Directors, and (iii) the Internal Audit Executive; and
f) decisions on increasing the share capital, to the extent this falls within the authority of the Board of Directors (article 651 paragraph 4 of the Swiss Code of Obligations), on the report concerning an increase in capital (article 652e of the Swiss Code of Obligations) and on the ascertainment of capital increases and the corresponding amendments to the Articles of Association.

Article 25

Supervision, control

Supervision and control of the business management comprises in particular the following:

a) review of the annual report;
b) acceptance of regular reports covering the course of business and the position of the Corporation, the status and development of country, counterparty and market risks and the extent to which equity and risk capital are tied up due to business operations; and
c) consideration of reports prepared by the Auditors.

Article 26

Delegation, Organization Regulations

The Board of Directors may delegate part of its authority to one or more of its members or to third parties subject to articles 24 and 25 of the Articles of Association. The allocation of authority and functions shall be defined in the Organization Regulations.

Article 27

Signatures

The due and valid representation of the Corporation by members of the Board of Directors or further persons shall be determined in the Organization Regulations and in a special directive.

Article 28

Compensation

The Board of Directors shall determine the compensation of its members.

C. Executive Board

Article 29

Organization

The Executive Board is composed of the President of the Executive Board and at least three other members as further set forth in the Organization Regulations.

Article 30

Functions, authorities

[1] The Executive Board, acting under the leadership of the President of the Executive Board, is responsible for the management of the Corporation. It is the supreme executive body as defined by the Swiss Federal Law on Banks and Savings Banks. It implements the strategy decided by the Board of Directors and ensures the execution of the decisions of the Board of Directors. It is responsible for the Corporation's results.

[2] The responsibilities and authorities of the Executive Board and other management units designated by the Board of Directors are set forth in the Organization Regulations.

D. Auditors

Article 31

Term of office, authority and duties

[1] An auditing company subject to governmental supervision as required by law is to be appointed as Auditors.
[2] The shareholders in the General Meeting shall elect the Auditors for a term of office of one year. The rights and duties of the Auditors are determined by the provisions of the law.
[3] The General Meeting may appoint Special Auditors for a term of three years who provide the attestations required for capital increases.

Section 4
Financial statements and appropriation of profit, reserves

Article 32

Financial year

The statutory financial statements are closed on 31 December of each year.

Article 33

Appropriation of disposable profit

[1] At least 5% of the profit for the year is allocated to the general statutory reserve until such time as said reserve amounts to 20% of the share capital.

[2] The remaining profit is, subject to the provisions of the Swiss Code of Obligations and of the Federal Banking Act, at the disposal of the shareholders in General Meeting who may also use it for the formation of free or special reserves.

Article 34

Reserves

The shareholders in General Meeting determine the utilization of the reserves in accordance with the legal provisions acting upon the recommendations of the Board of Directors.

Section 5
Notices and jurisdiction

Article 35

Official publication media

Public notices appear in the Swiss Official Gazette of Commerce (in French "Feuille Officielle Suisse du Commerce", or German "Schweizerisches Handelsamtsblatt"). The Board of Directors may designate other publications as well.

Article 36

Jurisdiction

Jurisdiction for any disputes arising out of the corporate relationship shall be at both the registered offices of the Corporation, with the exception of legal actions in connection with the contestation or nullity of decisions of the General Meeting or the nullity of Board of Directors' decisions, where jurisdiction shall exclusively be with the courts of Zurich.

UBS AG
For the Board of Directors

Axel A. Weber	Markus Baumann
Chairman	Company Secretary

UBS AG
P.O. Box, CH-8098 Zurich
P.O. Box, CH-4002 Basel

www.ubs.com

UBS

Exhibit 1.2

UBS

Articles of Association UBS Group AG (UBS Group SA) (UBS Group Inc.)

5 March 2018

The present text is a translation of the original German Articles of Association ("Statuten") which constitute the definitive text and are binding in law.

In these Articles of Association, references to the generic masculine equally apply to both sexes.

Contents

Section 1
Name, registered office, business object and duration of the Corporation

Article 1

Name and registered office

A corporation limited by shares under the name of UBS Group AG / UBS Group SA / UBS Group Inc. is established with its registered office in Zurich.

Article 2

Purpose

1 The purpose of the Corporation is to acquire, hold, manage and sell direct and indirect participations in enterprises of any kind, in particular in the area of banking, financial, advisory, trading and service activities in Switzerland and abroad.
2 The Corporation may establish enterprises of any kind in Switzerland and abroad, hold equity interests in these enterprises, and conduct their management.
3 The Corporation is authorized to acquire, mortgage and sell real estate and building rights in Switzerland and abroad.
4 The Corporation may provide loans, guarantees and other kinds of financing and security for Group companies and borrow and invest money on the money and capital markets.

Article 3

Duration

The duration of the Corporation shall not be limited by time.

Section 2
Share capital

Share capital

Article 4

[1] The share capital of the Corporation is CHF 385,309,660.30, divided into 3,853,096,603 registered shares with a par value of CHF 0.10 each. The share capital is fully paid up.

[2] Registered shares may be converted into bearer shares and bearer shares into registered shares by resolution of the General Meeting.

Conditional capital

Article 4a

[1] The share capital may be increased by a maximum of CHF 12,766,462.20 through the issuance of a maximum of 127,664,622 fully paid registered shares with a par value of CHF 0.10 each upon exercise of employee options issued to employees and members of the management and of the Board of Directors of the Corporation and its subsidiaries. The preemptive rights and the advance subscription rights of the shareholders shall be excluded. The issuance of these options to employees and members of the management and of the Board of Directors of the Corporation and its subsidiaries will take place in accordance with the plan rules issued by the Board of Directors and its compensation committee. The acquisition of shares through the exercise of option rights as well as every subsequent transfer of these shares shall be subject to the registration requirements set forth in Article 5 of the Articles of Association.

[2] The share capital may be increased in an amount not to exceed CHF 38,000,000 by the issuance of up to 380,000,000 fully paid registered shares with a nominal value of CHF 0.10 each through the voluntary or mandatory exercise of conversion rights and/or warrants granted in connection with the issuance of bonds or similar financial instruments by the Corporation or one of its Group companies on national or international capital markets. The preemptive rights of the shareholders shall be excluded. The then current owners of conversion rights and/or warrants shall be entitled to subscribe for the new shares. The condi-

tions of the conversion rights and/or warrants shall be determined by the Board of Directors.
The acquisition of shares through voluntary or mandatory exercise of conversion rights and/or warrants, as well as each subsequent transfer of the shares, shall be subject to the registration requirements set forth in Article 5 of the Articles of Association.
In connection with the issuance of convertible bonds or bonds with warrants or similar financial instruments, the Board of Directors shall be authorized to restrict or exclude the advance subscription rights of shareholders if such instruments are issued (i) on national or international capital markets or (ii) to one or more financial investors. If the advance subscription rights are restricted or excluded by the Board of Directors, the following shall apply: the issuance of such instrument shall be made at prevailing market conditions, and the new shares shall be issued pursuant to the relevant conditions of that financial instrument. Conversion rights may be exercised during a maximum 10-year period, and warrants may be exercised during a maximum 7-year period, in each case from the date of the respective issuance. The issuance of the new shares upon voluntary or mandatory exercise of conversion rights and/or warrants shall be made at conditions taking into account the market price of the shares and/or comparable instruments with a market price at the time of the issuance of the relevant financial instrument.

Article 5

Share register and nominees

[1] A share register is maintained for the registered shares, in which owners' and usufructuaries' family and given names are entered, with their complete address and nationality (or registered office for legal entities). Shares held in joint accounts may be registered jointly with voting rights, if all registered owners of the shares provide the declaration requested in paragraph 3 below.

[2] If the mailing address of a shareholder changes, the new address must be communicated to the Corporation. As long as this has not been done, all written communications will be sent to the address entered in the share register, this being valid according to the requirements of the law.
[3] Those who acquire registered shares shall be entered in the share register as shareholders with voting rights if they expressly declare that they acquired these registered shares in their own names and for their own account. If the party acquiring the shares is not prepared to provide such a declaration, the Board of Directors may refuse to allow the shares to be entered with voting rights.
[4] The restriction on registration under paragraph 3 above also applies to shares acquired by the exercise of preemptive, option or conversion rights.
[5] The Board of Directors is authorized, after hearing the position of the registered shareholder or nominee affected, to strike the entry of a shareholder with voting rights from the share register retroactively with effect to the date of the entry, if it was obtained under false pretenses. The party affected must be informed of the action immediately.
[6] The Board of Directors formulates general principles relating to the registration of fiduciaries/nominees and issues the necessary regulations to ensure compliance with the above provisions.

Article 6

Form of shares

[1] Registered shares of the Corporation will be, subject to paragraph 2, in the form of uncertificated securities (in the sense of the Swiss Code of Obligations) and intermediary-held securities (in the sense of the Swiss Federal Intermediated Securities Act).
[2] Following his registration in the share register, the shareholder may request the Corporation to issue a written statement in respect of his registered shares at any time; however, he has no entitlement to the printing and delivery of share certificates. In contrast, the Corporation may print

and deliver share certificates for registered shares (single certificates, certificates representing multiples of shares or global certificates) at any time. It may withdraw registered shares issued as intermediary-held securities from the respective custody system. With the consent of the shareholder, the Corporation may cancel issued certificates which are returned to it without replacement.

Article 7

Exercise of rights

[1] The Corporation recognizes only one representative per share.

[2] Voting rights and associated rights may only be exercised in relation to the Corporation by a party entered in the share register as having the right to vote.

Section 3
Corporate bodies

A. General Meeting

Article 8

Authority

The General Meeting is the Corporation's supreme corporate body.

Article 9

Types of General Meetings
a. Annual General Meeting

The Annual General Meeting takes place every year within six months after the close of the financial year; the annual report, the compensation report and the reports of the Auditors must be available for inspection by shareholders at the Corporation's registered office at least twenty days before the meeting.

Article 10

b. Extraordinary General Meetings

1 Extraordinary General Meetings are convened whenever the Board of Directors or the Auditors consider it necessary.
2 Such a meeting must also be convened upon a resolution of the General Meeting or a written request from one or more shareholders representing together at least one tenth of the share capital, specifying the items to be included on the agenda and the proposals to be put forward.

Article 11

Convening

1 The General Meeting shall be called by the Board of Directors or, if need be, by the Auditors at least twenty days before the meeting is to take place. The meeting is called by publishing a single notice in the publication of record designated by the Corporation. An invitation will be sent to all registered shareholders.
2 The notice to convene the General Meeting shall specify the agenda with the proposals of the Board of Directors and proposals from shareholders and, in the event of elections, the names of the proposed candidates.

Placing of items on the agenda

Article 12

[1] Shareholders representing shares with an aggregate par value of CHF 62,500 may submit proposals for matters to be placed on the agenda for consideration by the General Meeting, provided that their proposals are submitted in writing within the deadline published by the Corporation and include the actual motion(s) to be put forward.
[2] No resolutions may be passed concerning matters which have not been duly placed on the agenda, except on a motion put forward at the General Meeting to call an Extraordinary General Meeting or a motion for a special audit to be carried out.

Chairmanship, tellers, minutes

Article 13

[1] The Chairman of the Board of Directors or, if the Chairman cannot attend, a Vice Chairman or another member designated by the Board of Directors, shall preside over the General Meeting and appoint a secretary and the necessary tellers.
[2] Minutes are kept of the proceedings and must be signed by the presiding chair of the meeting and the secretary.

Shareholder proxies

Article 14

[1] The Board of Directors issues procedural rules for participation and representation of shareholders at the General Meeting, including the requirements as to powers of attorney.
[2] A shareholder may only be represented at the General Meeting by his legal representative, under a written power of attorney by another shareholder eligible to vote or, under a written or electronic power of attorney, by the Independent Proxy.
[3] The presiding chair of the meeting decides whether to recognize the power of attorney.

Article 15

Independent Proxy

[1] The Independent Proxy shall be elected by the General Meeting for a term of office expiring after completion of the next Annual General Meeting.
[2] Re-election is permitted.
[3] If the Corporation does not have an Independent Proxy, the Board of Directors shall appoint the Independent Proxy for the next General Meeting.

Article 16

Voting right

Each share conveys the right to cast one vote.

Article 17

Resolutions, elections

[1] Resolutions and elections are decided at the General Meeting by an absolute majority of the votes cast, excluding blank and invalid ballots, subject to these Articles of Association and the compulsory provisions of the law.
[2] A resolution to change Article 19 of the Articles of Association, to remove one fourth or more of the members of the Board of Directors or to delete or modify Article 17 paragraph 2 of the Articles of Association must receive at least two thirds of the votes represented.
[3] The presiding chair of the meeting shall decide whether voting on resolutions and elections be conducted electronically, by a show of hands or by a written ballot. Shareholders representing at least 3% of the votes represented may always request that a vote or election take place electronically or by a written ballot.
[4] In the case of a written ballot, the presiding chair of the meeting may rule that only the ballots of those shareholders shall be collected who choose to abstain or to cast a negative vote, and that all other shares represented at the General Meeting at the time of the vote shall be counted in favor, in order to expedite the counting of the votes.

[5] The presiding chair of the meeting may order that a resolution or election be repeated if, in his view, the results of the vote are in doubt. In this case, the preceding resolution or election shall be deemed to have not occurred.

Article 18

Powers

The General Meeting has the following powers:

a) To establish and amend the Articles of Association
b) To elect the members and the Chairman of the Board of Directors and the members of the compensation committee
c) To elect the Auditors
d) To elect the Independent Proxy
e) To approve the management report and the Group financial statements
f) To approve the financial statements and to decide upon the appropriation of the net profit shown in the balance sheet
g) To approve the compensation for the Board of Directors and the Group Executive Board pursuant to Article 43 of the Articles of Association
h) To give the members of the Board of Directors and of the Group Executive Board a discharge
i) To take decisions on all matters reserved to the General Meeting by law or by the Articles of Association, or which are placed before it by the Board of Directors.

B. Board of Directors

Article 19

Number of Board members

The Board of Directors shall consist of at least six and no more than twelve members.

Article 20

Term of office

[1] The term of office for members of the Board of Directors and its Chairman expires after completion of the next Annual General Meeting.
[2] Members whose term of office has expired are immediately eligible for re-election.

Article 21

Organization

[1] Except for the election of the Chairman and the members of the compensation committee by the General Meeting, the Board of Directors shall constitute itself. It shall elect at least one Vice Chairman and a Senior Independent Director from among its members.
[2] The Board of Directors shall appoint its secretary, who need not be a member of the Board.
[3] If the office of the Chairman is vacant, the Board of Directors shall appoint a new Chairman from among its members for the remaining term of office.

Article 22

Convening, participation

[1] The Chairman shall convene the Board of Directors as often as business requires, but at least six times a year.
[2] The Board of Directors shall also be convened if one of its members or the Group Chief Executive Officer submits a written request to the Chairman to hold such a meeting.

Decisions

Article 23

[1] Decisions of the Board of Directors are taken by an absolute majority of the votes cast. In case of a tie, the presiding chair of the meeting shall cast the deciding vote.
[2] The number of members who must be present to constitute a quorum and the modalities for the passing of resolutions shall be laid down by the Board of Directors in the Organization Regulations. No such quorum is required for decisions confirming and amending resolutions relating to capital increases.

Duties and powers

Article 24

[1] The Board of Directors has ultimate responsibility for the management of the Corporation and the supervision and control of its executive management.
[2] The Board of Directors may also take decisions on all matters which are not expressly reserved to the General Meeting or to another corporate body by law or by the Articles of Association.

Ultimate responsibility for the management of the Corporation

Article 25

The ultimate responsibility for the management of the Corporation comprises in particular:

a) Preparing of and deciding on proposals to be placed before the General Meeting
b) Issuing the regulations necessary for the conduct of business and for the delineation of authority, in particular the Organization Regulations and the regulations governing the Group Internal Audit
c) Laying down the principles for the accounting, financial and risk controls and financial planning, in particular the allocation of equity resources and risk capital for business operations
d) Decisions on Group strategy and other matters reserved to the Board of Directors under the Organization Regulations

e) Appointment and removal of (i) the Group Chief Executive Officer, (ii) such other members of the Group Executive Board as the Organization Regulations require to be appointed by the Board of Directors and (iii) the Head of Group Internal Audit
f) Decisions on increasing the share capital, to the extent this falls within the authority of the Board of Directors (Article 651 paragraph 4 of the Swiss Code of Obligations), on the report concerning an increase in capital (Article 652e of the Swiss Code of Obligations) and on the ascertainment of capital increases and the corresponding amendments to the Articles of Association.

Article 26

Supervision, control

Supervision and control of the business management comprises in particular the following:

a) Review of the management report, Group and parent company financial statements, the compensation report as well as quarterly financial statements
b) Acceptance of regular reports covering the course of business and the position of the Group, the status and development of country, counterparty and market risks and the extent to which equity and risk capital are tied up due to business operations
c) Consideration of reports prepared by the Auditors.

Article 27

Delegation, Organization Regulations

The Board of Directors may delegate part of its authority to one or more of its members or to third parties, subject to Articles 25 and 26 of the Articles of Association. The allocation of authority and functions shall be defined in the Organization Regulations.

Article 28

Number of members, term of office and organization of the compensation committee

[1] The compensation committee shall consist of at least three members of the Board of Directors.
[2] The compensation committee shall organize itself within the limits of the law and of the Articles of Association. The Board of Directors shall appoint a chairperson.
[3] If there are vacancies on the compensation committee, the Board of Directors shall appoint the missing members from among its members for the remaining term of office.

Article 29

Duties and powers of the compensation committee

[1] The compensation committee supports the Board of Directors in establishing and reviewing the Corporation's compensation strategy and guidelines and in articulating the performance criteria relevant for determining individual total compensation for each member of the Group Executive Board. The compensation committee also prepares the proposals to the General Meeting regarding the compensation of the Board of Directors and of the Group Executive Board and may submit proposals to the Board of Directors on other compensation-related issues.
[2] The Board of Directors shall determine, and codify in the Organization Regulations, for which functions of the Group Executive Board the compensation committee shall establish and review financial and non-financial performance targets and assess the performance against these targets to determine compensation recommendations for the members of the Group Executive Board. In accordance with the Organization Regulations, these recommendations shall be presented to the Board of Directors for review or approval, subject to the approval by the General Meeting as set out in Article 43 of the Articles of Association. The compensation committee shall, in accordance with the Organization Regulations, also submit a proposal for the compensation for the members of the Board of Directors to the Board of Directors, subject to the approval by the

General Meeting as set out in Article 43 of the Articles of Association.
[3] The Board of Directors may delegate further tasks to the compensation committee which shall be determined in the Organization Regulations approved by the Board of Directors.

Article 30

Signatures

The due and valid representation of the Corporation by members of the Board of Directors or further persons shall be determined in the Organization Regulations and a specific directive.

Article 31

Mandates

[1] No member of the Board of Directors may hold more than four additional mandates in listed companies and five additional mandates in non-listed companies.
[2] The following mandates are not subject to the limitations set forth in paragraph 1:
a) Mandates in companies which are controlled by the Corporation or which control the Corporation
b) Mandates held at the request of the Corporation or companies controlled by it. No member of the Board of Directors shall hold more than ten such mandates
c) Mandates in associations, charitable organizations, foundations, trusts and employee welfare foundations. No member of the Board of Directors shall hold more than ten such mandates.

[3] Mandates shall mean mandates in the supreme governing body of a legal entity which is required to be registered in the commercial register or a comparable foreign register. Mandates in different legal entities which are under joint control are deemed one mandate.

Article 32

Terms of agreements relating to compensation

The Corporation or companies controlled by it may enter into agreements for a fixed term with members of the Board of Directors relating to their compensation. Duration and termination shall comply with the term of office and the law.

Article 33

Loans

Loans to the independent members of the Board of Directors shall be made in accordance with the customary business and market conditions. Loans to the non-independent members of the Board of Directors shall be made in the ordinary course of business on substantially the same terms as those granted to employees of the Corporation or companies controlled by it. The total amount of such loans shall not exceed CHF 20,000,000 per member.

C. Group Executive Board

Organization

Article 34

The Group Executive Board is composed of the Group Chief Executive Officer and at least three other members as further set forth in the Organization Regulations.

Functions, authorities

Article 35

[1] The Group Executive Board acting under the leadership of the Group Chief Executive Officer is responsible for the management of the Group. It is the supreme executive body as defined by the Swiss Federal Law on Banks and Savings Banks. It implements the Group strategy decided by the Board of Directors and ensures the execution of the decisions of the Board of Directors. It is responsible for the Group's results.

[2] The responsibilities and authorities of the Group Executive Board and other management units designated by the Board of Directors are set forth in the Organization Regulations.

Mandates

Article 36

[1] No member of the Group Executive Board may hold more than one additional mandate in a listed company and five additional mandates in non-listed companies, subject to approval by the Board of Directors.

[2] The following mandates are not subject to the limitations set forth in paragraph 1:

a) Mandates in companies which are controlled by the Corporation or which control the Corporation
b) Mandates held at the request of the Corporation or companies controlled by it. No member of the Group Executive Board shall hold more than ten such mandates
c) Mandates in associations, charitable organizations, foundations, trusts and employee welfare foundations. No member of the Group Executive Board shall hold more than eight such mandates.

[3] Mandates shall mean mandates in the supreme governing body of a legal entity which is required to be registered in the commercial register or a comparable foreign register. Mandates in different legal entities which are under joint control are deemed one mandate.

Article 37

Employment contract terms

[1] The term of employment contracts with the members of the Group Executive Board may be unlimited with a notice period of up to twelve months or may be fixed with a term of up to one year.
[2] The Corporation or companies controlled by it may enter into non-compete agreements with the members of the Group Executive Board for the time after termination of the employment agreement for a duration of up to one year. The respective consideration shall not exceed the total compensation paid or granted to such member of the Group Executive Board for the last full financial year prior to termination.

Article 38

Loans

Loans to the members of the Group Executive Board shall be made in the ordinary course of business on substantially the same terms as those granted to employees of the Corporation or companies controlled by it. The total amount of such loans shall not exceed CHF 20,000,000 per member.

D. Auditors

Article 39

Term of office, authority and duties

[1] An auditing company subject to governmental supervision as required by law is to be appointed as Auditors.
[2] The General Meeting shall elect the Auditors for a term of office of one year. The rights and duties of the Auditors are determined by the provisions of the law.
[3] The General Meeting may appoint Special Auditors for a term of three years, who provide the attestations required for capital increases.

Section 4
Financial statements and appropriation of profit, reserves

Article 40

Financial year

The financial statements and the Group financial statements are closed on 31 December of each year.

Article 41

Appropriation of disposable profit

[1] At least 5% of the profit for the year is allocated to the general statutory reserve until such time as said reserve amounts to 20% of the share capital.

[2] The remaining profit is, subject to the provisions of the Swiss Code of Obligations and of the Swiss Federal Banking Act, at the disposal of the General Meeting who may also use it for the formation of free or special reserves.

Article 42

Reserves

The General Meeting determines the utilization of the general statutory reserve in accordance with the legal provisions acting upon the proposal of the Board of Directors.

Section 5

Compensation of the members of the Board of Directors and the Group Executive Board

Approval of the compensation of the Board of Directors and the Group Executive Board

Article 43

[1] The General Meeting shall approve the proposals of the Board of Directors in relation to:

a) The maximum aggregate amount of compensation of the Board of Directors for the period until the next Annual General Meeting
b) The maximum aggregate amount of fixed compensation of the Group Executive Board for the following financial year
c) The aggregate amount of variable compensation of the Group Executive Board for the preceding financial year.

[2] The Board of Directors may submit for approval by the General Meeting deviating or additional proposals relating to the same or different periods.

[3] In the event the General Meeting does not approve a proposal of the Board of Directors, the Board of Directors shall determine, taking into account all relevant factors, the respective (maximum) aggregate amount or (maximum) partial amounts and submit the amount(s) so determined for approval by the General Meeting.

[4] The Corporation or companies controlled by it may pay or grant compensation prior to approval by the General Meeting, subject to subsequent approval.

General compensation principles

Article 44

[1] The compensation system of the Corporation is designed to align reward with sustainable performance and to support appropriate and controlled risk-taking.

[2] When determining individual compensation, the Board of Directors or, where delegated to it, the compensation committee takes into account position and level of responsibility of the recipient and performance of the Corporation and companies controlled by it. It ensures compliance with applicable regulatory requirements.

[3] Compensation may be paid or granted in the form of cash, shares, financial instruments or units, in kind, or in the form of benefits. The Board of Directors or, where delegated to it, the compensation committee determines the key features, such as grant, vesting, exercise and forfeiture conditions and applicable harmful acts provisions. The Board of Directors, or where delegated to it, the compensation committee may provide, among other things, for continuation, acceleration or removal of vesting and exercise conditions, for payment or grant of compensation assuming target achievement or for forfeiture in the event of predetermined events such as a change-of-control or termination of an employment or mandate agreement. The Corporation or companies controlled by it may procure any shares required to meet any resulting payment obligations through purchases in the market or, to the extent available, by using the Corporation's conditional share capital.
[4] Compensation may be paid or granted by the Corporation or companies controlled by it.

Article 45

Compensation of the Board of Directors

[1] Compensation of the members of the Board of Directors shall comprise a base remuneration and may comprise other compensation elements and benefits.
[2] Compensation of the members of the Board of Directors is intended to recognize the responsibility and governance nature of their role, to attract and retain qualified individuals and to ensure alignment with shareholders' interest.

Article 46

Compensation of the Group Executive Board

[1] Compensation of the members of the Group Executive Board shall comprise fixed and variable compensation elements.
[2] Fixed compensation shall comprise the base salary and may comprise other compensation elements and benefits.

[3] Variable compensation elements shall be governed by financial and non-financial performance measures that take into account the performance of the Corporation and/or parts thereof, targets in relation to the market, other companies or comparable benchmarks, short- and long-term strategic objectives and/or individual targets. The Board of Directors or, where delegated to it, the compensation committee determines the respective performance measures, the overall and individual performance targets, and their achievements.
[4] The Board of Directors or, where delegated to it, the compensation committee aims to ensure alignment with sustainable performance and appropriate risk-taking through adequate deferrals, forfeiture conditions, caps on compensation, harmful acts provisions and similar means with regard to parts of or all of the compensation. Parts of variable compensation shall be subject to a multi-year vesting period.
[5] If the maximum aggregate amount of compensation already approved by the General Meeting is not sufficient to also cover the compensation of a person who becomes a member of or is being promoted within the Group Executive Board after the General Meeting has approved the compensation, the Corporation or companies controlled by it shall be authorized to pay or grant each such Group Executive Board member a supplementary amount during the compensation period(s) already approved. The aggregate pool for such supplementary amounts per compensation period shall not exceed 40% of the average of total annual compensation paid or granted to the Group Executive Board during the previous three years.

Section 6
Notices and jurisdiction

Article 47

Official publication media

Public notices appear in the Swiss Official Gazette of Commerce (in French “Feuille Officielle Suisse du Commerce”, or German “Schweizerisches Handelsamtsblatt”). The Board of Directors may designate other publications as well.

Article 48

Jurisdiction

Jurisdiction for any disputes arising out of the corporate relationship shall solely be at the registered office of the Corporation.

Section 7
Disclosure of contributions in kind

Article 49

Contribution in kind

[1] In connection with the capital increase dated 26 November 2014, the Corporation acquires from UBS AG, Zurich and Basel, acting as contributor in kind and exchange agent in its own name but for account of certain shareholders of UBS AG, Zurich and Basel, who have tendered their shares in the course of the public exchange offer of the Corporation, 3,183,370,731 shares of UBS AG, Zurich and Basel, with a par value of CHF 0.10 each and a total value of CHF 32,718,731,974.95. In return, the Corporation has issued 3,183,370,731 registered shares in the Corporation with a par value of CHF 0.10 each to the contributor in kind.

[2] In connection with the capital increase dated 26 November 2014, the Corporation acquires from UBS Securities LLC, 1285 Avenue of the Americas, New York, NY 10019, U.S., acting as contributor in kind and exchange agent in its own name but for account of certain shareholders of UBS AG, Zurich and Basel, who have tendered their shares in the course of the public exchange offer of the Corporation, 201,494,824 shares of UBS AG, Zurich and Basel, with a par value of CHF 0.10 each and a total value of CHF 2,070,966,814.07. In return, the Corporation has issued 201,494,824 registered shares in the Corporation with a par value of CHF 0.10 each to the contributor in kind.

[3] In connection with the capital increase dated 26 November 2014, the Corporation acquires from UBS AG, Zurich and Basel, acting as contributor in kind in its own name and in relation to shares tendered during the initial offer period in the course of the public exchange offer of the Corporation, 90,490,886 shares of UBS AG, Zurich and Basel, with a par value of CHF 0.10 each and a total value of CHF 1,533,820,517.70. In return, the Corporation has issued, on a one-to-one basis, 90,490,886 registered shares in the Corporation with a par value of CHF 0.10 each to the contributor in kind.

[4] In connection with the capital increase dated 16 December 2014, the Corporation acquires from UBS AG, Zurich and Basel, acting as contributor in kind in its own name but for account of certain shareholders of UBS AG, Zurich and Basel, who (i) have tendered their shares in the course of the public exchange offer of the Corporation or (ii) have offered their registered shares for a private exchange under the terms of this public exchange offer, 229,042,914 shares of UBS AG, Zurich and Basel, with a par value of CHF 0.10 each and a total value of CHF 2,244,527,510.81. In return, the Corporation has issued, on a one-to-one basis, 229,042,914 registered shares in the Corporation with a par value of CHF 0.10 each to the contributor in kind.
[5] In connection with the capital increase dated 16 December 2014, the Corporation acquires from UBS Securities LLC, 1285 Avenue of the Americas, New York, NY 10019, U.S., acting as contributor in kind in its own name but for account of certain shareholders of UBS AG, Zurich and Basel, who have tendered their shares in the course of the public exchange offer of the Corporation, 12,510,852 shares of UBS AG, Zurich and Basel, with a par value of CHF 0.10 each and a total value of CHF 122,601,267.19. In return, the Corporation has issued, on a one-to-one basis, 12,510,852 registered shares in the Corporation with a par value of CHF 0.10 each to the contributor in kind.
[6] In connection with the capital increase dated 10 February 2015, the Corporation acquires from UBS AG, Zurich and Basel, 11,800,250 shares of UBS AG, Zurich and Basel, with a par value of CHF 0.10 each and a total value of CHF 130,476,501.09. In return, the Corporation has issued 11,800,250 registered shares in the Corporation with a par value of CHF 0.10 each to the contributor in kind.
[7] In connection with the capital increase dated 9 March 2015, the Corporation acquires from UBS AG, Zurich and Basel, 9,525,000 shares of UBS AG, Zurich and Basel, with a par value of CHF 0.10 each and a total value of

CHF 104,986,854.19. In return, the Corporation has issued, on a one-to-one basis, 9,525,000 registered shares in the Corporation with a par value of CHF 0.10 each to the contributor in kind.

[8] In connection with the capital increase dated 12 June 2015, the Corporation acquires from UBS AG, Zurich and Basel, 17,500,000 shares of UBS AG, Zurich and Basel, with a par value of CHF 0.10 each and a total value of CHF 199,898,088.25. In return, the Corporation has issued, on a one-to-one basis, 17,500,000 registered shares in the Corporation with a par value of CHF 0.10 each to the contributor in kind.

[9] In connection with the capital increase dated 28 August 2015, the Corporation acquires from UBS AG, Zurich and Basel, 88,825,456 shares of UBS AG, Zurich and Basel, with a par value of CHF 0.10 each and a total value of CHF 968,693,952.29. In return, the Corporation has issued, on a one-to-one basis, 88,825,456 registered shares in the Corporation with a par value of CHF 0.10 each to the contributor in kind.

UBS Group AG
P.O. Box, CH-8098 Zurich

www.ubs.com

UBS

Exhibit 4.17

High-trigger loss-absorbing additional tier 1 capital

Issuer	UBS Group Funding (Switzerland) AG
ISIN	CH0447353704
Issue Date	28.11.2018
Currency	SGD
Nominal (million)	700.0
Coupon Rate	5.875% [1]
Maturity Date	perpetual
First Call Date	28.11.2023

[1] Rate subject to change after first call date.

TERMS AND CONDITIONS OF THE NOTES

The terms and conditions of the Tier 1 Capital Notes issued by UBS Group Funding (Switzerland) AG and guaranteed by UBS Group AG are as follows:

1. **DEFINITIONS**

"**Additional Amounts**" has the meaning assigned to such term in clause (b) of Condition 9 (*Taxation*).

"**Additional Tier 1 Capital**" means, at any time, any item that qualifies as additional tier 1 capital (*zusätzliches Kernkapital*) under National Regulations at such time.

"**Affected Reset Interest Period**" has the meaning assigned to such term in subclause (c)(i) of Condition 5 (*Interest*).

"**Agency Agreement**" means the Agency Agreement dated as of the Issue Date, among the Issuer, the Guarantor, the Principal Paying Agent, the Calculation Agent and the other agents from time to time party thereto, as amended, supplemented or otherwise modified from time to time.

"**Adjustment Spread**" means, with respect to any Alternative Benchmark Rate determined in accordance with the provisions of clause (c) of Condition 5 (*Interest*), a spread (which may be positive or negative), or a formula or methodology for calculating such a spread, applied to such Alternative Benchmark Rate in order to reduce or eliminate, to the extent reasonably practicable in the circumstances, any economic prejudice or benefit (as applicable) to Holders as a result of the replacement of the Existing Reference Rate with such Alternative Benchmark Rate.

"**Alignment Event**" has the meaning assigned to such term in clause (a) of Condition 12 (*Substitution and Amendment*).

"**Alternative Benchmark Rate**" has the meaning assigned to such term in subclause (c)(i) of Condition 5 (*Interest*).

"**Alternative Loss Absorption Date**" has the meaning assigned to such term in clause (f) of Condition 7 (*Contingent Write-down*).

"**Alternative Relevant Page**" has the meaning assigned to such term in clause (c)(v)(A) of Condition 5 (*Interest*).

"**Alternative Relevant Time**" has the meaning assigned to such term in clause (c)(v)(A) of Condition 5 (*Interest*).

"**Auditor**" means the accounting firm (i) appointed by the Board of Directors of the Group Holding Company or the shareholders of the Group Holding Company, as the case may be, to provide, among other things, audit and/or review opinions on the Group Holding Company's financial statements, and (ii) approved by the FINMA in accordance with the Financial Market Supervisory Act (*Finanzmarktaufsichtsgesetz*) of 22 June 2007, as amended from time to time.

"**Authorised Signatories**" means any two authorised officers of the Issuer signing jointly.

"**Automatic Issuer Substitution**" has the meaning assigned to such term in subclause (b)(i) of Condition 14 (*Issuer Substitution*).

"**Automatic Issuer Substitution Effective Date**" means, with respect to any Guarantee Event, (i) if such Guarantee Event occurred pursuant to clause (A) of the definition thereof, the tenth Business Day after the occurrence of such Guarantee Event, and (ii) if such Guarantee Event occurred pursuant to clause (B) of the definition thereof, the thirtieth day of the 30-day period described in such clause (B) (or, if such thirtieth day is not a Business Day, the first Business Day immediately following such thirtieth day).

"**Balance Sheet Date**" means (i) with respect to any Ordinary Publication Date, the cut-off date for the measurement of the CET1 Ratio in the Quarterly Financial Accounts published on such Ordinary Publication Date, and (ii) with respect to any Extraordinary Publication Date, the cut-off date for the Reviewed Interim Measurement published upon the instruction of the FINMA on such Extraordinary Publication Date.

"**Bankruptcy Event**" means any of the following events with respect to the Issuer or the Guarantor: (i) the adjudication of bankruptcy (*Konkurseröffnung*) pursuant to articles 171, 189, 190, 191 or 192 of the DEBA, including, without limitation, in connection with article 725a of the Swiss Code, (ii) the granting of a provisional or definitive stay of execution (*provisorische oder definitive Nachlassstundung*) pursuant to article 293 et seq. of the DEBA, (iii) the ordering of restructuring proceedings (*Sanierungsverfahren*) pursuant to articles 28 to 32 of the FBA or pursuant to any successor or analogous Swiss law or regulation applicable to bank holding companies in Switzerland such as UBS Group AG, and/or (iv) the ordering of liquidation proceedings (*Liquidation*) pursuant to articles 33 to 37g of the FBA or pursuant to any successor or analogous Swiss law or regulation applicable to bank holding companies in Switzerland such as UBS Group AG; *provided, however*, that none of the following will constitute a Bankruptcy Event: (x) mere debt collection proceedings (*Betreibungsverfahren*) pursuant to article 38 *et seq.* of the DEBA, (y) proceedings in connection with a freezing order (*Arrestverfahren*) pursuant to article 271 *et seq.* of the DEBA, and/or (z) the institution of protective measures (*Schutzmassnahmen*) pursuant to article 26 of the FBA or pursuant to any successor or analogous Swiss law or regulation applicable to bank holding companies in Switzerland such as UBS Group AG, including, in the case of each of subclauses (x), (y) and (z), any steps (other than any steps described in clauses (i) through (iv) of this definition) taken under or in connection therewith.

"**BIS Regulations**" means, at any time, the capital adequacy standards and guidelines promulgated by the Basel Committee on Banking Supervision, as implemented by the FINMA in Switzerland at such time.

"**BIS Risk Weighted Assets**" means, as of any Balance Sheet Date, the aggregate amount, in Swiss francs, of risk-weighted assets of the Group as of such Balance Sheet Date, as determined by the Group Holding Company pursuant to the BIS Regulations applicable to the Group Holding Company as of such Balance Sheet Date, and as (i) disclosed in the Quarterly Financial Accounts published on the relevant Ordinary Publication Date or (ii) may be disclosed as a component of the Reviewed Interim Measurement published upon the instruction of the FINMA on the relevant Extraordinary Publication Date, as applicable. For the avoidance doubt, the term "**risk-weighted assets**" as used in this definition has the meaning assigned to such term in the BIS Regulations in effect as of the relevant Balance Sheet Date.

"**Business Day**" means a day (other than a Saturday or a Sunday) on which commercial banks and foreign exchange markets settle payments and are open for general business (including, without limitation, dealing in foreign exchange and foreign currency deposits) in London, Singapore and Zurich.

"**Calculation Agent**" means UBS AG, in its capacity as calculation agent for the Notes, and includes any successor Calculation Agent appointed in accordance with the terms of the Agency Agreement.

"**Calculation Amount**" means SGD 250,000.

"**Calculation Period**" means the relevant period for which interest is to be calculated from (and including) the first day in such period to (but excluding) the last day in such period.

"**Capital Adequacy Ordinance**" means the Ordinance concerning Capital Adequacy and Risk Diversification for Banks and Securities Dealers, which entered into force on 1 January 2013, and as amended from time to time, or any successor Swiss law or regulation.

"**CET1 Capital**" means, as of any Balance Sheet Date, the aggregate amount, in Swiss francs, of items that constitute common equity tier 1 capital of the Group as of such Balance Sheet Date, less any deductions from common equity tier 1 capital required to be made, in each case as determined by the Group Holding Company pursuant to the BIS Regulations applicable to the Group Holding Company as of such Balance Sheet Date, and as (i) disclosed in the Quarterly Financial Accounts published on the relevant Ordinary Publication Date or (ii) may be disclosed as a component of the Reviewed Interim Measurement published upon the instruction of the FINMA on the relevant

Extraordinary Publication Date, as applicable. For the avoidance of doubt, the term "**common equity tier 1 capital**" as used in this definition has the meaning assigned to such term in the BIS Regulations in effect as of the relevant Balance Sheet Date.

"**CET1 Ratio**" means, as of any Balance Sheet Date, the CET1 Capital as of such Balance Sheet Date, divided by the BIS Risk Weighted Assets as of such Balance Sheet Date, expressed as a percentage, such ratio (or the components thereof) as determined by the Group Holding Company, and (i) as disclosed in the Quarterly Financial Accounts published on the relevant Ordinary Publication Date or (ii) constituting (or as disclosed in) the Reviewed Interim Measurement published upon the instruction of the FINMA on the relevant Extraordinary Publication Date, as applicable.

"**Compliant Securities**" means securities issued by UBS Group AG or any of its subsidiaries that have economic terms not materially less favourable to a Holder than these Terms and Conditions (as reasonably determined by the Issuer), provided that

(a) such securities (A) include terms that provide for the same interest rate and principal from time to time applying to the Notes, (B) rank *pari passu* with the Notes and (C) preserve any existing rights under these Terms and Conditions to any accrued and unpaid interest that has not been satisfied;

(b) where such securities are issued by a subsidiary of UBS Group AG, UBS Group AG has issued a guarantee for the benefit of the Holders on substantially the same terms as the Guarantee;

(c) where the Notes that have been substituted or amended were listed immediately prior to their substitution or amendment, the relevant securities are listed on (A) the SIX Swiss Exchange or (B) such other internationally recognised stock exchange selected by the Issuer; and

(d) where the Notes that have been substituted or amended were rated by a rating agency immediately prior to such substitution or amendment, each such rating agency has ascribed, or announced its intention to ascribe and publish, an equal or higher rating to the relevant securities.

"**Contingent Write-down**" means the events described in subclauses (i) through (iii) of clause (d) of Condition 7 (*Contingent Write-down*).

"**Day Count Fraction**" means, in respect of any period, the number of days from (and including) the first day of such period to (but excluding) the last day of such period divided by 365.

"**DEBA**" means the Swiss Federal Debt Enforcement and Bankruptcy Act of 11 April 1889, as amended from time to time.

"**Distributable Items**" means, in respect of an Interest Payment Date, the aggregate of (i) net profits carried forward and (ii) freely distributable reserves, in each case, less any amounts that must be contributed to legal reserves under applicable law, all in UBS Group AG's reporting currency and as appearing in the Relevant Accounts.

"**Event of Default**" has the meaning assigned to such term in clause (a) of Condition 11 (*Events of Default*).

"**Existing Benchmark Rate**" has the meaning assigned to such term in clause (c) of Condition 5 (*Interest*).

"**Extraordinary Publication Date**" means the Business Day on which a Reviewed Interim Measurement is published upon the instruction of the FINMA, after the FINMA has determined that the conditions for issuing a Trigger Event Write-down Notice in accordance with Condition 7 (*Contingent Write-down*) have been met.

"**Extraordinary Trigger Event Notice Date**" has the meaning assigned to such term in subclause (b)(i) of Condition 7 (*Contingent Write-down*).

"**FBA**" means the Swiss Federal Act on Banks and Savings Institutions of 8 November 1934, as amended from time to time.

"**FINMA**" means the Swiss Financial Market Supervisory Authority FINMA and any successor thereto.

"**First Call Date**" means 28 November 2023.

"**Fixed Interest Rate**" means 5.875 per cent. per annum.

"**Former Residence**" has the meaning assigned to such term in subclause (a)(i)(E) of Condition 14 (*Issuer Substitution*).

"**Going-Concern LR Requirement**" means a requirement under National Regulations for systemically relevant banks (*systemrelevante Banken*) to hold a minimum amount of going-concern capital (*Eigenmittel zur ordentlichen Weiterführung der Bank*), which amount is set by reference to the leverage ratio (*Höchstverschuldungsquote*) of such bank.

"**Going-Concern RWA Requirement**" means a requirement under National Regulations for systemically relevant banks (*systemrelevante Banken*) to hold a minimum amount of going-concern capital (*Eigenmittel zur ordentlichen Weiterführung der Bank*), which amount is set by reference to the risk weighted assets (*risikogewichtete Positionen*) of such bank.

"**Group**" means, at any time, the Group Holding Company and all its subsidiaries and other entities that are included in the Group Holding Company's consolidated capital adequacy reports prepared pursuant to National Regulations.

"**Group Holding Company**" means, at any time, the top Swiss holding company at such time of the financial group to which UBS Group AG belongs for purposes of preparing consolidated capital adequacy reports pursuant to National Regulations. As at the Issue Date, the Group Holding Company is UBS Group AG.

"**Guarantee**" has the meaning assigned to such term in clause (a) of Condition 4 (*Guarantee*).

"**Guarantee Event**" has the meaning assigned to such term in subclause (b)(ii) of Condition 14 (*Issuer Substitution*).

"**Guarantor**" means UBS Group AG in its capacity as guarantor of the Notes.

"**Guarantor Junior Obligations**" has the meaning assigned to such term in clause (b) of Condition 4 (*Guarantee*).

"**Guarantor Parity Obligations**" has the meaning assigned to such term in clause (b) of Condition 4 (*Guarantee*).

"**Guarantor Senior Obligations**" has the meaning assigned to such term in clause (b) of Condition 4 (*Guarantee*).

"**Higher-Trigger Amount**" means, as of any Publication Date, the sum of (i) the maximum portion of the aggregate principal amount, in Swiss francs, of all Higher-Trigger Contingent Capital, if any, outstanding on the relevant Balance Sheet Date that could be converted into equity and/or fully or partially written down, or otherwise operate to increase the CET1 Capital, if a Higher-Trigger Write-down/Conversion Notice were delivered in accordance with the terms thereof, and (ii) the maximum portion of the aggregate principal amount, in Swiss francs, of all Higher-Trigger Contingent Capital, if any, issued after the relevant Balance Sheet Date, but prior to such Publication Date, that could be converted into equity and/or fully or partially written down, or otherwise operate to increase the CET1 Capital, if a Higher-Trigger Write-down/Conversion Notice were delivered in accordance with the terms thereof, in the case of each of clauses (i) and (ii), as determined by UBS Group AG. For purposes of clause (ii) of this definition and, in the case of an Extraordinary Publication Date, clause (i) of this definition, the aggregate principal amount of any Higher-Trigger Contingent Capital that is not denominated in Swiss francs will be converted into Swiss francs at the applicable prevailing exchange rate on the last Business Day preceding the relevant Publication Date, as determined by UBS Group AG. In the case of an Ordinary Publication

Date, for purposes of clause (i) of this definition, the aggregate principal amount of any Higher-Trigger Contingent Capital that is not denominated in Swiss francs will be converted into Swiss francs at the applicable exchange rate used for such purposes in the relevant Quarterly Financial Accounts.

"**Higher-Trigger Contingent Capital**" means any instrument issued by, or any other obligation of, any member of the Group that (i) is issued or owed to holders that are not members of the Group and (ii) is required pursuant to its terms to be converted into equity and/or fully or partially written down, or otherwise operating to increase the CET1 Capital, when the CET1 Ratio (or equivalent capital measure of the Group described in the terms and conditions thereof) falls below a threshold that is higher than the Write-down Threshold (with respect to the relevant Higher-Trigger Contingent Capital, its "**Higher-Trigger Threshold**").

"**Higher-Trigger Threshold**" has the meaning assigned to such term in the definition of the term "**Higher-Trigger Contingent Capital**".

"**Higher-Trigger Write-down/Conversion Date**" has the meaning assigned to such term in the definition of the term "Higher-Trigger Write-down/Conversion Notice".

"**Higher-Trigger Write-down/Conversion Notice**" means a notice delivered pursuant to the terms of any Higher-Trigger Contingent Capital that notifies the holders thereof that the CET1 Ratio (or similar measure or other event described in the terms and conditions of such Higher-Trigger Contingent Capital) has fallen below its Higher-Trigger Threshold and, consequently, that such Higher-Trigger Contingent Capital will be converted into equity and/or fully or partially written down, or otherwise operate to increase the CET1 Capital, as applicable, as of a particular date (such date, the "**Higher-Trigger Write-down/Conversion Date**"). For the avoidance of doubt, if the terms and conditions of such Higher-Trigger Contingent Capital permit the FINMA to waive the conversion into equity and/or write-down of such Higher-Trigger Contingent Capital notwithstanding the fact that the CET1 Ratio (or similar measure or other event described in the terms and conditions of such Higher-Trigger Contingent Capital) has fallen below Higher-Trigger Threshold, the non-issuance of such a waiver by the FINMA between the relevant Publication Date and the Trigger Event Notice Date shall be deemed equivalent to the delivery of a Higher-Trigger Write-down/Conversion Notice for purposes of subclause (b)(ii) of Condition 7 (*Contingent Write-down*).

"**Holder**" means, with respect to any Note, the person or persons holding such Note in a securities account (*Effektenkonto*) that is in its or their name, or, in the case of intermediaries (*Verwahrungsstellen*), the intermediary or intermediaries holding the Notes for its or their own account in a securities account (*Effektenkonto*) that is in its or their name.

"**Independent Adviser**" means an independent financial institution of international repute or other independent financial adviser experienced in the international capital markets, in each case, appointed by the Issuer at its own expense.

"**Independent Adviser Determination Cut-off Date**" has the meaning assigned to such term in subclause (c)(i) of Condition 5 (*Interest*).

"**Interest Payment Date**" has the meaning assigned to such term in subclause (a)(ii) of Condition 5 (*Interest*).

"**Interest Period**" means each period beginning on (and including) an Interest Payment Date (or, in the case of the first Interest Period, the Issue Date) and ending on (but excluding) the next Interest Payment Date.

"**Interest Rate**" means the Fixed Interest Rate and/or Reset Interest Rate, as the case may be.

"**Intermediary**" has the meaning assigned to such term in clause (b) of Condition 2 (*Amount and Denomination; Form and Transfer*).

"**Intermediated Securities**" has the meaning assigned to such term in clause (b) of Condition 2 (*Amount and Denomination; Form and Transfer*).

"**Issue Date**" means 28 November 2018.

"**Issuer**" means UBS Group Funding (Switzerland) AG in its capacity as issuer of the Notes.

"**Junior Obligations**" means (i) all classes of share capital and participation securities (if any) of the Issuer and (ii) all other obligations of the Issuer that rank, or are expressed to rank, junior to claims in respect of the Notes and/or any Parity Obligation.

"**Margin**" means 3.605 per cent. per annum.

"**National Regulations**" means, at any time, (i) the Swiss national banking and capital adequacy laws, and (ii) the capital adequacy regulations promulgated by the Swiss Federal Council (*Bundesrat*) or the FINMA and the interpretation thereof by the FINMA or any other competent Swiss authority, in the case of each of clauses (i) and (ii), directly applicable to UBS Group AG (and/or, if different, the Group Holding Company) and/or the Group at such time.

"**New Residence**" has the meaning assigned to such term in subclause (a)(i)(E) of Condition 14 (*Issuer Substitution*).

"**Notes**" means the SGD 700,000,000 5.875 per cent. Tier 1 Capital Notes issued by the Issuer on the Issue Date.

"**Ordinary Publication Date**" means each Business Day on which Quarterly Financial Accounts are published.

"**Ordinary Shares**" means the registered ordinary shares of UBS Group AG.

"**Ordinary Trigger Event Notice Date**" has the meaning assigned to such term in subclause (b)(i) of Condition 7 (*Contingent Write-down*).

"**Parity Obligations**" means (i) all obligations of the Issuer in respect of Tier 1 Instruments (excluding any such obligations that rank, or are expressed to rank, junior to claims in respect of the Notes), and (ii) any other securities or obligations (including, without limitation, any guarantee, credit support agreement or similar undertaking) of the Issuer that rank, or are expressed to rank, *pari passu* with claims in respect of the Notes and/or any Parity Obligation.

"**Paying Agent**" has the meaning assigned to such term in clause (b) of Condition 8 (*Payments*).

"**Payment Business Day**" means a day (other than a Saturday or a Sunday) on which commercial banks and foreign exchange markets settle payments and are open for general business (including, without limitation, dealing in foreign exchange and foreign currency deposits) in London and Singapore.

"**Permitted Transactions**" means:

(a) repurchases, redemptions or other acquisitions of any Ordinary Shares in connection with (x) any employment contract, benefit plan or similar arrangement with, or for the benefit of, any employees, officers, directors or consultants of any member of the Group, (y) a dividend reinvestment or shareholder share purchase plan or (z) the issuance of any Ordinary Shares (or securities convertible into, or exercisable for, Ordinary Shares) as consideration for an acquisition consummated by any member of the Group;

(b) market-making in Ordinary Shares as part of the securities business of any member of the Group;

(c) purchases of fractional interests in any Ordinary Shares pursuant to the conversion or exchange provisions of (x) such Ordinary Shares or (y) any security convertible into, or exercisable for, Ordinary Shares;

(d) redemptions or repurchases of Ordinary Shares pursuant to any shareholders' rights plan; and

(e) distributions in cash or in kind on, or repurchases, redemptions or other acquisitions of, any Ordinary Shares as a part of any solvent reorganisation, reconstruction, amalgamation or merger of any member of the Group, so long as such member (or the successor entity resulting from such reorganisation, reconstruction, amalgamation or merger) continues to be a member of the Group.

"**Principal Paying Agent**" means UBS AG, in its capacity as principal paying agent for the Notes, and includes any successor Principal Paying Agent appointed in accordance with the terms of the Agency Agreement.

"**Public Sector**" means the government of, or a governmental agency or the central bank in, the country of incorporation of the Group Holding Company.

"**Publication Date**" means an Ordinary Publication Date or an Extraordinary Publication Date, as the case may be.

"**Quarterly Financial Accounts**" means (i) the financial statements of the Group (including, without limitation, the notes thereto) in respect of a financial quarter published by the Group Holding Company, which have been reviewed by the Auditor in accordance with the International Standards on Auditing; *provided, however*, that, if the financial statements of the Group in respect of the last quarter of any year are not so reviewed, the term "Quarterly Financial Accounts" in respect of such quarter will mean instead the annual financial statements of the Group (including, without limitation, the notes thereto) in respect of such year, which have been audited by the Auditor in accordance with the International Standards on Auditing and are published in the annual report of the Group Holding Company for such year, or (ii) in the event that the Group does not publish quarterly financial statements as described in clause (i) of this definition, the financial disclosures published by the Group pursuant to and in compliance with FINMA Circular 2016/01 "Capital Adequacy Disclosures Banks", as amended from time to time, or pursuant to and in compliance with any successor circular or regulation applicable to the Group Holding Company, *provided* that such financial disclosures are published for each financial quarter and the interim earnings included in such disclosures have been reviewed by the Auditor in accordance with International Standards on Auditing.

"**Redemption Date**" has the meaning assigned to such term in subclause (e)(i) of Condition 6 (*Redemption and Purchase*).

"**Redemption Notice**" has the meaning assigned to such term in subclause (e)(i) of Condition 6 (*Redemption and Purchase*).

"**Reference Rate**" means, in relation to a Reset Interest Period and the Reference Rate Determination Date in relation to such Reset Interest Period:

(a) the rate appearing under the column headed "ASK" for a maturity of five years that appears under the caption "*Tullett Prebon – Rates – Interest Rate Swaps – Asia Pac – SGD*" on the Relevant Page as of the Relevant Time on such Reference Rate Determination Date; or

(b) if such rate does not appear on the Relevant Page at the Relevant Time on such Reference Rate Determination Date, the Reset Reference Bank Rate on such Reference Rate Determination Date.

"**Reference Rate Determination Date**" means, in relation to a Reset Interest Period, the day falling two Business Days prior to the Reset Date on which such Reset Interest Period commences.

"**Regulatory Event**" has the meaning assigned to such term in subclause (d)(ii) of Condition 6 (*Redemption and Purchase*).

"**Relevant Accounts**" means, in respect of any Interest Payment Date, the most recently published audited unconsolidated annual financial statements of UBS Group AG prepared in accordance with the Swiss Code.

"**Relevant Date**" means, with respect to any payment, (i) the date on which such payment first becomes due under the Notes (the "**Scheduled Due Date**"), or (ii) if the full amount of the money payable on the Scheduled Due Date has not been received by the Principal Paying Agent on or before the Scheduled Due Date, the date on which the full amount of the money due on the Scheduled Due Date has been received by the Principal Paying Agent.

"**Relevant Page**" means Bloomberg Screen TPIS or such other page as may replace it on Bloomberg or, as the case may be, on such other information service that may replace Bloomberg, in each case, as may be nominated by the person providing or sponsoring the information appearing there for the purpose of displaying rates comparable to the Reference Rate.

"**Relevant Time**" means 11:00 a.m. (London time).

"**Relevant Swiss Issuer**" means, at any time, any bank, or any member of a banking group (including, without limitation, the Group), that is subject to a Going-Concern LR Requirement and a Going-Concern RWA Requirement at such time.

"**Reset Date**" means the First Call Date and each day which falls on the fifth anniversary of the immediately preceding Reset Date.

"**Reset Interest Amount**" has the meaning assigned to such term in clause (b) of Condition 5 (*Interest*).

"**Reset Interest Period**" means each period from (and including) any Reset Date and ending on (but excluding) the next Reset Date.

"**Reset Interest Rate**" means, in relation to any Reset Interest Period, the sum of the Margin and the Reference Rate in relation to such Reset Interest Period.

"**Reset Reference Bank Rate**" means, in relation to a Reset Interest Period and the Reference Rate Determination Date in relation to such Reset Interest Period, the percentage rate determined by the Calculation Agent as follows:

(a) the Calculation Agent will request the principal Singapore offices of each of the Reset Reference Banks to provide it with such Reset Reference Bank's swap offer rates for a duration of five years at close of business in Singapore on the Business Day immediately following the Reference Rate Determination Date; and

(b) if at least three quotations are provided, the Reset Reference Bank Rate will be the arithmetic mean of the quotations provided, eliminating the highest quotation (or, in the event of equality, one of the highest) and the lowest quotation (or, in the event of equality, one of the lowest);

(c) if only two quotations are provided, the Reset Reference Bank Rate will be the arithmetic mean of the quotations provided; and

(d) if only one quotation is provided, the Reset Reference Bank Rate will be the quotation provided; and

(e) if no quotations are provided, the Reset Reference Bank Rate for the relevant Reset Interest Period will be (i) in the case of each Reset Interest Period other than the Reset Interest Period commencing on the First Call Date, the Reference Rate in respect of the immediately preceding Reset Interest Period, or (ii) in the case of the Reset Interest Period commencing on the First Call Date, 2.270 per cent. per annum.

"**Reset Reference Banks**" means five major banks in the Singapore interbank market, as selected by the Issuer after consultation with the Calculation Agent.

"**Reviewed Interim Measurement**" means an interim measurement of the CET1 Ratio, with respect to which the Auditor has performed procedures in accordance with the International Standard on Related Services (and relevant Swiss standards and practices) applicable to agreed-upon procedures engagements.

"**Scheduled Due Date**" has the meaning assigned to such term in the definition of the term "Relevant Date".

"**Senior Obligations**" means all obligations of the Issuer that are unsubordinated or that are subordinated and do not constitute either Junior Obligations or Parity Obligations.

"**SGD**" means Singapore dollars.

"**Substitute Issuer**" has the meaning assigned to such term in subclause (a)(i) of Condition 14 (*Issuer Substitution*).

"**Substitution Documents**" has the meaning assigned to such term in subclause (a)(i)(D) of Condition 14 (*Issuer Substitution*).

"**Substitution or Amendment Effective Date**" has the meaning assigned to such term in subclause (a)(iii) of Condition 12 (*Substitution and Amendment*).

"**Substitution or Amendment Notice**" has the meaning assigned to such term in subclause (a)(iii) of Condition 12 (*Substitution and Amendment*).

"**Swiss Code**" means the Swiss Code of Obligations, as amended from time to time.

"**Tax Event**" has the meaning assigned to such term in subclause (c)(ii) of Condition 6 (*Redemption and Purchase*).

"**Tax Jurisdiction**" means Switzerland.

"**Taxes**" has the meaning assigned to such term in clause (a) of Condition 9 (*Taxation*).

"**Tier 1 Capital**" means Additional Tier 1 Capital or any item that qualifies as common equity tier 1 capital pursuant to National Regulations.

"**Tier 1 Instruments**" means any and all (i) securities or other obligations (other than Tier 1 Shares) issued by UBS Group AG or (ii) shares, securities, participation securities or other obligations (other than Tier 1 Shares) issued by a subsidiary of UBS Group AG and having the benefit of a guarantee, credit support agreement or similar undertaking of UBS Group AG, each of which shares, securities, participation securities or other obligations described in clauses (i) and (ii) of this definition qualify, or are issued in respect of a security that qualifies, as Tier 1 Capital of the Group and/or UBS Group AG (without regard to quantitative limits on such capital) on a consolidated (*Finanzgruppe*) or on an unconsolidated (*Einzelinstitut*) basis.

"**Tier 1 Shares**" means all classes of share capital and participation certificates (if any) of UBS Group AG or any subsidiary of UBS Group AG that qualify as common equity tier 1 capital of the Group and/or UBS Group AG under National Regulations on a consolidated (*Finanzgruppe*) or on an unconsolidated (*Einzelinstitut*) basis.

"**Trigger Breach Determination Date**" has the meaning assigned to such term in subclause (b)(i) of Condition 7 (*Contingent Write-down*).

"**Trigger CET1 Ratio**" means, as of any Publication Date, (i) the sum of (x) the CET1 Capital as of the relevant Balance Sheet Date and (y) the Higher-Trigger Amount as of such Publication Date, divided by (ii) the BIS Risk Weighted Assets as of the relevant Balance Sheet Date, expressed as a percentage.

"**Trigger Event**" has the meaning assigned to such term in subclause (a)(ii) of Condition 7 (*Contingent Write-down*).

"**Trigger Event Notice Date**" means an Ordinary Trigger Event Notice Date or an Extraordinary Trigger Event Notice Date, as the case may be.

"**Trigger Event Write-down Date**" has the meaning assigned to such term in the definition of the term "**Trigger Event Write-down Notice**".

"**Trigger Event Write-down Notice**" means, with respect to any Publication Date, a notice (i) stating that (x) the Trigger CET1 Ratio as of such Publication Date is less than the Write-down Threshold, and (y) a Contingent Write-down will take place and (ii) specifying the date on which the Contingent Write-down will take place, which date shall, subject to postponement pursuant to subclause (b)(ii) of Condition 7 (*Contingent Write-down*), be no later than ten Business Days after the date of such notice (the "**Trigger Event Write-down Date**").

"**Viability Event**" has the meaning assigned to such term in subclause (c)(ii) of Condition 7 (*Contingent Write-down*).

"**Viability Event Write-down Date**" has the meaning assigned to such term in subclause (c)(i) of Condition 7 (*Contingent Write-down*).

"**Viability Event Write-down Notice**" has the meaning assigned to such term in subclause (c)(ii) of Condition 7 (*Contingent Write-down*).

"**Write-down Date**" means, with respect to any Contingent Write-down, the Trigger Event Write-down Date or Viability Event Write-down Date, as applicable.

"**Write-down Notice**" means, with respect to any Contingent Write-down, the relevant Trigger Event Write-down Notice or Viability Event Write-down Notice, as applicable.

"**Write-down Notice Date**" means, with respect to any Contingent Write-down, the date of the relevant Write-down Notice.

"**Write-down Threshold**" means 7 per cent.

2. AMOUNT AND DENOMINATION; FORM AND TRANSFER

(a) Amount and denomination

The initial aggregate principal amount of the Notes will be SGD 700,000,000. The Notes will be issued to Holders in minimum denominations of SGD 250,000 and integral multiples of SGD 250,000 in excess thereof. The principal amount of the Notes may be written down in the circumstances and in the manner described in Condition 7 (*Contingent Write-down*). The Notes may only be held and transferred in minimum denominations of SGD 250,000 and integral multiples of SGD 250,000 in excess thereof.

(b) Uncertificated securities

The Notes are issued in uncertificated form as uncertificated securities (*Wertrechte*) in accordance with article 973c of the Swiss Code. The uncertificated securities (*Wertrechte*) will be created by the Issuer by means of a registration in its register of uncertificated securities (*Wertrechtebuch*). Such uncertificated securities will then be entered into the main register (*Hauptregister*) of SIX SIS Ltd or any other intermediary in Switzerland recognised for such purposes by SIX Swiss Exchange Ltd (SIX SIS Ltd or any such other intermediary, the "**Intermediary**"). Once the uncertificated securities are registered in the main register (*Hauptregister*) of the Intermediary and entered into the accounts of one or more participants of the Intermediary, the Notes will constitute intermediated securities (*Bucheffekten*) within the meaning of the Swiss Federal Intermediated Securities Act (*Bucheffektengesetz*) ("**Intermediated Securities**").

So long as the Notes are Intermediated Securities, the Notes may only be transferred by the entry of the transferred Notes in a securities account of the transferee.

The records of the Intermediary will determine the number of Notes held through each participant in the Intermediary.

Neither the Issuer nor any Holder nor any other person shall at any time have the right to effect or demand the conversion of the uncertificated securities (*Wertrechte*) into, or the delivery of, a global note (*Globalurkunde*) or definitive Notes (*Wertpapiere*).

3. STATUS AND SUBORDINATION

(a) Status

The Notes constitute direct, unsecured and subordinated obligations of the Issuer and rank *pari passu* and without any preference among themselves. The rights and claims of the Holders against the Issuer under the Notes are subordinated as described in clause (b) of this Condition 3.

(b) Subordination

In the event of (i) a Bankruptcy Event with respect to the Issuer or (ii) an order being made, or an effective resolution being passed, for the liquidation or winding-up of the Issuer (except, in any such case, a solvent liquidation or winding-up of the Issuer solely for the purposes of a reorganisation, reconstruction or amalgamation of the Issuer or the substitution in place of the Issuer of a successor in business to the Issuer, the terms of which reorganisation, reconstruction, amalgamation or substitution (x) have previously been approved by a valid resolution of the Holders and (y) do not provide that the Notes shall become redeemable in accordance with these Terms and Conditions), the rights and claims of the Holders against the Issuer in respect of or arising under (including, without limitation, any damages awarded for breach of any obligation under) the Notes will, subject to any obligations that are mandatorily preferred by law, rank (A) junior to the rights and claims of all holders of Senior Obligations, (B) *pari passu* with the rights and claims of holders of Parity Obligations and (C) senior to the rights and claims of holders of Junior Obligations; *provided*, *however*, that, if a Bankruptcy Event with respect to the Guarantor has occurred pursuant to clause (i) or (iv) of the definition thereof, any amount payable to Holders in respect of or arising under the Notes (including, for the avoidance of doubt, under the Guarantee) shall not exceed the amount per Note that would be paid on a liquidation distribution out of the assets of the Guarantor had the Notes and any Parity Obligations ranked *pari passu* with Guarantor Parity Obligations.

(c) Claims subject to a Contingent Write-down

Any claim of any Holder in respect of or arising under the Notes (including, without limitation, any claim in relation to any unsatisfied payment obligation of the Issuer subject to enforcement by any Holder pursuant to Condition 11 (*Events of Default*) or in relation to the occurrence of any other Event of Default) will be subject to, and superseded by, clause (d) of Condition 7 (*Contingent Write-down*), irrespective of whether the relevant Write-down Notice has been given prior to or after the occurrence of an Event of Default or any other event.

4. **GUARANTEE**

(a) Guarantee of the Notes

The Guarantor has, pursuant to and in accordance with the terms and conditions of a guarantee dated as of the Issue Date, and governed by Swiss law (the "**Guarantee**"), undertaken for the benefit of the Holders irrevocably and unconditionally to guarantee the payment of principal and interest and any other amounts due under the Notes. The obligations of the Guarantor under the Guarantee constitute direct and unsecured obligations of the Guarantor, subordinated as described in clause (b) of this Condition 4. Upon the occurrence of a Contingent Write-down, the Guarantee will cease to exist as of the relevant Write-down Date and all rights of any Holder for payment of any amounts under the Guarantee will become null and void, irrespective of whether such amounts have become due and payable prior to, or whether any Holder has requested payment of such amounts from the Guarantor under the Guarantee prior to, the relevant Write-down Notice Date or the Write-down Date. Upon the occurrence of an Automatic Issuer Substitution or if the Issuer voluntarily substitutes the Guarantor for itself as principal debtor under the Notes in accordance with clause (a) of Condition 14 (*Issuer Substitution*), the Guarantee will cease to exist.

(b) Subordination

The Guarantee provides that in the event of (i) a Bankruptcy Event with respect to the Guarantor or (ii) an order being made, or an effective resolution being passed, for the liquidation or winding-up of the Guarantor (except, in any such case, a solvent liquidation or winding-up of the Guarantor solely for the purposes of a reorganisation, reconstruction or amalgamation of the Guarantor or the substitution in place of the Guarantor of a successor in business to the Guarantor, the terms of which reorganisation, reconstruction, amalgamation or substitution (x) have previously been approved by a valid resolution of the Holders and (y) do not provide that the Notes shall become redeemable in accordance with these Terms and Conditions), the rights and claims of the Holders against the Guarantor in respect of or arising under (including, without limitation, any damages awarded for breach of any obligation under) the Guarantee will, subject to any obligations that are mandatorily preferred by law, rank (A) junior to the rights and claims of all holders of Guarantor Senior Obligations, (B) *pari passu* with the rights and claims of holders of Guarantor Parity Obligations and (C) senior to the rights and claims of holders of Guarantor Junior Obligations.

For purposes of this Condition 4,

(i) "**Guarantor Junior Obligations**" means (A) all classes of share capital and participation securities (if any) of the Guarantor and (B) all other obligations of the Guarantor that rank, or are expressed to rank, junior to claims in respect of the Guarantee and/or any Guarantor Parity Obligation.

(ii) "**Guarantor Parity Obligations**" means (A) all obligations of the Guarantor in respect of Tier 1 Instruments (excluding any such obligations that rank, or are expressed to rank, junior to claims in respect of the Guarantee), and (B) any other securities or obligations (including, without limitation, any guarantee, credit support agreement or similar undertaking) of the Guarantor that rank, or are expressed to rank, *pari passu* with claims in respect of the Guarantee and/or any Guarantor Parity Obligation.

(iii) "**Guarantor Senior Obligations**" means all obligations of the Guarantor that are unsubordinated or that are subordinated and do not constitute either Guarantor Junior Obligations or Guarantor Parity Obligations.

5. INTEREST

(a) Interest Payment Dates

(i) Subject to Condition 7 (*Contingent Write-down*) and clause (j) of this Condition 5, the Notes will bear interest on their principal amount (A) from (and including) the Issue Date to (but excluding) the First Call Date, at the Fixed Interest Rate, and (B) thereafter, at the applicable Reset Interest Rate.

(ii) Subject to Condition 7 (*Contingent Write-down*) and clause (j) of this Condition 5, interest on the Notes will be payable semi-annually in arrear on 28 May and 28 November of each year (each, an "**Interest Payment Date**"), commencing on 28 May 2019.

(b) Determination of Reference Rate in relation to a Reset Interest Period

With respect to each Reset Interest Period and subject to clause (c) of this Condition 5, the Calculation Agent will, as soon as practicable after the Relevant Time on the Reference Rate Determination Date in relation to such Reset Interest Period, determine the Reference Rate and the Reset Interest Rate for such Reset Interest Period and calculate the amount of interest payable per Calculation Amount on the Interest Payment Date in relation to each Interest Period falling in such Reset Interest Period (each, a "**Reset Interest Amount**").

(c) Benchmark replacement

If the Issuer (in consultation with the Calculation Agent) determines prior to any Reference Rate Determination Date that the rate referred to in clause (a) of the definition of Reference Rate (the "**Existing Benchmark Rate**") has been discontinued, then the following provisions shall apply (subject to the subsequent operation of this clause (c)):

(i) the Issuer shall use reasonable endeavours to appoint an Independent Adviser to determine in the Independent Adviser's discretion, in accordance with subclause (iv) below, an alternative rate (the "**Alternative Benchmark Rate**") no later than three Business Days prior to the Reference Rate Determination Date relating to the next succeeding Reset Interest Period (such Business Day, the

"**Independent Adviser Determination Cut-off Date**", and such next succeeding Reset Interest Period, the "**Affected Reset Interest Period**") for purposes of determining the Reference Rate in respect of the Affected Reset Interest Period and all Reset Interest Periods thereafter;

(ii) if prior to the Independent Adviser Determination Cut-off Date the Issuer is unable to appoint an Independent Adviser or the Independent Adviser appointed by the Issuer fails to determine an Alternative Benchmark Rate in accordance with subclause (iv) below, then the Issuer (in consultation with the Calculation Agent) may determine in its discretion, in accordance with subclause (iv) below, the Alternative Benchmark Rate for purposes of determining the Reference Rate in respect of the Affected Reset Interest Period and all Reset Interest Periods thereafter;

(iii) if subclause (ii) above applies and the Issuer is unable or unwilling to determine the Alternative Benchmark Rate prior to the Reference Rate Determination Date relating to the Affected Reset Interest Period in accordance with subclause (iv) below, the Reference Rate in respect of the Affected Reset Interest Period shall be equal to the Reference Rate in respect of the immediately preceding Reset Interest Period (or, if there is no preceding Reset Interest Period, the Reset Interest Rate applicable to the Affected Reset Interest Period will be equal to the Fixed Interest Rate); *provided, however*, that, if this subclause (iii) applies to the Affected Reset Interest Period, the Reset Interest Rate for all succeeding Reset Interest Periods shall be the Reset Interest Rate applicable to the Affected Reset Interest Period as determined in accordance with this subclause (iii) unless (A) the Issuer, in its sole discretion, elects to determine an Alternative Benchmark Rate in respect of any such succeeding Reset Interest Period and all Reset Interest Periods thereafter in accordance with the processes set out in this clause (c), and (B) an Alternative Benchmark Rate is so determined;

(iv) in the case of any determination of an Alternative Benchmark Rate pursuant to subclause (i) or (ii) above, the Alternative Benchmark Rate shall be such rate as the Independent Adviser or the Issuer (in consultation with the Calculation Agent and acting in good faith and a commercially reasonable manner), as applicable, determines in its reasonable discretion has replaced the Existing Benchmark Rate in customary market usage, or, if the Independent Adviser or the Issuer, as applicable, determines in its reasonable discretion that there is no such rate, such other rate as the Independent Adviser or the Issuer (in consultation with the Calculation Agent and acting in good faith and a commercially reasonable manner) determines in its reasonable discretion is most comparable to the Existing Benchmark Rate; and

(v) if the Independent Adviser or the Issuer determines an Alternative Benchmark Rate in accordance with the above provisions of this clause (c),

(A) the Independent Adviser (in the case of subclause (2) below, in consultation with the Issuer) or the Issuer (as the case may be) shall also, following consultation with the Calculation Agent, determine in its reasonable discretion (1) the method for obtaining the Alternative Benchmark Rate, including the screen page on or source from which the Alternative Benchmark Rate appears or is obtained (the "**Alternative Relevant Page**"), and the time at which the Alternative Benchmark Rate appears on, or is obtained from, the Alternative Relevant Page (the "**Alternative Relevant Time**"), (2) whether to apply an Adjustment Spread to the Alternative Benchmark Rate and, if so, the Adjustment Spread, which Adjustment Spread must be recognised or acknowledged as being in customary market usage in international debt capital markets transactions that reference the Existing Benchmark Rate, where such rate has been replaced by the Alternative Benchmark Rate, and (3) any alternative method for determining the Reference Rate if such Alternative Benchmark Rate is unavailable on the relevant Reset

Determination Date, which alternative method shall be consistent with any Alternative Benchmark Rate that has broad market support;

(B) for the Affected Reset Interest Period and all Reset Interest Periods thereafter, (1) clause (a) of the definition of Reference Rate shall be amended as contemplated in clause (b) of Condition 12 (*Substitution and Amendment*) to give effect to the determination described in subclause (A)(1) above and any Adjustment Spread determined pursuant to subclause (A)(2) above, and (2) clause (b) of the definition of Reference Rate shall be amended as contemplated in clause (b) of Condition 12 (*Substitution and Amendment*) to give effect to the determination described in subclause (A)(3) above;

(C) references to the Relevant Page and to the Relevant Time in these Terms and Conditions shall be deemed to be references to the Alternative Relevant Page and the Alternative Relevant Time;

(D) if any changes to the definitions of Day Count Fraction, Business Day, Payment Business Day and/or Reference Rate Determination Date are necessary in order to implement the amendments described in subclause (B) above and, if so, such definitions shall be amended as contemplated in clause (b) of Condition 12 (*Substitution and Amendment*) to reflect such changes; and

(E) the Issuer shall promptly give notice to the Holders in accordance with Condition 13 (*Notices*) specifying the Alternative Benchmark Rate (including any Adjustment Spread determined pursuant to subclause (A)(2) above), the Alternative Relevant Page, the Alternative Relevant Time, any alternative method for determining the Reference Rate described in subclause (A)(3) above, and any amendments implemented pursuant to clause (b) of Condition 12 (*Substitution and Amendment*) as described in subclause (D) above.

(d) Publication of Reset Interest Rate and interest amount payable upon redemption

With respect to each Reset Interest Period, as soon as practicable after such determination but in any event not later than the relevant Reset Date, the Calculation Agent will cause (i) the relevant Reset Interest Rate and the relevant Reset Interest Amount determined by it, together with the Interest Payment Date in relation to each Interest Period falling in such Reset Interest Period, to be notified to the Issuer and the Paying Agents and (ii) the relevant Reset Interest Rate determined by it to be notified to any stock exchange or other relevant authority on which the Notes are at the relevant time listed and to be published in accordance with Condition 13 (*Notices*).

The Calculation Agent shall calculate any interest amount payable on the Redemption Date (if the Notes are to be redeemed pursuant to Condition 6 (*Redemption and Purchase*) and cause such interest amount to be notified to Issuer and the Paying Agents and to any stock exchange or other relevant authority on which the Notes are at the relevant time listed and to be published in accordance with Condition 13 (*Notices*) no later than two Business Days prior to the Redemption Date.

(e) Calculation of amount of interest per Calculation Amount

Subject to Condition 7 (*Contingent Write-down*) and clause (j) of this Condition 5:

(i) the amount of interest payable per Calculation Amount on each Interest Payment Date from the Issue Date to (but excluding) the First Call Date in respect of the Notes will be calculated by:

(A) applying the Fixed Interest Rate to the Calculation Amount;

(B) multiplying the product thereof by the Day Count Fraction; and

(C) rounding the resulting figure to the nearest cent (half a cent being rounded upwards); and

(ii) if interest is required to be paid in respect of a Note on any other date (including, for the avoidance of doubt, the Reset Interest Amount), the amount of interest payable per Calculation Amount will be calculated by:

(A) applying the applicable Interest Rate to the Calculation Amount;

(B) multiplying the product thereof by the Day Count Fraction; and

(C) rounding the resulting figure to the nearest cent (half a cent being rounded upwards).

(f) Calculation of amount of interest per Note

Subject to Condition 7 (*Contingent Write-down*) and clause (j) of this Condition 5, the amount of interest payable in respect of a Note will be the product of:

(i) the amount of interest per Calculation Amount; and

(ii) the number by which the Calculation Amount is required to be multiplied to equal the denomination of such Note.

(g) Notifications, etc. to be final

All notifications, opinions, determinations, certificates, calculations, quotations and decisions given, expressed, made or obtained for the purposes this Condition 5, whether by the Reset Reference Banks (or any of them) or the Calculation Agent, will (in the absence of wilful default, bad faith and manifest error) be binding on the Issuer, the Guarantor, the Calculation Agent, the Paying Agents and the Holders and (in the absence of wilful default and bad faith) no liability to the Issuer, the Guarantor or the Holders will attach to the Reset Reference Banks (or any of them) or the Calculation Agent in connection with the exercise or non-exercise by the Calculation Agent of its powers, duties and discretions under this Condition 5.

(h) Calculation Agent

So long as any Note is outstanding, the Issuer and the Guarantor will at all times maintain a Calculation Agent. If the Calculation Agent is unable or unwilling to act as such or if the Calculation Agent fails to (i) duly calculate the Reference Rate and the Reset Interest Amount for any Interest Period or the interest amount payable on the Redemption Date (if the Notes are to be redeemed pursuant to Condition 6 (*Redemption and Purchase*)) or (ii) comply with any other requirement in relation to the Notes, the Issuer and the Guarantor shall appoint a leading bank or financial institution that is experienced in the calculations or determinations to be made by the Calculation Agent to act as such in the Calculation Agent's place. The Calculation Agent may not resign its duties without a successor having been appointed as aforesaid. Any termination or appointment of the Calculation Agent pursuant to this clause (h) shall take effect not more than 45 and not less than 30 days' after the Issuer has notified the Holders of such termination or appointment pursuant to Condition 13 (*Notices*); *provided, however*, that, in the case of insolvency of the Calculation Agent, such termination or appointment will take immediate effect.

(i) Accrual of interest in the case of redemption or a Write-down Event

(i) Subject to Condition 7 (*Contingent Write-down*), if the Notes are to be redeemed pursuant to clause (b), (c) or (d) of Condition 6 (*Redemption and Purchase*), interest on the Notes will accrue up to (but excluding) the relevant Redemption Date, and will cease to accrue on such Redemption Date; *provided, however*, that if the payment with respect to any Note is improperly withheld or refused on such Redemption Date, interest will continue to accrue on the principal amount of such

Note (both before and after judgment) at the relevant Interest Rate to the Relevant Date.

(ii) Upon the occurrence of a Write-down Event, interest on the Notes will cease to accrue and any accrued and unpaid interest as at the time of such Write-down Event (whether or not due and payable) will be written down to zero in accordance with Condition 7 (*Contingent Write-down*).

(j) Cancellation of interest; prohibited interest

(i) The Issuer may, at its discretion, elect to cancel all or part of any payment of interest on the Notes (including, for the avoidance of doubt, any related Additional Amounts) that is otherwise scheduled to be paid on an Interest Payment Date. This subclause (j)(i) is without prejudice to the provisions of subclause (j)(ii) of this Condition 5. Non-payment of any amount of interest by the Issuer to the Principal Paying Agent will constitute evidence of cancellation of the relevant payment, whether or not notice of cancellation has been given by the Issuer.

If practicable, the Issuer shall provide notice of any cancellation of interest (in whole or in part) pursuant to this subclause (j)(i) to the Holders on or prior to the relevant Interest Payment Date. If practicable, the Issuer shall endeavour to provide such notice at least five Business Days prior to the relevant Interest Payment Date. Failure to provide such notice will not have any impact on the effectiveness of, or otherwise invalidate, any such cancellation of interest, or give Holders any rights as a result of such failure.

(ii) The Issuer will be prohibited from making, in whole or in part, any payment of interest on the Notes (including, for the avoidance of doubt, any related Additional Amounts) on the relevant Interest Payment Date if and to the extent that:

(A) the amount of Distributable Items as at such Interest Payment Date is less than the sum of (1) the amount of such interest payment, plus (2) all other payments (other than redemption payments) made by the Issuer or the Guarantor on or in respect of the Notes or any Parity Obligations, Guarantor Parity Obligations, Junior Obligations or Guarantor Junior Obligations since the balance sheet date of the Relevant Accounts and prior to such Interest Payment Date, plus (3) all payments (other than redemption payments) payable by the Issuer or the Guarantor on such Interest Payment Date on or in respect of any Parity Obligations, Guarantor Parity Obligations, Junior Obligations or Guarantor Junior Obligations, in the case of each of clauses (1), (2) and (3), excluding any portion of such payments already accounted for in determining the amount of such Distributable Items; and/or

(B) UBS Group AG is not, or will not immediately after the relevant payment of interest be, in compliance with all applicable minimum capital adequacy requirements of the National Regulations on a consolidated (*Finanzgruppe*) basis (for the avoidance of doubt, it being understood that such minimum requirements will reflect any reduction in such requirements granted by the FINMA to the Group pursuant to the Capital Adequacy Ordinance); and/or

(C) the FINMA has required the Issuer not to make such interest payment.

The Issuer shall deliver a certificate signed by the Authorised Signatories to the Principal Paying Agent and shall give notice in accordance with Condition 13 (*Notices*) to the Holders, in each case as soon as practicable following any determination that interest is required to be cancelled pursuant to this subclause (j)(ii) or, where no such prior determination is made, promptly following any Interest Payment Date on which interest was scheduled to be paid if such interest is being cancelled in accordance with this subclause (j)(ii), to such effect setting out brief details as to the amount of interest being cancelled and the reason therefor. Failure to provide such certificate and notice will not have any impact on the effectiveness of, or otherwise invalidate, any such cancellation or give any Holder any rights as a result of such failure.

(iii) If, on any Interest Payment Date, any payment of interest scheduled to be made on such date is not made in full pursuant to subclause (j)(i) or subclause (j)(ii) of this Condition 5, the Issuer shall procure that UBS Group AG shall not, directly or indirectly,

(A) recommend to holders of Ordinary Shares that any dividend or other distribution in cash or in kind (other than in the form of Ordinary Shares) be paid or made on any Ordinary Shares; and

(B) redeem, purchase or otherwise acquire any Ordinary Shares other than as a Permitted Transaction,

in each case unless and until (x) the interest payment due and payable on the Notes on any subsequent Interest Payment Date has been paid in full (or an amount equal to the same has been paid in full to a designated third party trust account for the benefit of the Holders prior to payment by the trustee thereof to the Holders on such subsequent Interest Payment Date) or, if earlier, (y) all outstanding Notes have been cancelled in accordance with these Terms and Conditions.

(iv) Payments of interest on the Notes are not cumulative. Notwithstanding any other provision in these Terms and Conditions, the cancellation or non-payment of any interest amount by virtue of this Condition 5(j) will not constitute a default for any purpose (including, without limitation, Condition 11 (*Events of Default*)) on the part of the Issuer. Any interest payment not paid by virtue of this Condition 5(j) will not accumulate or be payable at any time thereafter, and Holders will have no right thereto.

(v) If UBS Group AG determines, after consultation with the FINMA, that the Notes do not, or will cease to, fully qualify as Additional Tier 1 Capital, (A) the Issuer shall not, to the extent permitted under National Regulations, exercise its discretion pursuant to subclause (j)(i) of this Condition 5 to cancel any interest payments due on the Notes on any Interest Payment Date following the occurrence of such determination, and (B) the Issuer shall give notice to the Holders in accordance with Condition 13 (*Notices*) as soon as practicable after such determination stating that the Issuer may no longer exercise its discretion pursuant to subclause (j)(i) of this Condition 5 to cancel any interest payments as from the date of such notice.

6. **REDEMPTION AND PURCHASE**

(a) No fixed redemption date

The Notes are perpetual securities in respect of which there is no fixed redemption date. Unless previously redeemed or purchased and cancelled in accordance with this Condition 6 and subject to Condition 7 (*Contingent Write-down*), the Notes are perpetual and may only be redeemed or purchased in accordance with this Condition 6.

(b) Redemption at the option of the Issuer

Subject to clause (e) of this Condition 6, the Issuer may elect, in its sole discretion, to redeem the Notes, in whole but not in part, on the First Call Date or on any other Interest Payment Date thereafter at their aggregate principal amount, together with any accrued and unpaid interest thereon to (but excluding) the First Call Date or such other Interest Payment Date, as applicable.

(c) Redemption due to a Tax Event

(i) Subject to clause (e) of this Condition 6, upon the occurrence of a Tax Event at any time after the Issue Date, the Issuer may elect, in its sole discretion, to redeem the Notes, in whole but not in part, on the relevant Redemption Date at their aggregate principal amount, together with any accrued and unpaid interest thereon to (but excluding) such Redemption Date.

(ii) A "**Tax Event**" will have occurred if the Issuer in making any payments on the Notes or (if a demand were to be made under the Guarantee) the Guarantor in making any payments under the Guarantee (A) has paid, or will or would on the next payment date be required to pay, Additional Amounts, or (B) has paid, or will or would be required to pay, any additional Tax in respect of the Notes or the Guarantee, as applicable, in the case of each of clauses (A) and (B), under the laws or regulations of a Tax Jurisdiction or any political subdivision thereof or any authority of or in a Tax Jurisdiction or any political subdivision thereof having the power to impose, levy, collect, withhold or assess Taxes, including, without limitation, any treaty to which a Tax Jurisdiction is a party, or any generally published application or interpretation of such laws (including, without limitation, a decision of any court or tribunal, any generally published application or interpretation of such laws by any relevant tax authority or any generally published pronouncement by any relevant tax authority), and the Issuer or the Guarantor, as the case may be, cannot avoid the foregoing by taking measures reasonably available to it.

(d) Redemption due to a Regulatory Event

(i) Subject to clause (e) of this Condition 6, upon the occurrence of a Regulatory Event at any time after the Issue Date, the Issuer may elect, in its sole discretion, to redeem the Notes, in whole but not in part, on the relevant Redemption Date at their aggregate principal amount, together with any accrued and unpaid interest thereon to (but excluding) such Redemption Date.

(ii) A "**Regulatory Event**" will have occurred if any of the Notes ceases to be eligible in full to be (A) treated as Additional Tier 1 Capital, and/or (B) counted towards either the Going-Concern LR Requirement or the Going-Concern RWA Requirement (or both).

(e) Conditions for redemption

(i) If the Issuer elects to redeem the Notes pursuant to clause (b), (c) or (d) of this Condition 6, the Issuer shall give the Holders not less than 30 and not more than 60 days' prior notice in accordance with Condition 13 (*Notices*) (a "**Redemption Notice**"), which notice shall, subject to clause (f) of this Condition 6, be irrevocable and specify the date on which the Issuer will redeem the Notes pursuant to such clause of this Condition 6 (such specified date, the "**Redemption Date**").

(ii) The Issuer may only redeem the Notes pursuant to clause (b) or (c) of this Condition 6 on the relevant Redemption Date if the FINMA has approved such redemption on or prior to such Redemption Date, if such approval is then required under applicable Swiss laws and regulations.

(iii) The Issuer may only redeem the Notes pursuant to any clause of this Condition 6 on the relevant Redemption Date if no Trigger Event or Viability Event has occurred prior to such Redemption Date.

(iv) Prior to the publication of any notice of redemption pursuant to subclause (e)(i) of this Condition 6, the Issuer shall deliver to the Principal Paying Agent (A) a certificate signed by two Authorised Signatories stating that the relevant requirement or circumstance giving rise to the right to redeem under this Condition 6 is satisfied and the reasons therefor and such certificate will be conclusive and binding on the Holders, and (B) an opinion of independent legal advisers of recognised standing to the effect that circumstances entitling the Issuer to exercise its right of redemption under this Condition 6 have arisen.

(f) Purchases

The Issuer or any other member of the Group or any of their respective affiliates may at any time purchase Notes at any price in the open market or otherwise, *provided* that (i) such purchase complies with any limits or conditions to which any member of the Group is subject under applicable banking laws and regulations at the time of such purchase, (ii) other than in the case of purchases made in connection with stabilisation measures in compliance with applicable law or in connection with any market making in the Notes, the FINMA has approved such purchase (if such approval is then required under applicable Swiss laws and regulations) on or prior to the date of such purchase, and (iii) no Trigger Event or Viability Event has occurred prior to the date of such purchase. Any Notes so purchased may, at the option of the Issuer, be held, reissued, resold or cancelled.

(g) Cancellation

All Notes redeemed in accordance with this Condition 6 will be cancelled and may not be reissued or resold.

(h) Redemption of Other Instruments

For the avoidance of doubt, it is understood that, if, upon the occurrence of a Tax Event or a Regulatory Event, the Issuer does not elect to redeem the Notes pursuant to this Condition 6, nothing in this Condition 6 or any other provision of these Terms and Conditions will prohibit the Issuer from redeeming (whether early, at maturity or otherwise) any other instruments issued by any member of the Group pursuant to the terms thereof.

7. **CONTINGENT WRITE-DOWN**

(a) Trigger Event

(i) Upon the occurrence of a Trigger Event, a Contingent Write-down will occur on the Trigger Event Write-down Date in accordance with clause (d) of this Condition 7.

(ii) A "**Trigger Event**" will have occurred if the Issuer or the Guarantor gives the Holders a Trigger Event Write-down Notice in accordance with clause (b) of this Condition 7.

(b) Trigger Event Write-down Notice

(i) If, with respect to any Publication Date, the Trigger CET1 Ratio as of such Publication Date is less than the Write-down Threshold, the Issuer or the Guarantor shall, subject to subclauses (b)(ii) and (b)(iii) of this Condition 7, give a Trigger Event Write-down Notice to the Holders (x) if such Publication Date is an Ordinary Publication Date, within five Business Days of such Ordinary Publication Date (such fifth Business Day, the "**Trigger Breach Determination Date**", and the date of such notice, the "**Ordinary Trigger Event Notice Date**"), and (y) if such Publication Date is an Extraordinary Publication Date, on such Extraordinary Publication Date (the "**Extraordinary Trigger Event Notice Date**"), in each case in accordance with Condition 13 (*Notices*).

(ii) If a Trigger Event Write-down Notice is required to be given pursuant to subclause (b)(i) of this Condition 7, and on the relevant Publication Date any Higher-Trigger Contingent Capital is outstanding with respect to which either (x) no Higher-Trigger Write-down/Conversion Notice has been given prior to the Trigger Event Notice Date or (y) a Higher-Trigger Write-down/Conversion Notice has been given prior to the Trigger Event Notice Date, but the Trigger Event Write-down Date is scheduled to occur prior to the relevant Higher-Trigger Write-down/Conversion Date,

(A) in the case of clause (x) above, the giving of such Trigger Event Write-down Notice will be postponed until the date on which a Higher-Trigger Write-down/Conversion Notice has been given with respect to all such outstanding Higher-Trigger Contingent Capital and such date will be deemed to be the Trigger Event Notice Date; and

(B) in the case of clauses (x) and (y) above, if the Trigger Event Write-down Date is scheduled to occur prior to the Higher-Trigger Write-down/Conversion Date (or, in the case of more than one Higher-Trigger Write-down/Conversion Date, the latest Higher-Trigger Write-down/Conversion Date), the Trigger Event Write-down Date will be postponed to the Higher-Trigger Write-down/Conversion Date (or the latest Higher-Trigger Write-down/Conversion Date, as applicable) and such postponement shall be specified in such Trigger Event Write-down Notice.

(iii) If (A) a Trigger Event Write-down Notice is required to be given pursuant to subclause (b)(i) of this Condition 7 in relation to an Ordinary Publication Date, and (B) prior to the earlier of the Ordinary Trigger Event Notice Date and the Trigger Breach Determination Date, the FINMA, upon the request of UBS Group AG, has agreed in writing that a Contingent Write-down is not required as a result of actions taken by the Group or circumstances or events, in each case, that have had, or imminently will have, the effect of restoring the CET1 Ratio as of the Balance Sheet Date relating to the relevant Ordinary Publication Date, after giving pro forma effect to such actions, circumstances or events, to a level above the Write-down Threshold that the FINMA and UBS Group AG deem, in their sole discretion, to be adequate at such time, (x) neither the Issuer nor the Guarantor shall give such Trigger Event Write-down Notice pursuant to subclause (b)(i) of this Condition 7 in relation to the relevant Ordinary Publication Date, and (y) either the Issuer or the Guarantor shall give notice to the Holders on or prior to the Trigger Breach Determination Date in accordance with Condition 13 (*Notices*), which notice shall state that no Contingent Write-down will occur in relation to the relevant Ordinary Publication Date.

(c) Viability Event

(i) Subject to clause (f) of this Condition 7, upon the occurrence of a Viability Event, (A) the Issuer or the Guarantor shall give notice to the Holders in accordance with Condition 13 (*Notices*) within three days of the date on which such Viability Event occurred, which notice shall (x) state that a Viability Event has occurred and a Contingent Write-down will take place and (y) specify the date on which the Contingent Write-down will take place, which date shall be no later than 10 Business Days after the date of such notice (such specified date, the "**Viability Event Write-down Date**", and such notice, a "**Viability Event Write-down Notice**"), and (B) a Contingent Write-down will occur on the Viability Event Write-down Date in accordance with clause (d) of this Condition 7.

(ii) A "**Viability Event**" will have occurred if prior to an Alternative Loss Absorption Date (if any):

(A) the FINMA has notified UBS Group AG in writing that it has determined a write-down of the Notes, together with the conversion or write-down, as applicable, of holders' claims in respect of all other capital instruments issued by, or other capital obligations (whether qualifying fully or partially for capital treatment) of, any member of the Group that, pursuant to their terms or by operation of law, are capable of being converted into equity or written down at that time, is, because customary measures to improve the Group Holding Company's capital adequacy are at the time inadequate or infeasible, an essential requirement to prevent the Group Holding Company from becoming insolvent, bankrupt, unable to pay a material part of its debts as they fall due or unable to carry on its business; or

(B) customary measures to improve the Group Holding Company's capital adequacy being at the time inadequate or infeasible, the Group Holding Company has received an irrevocable commitment of direct or indirect extraordinary support from the Public Sector (beyond customary transactions and arrangements in the ordinary course) that has, or imminently will have, the effect of improving the Group Holding Company's capital adequacy and without which, in the determination of (and as notified in writing by) the FINMA, the Group Holding Company would have become insolvent, bankrupt, unable to pay a material part of its debts as they fall due or unable to carry on its business.

For the avoidance of doubt, it is understood that, a Viability Event may occur irrespective of whether or not a Trigger Event has occurred or whether any of the conditions to the issuance of a Trigger Event Write-down Notice have been met.

(d) Contingent Write-down

If the Issuer or the Guarantor has given a Write-down Notice in accordance with this Condition 7, then on the relevant Write-down Date,

(i) the full principal amount of, and any accrued and unpaid interest (whether or not due and payable) on, each Note will automatically be written down to zero, the Notes will be cancelled and all references to the principal amount of the Notes in these Terms and Conditions will be construed accordingly;

(ii) the Holders will be automatically deemed to have irrevocably waived their right to receive, and will no longer have any rights against the Issuer with respect to, repayment of the aggregate principal amount of, and payment of any accrued and unpaid interest on, the Notes written down pursuant to subclause (i) of this clause (d) (*bedingter Forderungsverzicht*); and

(iii) all rights of any Holder for payment of any amounts under or in respect of the Notes (including, without limitation, any amounts arising as a result of, or due and payable upon the occurrence of, an Event of Default) will become null and void, irrespective of whether such amounts have become due and payable prior to the relevant Write-down Notice Date or the Write-down Date.

(e) Determination of CET1 Ratio and Trigger CET1 Ratio

With respect to any Publication Date, (i) the CET1 Ratio as of the relevant Balance Sheet Date, (ii) the Trigger CET1 Ratio as of such Publication Date and (iii) the components of both of the foregoing, in each case, as published on such Publication Date, will be final for purposes of this Condition 7, and any revisions, restatements or adjustments to any of the calculations described in subclauses (i) through (iii) of this clause (e) subsequently published will have no effect for purposes of this Condition 7.

(f) Alternative loss absorption

In the event of the implementation of any new, or amendment to or change in the interpretation of any existing, laws or components of National Regulations, in each case occurring after the Issue Date, that alone or together with any other law(s) or regulation(s) has, in the joint determination of UBS Group AG and the FINMA, the effect that clause (c) of this Condition 7 could cease to apply to the Notes without giving rise to a Regulatory Event, then the Issuer or the Guarantor shall give notice to the Holders in accordance with Condition 13 (*Notices*) no later than five Business Days after such joint determination stating that such provisions will cease to apply from the date of such notice (the "**Alternative Loss Absorption Date**"), and from the date of such notice, such provisions will cease to apply to the Notes.

8. **PAYMENTS**

(a) All payments required to be made under the Notes will be made available in good time in freely disposable funds in SGD, which will be placed at the free disposal of the Principal Paying Agent on behalf of the Holders. If the Scheduled Due Date for any payment (whether in respect of principal, interest or otherwise) in respect of the Notes is not a Payment Business Day, then the Holders will not be entitled to payment thereof until the first Payment Business Day immediately following the Scheduled Due Date, and the Holders will not be entitled to any additional sum in relation to such payment. All payments required to be made under the Notes (including, for the avoidance of doubt, any Additional Amounts) shall be made to the Holders in SGD without collection costs, without any restrictions and whatever the circumstances may be, irrespective of nationality, domicile or residence of the relevant Holder and without certification, affidavit or the fulfilment of any other formality.

(b) The Issuer and the Guarantor reserve the right to terminate the appointment of the Principal Paying Agent, as well as to appoint or, after any such appointment, to terminate the appointment of, one or more other paying agents to carry out any payment, calculation or other functions in respect of the Notes (each, a "**Paying Agent**", which term includes the Principal Paying Agent). Any such appointment or termination of appointment shall only take effect not more than 45 and not less than 30 days' after the Issuer has notified the Holders of such appointment or termination pursuant to Condition 13 (*Notices*); *provided, however*, that, in the case of insolvency of any Paying Agent, any termination of such Paying Agent and appointment of any other Paying Agent will take immediate effect. In addition, for so long as the Notes are listed on the SIX Swiss Exchange, the Issuer and the Guarantor shall maintain a Paying Agent in Switzerland, which agent shall have an office in Switzerland and be a bank or securities dealer subject to supervision by FINMA, to perform the functions of a Swiss paying agent.

9. **TAXATION**

(a) All payments to be made by or on behalf of the Issuer in respect of the Notes (including, for the avoidance of doubt, amounts paid by the Guarantor under the Guarantee and payments by a Paying Agent) shall be made without withholding or deduction for, or on account of, any present or future taxes, duties, assessments or other government charges of any nature ("**Taxes**") imposed, levied, collected, withheld or assessed by or on behalf of any Tax Jurisdiction or any political subdivision thereof or any authority of or in a Tax Jurisdiction or any political subdivision thereof having the power to impose, levy, collect, withhold or assess Taxes, unless withholding, deduction or accounting for such Taxes is required by law.

(b) In the event that any payment to be made by or on behalf of the Issuer in respect of the Notes (including, for the avoidance of doubt, amounts paid by the Guarantor under the Guarantee and payments by a Paying Agent) is subject to any withholding or deduction for, or on account of, any Taxes by requirement of law in a Tax Jurisdiction (as determined by the relevant tax authority of or in such Tax Jurisdiction), the Issuer shall pay such additional amounts as will result in the Holders receiving the amounts that they would have received in respect of the Notes if no such withholding or deduction had been required ("**Additional Amounts**").

(c) No Additional Amounts will be payable pursuant to clause (b) of this Condition 9 in relation to any Note:

(i) if the relevant Holder is liable for such Taxes on such Note as a result of having some connection with the relevant Tax Jurisdiction other than its mere ownership or possession of such Note or the receipt of principal or interest in respect thereof; or

(ii) with respect to any Tax collected pursuant to the provisions of, or any laws or an agreement with any Tax Jurisdiction relating to, Sections 1471 through 1474 of the US Internal Revenue Code (commonly referred to as "FATCA"); or

(iii) where such withholding or deduction is required to be made pursuant to laws enacted by Switzerland providing for the taxation of payments according to principles similar to those laid down in the draft legislation of the Swiss Federal Council of 17 December 2014, or otherwise changing the Swiss federal withholding tax system from an issuer-based system to a paying agent-based system pursuant to which a person other than the issuer is required to withhold tax on any interest payments; or

(iv) to the extent any combination of subclauses (i) through (iii) of this clause (c) applies.

(d) Any reference in these Terms and Conditions to amounts payable by the Issuer in respect of the Notes includes (i) any Additional Amount payable pursuant to this Condition 9 and (ii) any sum payable pursuant to an obligation taken in addition to or in substitution for the obligation in this Condition 9.

10. STATUTE OF LIMITATIONS

In accordance with Swiss law, (a) claims for interest payments under the Notes will become time-barred after the five-year period and (b) claims for the repayment or redemption of Notes will become time-barred after the ten-year period, in each case, commencing on the date on which such payments, repayment or redemption become due and payable.

11. EVENTS OF DEFAULT

(a) If any of the following events occurs, such occurrence will constitute an "**Event of Default**":

(i) the Issuer fails to pay the principal amount of any Note if and when the same becomes due and payable under these Terms and Conditions, and such failure continues unremedied by the Issuer or the Guarantor for a period of 30 days; or

(ii) the Issuer fails to pay any interest on the Notes if and when the same becomes due and payable under these Terms and Conditions, and such failure continues unremedied by the Issuer or the Guarantor for a period of 30 days; or

(iii) the Issuer or the Guarantor fails to observe or perform any other covenant, condition, or agreement contained in these Terms and Conditions or the Guarantee, respectively, and such failure continues unremedied for a period of 60 days after written notice thereof from any Holder to the Issuer; or

(iv) a Bankruptcy Event with respect to either the Issuer or the Guarantor.

(b) Upon the occurrence of an Event of Default relating to any failure of the Issuer to meet any payment obligation under these Terms and Conditions and subject to Condition 7 (*Contingent Write-down*), (i) such payment obligation (and such payment obligation only) will be immediately deemed a due and payable (*fällige*) payment obligation of the Issuer, and (ii) if (A) the relevant Holder has formally requested payment of such payment obligation, (B) such payment obligation has not been fulfilled within the statutory period under Swiss law commencing after the date of such formal request and (C) a writ of payment (*Zahlungsbefehl*) has been issued with respect to such payment obligation pursuant to the DEBA, the relevant Holder may institute proceedings against the Issuer in Switzerland (but not elsewhere) to enforce its rights with respect to such payment obligation under the DEBA.

(c) If a debt collection or insolvency proceeding with respect to the Issuer is instituted in Switzerland in accordance with clause (b) of this Condition 11, the Issuer shall not (i) after having received the writ of payment (*Zahlungsbefehl*) relating to the relevant payment obligation, argue or plead that such payment obligation is not due and payable by the Issuer, or (ii) prior to the declaration of bankruptcy (or similar proceeding under Swiss insolvency laws), make any payment to the relevant Holder under or in connection with the Notes.

(d) In the case of any Event of Default arising under subclause (a)(iii) of this Condition 11 and subject to Condition 7 (*Contingent Write-down*), any Holder may seek specific performance or damages with respect to such Event of Default pursuant to the Swiss Code if so entitled thereunder. Any such damage claim of any Holder will rank junior to the rights and claims of all holders of Senior Obligations.

(e) In the case of any Event of Default arising under subclause (a)(iv) of this Condition 11 and subject to Condition 7 (*Contingent Write-down*), any Holder may, by written notice to the Issuer, declare the principal amount of any of its Notes, together with any accrued and unpaid interest thereon, immediately due and payable, without presentment, demand, protest or other notice of any kind.

(f) No remedy against the Issuer other than those described in this Condition 11 will be available to the Holders in connection with the Issuer's obligations under these Terms and Conditions, whether for the recovery of amounts owing under these Terms and Conditions or in respect of any breach by the Issuer of any of its other obligations under these Terms and Conditions or otherwise. In particular, no Holder may declare (i) the principal amount of any Notes due and payable prior to any Redemption Date, or (ii) any interest on any Notes due and payable prior to the relevant Interest Payment Date, except, in the case of each of subclauses (i) and (ii) of this clause (f), pursuant to clause (e) of this Condition 11.

12. SUBSTITUTION AND AMENDMENT

(a) If a Tax Event, a Regulatory Event or an Alignment Event has occurred, the Issuer may, without the consent of the Holders unless so required by mandatory provisions of Swiss law, either substitute all, but not some only, of the Notes for, or amend these Terms and Conditions so that they remain or become, Compliant Securities, *provided* that:

(i) neither a Tax Event nor a Regulatory Event arises as a result of such substitution or amendment;

(ii) the FINMA has approved such substitution or amendment (if such approval is then required under applicable Swiss laws and regulations);

(iii) the Issuer has given the Holders not less than 30 days' notice of such substitution or amendment in accordance with Condition 13 (*Notices*), which notice (the "**Substitution or Amendment Notice**") will, subject to subclause (a)(iv) of this Condition 12, be irrevocable, and state the date on which such substitution or amendment will be effective (the "**Substitution or Amendment Effective Date**");

(iv) prior to the publication of any notice pursuant to subclause (a)(iii) of this Condition 12, the Issuer shall deliver to the Principal Paying Agent (A) a certificate signed by two Authorised Signatories stating that the relevant requirement or circumstance giving rise to the right to substitute or amend the terms of the Notes, as applicable, pursuant to this clause (a) of this Condition 12 is satisfied and the reasons therefor and such certificate will be conclusive and binding on the Holders, and (B) an opinion of independent legal advisers of recognised standing to the effect that circumstances entitling the Issuer to exercise its right to substitute or amend the terms of the Notes, as applicable, pursuant to this clause (a) of this Condition 12 have arisen; and

(v) no Trigger Event or Viability Event has occurred prior to the relevant Effective Date.

In connection with any substitution or amendment in accordance with this clause (a) of this Condition 12, the Issuer shall (and shall cause the Guarantor to) comply with the rules of any stock exchange on which the Notes are for the time being listed or admitted to trading.

An "**Alignment Event**" will have occurred if, as a result of any change in National Regulations at any time after the Issue Date, any Relevant Swiss Issuer would be permitted to issue or guarantee (including, without limitation, by providing a guarantee, credit support agreement or similar undertaking), or has issued or guaranteed (including, without limitation, by providing a guarantee, credit support agreement or similar undertaking), a capital instrument that (i) is eligible in full to be (A) treated as Additional Tier 1 Capital and (B) counted towards either the Going-Concern LR Requirement or the Going-Concern RWA Requirement (or both), and (ii) has terms and conditions that (A) include a write-down feature, and (B) contain one or more provisions that are, in the reasonable opinion of UBS Group AG, different in any material respect from those in these Terms and Conditions, which provisions, if they had been included in these Terms and Conditions, would have prevented the Notes from being eligible in full to be treated as Additional Tier 1 Capital and/or to be counted towards either the Going-Concern LR Requirement or the Going-Concern RWA Requirement (or both) immediately prior to such change in National Regulations.

(b) In addition to its rights under clause (a) of this Condition 12, the Issuer may, without the consent of the Holders unless so required by mandatory provisions of Swiss law, make any amendment to these Terms and Conditions that it considers to be (i) necessary or desirable to give effect to (A) any Alternative Benchmark Rate determined in accordance with clause (c) of Condition 5 (*Interest*) (including any Adjustment Spread determined in accordance with subclause (v)(A)(2) thereof and any alternative method for determining the Reference Rate if such Alternative Benchmark Rate is unavailable on the relevant Reset Determination Date determined in accordance with subclause (v)(A)(3) thereof), or (B) the provisions of clause (a) of Condition 14 (*Issuer Substitution*) (including, without limitation, (x) if the Substitute Issuer is organised and/or resident for tax purposes in a jurisdiction other than Switzerland, any amendments to any references to the jurisdiction of "Switzerland" contained herein, including, without limitation, amendments to the definition of the term "Bankruptcy Event", the definition of the term "Business Day", the governing law of the subordination provisions set forth in Condition 3 (*Status and Subordination*) and the provisions of Condition 11 (*Events of Default*), and (y) any amendments to reflect UBS Group AG's guarantee described in subclause (a)(i)(C) of Condition 14 (*Issuer Substitution*)), or (C) the provisions of clause (b) of Condition 14 (*Issuer Substitution*), or (ii) formal, minor or technical in nature, or (iii) necessary to correct a manifest error or (iv) not materially prejudicial to the interests of the Holders.

(c) The Issuer shall notify the Holders of any amendments made pursuant to clause (b) of this Condition 12 in accordance with Condition 13 (*Notices*), which notice shall state the date on which such amendment will be effective.

(d) Any amendment made pursuant to this Condition 12 will be binding on the Holders in accordance with its terms.

13. NOTICES

So long as the Notes are listed on the SIX Swiss Exchange, notices to Holders shall be given by the Issuer or, if applicable, by the Guarantor (a) by means of electronic publication on the internet website of the SIX Swiss Exchange (www.six-swiss-exchange.com), where notices are currently published under the address www.six-swiss-exchange.com/news/official_notices/search_en.html, or (b) otherwise in accordance with the regulations of the SIX Swiss Exchange. Any notice will be validly given on the date of such publication or, if published more than once, on the date of the first such publication.

If the Notes are for any reason no longer listed on the SIX Swiss Exchange, notices to Holders will be given by the Issuer or, if applicable, by the Guarantor to the Intermediary for forwarding to the Holders. Any such notice will be validly given on the date of delivery to the Intermediary.

14. ISSUER SUBSTITUTION

(a) Voluntary Issuer Substitution

(i) The Issuer (for purposes of clause (a) of this Condition 14, the "**Current Issuer**") may, without the consent of the Holders, substitute any entity (whether or not such entity is organised under the laws of Switzerland) (such substitute entity, the

"**Substitute Issuer**") for itself as principal debtor under the Notes upon giving no more than 30 and no less than 10 days' notice to the Holders in accordance with Condition 13 (*Notices*), *provided* that:

(A) the Substitute Issuer is UBS Group AG or at least 95 per cent. of the Substitute Issuer's capital and voting rights are held, directly or indirectly, by UBS Group AG;

(B) the Current Issuer is not in default in respect of any amount payable under the Notes at the time of such substitution;

(C) if the Current Issuer is UBS Group AG, UBS Group AG has issued a guarantee for the benefit of the Holders on substantially the same terms as the Guarantee;

(D) the Current Issuer and the Substitute Issuer (1) have entered into such documents (the "**Substitution Documents**") as are necessary to give effect to such substitution and pursuant to which the Substitute Issuer has (x) undertaken in favour of each Holder to be bound by these Terms and Conditions as the principal debtor (on a subordinated basis corresponding to Condition 3 (*Status and Subordination*)) under the Notes in place of the Current Issuer and (y) assumed the obligations of the Current Issuer under the Agency Agreement, and (2) procure that all action, conditions and things required to be taken, fulfilled and done (including, without limitation, the obtaining of any necessary consents) to ensure that the Substitution Documents represent valid, legally binding and enforceable obligations of the Substitute Issuer have been taken, fulfilled and done and are in full force and effect;

(E) if the Substitute Issuer is resident for tax purposes in a jurisdiction (the "**New Residence**") other than that in which the Current Issuer prior to such substitution was resident for tax purposes (the "**Former Residence**"), the Substitution Documents contain an undertaking by the Substitute Issuer and/or such other provisions as may be necessary to ensure that each Holder has the benefit of an undertaking in terms corresponding to the provisions of Condition 9 (*Taxation*) in relation to the payment of all amounts due and payable under, or in respect of, the Notes, with the substitution of references to the Former Residence with references to the New Residence, and an undertaking by the Substitute Issuer to indemnify each Holder against any Tax that is imposed on it by (or by any authority in or of) the New Residence and, if different, the jurisdiction of the Substitute Issuer's organisation with respect to any Note and that would not have been so imposed had the substitution not been made, as well as against any Tax, and any cost or expense, relating to such substitution;

(F) if the Substitute Issuer is not UBS Group AG, the FINMA has approved such substitution (if such approval is then required under applicable Swiss laws and regulations), and the Current Issuer and the Substitute Issuer have obtained all other necessary governmental and other approvals and consents for such substitution and for the performance by the Substitute Issuer of its obligations under the Substitution Documents;

(G) if the Substitute Issuer is not organised under the laws of Switzerland, the Substitute Issuer has appointed a process agent as its agent in Switzerland to receive service of process on its behalf in relation to any legal proceedings arising out of or in connection with the Notes;

(H) the Substitute Issuer has appointed a Paying Agent in Switzerland that is a participant in the Intermediary; and

(I) such substitution does not give rise to a Tax Event or a Regulatory Event.

(ii) Upon any substitution pursuant to subclause (a)(i) of this Condition 14, (A) the Substitute Issuer will succeed to, and be substituted for, and may exercise every right and power of, the Current Issuer under the Notes with the same effect as if the Substitute Issuer had been named as Issuer in these Terms and Conditions, (B) the Current Issuer will be released from its obligations under the Notes and (C) if the Substitute Issuer is UBS Group AG, the Guarantee will cease to exist.

(iii) After giving effect to any substitution pursuant to subclause (a)(i) of this Condition 14, (A) if the Substitute Issuer is UBS Group AG, all references to the "Guarantor" or the "Guarantee" in the Notes and these Terms and Conditions will cease to apply, except that the references to the "Guarantee" in the definition of "Compliant Securities" and in subclause (a)(i)(C) of this Condition 14 will remain applicable and such references to the "Guarantee" will be deemed to mean the Guarantee as in effect immediately prior to such substitution, and (B) in all cases, (x) references to the "Issuer" in the Notes and these Terms and Conditions will be references to the Substitute Issuer, and (y) references to the "Tax Jurisdiction" in the Notes and these Terms and Conditions will be read and construed as including the jurisdiction of establishment of the Substitute Issuer and, if different, the jurisdiction in which the Substitute Issuer is resident for tax purposes instead of or in addition to (as the case may be) references to the jurisdiction of establishment of the Issuer and Switzerland.

(b) Automatic Issuer Substitution

(i) Upon the occurrence of a Guarantee Event at any time on or after the Issue Date but prior to the occurrence of a Trigger Event or a Viability Event, UBS Group AG will, without the consent of the Holders, automatically be substituted for the Issuer for all purposes under the Notes and these Terms and Conditions on the Automatic Issuer Substitution Effective Date (such substitution, an "**Automatic Issuer Substitution**"). Any such Automatic Issuer Substitution will automatically take place on the Automatic Issuer Substitution Effective Date without requiring any action to be taken and without regard to the conditions that would be applicable to a voluntary substitution pursuant to clause (a) of this Condition 14.

(ii) A "**Guarantee Event**" will have occurred if (A) the Issuer or the Guarantor has obtained an opinion of independent legal advisers of recognised standing to the effect that UBS Group AG's guarantee of the Issuer's payment obligations under the Notes set forth in section 1 of the Guarantee is not in full force and effect, or (B) a Holder has notified the Issuer that the Guarantor has claimed that its guarantee of the Issuer's payment obligations under the Notes set forth in section 1 of the Guarantee is not in full force and effect and such claim has not been remedied during the 30-day period following the date of such notice, unless, in the case of each of clauses (A) and (B), such guarantee is not (or is claimed by the Guarantor not to be) in full force and effect as a result of the voluntary substitution by the Issuer of UBS Group AG for itself as principal debtor under the Notes in accordance with clause (a) of this Condition 14 or a merger of the Issuer and UBS Group AG.

(iii) Upon any Automatic Issuer Substitution, (A) UBS Group AG will, without the need for the amendment of existing, or the entry into of additional documentation, succeed to, and be substituted for, and may exercise every right and power of, the Issuer under the Notes with the same effect as if UBS Group AG had been named as Issuer in these Terms and Conditions, (B) the Issuer will be released from its obligations under the Notes and (C) the Guarantee will cease to exist.

(iv) After giving effect to any Automatic Issuer Substitution, (A) references to the "Issuer" in the Notes and these Terms and Conditions will be references to UBS Group AG, and (B) all references to the "Guarantor" or the "Guarantee" in the Notes and these Terms and Conditions will cease to apply, except that the references to the "Guarantee" in the definition of "Compliant Securities" and in subclause (a)(i)(C) of this Condition 14 will remain applicable and such references to the "Guarantee" will be deemed to mean the Guarantee as in effect immediately prior to such Automatic Issuer Substitution.

(v) Upon the occurrence of a Guarantee Event, the Issuer will provide notice to the Principal Paying Agent and the Holders in accordance with Condition 13 (*Notices*) no later than the Automatic Issuer Substitution Effective Date, which notice will (A) state that a Guarantee Event has occurred and an Automatic Issuer Substitution has taken or will take place, as the case may be, and (B) specify the Automatic Issuer Substitution Effective Date on which such Automatic Issuer Substitution has taken or will take place.

15. FURTHER ISSUES

The Issuer may from time to time without the consent of the Holders issue further notes and, *provided* that such notes have the same terms and conditions as the Notes in all respects (or in all respects except for the issue date and/or first date on which interest is paid), such further notes will be consolidated and form a single series with the Notes. If the Issuer issues any such further notes pursuant to this Condition 15, references in these Terms and Conditions to "**Notes**" include such further notes, unless the context otherwise requires.

16. CURRENCY INDEMNITY

Any amount received or recovered by any Holder in a currency other than SGD (whether as a result of, or of the enforcement of, a judgment or order of a court of any jurisdiction, in the insolvency, winding-up or dissolution of the Issuer or otherwise) under the Notes will only constitute a discharge of the Issuer to the extent of the amount in SGD that such Holder is able to purchase with the amount so received or recovered in such other currency on the date of such receipt or recovery (or, if it is not practicable to purchase SGD with such amount on such date, on the first date on which it is practicable to do so). If the amount of SGD that such Holder is able to purchase is less than the amount owed by the Issuer to such Holder under the Notes, the Issuer shall indemnify such Holder against any loss sustained by it as a result. In addition, the Issuer shall indemnify such Holder for the costs of making such purchase. For purposes of this Condition 16, it is sufficient for the relevant Holder to demonstrate that it would have suffered a loss had an actual purchase been made. The indemnities under this Condition 16 will (a) constitute a separate and independent obligation from the Issuer's other obligations hereunder, (b) give rise to a separate and independent cause of action, (c) apply irrespective of any indulgence granted by any Holder and (d) continue in full force and effect despite any other judgment, order, claim or proof for a liquidated amount in respect of any amount due under the Notes or any other judgment or order.

17. NO SET-OFF BY HOLDERS

Subject to applicable law, each Holder, by acceptance of any direct or beneficial interest in a Note, agrees that it will not, and waives its right to, exercise, claim or plead any right of set-off, compensation or retention with respect to any amount owed to it by the Issuer or the Guarantor in respect of, or arising in connection with, the Notes or the Guarantee.

18. NO CONVERSION

Notwithstanding the powers of the FINMA under articles 25 *et seq.* of the FBA or pursuant to any successor or analogous Swiss law or regulation applicable to bank holding companies in Switzerland such as UBS Group AG, the Notes shall under no circumstances be converted into equity of the Issuer or the Guarantor, and shall only absorb losses pursuant to these Terms and Conditions.

19. GOVERNING LAW AND JURISDICTION

(a) The Notes shall be governed by and construed in accordance with the laws of Switzerland.

(b) The courts of the Canton of Zurich (venue being the City of Zurich) shall have exclusive jurisdiction to settle any disputes that may arise out of or in connection with the Notes.

Exhibit 4.18

UBS

High-trigger loss-absorbing additional tier 1 capital instrument

Issuer	UBS Group Funding (Switzerland) AG
ISIN	US90352JAF03 / USH4209UAT37
Issue Date	31.01.2019
Currency	USD
Nominal (million)	2,500.0
Coupon Rate	7.000% [1]
Maturity Date	perpetual
First Call Date	31.01.2024

[1] Rate subject to change after first call date.

TERMS AND CONDITIONS OF THE NOTES

The terms and conditions of the Tier 1 Capital Notes issued by UBS Group Funding (Switzerland) AG and guaranteed by UBS Group AG are as follows:

1. **DEFINITIONS**

"**Additional Amounts**" has the meaning assigned to such term in clause (b) of Condition 10 (*Taxation*).

"**Additional Tier 1 Capital**" means, at any time, any item that qualifies as additional tier 1 capital (*zusätzliches Kernkapital*) under National Regulations at such time.

"**Adjustment Spread**" means, with respect to any Alternative Benchmark Rate determined in accordance with the provisions of clause (c) of Condition 6 (*Interest*), a spread (which may be positive or negative), or a formula or methodology for calculating such a spread, applied to such Alternative Benchmark Rate in order to reduce or eliminate, to the extent reasonably practicable in the circumstances, any economic prejudice or benefit (as applicable) to Holders as a result of the replacement of the Existing Benchmark Rate with such Alternative Benchmark Rate.

"**Affected Reset Interest Period**" has the meaning assigned to such term in subclause (c)(i) of Condition 6 (*Interest*).

"**Agent Insolvency Event**" has the meaning assigned to such term in subclause (c)(ii) of Condition 9 (*Payments; Agents*).

"**Agents**" means the Fiscal Agent, the Registrar, the Calculation Agent, the Swiss Paying Agent and any other agent from time to time appointed pursuant to the terms of the Fiscal Agency Agreement.

"**Alignment Event**" has the meaning assigned to such term in clause (a) of Condition 13 (*Substitution and Amendment*).

"**Alternative Benchmark Rate**" has the meaning assigned to such term in subclause (c)(i) of Condition 6 (*Interest*).

"**Alternative Loss Absorption Date**" has the meaning assigned to such term in clause (f) of Condition 8 (*Contingent Write-down*).

"**Alternative Relevant Page**" has the meaning assigned to such term in subclause (c)(v)(A) of Condition 6 (*Interest*).

"**Alternative Relevant Time**" has the meaning assigned to such term in subclause (c)(v)(A) of Condition 6 (*Interest*).

"**Auditor**" means the accounting firm (i) appointed by the Board of Directors of the Group Holding Company or the shareholders of the Group Holding Company, as the case may be, to provide, among other things, audit and/or review opinions on the Group Holding Company's financial statements, and (ii) approved by the FINMA in accordance with the Financial Market Supervisory Act (*Finanzmarktaufsichtsgesetz*) of 22 June 2007, as amended from time to time.

"**Authorised Signatories**" means any two authorised officers of the Issuer signing jointly.

"**Automatic Issuer Substitution**" has the meaning assigned to such term in subclause (b)(i) of Condition 15 (*Issuer Substitution*).

"**Automatic Issuer Substitution Effective Date**" means, with respect to any Guarantee Event, (i) if such Guarantee Event occurred pursuant to clause (A) of the definition thereof, the tenth Business Day after the occurrence of such Guarantee Event, and (ii) if such Guarantee Event occurred pursuant to clause (B) of the definition thereof, the thirtieth day of the 30-day period described in such clause (B) (or, if such thirtieth day is not a Business Day, the first Business Day immediately following such thirtieth day).

"**Balance Sheet Date**" means (i) with respect to any Ordinary Publication Date, the cut-off date for the measurement of the CET1 Ratio in the Quarterly Financial Accounts published on such Ordinary Publication Date, and (ii) with respect to any Extraordinary Publication Date, the cut-off date for the Reviewed Interim Measurement published upon the instruction of the FINMA on such Extraordinary Publication Date.

"**Bankruptcy Event**" means any of the following events with respect to the Issuer or the Guarantor: (i) the adjudication of bankruptcy (*Konkurseröffnung*) pursuant to articles 171, 189, 190, 191 or 192 of the DEBA, including, without limitation, in connection with article 725a of the Swiss Code, (ii) the granting of a provisional or definitive stay of execution (*provisorische oder definitive Nachlassstundung*) pursuant to article 293 et seq. of the DEBA, (iii) the ordering of restructuring proceedings (*Sanierungsverfahren*) pursuant to articles 28 to 32 of the FBA or pursuant to any successor or analogous Swiss law or regulation applicable to bank holding companies in Switzerland such as UBS Group AG, and/or (iv) the ordering of liquidation proceedings (*Liquidation*) pursuant to articles 33 to 37g of the FBA or pursuant to any successor or analogous Swiss law or regulation applicable to bank holding companies in Switzerland such as UBS Group AG; *provided, however*, that none of the following will constitute a Bankruptcy Event: (x) mere debt collection proceedings (*Betreibungsverfahren*) pursuant to article 38 *et seq.* of the DEBA, (y) proceedings in connection with a freezing order (*Arrestverfahren*) pursuant to article 271 *et seq.* of the DEBA, and/or (z) the institution of protective measures (*Schutzmassnahmen*) pursuant to article 26 of the FBA or pursuant to any successor or analogous Swiss law or regulation applicable to bank holding companies in Switzerland such as UBS Group AG, including, in the case of each of subclauses (x), (y) and (z), any steps (other than any steps described in clauses (i) through (iv) of this definition) taken under or in connection therewith.

"**BIS Regulations**" means, at any time, the capital adequacy standards and guidelines promulgated by the Basel Committee on Banking Supervision, as implemented by the FINMA in Switzerland at such time.

"**BIS Risk Weighted Assets**" means, as of any Balance Sheet Date, the aggregate amount, in Swiss francs, of risk-weighted assets of the Group as of such Balance Sheet Date, as determined by the Group Holding Company pursuant to the BIS Regulations applicable to the Group Holding Company as of such Balance Sheet Date, and as (i) disclosed in the Quarterly Financial Accounts published on the relevant Ordinary Publication Date or (ii) may be disclosed as a component of the Reviewed Interim Measurement published upon the instruction of the FINMA on the relevant Extraordinary Publication Date, as applicable. For the avoidance doubt, the term "**risk-weighted assets**" as used in this definition has the meaning assigned to such term in the BIS Regulations in effect as of the relevant Balance Sheet Date.

"**Business Day**" means a day (other than a Saturday or a Sunday) on which commercial banks and foreign exchange markets settle payments and are open for general business (including, without limitation, dealing in foreign exchange and foreign currency deposits) in London, New York and Zurich.

"**Calculation Agent**" means UBS AG, in its capacity as calculation agent for the Notes, and includes any successor Calculation Agent appointed in accordance with the terms of the Fiscal Agency Agreement.

"**Calculation Amount**" means USD 1,000.

"**Calculation Period**" means the relevant period for which interest is to be calculated from (and including) the first day in such period to (but excluding) the last day in such period.

"**Capital Adequacy Ordinance**" means the Ordinance concerning Capital Adequacy and Risk Diversification for Banks and Securities Dealers, which entered into force on 1 January 2013, and as amended from time to time, or any successor Swiss law or regulation.

"**Certificate**" means a Global Certificate and/or a Definitive Certificate, as the case may be.

"**CET1 Capital**" means, as of any Balance Sheet Date, the aggregate amount, in Swiss francs, of items that constitute common equity tier 1 capital of the Group as of such Balance Sheet Date, less any deductions from common equity tier 1 capital required to be made, in each case as determined by the Group Holding Company pursuant to the BIS Regulations applicable to the Group Holding Company as of such Balance Sheet Date, and as (i) disclosed in the Quarterly Financial Accounts published on the relevant Ordinary Publication Date or (ii) may be disclosed as a component of the Reviewed Interim Measurement published upon the instruction of the FINMA on the relevant Extraordinary Publication Date, as applicable. For the avoidance of doubt, the term "**common equity tier 1 capital**" as used in this definition has the meaning assigned to such term in the BIS Regulations in effect as of the relevant Balance Sheet Date.

"**CET1 Ratio**" means, as of any Balance Sheet Date, the CET1 Capital as of such Balance Sheet Date, divided by the BIS Risk Weighted Assets as of such Balance Sheet Date, expressed as a percentage, such ratio (or the components thereof) as determined by the Group Holding Company, and (i) as disclosed in the Quarterly Financial Accounts published on the relevant Ordinary Publication Date or (ii) constituting (or as disclosed in) the Reviewed Interim Measurement published upon the instruction of the FINMA on the relevant Extraordinary Publication Date, as applicable.

"**Clearstream, Luxembourg**" means Clearstream Banking S.A.

"**Compliant Securities**" means securities issued by UBS Group AG or any of its subsidiaries that have economic terms not materially less favourable to a Holder than these Terms and Conditions (as reasonably determined by the Issuer), *provided* that

(a) such securities (A) include terms that provide for the same interest rate and principal from time to time applying to the Notes, (B) rank *pari passu* with the Notes and (C) preserve any existing rights under these Terms and Conditions to any accrued and unpaid interest that has not been satisfied;

(b) where such securities are issued by a subsidiary of UBS Group AG, UBS Group AG has issued a guarantee for the benefit of the Holders on substantially the same terms as the Guarantee;

(c) where the Notes that have been substituted or amended were listed immediately prior to their substitution or amendment, the relevant securities are listed on (A) the SIX Swiss Exchange or (B) such other internationally recognised stock exchange selected by the Issuer; and

(d) where the Notes that have been substituted or amended were rated by a rating agency immediately prior to such substitution or amendment, each such rating agency has ascribed, or announced its intention to ascribe and publish, an equal or higher rating to the relevant securities.

"**Contingent Write-down**" means the events described in subclauses (i) through (iii) of clause (d) of Condition 8 (*Contingent Write-down*).

"**Day Count Fraction**" means, in respect of any period, the number of days in the relevant period divided by 360 calculated on a formula basis as follows:

$$\text{Day Count Fraction} = \frac{[360x(Y_2 - Y_1)] + [30x(M_2 - M_1)] + (D_2 - D_1)}{360}$$

where:

"**Y1**" is the year, expressed as a number, in which the first day of the Calculation Period falls;

"**Y2**" is the year, expressed as a number, in which the day immediately following the last day included in the Calculation Period falls;

"**M1**" is the calendar month, expressed as a number, in which the first day of the Calculation Period falls;

"**M2**" is the calendar month, expressed as number, in which the day immediately following the last day included in the Calculation Period falls;

"**D1**" is the first calendar day, expressed as a number, of the Calculation Period, unless such number would be 31, in which case D1 will be 30; and

"**D2**" is the calendar day, expressed as a number, immediately following the last day included in the Calculation Period, unless such number would be 31 and D1 is greater than 29, in which case D2 will be 30.

"**DEBA**" means the Swiss Federal Debt Enforcement and Bankruptcy Act of 11 April 1889, as amended from time to time.

"**Definitive Certificate**" has the meaning assigned to such term in subclause (c)(i) of Condition 2 (*Amount, Denomination and Form*).

"**Depositary**" means DTC or any other Relevant Clearing System outside of Switzerland designated as Depositary by the Issuer; *provided, however*, that, irrespective of the number of Regulation S Global Certificates and/or Rule 144A Global Certificates, as the case may be, outstanding, there will be no more than one Depositary for the Notes at any time.

"**Distributable Items**" means, in respect of an Interest Payment Date, the aggregate of (i) net profits carried forward and (ii) freely distributable reserves, in each case, less any amounts that must be contributed to legal reserves under applicable law, all in UBS Group AG's reporting currency and as appearing in the Relevant Accounts.

"**Distribution Compliance Period**" means the 40-day period commencing on (and including) the later of (i) the day on which the Notes are first offered to Persons other than distributors (as defined in Regulation S under the US Securities Act), and (ii) the day on which the closing of the offering of the Notes occurs.

"**DTC**" means The Depository Trust Company.

"**Euroclear**" means Euroclear Bank SA/NV.

"**Event of Default**" has the meaning assigned to such term in clause (a) of Condition 12 (*Events of Default*).

"**Existing Benchmark Rate**" has the meaning assigned to such term in clause (c) of Condition 6 (*Interest*).

"**Extraordinary Publication Date**" means the Business Day on which a Reviewed Interim Measurement is published upon the instruction of the FINMA, after the FINMA has determined that the conditions for issuing a Trigger Event Write-down Notice in accordance with Condition 8 (*Contingent Write-down*) have been met.

"**Extraordinary Trigger Event Notice Date**" has the meaning assigned to such term in subclause (b)(i) of Condition 8 (*Contingent Write-down*).

"**FBA**" means the Swiss Federal Act on Banks and Savings Institutions of 8 November 1934, as amended from time to time.

"**FINMA**" means the Swiss Financial Market Supervisory Authority FINMA and any successor thereto.

"**First Call Date**" means 31 January 2024.

"**Fiscal Agency Agreement**" means the fiscal agency agreement relating to the Notes, dated as of the Issue Date, among the Issuer, the Guarantor, the Fiscal Agent, the Registrar, the Calculation

Agent, the Swiss Paying Agent and the other Agents from time to time party thereto, as amended, supplemented or otherwise modified from time to time.

"**Fiscal Agent**" means Deutsche Bank Trust Company Americas, in its capacity as fiscal agent for the Notes, and includes any successor Fiscal Agent appointed in accordance with the terms of the Fiscal Agency Agreement.

"**Fixed Interest Rate**" means 7.00 per cent. per annum.

"**Former Residence**" has the meaning assigned to such term in subclause (a)(i)(E) of Condition 15 (*Issuer Substitution*).

"**Global Certificate**" means a Rule 144A Global Certificate and/or a Regulation S Global Certificate, as the case may be.

"**Going-Concern LR Requirement**" means a requirement under National Regulations for systemically relevant banks (*systemrelevante Banken*) to hold a minimum amount of going-concern capital (*Eigenmittel zur ordentlichen Weiterführung der Bank*), which amount is set by reference to the leverage ratio (*Höchstverschuldungsquote*) of such bank.

"**Going-Concern RWA Requirement**" means a requirement under National Regulations for systemically relevant banks (*systemrelevante Banken*) to hold a minimum amount of going-concern capital (*Eigenmittel zur ordentlichen Weiterführung der Bank*), which amount is set by reference to the risk weighted assets (*risikogewichtete Positionen*) of such bank.

"**Group**" means, at any time, the Group Holding Company and all its subsidiaries and other entities that are included in the Group Holding Company's consolidated capital adequacy reports prepared pursuant to National Regulations.

"**Group Holding Company**" means, at any time, the top Swiss holding company at such time of the financial group to which UBS Group AG belongs for purposes of preparing consolidated capital adequacy reports pursuant to National Regulations. As at the Issue Date, the Group Holding Company is UBS Group AG.

"**Guarantee**" has the meaning assigned to such term in clause (a) of Condition 5 (*Guarantee*).

"**Guarantee Event**" has the meaning assigned to such term in subclause (b)(ii) of Condition 15 (*Issuer Substitution*).

"**Guarantor**" means UBS Group AG in its capacity as guarantor of the Notes.

"**Guarantor Junior Obligations**" has the meaning assigned to such term in clause (b) of Condition 5 (*Guarantee*).

"**Guarantor Parity Obligations**" has the meaning assigned to such term in clause (b) of Condition 5 (*Guarantee*).

"**Guarantor Senior Obligations**" has the meaning assigned to such term in clause (b) of Condition 5 (*Guarantee*).

"**Higher-Trigger Amount**" means, as of any Publication Date, the sum of (i) the maximum portion of the aggregate principal amount, in Swiss francs, of all Higher-Trigger Contingent Capital, if any, outstanding on the relevant Balance Sheet Date that could be converted into equity and/or fully or partially written down, or otherwise operate to increase the CET1 Capital, if a Higher-Trigger Write-down/Conversion Notice were delivered in accordance with the terms thereof, and (ii) the maximum portion of the aggregate principal amount, in Swiss francs, of all Higher-Trigger Contingent Capital, if any, issued after the relevant Balance Sheet Date, but prior to such Publication Date, that could be converted into equity and/or fully or partially written down, or otherwise operate to increase the CET1 Capital, if a Higher-Trigger Write-down/Conversion Notice were delivered in accordance with the terms thereof, in the case of each of clauses (i) and (ii), as determined by UBS Group AG. For purposes of clause (ii) of this definition and, in the case of an Extraordinary Publication Date, clause (i) of this definition, the aggregate principal amount of any Higher-Trigger Contingent Capital that is not denominated in Swiss francs will be converted into Swiss francs at the applicable prevailing exchange rate on the last Business Day preceding the relevant Publication Date, as determined by UBS Group AG. In the case of an Ordinary Publication Date, for purposes of clause (i) of this definition, the aggregate principal amount of any Higher-Trigger Contingent Capital that is not denominated in Swiss francs will be converted into Swiss francs at the applicable exchange rate used for such purposes in the relevant Quarterly Financial Accounts.

"**Higher-Trigger Contingent Capital**" means any instrument issued by, or any other obligation of, any member of the Group that (i) is issued or owed to holders that are not members of the Group and (ii) is required pursuant to its terms to be converted into equity and/or fully or partially written down, or otherwise operating to increase the CET1 Capital, when the CET1 Ratio (or equivalent capital measure of the Group described in the terms and conditions thereof) falls below a threshold that is higher than the Write-down Threshold (with respect to the relevant Higher-Trigger Contingent Capital, its "**Higher-Trigger Threshold**").

"**Higher-Trigger Threshold**" has the meaning assigned to such term in the definition of the term "**Higher-Trigger Contingent Capital**".

"**Higher-Trigger Write-down/Conversion Date**" has the meaning assigned to such term in the definition of the term "**Higher-Trigger Write-down/Conversion Notice**".

"**Higher-Trigger Write-down/Conversion Notice**" means a notice delivered pursuant to the terms of any Higher-Trigger Contingent Capital that notifies the holders thereof that the CET1 Ratio (or similar measure or other event described in the terms and conditions of such Higher-Trigger Contingent Capital) has fallen below its Higher-Trigger Threshold and, consequently, that such Higher-Trigger Contingent Capital will be converted into equity and/or fully or partially written down, or otherwise operate to increase the CET1 Capital, as applicable, as of a particular date (such date, the "**Higher-Trigger Write-down/Conversion Date**"). For the avoidance of doubt, if the terms and conditions of such Higher-Trigger Contingent Capital permit the FINMA to waive the conversion into equity and/or write-down of such Higher-Trigger Contingent Capital notwithstanding the fact that the CET1 Ratio (or similar measure or other event described in the terms and conditions of such Higher-Trigger Contingent Capital) has fallen below Higher-Trigger Threshold, the non-issuance of such a waiver by the FINMA between the relevant Publication Date and the Trigger Event Notice Date shall be deemed equivalent to the delivery of a Higher-Trigger Write-down/Conversion Notice for purposes of subclause (b)(ii) of Condition 8 (*Contingent Write-down*).

"**Holder**" means, with respect to any Note, the Person in whose name the Certificate representing such Note is registered in the Register. For the avoidance of doubt, with respect to Notes represented by a Global Certificate, no Indirect Holder or other Person will be a Holder for purposes of these Terms and Conditions, such Notes or the Guarantee or have any rights, or be owed any obligations by the Issuer or the Guarantor, under such Notes or the Guarantee.

"**Independent Adviser**" means an independent financial institution of international repute or other independent financial adviser experienced in the international capital markets, in each case, appointed by the Issuer at its own expense.

"**Independent Adviser Determination Cut-off Date**" has the meaning assigned to such term in subclause (c)(i) of Condition 6 (*Interest*).

"**Indirect Holder**" means, with respect to any Note represented by a Global Certificate, any Person (other than the Holder) that owns a beneficial interest in such Notes through a bank, broker or other financial institution that (i) participates in the book-entry system of SIS, DTC, Euroclear, Clearstream, Luxembourg and/or any other clearing system (each, a "**Relevant Clearing System**"), or (ii) holds an interest in such Note through a participant in the book-entry system of any Relevant Clearing System. No Indirect Holder will have any rights, or be owed any obligations by the Issuer or the Guarantor, under the Notes or the Guarantee.

"**Interest Payment Date**" has the meaning assigned to such term in subclause (a)(ii) of Condition 6 (*Interest*).

"**Interest Period**" means each period beginning on (and including) an Interest Payment Date (or, in the case of the first Interest Period, the Issue Date) and ending on (but excluding) the next Interest Payment Date.

"**Interest Rate**" means the Fixed Interest Rate and/or Reset Interest Rate, as the case may be.

"**Issue Date**" means 31 January 2019.

"**Issuer**" means UBS Group Funding (Switzerland) AG in its capacity as issuer of the Notes.

"**Junior Obligations**" means (i) all classes of share capital and participation securities (if any) of the Issuer and (ii) all other obligations of the Issuer that rank, or are expressed to rank, junior to claims in respect of the Notes and/or any Parity Obligation.

"**Margin**" means 4.344 per cent. per annum.

"**Mid Market Swap Rate**" means, in relation to a Reset Interest Period and the Reference Rate Determination Date in relation to such Reset Interest Period:

(a) the semi-annual-mid rate for US dollar swaps with a term of five years that appears on the Relevant Page as of the Relevant Time on such Reference Rate Determination Date; or

(b) if such rate does not appear on the Relevant Page at the Relevant Time on such Reference Rate Determination Date, the Reset Reference Bank Rate on such Reference Rate Determination Date.

"**Mid Market Swap Rate Quotations**" means the arithmetic mean of the bid and offered rates for the semi-annual fixed leg (calculated on a 30/360 day count basis) of a fixed-for-floating US dollar interest rate swap transaction that:

(a) has a term of five years commencing on the relevant Reset Date; and

(b) is in an amount that is representative for a single transaction in the relevant market at the relevant time with an acknowledged dealer of good credit in the swap market; and

(c) has a floating leg based on 6-month US dollar LIBOR (calculated on an Actual/360 day count basis).

"**National Regulations**" means, at any time, (i) the Swiss national banking and capital adequacy laws, and (ii) the capital adequacy regulations promulgated by the Swiss Federal Council (*Bundesrat*) or the FINMA and the interpretation thereof by the FINMA or any other competent Swiss authority, in the case of each of clauses (i) and (ii), directly applicable to UBS Group AG (and/or, if different, the Group Holding Company) and/or the Group at such time.

"**New Residence**" has the meaning assigned to such term in subclause (a)(i)(E) of Condition 15 (*Issuer Substitution*).

"**Notes**" means the USD 2,500,000,000 7.00 per cent. Tier 1 Capital Notes issued by the Issuer on the Issue Date.

"**Ordinary Publication Date**" means each Business Day on which Quarterly Financial Accounts are published.

"**Ordinary Shares**" means the registered ordinary shares of UBS Group AG.

"**Ordinary Trigger Event Notice Date**" has the meaning assigned to such term in subclause (b)(i) of Condition 8 (*Contingent Write-down*).

"**Parity Obligations**" means (i) all obligations of the Issuer in respect of Tier 1 Instruments (excluding any such obligations that rank, or are expressed to rank, junior to claims in respect of the Notes), and (ii) any other securities or obligations (including, without limitation, any guarantee, credit support agreement or similar undertaking) of the Issuer that rank, or are expressed to rank, *pari passu* with claims in respect of the Notes and/or any Parity Obligation.

"**Paying Agent**" has the meaning assigned to such term in subclause (c)(i) of Condition 9 (*Payments; Agents*).

"**Payment Business Day**" means a day (other than a Saturday or a Sunday) on which commercial banks and foreign exchange markets settle payments and are open for general business (including, without limitation, dealing in foreign exchange and foreign currency deposits) in London and New York.

"**Permitted Transactions**" means:

(a) repurchases, redemptions or other acquisitions of any Ordinary Shares in connection with (x) any employment contract, benefit plan or similar arrangement with, or for the benefit of, any employees, officers, directors or consultants of any member of the Group, (y) a dividend reinvestment or shareholder share purchase plan or (z) the issuance of any Ordinary Shares (or securities convertible into, or exercisable for, Ordinary Shares) as consideration for an acquisition consummated by any member of the Group;

(b) market-making in Ordinary Shares as part of the securities business of any member of the Group;

(c) purchases of fractional interests in any Ordinary Shares pursuant to the conversion or exchange provisions of (x) such Ordinary Shares or (y) any security convertible into, or exercisable for, Ordinary Shares;

(d) redemptions or repurchases of Ordinary Shares pursuant to any shareholders' rights plan; and

(e) distributions in cash or in kind on, or repurchases, redemptions or other acquisitions of, any Ordinary Shares as a part of any solvent reorganisation, reconstruction, amalgamation or merger of any member of the Group, so long as such member (or the successor entity resulting from such reorganisation, reconstruction, amalgamation or merger) continues to be a member of the Group.

"**Person**" means any individual, corporation, bank, partnership, joint venture, association, joint-stock company, limited liability company, trust, unincorporated organisation or government or any agency or political subdivision thereof.

"**Public Sector**" means the government of, or a governmental agency or the central bank in, the country of incorporation of the Group Holding Company.

"**Publication Date**" means an Ordinary Publication Date or an Extraordinary Publication Date, as the case may be.

"**Quarterly Financial Accounts**" means (i) the financial statements of the Group (including, without limitation, the notes thereto) in respect of a financial quarter published by the Group Holding Company, which have been reviewed by the Auditor in accordance with the International Standards on Auditing; *provided, however*, that, if the financial statements of the Group in respect of the last quarter of any year are not so reviewed, the term "**Quarterly Financial Accounts**" in respect of such quarter will mean instead the annual financial statements of the Group (including, without limitation, the notes thereto) in respect of such year, which have been audited by the Auditor in accordance with the International Standards on Auditing and are published in the annual report of the Group Holding Company for such year, or (ii) in the event that the Group does not publish quarterly financial statements as described in clause (i) of this definition, the financial disclosures published by the Group pursuant to and in compliance with FINMA Circular 2016/01 "**Capital Adequacy Disclosures Banks**", as amended from time to time, or pursuant to and in compliance with any successor circular or regulation applicable to the Group Holding Company, *provided* that such financial disclosures are published for each financial quarter and the interim earnings included in such disclosures have been reviewed by the Auditor in accordance with International Standards on Auditing.

"**QIB**" has the meaning assigned to such term in subclause (b)(i) of Condition 2 (*Amount, Denomination and Form*).

"**Record Date**" means, with respect to any Scheduled Due Date, the last Relevant Banking Day immediately preceding such Scheduled Due Date.

"**Redemption Date**" has the meaning assigned to such term in subclause (e)(i) of Condition 7 (*Redemption and Purchase*).

"**Redemption Notice**" has the meaning assigned to such term in subclause (e)(i) of Condition 7 (*Redemption and Purchase*).

"**Reference Rate**" means, in relation to a Reset Interest Period, the Mid Market Swap Rate determined for such Reset Interest Period by the Calculation Agent on the relevant Reference Rate Determination Date.

"**Reference Rate Determination Date**" means, in relation to a Reset Interest Period, the day falling two Business Days prior to the Reset Date on which such Reset Interest Period commences.

"**Register**" means the register that the Issuer will procure to be kept by the Registrar in accordance with the provisions of the Fiscal Agency Agreement.

"**Registrar**" means Deutsche Bank Trust Company Americas, in its capacity as registrar for the Notes, and includes any successor Registrar appointed in accordance with the Fiscal Agency Agreement.

"**Regulation S Global Certificate**" has the meaning assigned to such term in subclause (b)(i) of Condition 2 (*Amount, Denomination and Form*).

"**Regulatory Event**" has the meaning assigned to such term in subclause (d)(ii) of Condition 7 (*Redemption and Purchase*).

"**Relevant Accounts**" means, in respect of any Interest Payment Date, the most recently published audited unconsolidated annual financial statements of UBS Group AG prepared in accordance with the Swiss Code.

"**Relevant Banking Day**" means a day other than a Saturday or Sunday, on which banks are open for business in the place of the Specified Office of the Registrar and the Fiscal Agent.

"**Relevant Clearing System**" has the meaning assigned to such term in the definition of the term "**Indirect Holder**".

"**Relevant Date**" means, with respect to any payment, (i) the date on which such payment first becomes due under the Notes (the "**Scheduled Due Date**"), or (ii) if the full amount of the money payable on the Scheduled Due Date has not been received by the Fiscal Agent on or before the Scheduled Due Date, the date on which the full amount of the money due on the Scheduled Due Date has been received by the Fiscal Agent.

"**Relevant Page**" means Reuters Screen "ISDAFIX1" or such other page as may replace it on Reuters or, as the case may be, on such other information service that may replace Reuters, in each case, as may be nominated by the Person providing or sponsoring the information appearing there for the purpose of displaying rates comparable to the Mid Market Swap Rate.

"**Relevant Time**" means 11:00 a.m. (New York City time).

"**Relevant Swiss Issuer**" means, at any time, any bank, or any member of a banking group (including, without limitation, the Group), that is subject to a Going-Concern LR Requirement and a Going-Concern RWA Requirement at such time.

"**Reset Date**" means the First Call Date and each day which falls on the fifth anniversary of the immediately preceding Reset Date.

"**Reset Interest Amount**" has the meaning assigned to such term in clause (b) of Condition 6 (*Interest*).

"**Reset Interest Period**" means each period from (and including) any Reset Date and ending on (but excluding) the next Reset Date.

"**Reset Interest Rate**" means, in relation to any Reset Interest Period, the sum of the Margin and the Reference Rate in relation to such Reset Interest Period.

"**Reset Reference Bank Rate**" means, in relation to a Reset Interest Period and the Reference Rate Determination Date in relation to such Reset Interest Period, the percentage rate determined on the basis of the Mid Market Swap Rate Quotations provided by the Reset Reference Banks to the Calculation Agent at approximately the Relevant Time on such Reference Rate Determination Date. If at least three quotations are provided, the Reset Reference Bank Rate will be the arithmetic mean of the quotations provided, eliminating the highest quotation (or, in the event of equality, one of the highest) and the lowest quotation (or, in the event of equality, one of the lowest). If only two quotations are provided, the Reset Reference Bank Rate will be the arithmetic mean of the quotations provided. If only one quotation is provided, the Reset Reference Bank Rate will be the quotation provided. If no quotations are provided, the Reset Reference Bank Rate for the relevant Reset Interest Period will be (i) in the case of each Reset Interest Period other than the Reset Interest Period commencing on the First Call Date, the Mid Market Swap Rate in respect of the immediately preceding Reset Interest Period, or (ii) in the case of the Reset Interest Period commencing on the First Call Date, 2.656 per cent. per annum.

"**Reset Reference Banks**" means five major banks in the swap, money, securities or other market most closely connected with the Reference Rate, as selected by the Issuer after consultation with the Calculation Agent.

"**Reviewed Interim Measurement**" means an interim measurement of the CET1 Ratio, with respect to which the Auditor has performed procedures in accordance with the International Standard on Related Services (and relevant Swiss standards and practices) applicable to agreed-upon procedures engagements.

"**Rule 144A**" has the meaning assigned to such term in subclause (b)(i) of Condition 2 (*Amount, Denomination and Form*).

"**Rule 144A Global Certificate**" has the meaning assigned to such term in subclause (b)(i) of Condition 2 (*Amount, Denomination and Form*).

"**Scheduled Due Date**" has the meaning assigned to such term in the definition of the term "Relevant Date".

"**Senior Obligations**" means all obligations of the Issuer that are unsubordinated or that are subordinated and do not constitute either Junior Obligations or Parity Obligations.

"**SIS**" means SIX SIS Ltd.

"**Specified Office**" means (i) in the case of Deutsche Bank Trust Company Americas, as Fiscal Agent, Paying Agent, Registrar and Calculation Agent, Trust and Agency Services, 60 Wall Street, 16th Floor, New York, New York 10005, USA, (ii) in the case of UBS AG, as Swiss Paying Agent, Bahnhofstrasse 45, CH-8001 Zurich, Switzerland, and (iii) in the case of any other Agent, such office as is notified by the Issuer to the Holders in writing in accordance with Condition 14 (*Notices*) as soon as practicable after the appointment of such Agent, in the case of each of clauses (i), (ii) and (iii), or such other office as the relevant Agent may designate from time to time by providing notice to the Issuer and the Holders in writing in accordance with Condition 14 (*Notices*).

"**Substitute Issuer**" has the meaning assigned to such term in subclause (a)(i) of Condition 15 (*Issuer Substitution*).

"**Substitution Documents**" has the meaning assigned to such term in subclause (a)(i)(D) of Condition 15 (*Issuer Substitution*).

"**Substitution or Amendment Effective Date**" has the meaning assigned to such term in subclause (a)(iii) of Condition 13 (*Substitution and Amendment*).

"**Substitution or Amendment Notice**" has the meaning assigned to such term in subclause (a)(iii) of Condition 13 (*Substitution and Amendment*).

"**Swiss Code**" means the Swiss Code of Obligations, as amended from time to time.

"**Swiss Paying Agent**" has the meaning assigned to such term in subclause (c)(i) of Condition 9 (*Payments; Agents*).

"**Tax Event**" has the meaning assigned to such term in subclause (c)(ii) of Condition 7 (*Redemption and Purchase*).

"**Tax Jurisdiction**" means Switzerland.

"**Taxes**" has the meaning assigned to such term in clause (a) of Condition 10 (*Taxation*).

"**Tier 1 Capital**" means Additional Tier 1 Capital or any item that qualifies as common equity tier 1 capital pursuant to National Regulations.

"**Tier 1 Instruments**" means any and all (i) securities or other obligations (other than Tier 1 Shares) issued by UBS Group AG or (ii) shares, securities, participation securities or other obligations (other than Tier 1 Shares) issued by a subsidiary of UBS Group AG and having the benefit of a guarantee, credit support agreement or similar undertaking of UBS Group AG, each of which shares, securities, participation securities or other obligations described in clauses (i) and (ii) of this definition qualify, or are issued in respect of a security that qualifies, as Tier 1 Capital of the Group and/or UBS Group AG (without regard to quantitative limits on such capital) on a consolidated (*Finanzgruppe*) or on an unconsolidated (*Einzelinstitut*) basis.

"**Tier 1 Shares**" means all classes of share capital and participation certificates (if any) of UBS Group AG or any subsidiary of UBS Group AG that qualify as common equity tier 1 capital of the Group and/or UBS Group AG under National Regulations on a consolidated (*Finanzgruppe*) or on an unconsolidated (*Einzelinstitut*) basis.

"**Trigger Breach Determination Date**" has the meaning assigned to such term in subclause (b)(i) of Condition 8 (*Contingent Write-down*).

"**Trigger CET1 Ratio**" means, as of any Publication Date, (i) the sum of (x) the CET1 Capital as of the relevant Balance Sheet Date and (y) the Higher-Trigger Amount as of such Publication Date, divided by (ii) the BIS Risk Weighted Assets as of the relevant Balance Sheet Date, expressed as a percentage.

"**Trigger Event**" has the meaning assigned to such term in subclause (a)(ii) of Condition 8 (*Contingent Write-down*).

"**Trigger Event Notice Date**" means an Ordinary Trigger Event Notice Date or an Extraordinary Trigger Event Notice Date, as the case may be.

"**Trigger Event Write-down Date**" has the meaning assigned to such term in the definition of the term "**Trigger Event Write-down Notice**".

"**Trigger Event Write-down Notice**" means, with respect to any Publication Date, a notice (i) stating that (x) the Trigger CET1 Ratio as of such Publication Date is less than the Write-down Threshold, and (y) a Contingent Write-down will take place and (ii) specifying the date on which the Contingent Write-down will take place, which date shall, subject to postponement pursuant to subclause (b)(ii) of Condition 8 (*Contingent Write-down*), be no later than ten Business Days after the date of such notice (the "**Trigger Event Write-down Date**").

"**US Exchange Act**" means the US Securities and Exchange Act of 1934, as amended.

"**US Investment Company Act**" means the US Investment Company Act of 1940, as amended.

"**US Securities Act**" means the US Securities Act of 1933, as amended.

"**USD**" means US dollars.

"**Viability Event**" has the meaning assigned to such term in subclause (c)(ii) of Condition 8 (*Contingent Write-down*).

"**Viability Event Write-down Date**" has the meaning assigned to such term in subclause (c)(i) of Condition 8 (*Contingent Write-down*).

"**Viability Event Write-down Notice**" has the meaning assigned to such term in subclause (c)(i) of Condition 8 (*Contingent Write-down*).

"**Write-down Date**" means, with respect to any Contingent Write-down, the Trigger Event Write-down Date or Viability Event Write-down Date, as applicable.

"**Write-down Notice**" means, with respect to any Contingent Write-down, the relevant Trigger Event Write-down Notice or Viability Event Write-down Notice, as applicable.

"**Write-down Notice Date**" means, with respect to any Contingent Write-down, the date of the relevant Write-down Notice.

"**Write-down Threshold**" means 7 per cent.

2. AMOUNT, DENOMINATION AND FORM

(a) *Amount and denomination*

The initial aggregate principal amount of the Notes will be USD 2,500,000,000. The Notes will be issued to Holders in minimum denominations of USD 200,000 and integral multiples of USD 1,000 in excess thereof. The principal amount of the Notes may be written down in the circumstances and in the manner described in Condition 8 (*Contingent Write-down*). The Notes may only be held and transferred in minimum denominations of USD 200,000 and integral multiples of USD 1,000 in excess thereof.

(b) *Global Certificates*

(i) Notes that are initially sold in the United States to "qualified institutional buyers" (each, a "**QIB**") within the meaning of Rule 144A under the US Securities Act ("**Rule 144A**") are initially represented by one or more permanent registered global certificates (each, a "**Rule 144A Global Certificate**"), without interest coupons, deposited with the Fiscal Agent as custodian for, and registered in the name of Cede & Co. as nominee for, DTC. Notes that are initially sold in an "offshore transaction" within the meaning of Regulation S of the US Securities Act are initially represented by one or more permanent registered global certificates (each, a "**Regulation S Global Certificate**"), without interest coupons, deposited with the Fiscal Agent as custodian for, and registered in the name of Cede & Co. as nominee for, DTC, *provided* that upon such Regulation S Global Certificate's deposit, all beneficial interests in the Notes represented thereby are maintained at or through Euroclear and/or Clearstream, Luxembourg until expiration of the Distribution Compliance Period. The form of Regulation S Global Certificate and the form of Rule 144A Global Certificate are set out in the Fiscal Agency Agreement, which will be made available by the Registrar to any Holder upon request.

(ii) The aggregate principal amount of the Notes represented by each of the Global Certificates may from time to time be increased or decreased by adjustments made on the records of the Registrar. Each Global Certificate shall have affixed a schedule for the purpose of recording adjustments in the aggregate principal amount thereof; *provided, however*, that, in the event of a discrepancy between the principal amounts recorded on such schedule and the amounts listed on the records of the Registrar, the principal amounts listed on the records of the Registrar will control. Any beneficial interest of an Indirect Holder in any Note represented by one of the Global Certificates that is transferred to a Person who takes delivery in the form of a beneficial interest in such Note represented by another Global Certificate will, upon transfer, cease to be a beneficial interest in such first Global Certificate and become a beneficial interest in the other Global Certificate and, accordingly, will thereafter be subject to all transfer restrictions, if any, and other procedures applicable to beneficial interests in such other Global Certificate for as long as it retains such an interest.

(iii) The Holder of a Global Certificate may grant proxies and otherwise authorise any Person, including, without limitation, participants of DTC or another Relevant Clearing System and Persons that may hold interests through such participants, to take any action that a Holder is entitled to take under these Terms and Conditions or the Notes represented by such Global Certificate.

(iv) So long as the Notes are represented by one or more Global Certificates deposited with, or with a custodian for, the Depositary, although the Holders are the only Persons entitled to participate in, and vote at, any meeting of Holders, the Holder of a Global Certificate may grant proxies and otherwise authorise any Person, including, without limitation, participants of a Relevant Clearing System and Persons that may hold interests through such participants, to take any action that the Holder is entitled to take under these Terms and Conditions or the Notes, and nothing in these Terms and Conditions will prevent the Issuer, the Guarantor, the Agents or any of their respective agents from giving effect to any such proxies or other authorisations furnished by the Holder of a Global Certificate for purposes of this subclause (b)(iv). The Holder of a Global Certificate shall (i) obtain instructions from the relevant Indirect Holders in respect of any meeting of Holders, (ii) vote at such meeting in respect of each Note represented by such Global Certificate in accordance with the instructions received from the relevant Indirect Holder and (iii) abstain from representing any Note represented by such Global Certificate at a meeting of Holders for which it has not received an instruction from the relevant Indirect Holder. Only the Notes represented by such Global Certificate for which the Holder received an instruction by the relevant Indirect Holder to take part at a meeting of Holders will be deemed to be present or represented at such meeting.

(c) *Definitive Certificates*

(i) Definitive Notes in registered form (each, a "**Definitive Certificate**") shall be issued, and a Global Certificate will be exchanged, in whole, but not in part, for Definitive Certificates, if (and only if):

(A) the Depositary notifies the Issuer that it is no longer willing or able to discharge properly its responsibilities as depositary with respect to some or all of the Global Certificates, or ceases to be a "clearing agency" registered under the US Exchange Act; or

(B) at any time the Depositary is no longer eligible to act as such, or the Notes cease for any reason to be eligible for clearing through the Depositary, and the Issuer is unable to locate a qualified successor within 90 days of receiving notice of such ineligibility of the Depositary or of the Notes, as the case may be, from or on behalf of the Depositary; or

(C) issuance of the Definitive Certificates is required by Swiss or other applicable laws or regulations in connection with the enforcement of rights under the Notes; or

(D) the Issuer provides its consent.

(ii) If a Global Certificate is to be exchanged for Definitive Certificates pursuant to subclause (i) of this clause (c), the Issuer will procure the prompt delivery (free of charge) of Definitive Certificates to the Fiscal Agent, duly executed without interest coupons, registered in the names of the relevant Indirect Holders, addresses and denominations provided in a written notice to be given by the Depositary or the Issuer to the Fiscal Agent (which notice shall be given subject to the Depositary's procedures and also specify the taxpayer identification number, if any, of each Person in whose name such Definitive Certificates are to be registered). Upon written direction of the Issuer, the Fiscal Agent will deliver such Definitive Certificates to the Holders thereof not later than five Business Days after receipt by the Fiscal Agent of the written notice provided by the Depositary (or the Issuer, as applicable) referred to above (and any other necessary information as the Fiscal Agent may reasonably request from the Issuer at such time). The Fiscal Agent shall promptly cancel and deliver to the Issuer the surrendered Global Certificates. The form of Definitive Certificate that will be issued in exchange for a beneficial interest in a Note represented by a Rule 144A Global Certificate and the form of Definitive Certificate that will be issued in exchange for a beneficial interest in a Note represented by a Regulation S Global Certificate are set out in the Fiscal Agency Agreement, which will be made available by the Registrar to any Holder upon request.

(iii) If Definitive Certificates have been issued pursuant to Condition 2(c), any Definitive Certificate that is lost, stolen, mutilated, defaced or destroyed may be replaced, subject to applicable laws and regulations, at the Specified Office of the Fiscal Agent upon payment by the claimant of the fees, costs and expenses incurred by the Fiscal Agent and the Issuer in connection therewith and on such terms as to evidence, security and indemnity (which may provide, among other things, that if the Definitive Certificate allegedly or actually lost, stole or destroyed is subsequently presented for payment there shall be paid to the Issuer on demand the amount payable by the Issuer in respect of such Definitive Certificate subsequently presented) as the Issuer may require. Mutilated or defaced Definitive Certificates must be surrendered before replacements will be issued.

3. **TRANSFER**

(a) *General*

(i) Subject to Conditions 3(b) and 3(c), title to Notes will pass on transfer by assignment (*Zession*) and due registration in the Register. All transfers of Notes and entries on the Register will be made subject to the provisions concerning transfers of Notes set forth in the Fiscal Agency Agreement, which will be made available by the Registrar to any Holder upon written request.

(ii) Transfers of Notes, or of beneficial interests in Notes represented by Global Certificates, may be made only in accordance with the legend set forth upon the face of the applicable Global Certificate or Definitive Certificate, and the Registrar will not be required to accept for registration of transfer any Note or beneficial interests in Notes except upon presentation of evidence satisfactory to the Fiscal Agent and the Registrar that such transfer is being made in compliance with such legend.

(iii) Transfers of Notes and the issue of new Global Certificates or Definitive Certificates, as the case may be, on transfer will be effected without charge by or on behalf of the Issuer or the Registrar, but upon payment of any tax or other governmental charges that may be imposed in relation to the transfer (or the giving of such indemnity as the Fiscal Agent or the Registrar may require) by the Holder.

(iv) No Holder may require the transfer of a Note to be registered (x) if the Notes are to be redeemed pursuant to Condition 7 (*Redemption and Purchase*), during the period of 15 days ending on (and including) the relevant Redemption Date, or (y) during the period of 15 days ending on (and including) the Record Date for any Interest Payment Date.

(v) No Person (including any Indirect Holder) other than the Holder(s) will have any rights, or be owed any obligations by the Issuer or the Guarantor, under the Notes or the Guarantee. Payments of principal, interest or any other amount in respect of Notes will be made only to the Person shown on the Register as the registered holder of such Note (i.e., the Holder) at close of business on the relevant Record Date.

(b) *Transfer of Notes represented by a Global Certificate*

(i) Global Certificates may be transferred only in whole, but not in part, and only to a Relevant Clearing System or any of their respective successors or nominees except as provided below. Beneficial interests of Indirect Holders in Notes represented by Global Certificates will be transferred only in accordance with the rules and procedures of such Relevant Clearing System, the provisions of the Fiscal Agency Agreement and this Condition 3(b).

(ii) A beneficial interest in a Note represented by a Regulation S Global Certificate may be transferred to a Person who takes delivery in the form of a beneficial interest in a Note represented by a Rule 144A Global Certificate during the Distribution Compliance Period, only if such exchange occurs in connection with a transfer of beneficial interests in the Notes pursuant to Rule 144A and the transferor first delivers to the Fiscal Agent and the Registrar a written certificate substantially in the form of a certificate available on request from the Registrar to the effect that the beneficial interests in the Notes are being transferred to a Person who the transferor reasonably believes is a QIB within the meaning of Rule 144A under the US Securities Act, purchasing the beneficial interests in the Notes for its own account or the account of a QIB in a transaction meeting the requirements of Rule 144A and in accordance with all applicable securities laws of the states of the United States and other jurisdictions.

(iii) A beneficial interest in a Note represented by a Rule 144A Global Certificate may be transferred to a Person who takes delivery in the form of a beneficial interest in a Note represented by a Regulation S Global Certificate, whether before or after the expiration of the Distribution Compliance Period, only if the transferor first delivers to the Fiscal Agent and the Registrar a written certificate substantially in the form of a certificate available on request from the Registrar to the effect that the transfer is being conducted in compliance with Rule 903 or Rule 904 of Regulation S under the US Securities Act.

(iv) Until the termination of the Distribution Compliance Period, beneficial interests in any Regulation S Global Certificate may be held only through participants acting for and on behalf of Euroclear and/or Clearstream, Luxembourg, *provided* that this subclause (iv) shall not prohibit any transfer in accordance with subclause (ii) of this Condition 3(b).

(c) *Transfer of Notes represented by a Definitive Certificate*

(i) If and when Definitive Certificates have been issued pursuant to Condition 2(c), one or more Notes may be transferred only in accordance with the legends set forth upon the face of the relevant Definitive Certificate and only upon the surrender (at the Specified Office of the Registrar) of the Definitive Certificate representing such Notes to be transferred, together with the form of transfer attached to such Definitive Certificate (or another form of transfer substantially in the same form and containing the same representations and certifications (if any), unless otherwise agreed by the Issuer), duly completed and executed and any other evidence as the Fiscal Agent and the Registrar may reasonably require. A new Definitive Certificate shall be issued to the transferee in respect of the Notes that are the subject of the relevant transfer and, in the case of a transfer of part only of a holding of Notes represented by one Definitive Certificate, a new Definitive Certificate in respect of the balance of the Notes not transferred shall be issued to the transferor. In the case of a transfer of Notes to a Person who is already a Holder, a new Definitive Certificate representing the enlarged holding may be issued but only against surrender of the Definitive Certificate representing the existing holding of such Person.

(ii) Each new Definitive Certificate to be issued pursuant to Condition 2(c) shall be available for delivery within three Relevant Banking Days of receipt of the form of transfer and surrender of the relevant Definitive Certificate. Delivery of new Definitive Certificate(s) will be made at the Specified Office of the Fiscal Agent to whom delivery and surrender of such form of transfer and Definitive Certificate or, as the case may be, surrender of such Definitive Certificate, will have been made or, at the option of the relevant Holder and as specified in the relevant form of transfer or otherwise in writing, be mailed by uninsured post at the risk of the Holder entitled to the new Definitive Certificate to such address as may be so specified, unless such Holder requests otherwise and pays in advance to the Fiscal Agent the costs of such other method of delivery and/or such insurance as it may specify.

(d) *Rule 144A*

Each Note that is initially sold in the United States to a QIB will not be registered under the US Securities Act, or with any securities regulatory authority of any state or other jurisdiction of the United States and may not be sold, pledged or otherwise transferred, except (w) in accordance with Rule 144A to a Person that the Holder and any Person acting on its behalf reasonably believe is a QIB that is acquiring the Notes for its own account or for the account of one or more QIBs, (i) in an offshore transaction in accordance with Rule 903 or 904 of Regulation S under the US Securities Act, (ii) pursuant to an exemption from registration under Rule 144 under the US Securities Act, or in accordance with another exemption from, or in a transaction not subject to, registration under the US Securities Act, if available, or (iii) pursuant to an effective registration statement under the US Securities Act, in each case, in accordance with any applicable securities laws of any state of the United States.

4. STATUS AND SUBORDINATION

(a) *Status*

The Notes constitute direct, unsecured and subordinated obligations of the Issuer and rank *pari passu* and without any preference among themselves. The rights and claims of the Holders against the Issuer under the Notes are subordinated as described in clause (b) of this Condition 4.

(b) *Subordination*

In the event of (i) a Bankruptcy Event with respect to the Issuer or (ii) an order being made, or an effective resolution being passed, for the liquidation or winding-up of the Issuer (except, in any such case, a solvent liquidation or winding-up of the Issuer solely for the purposes of a reorganisation, reconstruction or amalgamation of the Issuer or the substitution in place of the Issuer of a successor in business to the Issuer, the terms of which reorganisation, reconstruction, amalgamation or substitution (x) have previously been approved by a valid resolution of the Holders and (y) do not provide that the Notes shall become redeemable in accordance with these Terms and Conditions), the rights and claims of the Holders against the Issuer in respect of or arising under (including, without limitation, any damages awarded for breach of any obligation under) the Notes will, subject to any obligations that are mandatorily preferred by law, rank (A) junior to the rights and claims of all holders of Senior Obligations, (B) *pari passu* with the rights and claims of holders of Parity Obligations and (C) senior to the rights and claims of holders of Junior Obligations; *provided, however*, that, if a Bankruptcy Event with respect to the Guarantor has occurred pursuant to clause (i) or (iv) of the definition thereof, any amount payable to Holders in respect of or arising under the Notes (including, for the avoidance of doubt, under the Guarantee) shall not exceed the amount per Note that would be paid on a liquidation distribution out of the assets of the Guarantor had the Notes and any Parity Obligations ranked *pari passu* with Guarantor Parity Obligations.

(c) *Claims subject to a Contingent Write-down*

Any claim of any Holder in respect of or arising under the Notes (including, without limitation, any claim in relation to any unsatisfied payment obligation of the Issuer subject to enforcement by any Holder pursuant to Condition 12 (*Events of Default*) or in relation to the occurrence of any other Event of Default) will be subject to, and superseded by, clause (d) of Condition 8 (*Contingent Write-down*), irrespective of whether the relevant Write-down Notice has been given prior to or after the occurrence of an Event of Default or any other event.

5. **GUARANTEE**

(a) *Guarantee of the Notes*

The Guarantor has, pursuant to and in accordance with the terms and conditions of a guarantee dated as of the Issue Date, and governed by Swiss law (the "**Guarantee**"), undertaken for the benefit of the Holders irrevocably and unconditionally to guarantee the payment of principal and interest and any other amounts due under the Notes. The obligations of the Guarantor under the Guarantee constitute direct and unsecured obligations of the Guarantor, subordinated as described in clause (b) of this Condition 5. Upon the occurrence of a Contingent Write-down, the Guarantee will cease to exist as of the relevant Write-down Date and all rights of any Holder for payment of any amounts under the Guarantee will become null and void, irrespective of whether such amounts have become due and payable prior to, or whether any Holder has requested payment of such amounts from the Guarantor under the Guarantee prior to, the relevant Write-down Notice Date or the Write-down Date. Upon the occurrence of an Automatic Issuer Substitution or if the Issuer voluntarily substitutes the Guarantor for itself as principal debtor under the Notes in accordance with clause (a) of Condition 15 (*Issuer Substitution*), the Guarantee will cease to exist.

(b) *Subordination*

The Guarantee provides that in the event of (i) a Bankruptcy Event with respect to the Guarantor or (ii) an order being made, or an effective resolution being passed, for the liquidation or winding-up of the Guarantor (except, in any such case, a solvent liquidation or winding-up of the Guarantor solely for the purposes of a reorganisation, reconstruction or amalgamation of the Guarantor or the substitution in place of the Guarantor of a successor in business to the Guarantor, the terms of which reorganisation, reconstruction, amalgamation or substitution (x) have previously been approved by a valid resolution of the Holders and (y) do not provide that the Notes shall become redeemable in accordance with these Terms and Conditions), the rights and claims of the Holders against the Guarantor in respect of or arising under (including, without limitation, any damages awarded for breach of any obligation under) the Guarantee will, subject to any obligations that are mandatorily preferred by law, rank (A) junior to the rights and claims of all holders of Guarantor Senior Obligations, (B) *pari passu* with the rights and claims of holders of Guarantor Parity Obligations and (C) senior to the rights and claims of holders of Guarantor Junior Obligations.

For purposes of this Condition 5,

(i) "**Guarantor Junior Obligations**" means (A) all classes of share capital and participation securities (if any) of the Guarantor and (B) all other obligations of the Guarantor that rank, or are expressed to rank, junior to claims in respect of the Guarantee and/or any Guarantor Parity Obligation.

(ii) "**Guarantor Parity Obligations**" means (A) all obligations of the Guarantor in respect of Tier 1 Instruments (excluding any such obligations that rank, or are expressed to rank, junior to claims in respect of the Guarantee), and (B) any other securities or obligations (including, without limitation, any guarantee, credit support agreement or similar undertaking) of the Guarantor that rank, or are expressed to rank, *pari passu* with claims in respect of the Guarantee and/or any Guarantor Parity Obligation.

(iii) "**Guarantor Senior Obligations**" means all obligations of the Guarantor that are unsubordinated or that are subordinated and do not constitute either Guarantor Junior Obligations or Guarantor Parity Obligations.

(c) *Consolidation, merger or sale*

The Guarantor has agreed pursuant to the Guarantee that it will not consolidate with, merge with or into, or sell, convey, transfer or otherwise dispose of all or substantially all of its property and assets (as an entirety or substantially as an entirety in one transaction or a series of related transactions) to, any Person (other than with, into or to the Issuer or any other Person of which at least 95 per cent. of such Person's capital and voting rights are held, directly or indirectly, by the Guarantor) or permit any Person to merge with or into the Guarantor unless (i) the Guarantor will be the continuing Person, or (ii) the Person formed by such consolidation or into which the Guarantor is merged or that acquired such property and assets of the Guarantor expressly assumes in writing (or, in the case of an acquisition of property and assets, guarantees) all of the obligations of the Guarantor under the Guarantee.

6. INTEREST

(a) *Interest Payment Dates*

(i) Subject to Condition 8 (*Contingent Write-down*) and clause (h) of this Condition 6, the Notes will bear interest on their principal amount (A) from (and including) the Issue Date to (but excluding) the First Call Date, at the Fixed Interest Rate, and (B) thereafter, at the applicable Reset Interest Rate.

(ii) Subject to Condition 8 (*Contingent Write-down*) and clause (i) of this Condition 6, interest on the Notes will be payable semi-annually in arrear on 31 January and 31 July of each year (each, an "**Interest Payment Date**"), commencing on 31 July 2019.

(b) *Determination of Reference Rate in relation to a Reset Interest Period*

With respect to each Reset Interest Period and subject to clause (c) of this Condition 6, the Calculation Agent will, as soon as practicable after the Relevant Time on the Reference Rate Determination Date in relation to such Reset Interest Period, determine the Reference Rate and the Reset Interest Rate for such Reset Interest Period and calculate the amount of interest payable per Calculation Amount on the Interest Payment Date in relation to each Interest Period falling in such Reset Interest Period (each, a "**Reset Interest Amount**").

(c) *Benchmark replacement*

If the Issuer (in consultation with the Calculation Agent) determines prior to any Reference Rate Determination Date that the rate referred to in clause (a) of the definition of Mid Market Swap Rate (the "**Existing Benchmark Rate**") has been discontinued, then the following provisions shall apply (subject to the subsequent operation of this clause (c)):

(i) the Issuer shall use reasonable endeavours to appoint an Independent Adviser to determine in the Independent Adviser's discretion, in accordance with subclause (iv) below, an alternative rate (the "**Alternative Benchmark Rate**") no later than three Business Days prior to the Reference Rate Determination Date relating to the next succeeding Reset Interest Period (such Business Day, the "**Independent Adviser Determination Cut-off Date**", and such next succeeding Reset Interest Period, the "**Affected Reset Interest Period**") for purposes of determining the Mid Market Swap Rate in respect of the Affected Reset Interest Period and all Reset Interest Periods thereafter;

(ii) if prior to the Independent Adviser Determination Cut-off Date the Issuer is unable to appoint an Independent Adviser or the Independent Adviser appointed by the Issuer fails to determine an Alternative Benchmark Rate in accordance with subclause (iv) below, then the Issuer (in consultation with the Calculation Agent) may determine in its discretion, in accordance with subclause (iv) below, the Alternative Benchmark Rate for purposes of determining the Mid Market Swap Rate in respect of the Affected Reset Interest Period and all Reset Interest Periods thereafter;

(iii) if subclause (ii) above applies and the Issuer is unable or unwilling to determine the Alternative Benchmark Rate prior to the Reference Rate Determination Date relating to the Affected Reset Interest Period in accordance with subclause (iv) below, the Mid Market Swap Rate in respect of the Affected Reset Interest Period will be equal to the Mid Market Swap Rate in respect of the immediately preceding Reset Interest Period (or, if there is no preceding Reset Interest Period, the Reset Interest Rate applicable to the Affected Reset Interest Period will be equal to the Fixed Interest Rate); *provided, however*, that, if this subclause (iii) applies to the Affected Reset Interest Period, the Mid Market Swap Rate for all succeeding Reset Interest Periods shall be the Mid Market Swap Rate applicable to the Affected Reset Interest Period as determined in accordance with this subclause (iii) unless (A) the Issuer, in its sole discretion, elects to determine an Alternative Benchmark Rate in respect of any such succeeding Reset Interest Period and all Reset Interest Periods thereafter in accordance with the processes set out in this clause (c), and (B) an Alternative Benchmark Rate is so determined;

(iv) in the case of any determination of an Alternative Benchmark Rate pursuant to subclause (i) or (ii) above, the Alternative Benchmark Rate shall be such rate as the Independent Adviser or the Issuer (in consultation with the Calculation Agent and acting in good faith and a commercially reasonable manner), as applicable, determines in its reasonable discretion has replaced the Existing Benchmark Rate in customary market usage, or, if the Independent Adviser or the Issuer, as applicable, determines in its reasonable discretion that there is no such rate, such other rate as the Independent Adviser or the Issuer (in consultation with the Calculation Agent and acting in good faith and a commercially reasonable manner) determines in its reasonable discretion is most comparable to the Existing Benchmark Rate; and

(v) if the Independent Adviser or the Issuer determines an Alternative Benchmark Rate in accordance with the above provisions of this clause (c).

(A) the Independent Adviser (in the case of subclause (2) below, in consultation with the Issuer) or the Issuer (as the case may be) shall also, following consultation with the Calculation Agent, determine in its reasonable discretion (1) the method for obtaining the Alternative Benchmark Rate, including the screen page on or source from which the Alternative Benchmark Rate appears or is obtained (the "**Alternative Relevant Page**"), and the time at which the Alternative Benchmark Rate appears on, or is obtained from, the Alternative Relevant Page (the "**Alternative Relevant Time**"), (2) whether to apply an Adjustment Spread to the Alternative Benchmark Rate and, if so, the Adjustment Spread, which Adjustment Spread must be recognised or acknowledged as being in customary market usage in international debt capital markets transactions that reference the Existing Benchmark Rate, where such rate has been replaced by the Alternative Benchmark Rate, and (3) any alternative method for determining the Mid Market Swap Rate if such Alternative Benchmark Rate is unavailable on the relevant Reset Determination Date, which alternative method shall be consistent with any Alternative Benchmark Rate that has broad market support;

(B) for the Affected Reset Interest Period and all Reset Interest Periods thereafter, (1) clause (a) of the definition of Mid Market Swap Rate shall be amended as contemplated in clause (b) of Condition 13 (*Substitution and Amendment*) to give effect to the determination described in subclause (A)(1) above and any Adjustment Spread determined pursuant to subclause (A)(2) above, and (2) clause (b) of the definition of Mid Market Swap Rate shall be amended as contemplated in clause (b) of Condition 13 (*Substitution and Amendment*) to give effect to the determination described in subclause (A)(3) above;

(C) references to the Relevant Page and to the Relevant Time in these Terms and Conditions shall be deemed to be references to the Alternative Relevant Page and the Alternative Relevant Time;

(D) if any changes to the definitions of Day Count Fraction, Business Day, Payment Business Day and/or Reference Rate Determination Date are necessary in order to implement the amendments described in subclause (B) above and, if so, such definitions shall be amended as contemplated in clause (b) of Condition 13 (*Substitution and Amendment*) to reflect such changes; and

(E) the Issuer shall promptly give notice to the Holders in accordance with Condition 14 (*Notices*) specifying the Alternative Benchmark Rate (including any Adjustment Spread determined pursuant to subclause (A)(2) above), the Alternative Relevant Page, the Alternative Relevant Time, any alternative method for determining the Mid Market Swap Rate described in subclause (A)(3) above, and any amendments implemented pursuant to clause (b) of Condition 13 (*Substitution and Amendment*) as described in subclause (D) above.

(d) *Publication of Reset Interest Rate and interest amount payable upon redemption*

With respect to each Reset Interest Period, as soon as practicable after such determination but in any event not later than the relevant Reset Date, the Calculation Agent will cause (i) the relevant Reset Interest Rate and the relevant Reset Interest Amount determined by it, together with the Interest Payment Date in relation to each Interest Period falling in such Reset Interest Period, to be notified to the Issuer and the Paying Agents and (ii) the relevant Reset Interest Rate determined by it to be notified to any stock exchange or other relevant authority on which the Notes are at the relevant time listed and to be published in accordance with Condition 14 (*Notices*).

The Calculation Agent shall calculate any interest amount payable on the Redemption Date (if the Notes are to be redeemed pursuant to Condition 7 (*Redemption and Purchase*) and cause such interest amount to be notified to Issuer and the Paying Agents and to any stock exchange or other relevant authority on which the Notes are at the relevant time listed and to be published in accordance with Condition 14 (*Notices*) no later than two Business Days prior to the Redemption Date.

(e) *Calculation of amount of interest per Calculation Amount*

Subject to Condition 8 (*Contingent Write-down*) and clause (i) of this Condition 6:

(i) the amount of interest payable on each Interest Payment Date from the Issue Date to (but excluding) the First Call Date in respect of the Notes will be USD 35.00 per Calculation Amount; and

(ii) if interest is required to be paid in respect of a Note on any other date (including, for the avoidance of doubt, the Reset Interest Amount), the amount of interest payable per Calculation Amount will be calculated by:

(A) applying the applicable Interest Rate to the Calculation Amount;

(B) multiplying the product thereof by the Day Count Fraction; and

(C) rounding the resulting figure to the nearest cent (half a cent being rounded upwards).

(f) *Calculation of amount of interest per Note*

Subject to Condition 8 (*Contingent Write-down*) and clause (i) of this Condition 6, the amount of interest payable in respect of a Note will be the product of:

(i) the amount of interest per Calculation Amount; and

(ii) the number by which the Calculation Amount is required to be multiplied to equal the denomination of such Note.

(g) *Notifications, etc. to be final*

All notifications, opinions, determinations, certificates, calculations, quotations and decisions given, expressed, made or obtained for the purposes this Condition 6, whether by the Reset Reference Banks (or any of them) or the Calculation Agent, will (in the absence of wilful default, bad faith and manifest error) be binding on the Issuer, the Guarantor, the Calculation Agent, the Paying Agents and the Holders and (in the absence of wilful default and bad faith) no liability to the Issuer, the Guarantor or the Holders will attach to the Reset Reference Banks (or any of them) or the Calculation Agent in connection with the exercise or non-exercise by the Calculation Agent of its powers, duties and discretions under this Condition 6.

(h) *Accrual of interest in the case of redemption or a Write-down Event*

(i) Subject to Condition 8 (*Contingent Write-down*), if the Notes are to be redeemed pursuant to clause (b), (c) or (d) of Condition 7 (*Redemption and Purchase*), interest on the Notes will accrue up to (but excluding) the relevant Redemption Date, and will cease to accrue on such Redemption Date; *provided, however,* that if the payment with respect to any Note is improperly withheld or refused on such Redemption Date, interest will continue to accrue on the principal amount of such Note (both before and after judgment) at the relevant Interest Rate to the Relevant Date.

(ii) Upon the occurrence of a Write-down Event, interest on the Notes will cease to accrue and any accrued and unpaid interest as at the time of such Write-down Event (whether or not due and payable) will be written down to zero in accordance with Condition 8 (*Contingent Write-down*).

(i) *Cancellation of interest; prohibited interest*

(i) The Issuer may, at its discretion, elect to cancel all or part of any payment of interest on the Notes (including, for the avoidance of doubt, any related Additional Amounts) that is otherwise scheduled to be paid on an Interest Payment Date. This subclause (i)(i) is without prejudice to the provisions of subclause (i)(ii) of this Condition 6. Non-payment of any amount of interest by the Issuer to the Fiscal Agent will constitute evidence of cancellation of the relevant payment, whether or not notice of cancellation has been given by the Issuer.

If practicable, the Issuer shall provide notice of any cancellation of interest (in whole or in part) pursuant to this subclause (i)(i) to the Holders on or prior to the relevant Interest Payment Date. If practicable, the Issuer shall endeavour to provide such notice at least five Business Days prior to the relevant Interest Payment Date. Failure to provide such notice will not have any impact on the effectiveness of, or otherwise invalidate, any such cancellation of interest, or give Holders any rights as a result of such failure.

(ii) The Issuer will be prohibited from making, in whole or in part, any payment of interest on the Notes (including, for the avoidance of doubt, any related

Additional Amounts) on the relevant Interest Payment Date if and to the extent that:

(A) the amount of Distributable Items as at such Interest Payment Date is less than the sum of (1) the amount of such interest payment, plus (2) all other payments (other than redemption payments) made by the Issuer or the Guarantor on or in respect of the Notes or any Parity Obligations, Guarantor Parity Obligations, Junior Obligations or Guarantor Junior Obligations since the balance sheet date of the Relevant Accounts and prior to such Interest Payment Date, plus (3) all payments (other than redemption payments) payable by the Issuer or the Guarantor on such Interest Payment Date on or in respect of any Parity Obligations, Guarantor Parity Obligations, Junior Obligations or Guarantor Junior Obligations, in the case of each of clauses (1), (2) and (3), excluding any portion of such payments already accounted for in determining the amount of such Distributable Items; and/or

(B) UBS Group AG is not, or will not immediately after the relevant payment of interest be, in compliance with all applicable minimum capital adequacy requirements of the National Regulations on a consolidated (*Finanzgruppe*) basis (for the avoidance of doubt, it being understood that such minimum requirements will reflect any reduction in such requirements granted by the FINMA to the Group pursuant to the Capital Adequacy Ordinance); and/or

(C) the FINMA has required the Issuer not to make such interest payment.

The Issuer shall deliver a certificate signed by the Authorised Signatories to the Fiscal Agent and shall give notice in accordance with Condition 14 (*Notices*) to the Holders, in each case as soon as practicable following any determination that interest is required to be cancelled pursuant to this subclause (i)(ii) or, where no such prior determination is made, promptly following any Interest Payment Date on which interest was scheduled to be paid if such interest is being cancelled in accordance with this subclause (i)(ii), to such effect setting out brief details as to the amount of interest being cancelled and the reason therefor. Failure to provide such certificate and notice will not have any impact on the effectiveness of, or otherwise invalidate, any such cancellation or give any Holder any rights as a result of such failure.

(iii) If, on any Interest Payment Date, any payment of interest scheduled to be made on such date is not made in full pursuant to subclause (i)(i) or subclause (i)(ii) of this Condition 6, the Issuer shall procure that UBS Group AG shall not, directly or indirectly,

(A) recommend to holders of Ordinary Shares that any dividend or other distribution in cash or in kind (other than in the form of Ordinary Shares) be paid or made on any Ordinary Shares; and

(B) redeem, purchase or otherwise acquire any Ordinary Shares other than as a Permitted Transaction,

in each case unless and until (x) the interest payment due and payable on the Notes on any subsequent Interest Payment Date has been paid in full (or an amount equal to the same has been paid in full to a designated third party trust account for the benefit of the Holders prior to payment by the trustee thereof to the Holders on such subsequent Interest Payment Date) or, if earlier, (y) all outstanding Notes have been cancelled in accordance with these Terms and Conditions.

(iv) Payments of interest on the Notes are not cumulative. Notwithstanding any other provision in these Terms and Conditions, the cancellation or non-payment of any interest amount by virtue of this Condition 6(i) will not constitute a default for any purpose (including, without limitation, Condition 12 (*Events of Default*) on the part of the Issuer. Any interest payment not paid by virtue of this Condition 6(i) will not accumulate or be payable at any time thereafter, and Holders will have no right thereto.

(v) If UBS Group AG determines, after consultation with the FINMA, that the Notes do not, or will cease to, fully qualify as Additional Tier 1 Capital, (A) the Issuer shall not, to the extent permitted under National Regulations, exercise its discretion pursuant to subclause (i)(i) of this Condition 6 to cancel any interest payments due on the Notes on any Interest Payment Date following the occurrence of such determination, and (B) the Issuer shall give notice to the Holders in accordance with Condition 14 (*Notices*) as soon as practicable after such determination stating that the Issuer may no longer exercise its discretion pursuant to subclause (i)(i) of this Condition 6 to cancel any interest payments as from the date of such notice.

7. REDEMPTION AND PURCHASE

(a) *No fixed redemption date*

The Notes are perpetual securities in respect of which there is no fixed redemption date. Unless previously redeemed or purchased and cancelled in accordance with this Condition 7 and subject to Condition 8 (*Contingent Write-down*), the Notes are perpetual and may only be redeemed or purchased in accordance with this Condition 7.

(b) *Redemption at the option of the Issuer*

Subject to clause (e) of this Condition 7, the Issuer may elect, in its sole discretion, to redeem the Notes, in whole but not in part, on the First Call Date or on any other Interest Payment Date thereafter at their aggregate principal amount, together with any accrued and unpaid interest thereon to (but excluding) the First Call Date or such other Interest Payment Date, as applicable.

(c) *Redemption due to a Tax Event*

(i) Subject to clause (e) of this Condition 7, upon the occurrence of a Tax Event at any time after the Issue Date, the Issuer may elect, in its sole discretion, to redeem the Notes, in whole but not in part, on the relevant Redemption Date at their aggregate principal amount, together with any accrued and unpaid interest thereon to (but excluding) such Redemption Date.

(ii) A "**Tax Event**" will have occurred if the Issuer in making any payments on the Notes or (if a demand were to be made under the Guarantee) the Guarantor in making any payments under the Guarantee (A) has paid, or will or would on the next payment date be required to pay, Additional Amounts, or (B) has paid, or will or would be required to pay, any additional Tax in respect of the Notes or the Guarantee, as applicable, in the case of each of clauses (A) and (B), under the laws or regulations of a Tax Jurisdiction or any political subdivision thereof or any authority of or in a Tax Jurisdiction or any political subdivision thereof having the power to impose, levy, collect, withhold or assess Taxes, including, without limitation, any treaty to which a Tax Jurisdiction is a party, or any generally published application or interpretation of such laws (including, without limitation, a decision of any court or tribunal, any generally published application or interpretation of such laws by any relevant tax authority or any generally published pronouncement by any relevant tax authority), and the Issuer or the Guarantor, as the case may be, cannot avoid the foregoing by taking measures reasonably available to it.

(d) *Redemption due to a Regulatory Event*

(i) Subject to clause (e) of this Condition 7, upon the occurrence of a Regulatory Event at any time after the Issue Date, the Issuer may elect, in its sole discretion, to redeem the Notes, in whole but not in part, on the relevant Redemption Date at their aggregate principal amount, together with any accrued and unpaid interest thereon to (but excluding) such Redemption Date.

(ii) A "**Regulatory Event**" will have occurred if any of the Notes ceases to be eligible in full to be (A) treated as Additional Tier 1 Capital, and/or (B) counted towards either the Going-Concern LR Requirement or the Going-Concern RWA Requirement (or both).

(e) *Conditions for redemption*

(i) If the Issuer elects to redeem the Notes pursuant to clause (b), (c) or (d) of this Condition 7, the Issuer shall give the Holders not less than 30 and not more than 60 days' prior notice in accordance with Condition 14 (*Notices*) (a "**Redemption Notice**"), which notice shall, subject to clause (f) of this Condition 7, be irrevocable and specify (x) the clause of this Condition 7 pursuant to which the redemption is to be made, (y) if any Definitive Certificates have been issued, the method by which Notes to be redeemed will be tendered, and (z) the date (which date shall be a Payment Business Day) on which the Issuer will redeem the Notes pursuant to such clause of this Condition 7 (such specified date, the "**Redemption Date**").

(ii) The Issuer may only redeem the Notes pursuant to clause (b) or (c) of this Condition 7 on the relevant Redemption Date if the FINMA has approved such redemption on or prior to such Redemption Date, if such approval is then required under applicable Swiss laws and regulations.

(iii) The Issuer may only redeem the Notes pursuant to any clause of this Condition 7 on the relevant Redemption Date if no Trigger Event or Viability Event has occurred prior to such Redemption Date.

(iv) Prior to the publication of any notice of redemption pursuant to subclause (e)(i) of this Condition 7, the Issuer shall deliver to the Fiscal Agent (A) a certificate signed by two Authorised Signatories stating that the relevant requirement or circumstance giving rise to the right to redeem under this Condition 7 is satisfied and the reasons therefor and such certificate will be conclusive and binding on the Holders, and (B) an opinion of independent legal advisers of recognised standing to the effect that circumstances entitling the Issuer to exercise its right of redemption under this Condition 7 have arisen.

(f) *Purchases*

The Issuer or any other member of the Group or any of their respective affiliates may at any time purchase Notes at any price in the open market or otherwise, ***provided*** that (i) such purchase complies with any limits or conditions to which any member of the Group is subject under applicable banking laws and regulations at the time of such purchase, (ii) other than in the case of purchases made in connection with stabilisation measures in compliance with applicable law or in connection with any market making in the Notes, the FINMA has approved such purchase (if such approval is then required under applicable Swiss laws and regulations) on or prior to the date of such purchase, and (iii) no Trigger Event or Viability Event has occurred prior to the date of such purchase. Any Notes so purchased may, at the option of the Issuer, be held, reissued, resold or cancelled.

(g) *Cancellation*

All Notes redeemed in accordance with this Condition 7 will be cancelled and may not be reissued or resold.

(h) *Redemption of Other Instruments*

For the avoidance of doubt, it is understood that, if, upon the occurrence of a Tax Event or a Regulatory Event, the Issuer does not elect to redeem the Notes pursuant to this

Condition 7, nothing in this Condition 7 or any other provision of these Terms and Conditions will prohibit the Issuer from redeeming (whether early, at maturity or otherwise) any other instruments issued by any member of the Group pursuant to the terms thereof.

8. CONTINGENT WRITE-DOWN

(a) *Trigger Event*

(i) Upon the occurrence of a Trigger Event, a Contingent Write-down will occur on the Trigger Event Write-down Date in accordance with clause (d) of this Condition 8.

(ii) A **"Trigger Event"** will have occurred if the Issuer or the Guarantor gives the Holders a Trigger Event Write-down Notice in accordance with clause (b) of this Condition 8.

(b) *Trigger Event Write-down Notice*

(i) If, with respect to any Publication Date, the Trigger CET1 Ratio as of such Publication Date is less than the Write-down Threshold, the Issuer or the Guarantor shall, subject to subclauses (b)(ii) and (b)(iii) of this Condition 8, give a Trigger Event Write-down Notice to the Holders (x) if such Publication Date is an Ordinary Publication Date, within five Business Days of such Ordinary Publication Date (such fifth Business Day, the **"Trigger Breach Determination Date"**, and the date of such notice, the **"Ordinary Trigger Event Notice Date"**), and (y) if such Publication Date is an Extraordinary Publication Date, on such Extraordinary Publication Date (the **"Extraordinary Trigger Event Notice Date"**), in each case in accordance with Condition 14 (*Notices*).

(ii) If a Trigger Event Write-down Notice is required to be given pursuant to subclause (b)(i) of this Condition 8, and on the relevant Publication Date any Higher-Trigger Contingent Capital is outstanding with respect to which either (x) no Higher-Trigger Write-down/Conversion Notice has been given prior to the Trigger Event Notice Date or (y) a Higher-Trigger Write-down/Conversion Notice has been given prior to the Trigger Event Notice Date, but the Trigger Event Write-down Date is scheduled to occur prior to the relevant Higher-Trigger Write-down/Conversion Date,

(A) in the case of clause (x) above, the giving of such Trigger Event Write-down Notice will be postponed until the date on which a Higher-Trigger Write-down/Conversion Notice has been given with respect to all such outstanding Higher-Trigger Contingent Capital and such date will be deemed to be the Trigger Event Notice Date; and

(B) in the case of clauses (x) and (y) above, if the Trigger Event Write-down Date is scheduled to occur prior to the Higher-Trigger Write-down/Conversion Date (or, in the case of more than one Higher-Trigger Write-down/Conversion Date, the latest Higher-Trigger Write-down/Conversion Date), the Trigger Event Write-down Date will be postponed to the Higher-Trigger Write-down/Conversion Date (or the latest Higher-Trigger Write-down/Conversion Date, as applicable) and such postponement shall be specified in such Trigger Event Write-down Notice.

(iii) If (A) a Trigger Event Write-down Notice is required to be given pursuant to subclause (b)(i) of this Condition 8 in relation to an Ordinary Publication Date, and (B) prior to the earlier of the Ordinary Trigger Event Notice Date and the Trigger Breach Determination Date, the FINMA, upon the request of UBS Group AG, has agreed in writing that a Contingent Write-down is not required as a result of actions taken by the Group or circumstances or events, in each case, that have had, or imminently will have, the effect of restoring the CET1 Ratio as of the Balance Sheet Date relating to the relevant Ordinary Publication Date, after giving pro forma effect to such actions, circumstances or events, to a level above the Write-down Threshold that the FINMA and UBS Group AG deem, in their sole discretion, to be adequate at such time, (x) neither the Issuer nor the Guarantor shall give such Trigger Event Write-down Notice pursuant to subclause (b)(i) of this Condition 8 in relation to the relevant Ordinary Publication Date, and (y) either the Issuer or the Guarantor shall give notice to the Holders on or prior to the Trigger Breach Determination Date in accordance with Condition 14 (*Notices*), which notice shall state that no Contingent Write-down will occur in relation to the relevant Ordinary Publication Date.

(c) *Viability Event*

(i) Subject to clause (f) of this Condition 8, upon the occurrence of a Viability Event, (A) the Issuer or the Guarantor shall give notice to the Holders in accordance with Condition 14 (*Notices*) within three days of the date on which such Viability Event occurred, which notice shall (x) state that a Viability Event has occurred and a Contingent Write-down will take place and (y) specify the date on which the Contingent Write-down will take place, which date shall be no later than 10 Business Days after the date of such notice (such specified date, the "**Viability Event Write-down Date**", and such notice, a "**Viability Event Write-down Notice**"), and (B) a Contingent Write-down will occur on the Viability Event Write-down Date in accordance with clause (d) of this Condition 8.

(ii) A "**Viability Event**" will have occurred if prior to an Alternative Loss Absorption Date (if any):

(A) the FINMA has notified UBS Group AG in writing that it has determined a write-down of the Notes, together with the conversion or write-down, as applicable, of holders' claims in respect of all other capital instruments issued by, or other capital obligations (whether qualifying fully or partially for capital treatment) of, any member of the Group that, pursuant to their terms or by operation of law, are capable of being converted into equity or written down at that time, is, because customary measures to improve the Group Holding Company's capital adequacy are at the time inadequate or infeasible, an essential requirement to prevent the Group Holding Company from becoming insolvent, bankrupt, unable to pay a material part of its debts as they fall due or unable to carry on its business; or

(B) customary measures to improve the Group Holding Company's capital adequacy being at the time inadequate or infeasible, the Group Holding Company has received an irrevocable commitment of direct or indirect extraordinary support from the Public Sector (beyond customary transactions and arrangements in the ordinary course) that has, or imminently will have, the effect of improving the Group Holding Company's capital adequacy and without which, in the determination of (and as notified in writing by) the FINMA, the Group Holding Company would have become insolvent, bankrupt, unable to pay a material part of its debts as they fall due or unable to carry on its business.

For the avoidance of doubt, it is understood that, a Viability Event may occur irrespective of whether or not a Trigger Event has occurred or whether any of the conditions to the issuance of a Trigger Event Write-down Notice have been met.

(d) *Contingent Write-down*

If the Issuer or the Guarantor has given a Write-down Notice in accordance with this Condition 8, then on the relevant Write-down Date,

(i) the full principal amount of, and any accrued and unpaid interest (whether or not due and payable) on, each Note will automatically be written down to zero, the Notes will be cancelled and all references to the principal amount of the Notes in these Terms and Conditions will be construed accordingly;

(ii) the Holders will be automatically deemed to have irrevocably waived their right to receive, and will no longer have any rights against the Issuer with respect to, repayment of the aggregate principal amount of, and payment of any accrued and unpaid interest on, the Notes written down pursuant to subclause (i) of this clause (d) (*bedingter Forderungsverzicht*); and

(iii) all rights of any Holder for payment of any amounts under or in respect of the Notes (including, without limitation, any amounts arising as a result of, or due and payable upon the occurrence of, an Event of Default) will become null and void, irrespective of whether such amounts have become due and payable prior to the relevant Write-down Notice Date or the Write-down Date.

(e) *Determination of CET1 Ratio and Trigger CET1 Ratio*

With respect to any Publication Date, (i) the CET1 Ratio as of the relevant Balance Sheet Date, (ii) the Trigger CET1 Ratio as of such Publication Date and (iii) the components of both of the foregoing, in each case, as published on such Publication Date, will be final for purposes of this Condition 8, and any revisions, restatements or adjustments to any of the calculations described in subclauses (i) through (iii) of this clause (e) subsequently published will have no effect for purposes of this Condition 8.

(f) *Alternative loss absorption*

In the event of the implementation of any new, or amendment to or change in the interpretation of any existing, laws or components of National Regulations, in each case occurring after the Issue Date, that alone or together with any other law(s) or regulation(s) has, in the joint determination of UBS Group AG and the FINMA, the effect that clause (c) of this Condition 8 could cease to apply to the Notes without giving rise to a Regulatory Event, then the Issuer or the Guarantor shall give notice to the Holders in accordance with Condition 14 (*Notices*) no later than five Business Days after such joint determination stating that such provisions will cease to apply from the date of such notice (the "**Alternative Loss Absorption Date**"), and from the date of such notice, such provisions will cease to apply to the Notes.

9. **PAYMENTS; AGENTS**

(a) All payments required to be made under the Notes will be made available in good time in freely disposable funds in USD, which will be placed at the free disposal of the Fiscal Agent on behalf of the Holders. If the Scheduled Due Date for any payment (whether in respect of principal, interest or otherwise) in respect of the Notes is not a Payment Business Day, then the Holders will not be entitled to payment thereof until the first Payment Business Day immediately following the Scheduled Due Date, and the Holders will not be entitled to any additional sum in relation to such payment. All payments required to be made under the Notes (including, without limitation, any Additional Amounts) shall be made to the Holders in USD without collection costs, without any restrictions and whatever the circumstances may be, irrespective of nationality, domicile or residence of the relevant Holder and without certification, affidavit or the fulfilment of any other formality; *provided, however*, that, in the case of Notes represented by Definitive Certificates, such Definitive Certificates must be presented and, in the case of redemption, surrendered at the Specified Office of the relevant Paying Agent as a condition to receipt of any such payment.

(b) The receipt by the Fiscal Agent of the due and punctual payment of funds in USD will release the Issuer from its obligations under the Notes to the extent of such payment.

(c) Subject to clause (d) of this Condition 9,

(i) the Issuer and the Guarantor reserve the right to terminate the appointment of any Agent, as well as to appoint or, after any such appointment, to terminate the appointment of, one or more other paying agents to carry out any payment, calculation or other functions in respect of the Notes (each, a "**Paying Agent**"), *provided* that (A) so long as any Note is outstanding, there will at all times be a Fiscal Agent, a Registrar and a Calculation Agent, and (B) for so long as the Notes are listed on the SIX Swiss Exchange, the Issuer and the Guarantor shall maintain a Paying Agent in Switzerland, which agent shall have an office in Switzerland and be a bank or securities dealer subject to supervision by the FINMA, to perform the functions of a Swiss paying agent (the "**Swiss Paying Agent**"), and (C) any successor Calculation Agent must be a leading bank or financial institution that is experienced in the calculations or determinations to be made by the Calculation Agent; and

(ii) if at any time the Fiscal Agent, the Registrar, the Calculation Agent, or the Swiss Paying Agent, (A) becomes incapable of acting, or (B) is adjudged bankrupt or insolvent, or files a voluntary petition in bankruptcy, or makes an assignment for the benefit of its creditors, or consents to the appointment of a receiver of all or any substantial part of its property, or admits in writing its inability to pay or meet its debts as they mature, or if an order of any court is entered approving any petition filed by or against it under the provisions of any applicable bankruptcy or insolvency law, or if a receiver of it or of all or any substantial part of its property is appointed, or if any public officer takes charge or control of it or of its property or affairs for the purpose of rehabilitation, conservation or liquidation (any such event, an "**Agent Insolvency Event**"), then the Issuer and the Guarantor will terminate the appointment of such Agent in accordance with the Fiscal Agency Agreement and appoint a successor Agent; and

(iii) if at any time the Calculation Agent fails to (A) duly calculate the Reference Rate and the Reset Interest Amount for any Interest Period or the interest amount payable on the Redemption Date (if the Notes are to be redeemed pursuant to Condition 7 (*Redemption and Purchase*)) or (B) comply with any other requirement in relation to the Notes, then the Issuer and the Guarantor will terminate the appointment of the Calculation Agent in accordance with the Fiscal Agency Agreement and appoint a successor Calculation Agent; *provided, however*, that, if the Calculation Agent duly calculates such Reference Rate, Reset Interest Amount or interest amount payable on the Redemption Date, as the case may be, prior to its termination (and the appointment of its successor) taking effect in accordance with clause (d) of this Condition 9, the Issuer and the Guarantor may elect, in their sole discretion and upon written notice to the Holders pursuant to Condition 14 (*Notices*), to cancel such termination (and appointment).

(d) Any appointment or termination of appointment of, or any resignation by, any Agent may only take effect not more than 45 and not less than 30 days after the Issuer has notified the Holders of such appointment, termination or resignation pursuant to Condition 14 (*Notices*); *provided, however*, that, in the case of the termination of an Agent with respect to which an Agent Insolvency Event has occurred, such termination may take effect prior the expiry of such 30-day notice period, so long as a successor Agent has been appointed to the extent required by the immediately succeeding sentence. Notwithstanding the foregoing, any termination of the appointment of, or resignation by, the Fiscal Agent, the Registrar, the Swiss Paying Agent, or the Calculation Agent may not take effect until the Issuer and the Guarantor have appointed a successor Fiscal Agent, Registrar, Swiss Paying Agent or Calculation Agent, as applicable; *provided, however*, that, if no such successor has been appointed within 30 days of the scheduled effectiveness of such termination or resignation, any Holder (on behalf of itself and all others similarly situated) or, pursuant to and in accordance with the Fiscal Agency Agreement, the Fiscal Agent, the Registrar, any Paying Agent or the Calculation Agent, as the case may be, may petition any court of competent jurisdiction for the appointment of a successor, at the expense of the Issuer.

10. TAXATION

(a) All payments to be made by or on behalf of the Issuer in respect of the Notes (including, for the avoidance of doubt, amounts paid by the Guarantor under the Guarantee and payments by a Paying Agent) shall be made without withholding or deduction for, or on account of, any present or future taxes, duties, assessments or other government charges of any nature ("**Taxes**") imposed, levied, collected, withheld or assessed by or on behalf of any Tax Jurisdiction or any political subdivision thereof or any authority of or in a Tax Jurisdiction or any political subdivision thereof having the power to impose, levy, collect, withhold or assess Taxes, unless withholding, deduction or accounting for such Taxes is required by law.

(b) In the event that any payment to be made by or on behalf of the Issuer in respect of the Notes (including, for the avoidance of doubt, amounts paid by the Guarantor under the Guarantee and payments by a Paying Agent) is subject to any withholding or deduction for, or on account of, any Taxes by requirement of law in a Tax Jurisdiction (as determined by the relevant tax authority of or in such Tax Jurisdiction), the Issuer shall pay such additional amounts as will result in the Holders receiving the amounts that they would have received in respect of the Notes if no such withholding or deduction had been required ("**Additional Amounts**").

(c) No Additional Amounts will be payable pursuant to clause (b) of this Condition 10 in relation to any Note:

   (i) if the relevant Holder is liable for such Taxes on such Note as a result of having some connection with the relevant Tax Jurisdiction other than its mere ownership or possession of such Note or the receipt of principal or interest in respect thereof; or

   (ii) with respect to any Tax collected pursuant to the provisions of, or any laws or an agreement with any Tax Jurisdiction relating to, Sections 1471 through 1474 of the US Internal Revenue Code (commonly referred to as "**FATCA**"); or

   (iii) where such withholding or deduction is required to be made pursuant to laws enacted by Switzerland providing for the taxation of payments according to principles similar to those laid down in the draft legislation of the Swiss Federal Council of 17 December 2014, or otherwise changing the Swiss federal withholding tax system from an issuer-based system to a paying agent-based system pursuant to which a Person other than the issuer is required to withhold tax on any interest payments; or

   (iv) to the extent any combination of subclauses (i) through (iii) of this clause (c) applies.

(d) Any reference in these Terms and Conditions to amounts payable by the Issuer in respect of the Notes includes (i) any Additional Amount payable pursuant to this Condition 10 and (ii) any sum payable pursuant to an obligation taken in addition to or in substitution for the obligation in this Condition 10.

11. STATUTE OF LIMITATIONS

In accordance with Swiss law, (a) claims for interest payments under the Notes will become time-barred after the five-year period and (b) claims for the repayment or redemption of Notes will become time-barred after the ten-year period, in each case, commencing on the date on which such payments, repayment or redemption become due and payable.

12. EVENTS OF DEFAULT

(a) If any of the following events occurs, such occurrence will constitute an "**Event of Default**":

(i) the Issuer fails to pay the principal amount of any Note if and when the same becomes due and payable under these Terms and Conditions, and such failure continues unremedied by the Issuer or the Guarantor for a period of 30 days; or

(ii) the Issuer fails to pay any interest on the Notes if and when the same becomes due and payable under these Terms and Conditions, and such failure continues unremedied by the Issuer or the Guarantor for a period of 30 days; or

(iii) the Issuer or the Guarantor fails to observe or perform any other covenant, condition, or agreement contained in these Terms and Conditions or the Guarantee, respectively, and such failure continues unremedied for a period of 60 days after written notice thereof from any Holder to the Issuer; or

(iv) a Bankruptcy Event with respect to either the Issuer or the Guarantor.

(b) Upon the occurrence of an Event of Default relating to any failure of the Issuer to meet any payment obligation under these Terms and Conditions and subject to Condition 8 (*Contingent Write-down*), (i) such payment obligation (and such payment obligation only) will be immediately deemed a due and payable (*fällige*) payment obligation of the Issuer, and (ii) if (A) the relevant Holder has formally requested payment of such payment obligation, (B) such payment obligation has not been fulfilled within the statutory period under Swiss law commencing after the date of such formal request and (C) a writ of payment (*Zahlungsbefehl*) has been issued with respect to such payment obligation pursuant to the DEBA, the relevant Holder may institute proceedings against the Issuer in Switzerland (but not elsewhere) to enforce its rights with respect to such payment obligation under the DEBA.

(c) If a debt collection or insolvency proceeding with respect to the Issuer is instituted in Switzerland in accordance with clause (b) of this Condition 12, the Issuer shall not (i) after having received the writ of payment (*Zahlungsbefehl*) relating to the relevant payment obligation, argue or plead that such payment obligation is not due and payable by the Issuer, or (ii) prior to the declaration of bankruptcy (or similar proceeding under Swiss insolvency laws), make any payment to the relevant Holder under or in connection with the Notes.

(d) In the case of any Event of Default arising under subclause (a)(iii) of this Condition 12 and subject to Condition 8 (*Contingent Write-down*), any Holder may seek specific performance or damages with respect to such Event of Default pursuant to the Swiss Code if so entitled thereunder. Any such damage claim of any Holder will rank junior to the rights and claims of all holders of Senior Obligations.

(e) In the case of any Event of Default arising under subclause (a)(iv) of this Condition 12 and subject to Condition 8 (*Contingent Write-down*), any Holder may, by written notice to the Issuer, declare the principal amount of any of its Notes, together with any accrued and unpaid interest thereon, immediately due and payable, without presentment, demand, protest or other notice of any kind.

(f) No remedy against the Issuer other than those described in this Condition 12 will be available to the Holders in connection with the Issuer's obligations under these Terms and Conditions, whether for the recovery of amounts owing under these Terms and Conditions or in respect of any breach by the Issuer of any of its other obligations under these Terms and Conditions or otherwise. In particular, no Holder may declare (i) the principal amount of any Notes due and payable prior to any Redemption Date, or (ii) any interest on any Notes due and payable prior to the relevant Interest Payment Date, except, in the case of each of subclauses (i) and (ii) of this clause (f), pursuant to clause (e) of this Condition 12.

13. SUBSTITUTION AND AMENDMENT

(a) If a Tax Event, a Regulatory Event or an Alignment Event has occurred, the Issuer may, without the consent of the Holders unless so required by mandatory provisions of Swiss law, either substitute all, but not some only, of the Notes for, or amend these Terms and Conditions so that they remain or become, Compliant Securities, *provided* that:

(i) neither a Tax Event nor a Regulatory Event arises as a result of such substitution or amendment;

(ii) the FINMA has approved such substitution or amendment (if such approval is then required under applicable Swiss laws and regulations);

(iii) the Issuer has given the Holders not less than 30 days' notice of such substitution or amendment in accordance with Condition 14 (*Notices*), which notice (the "**Substitution or Amendment Notice**") will, subject to subclause (a)(iv) of this Condition 13, be irrevocable, and state the date on which such substitution or amendment will be effective (the "**Substitution or Amendment Effective Date**");

(iv) prior to the publication of any notice pursuant to subclause (a)(iii) of this Condition 13, the Issuer shall deliver to the Fiscal Agent (A) a certificate signed by two Authorised Signatories stating that the relevant requirement or circumstance giving rise to the right to substitute or amend the terms of the Notes, as applicable, pursuant to this clause (a) of this Condition 13 is satisfied and the reasons therefor and such certificate will be conclusive and binding on the Holders, and (B) an opinion of independent legal advisers of recognised standing to the effect that circumstances entitling the Issuer to exercise its right to substitute or amend the terms of the Notes, as applicable, pursuant to this clause (a) of this Condition 13 have arisen; and

(v) no Trigger Event or Viability Event has occurred prior to the relevant Effective Date.

In connection with any substitution or amendment in accordance with this clause (a) of this Condition 13, the Issuer shall (and shall cause the Guarantor to) comply with the rules of any stock exchange on which the Notes are for the time being listed or admitted to trading.

An "**Alignment Event**" will have occurred if, as a result of any change in National Regulations at any time after the Issue Date, any Relevant Swiss Issuer would be permitted to issue or guarantee (including, without limitation, by providing a guarantee, credit support agreement or similar undertaking), or has issued or guaranteed (including, without limitation, by providing a guarantee, credit support agreement or similar undertaking), a capital instrument that (i) is eligible in full to be (A) treated as Additional Tier 1 Capital and (B) counted towards either the Going-Concern LR Requirement or the Going-Concern RWA Requirement (or both), and (ii) has terms and conditions that (A) include a write-down feature, and (B) contain one or more provisions that are, in the reasonable opinion of UBS Group AG, different in any material respect from those in these Terms and Conditions, which provisions, if they had been included in these Terms and Conditions, would have prevented the Notes from being eligible in full to be treated as Additional Tier 1 Capital and/or to be counted towards either the Going-Concern LR Requirement or the Going-Concern RWA Requirement (or both) immediately prior to such change in National Regulations.

(b) In addition to its rights under clause (a) of this Condition 13, the Issuer may, without the consent of the Holders unless so required by mandatory provisions of Swiss law, make any amendment to these Terms and Conditions that it considers to be (i) necessary or desirable to give effect to (A) any Alternative Benchmark Rate determined in accordance with clause (c) of Condition 6 (*Interest*) (including any Adjustment Spread determined in accordance with subclause (v)(A)(2) thereof and any alternative method for determining the Mid Market Swap Rate if such Alternative Benchmark Rate is unavailable on the relevant Reset Determination Date determined in accordance with subclause (v)(A)(3) thereof), or (B) the provisions of clause (a) of Condition 15 (*Issuer Substitution*) (including, without limitation, (x) if the Substitute Issuer is organised and/or resident for tax purposes in a jurisdiction other than Switzerland, any amendments to any references law, either substitute all, but not some only, of the Notes for, or amend these Terms and Conditions so that they remain or become, Compliant Securities, *provided* that:

(i) neither a Tax Event nor a Regulatory Event arises as a result of such substitution or amendment;

(ii) the FINMA has approved such substitution or amendment (if such approval is then required under applicable Swiss laws and regulations);

(iii) the Issuer has given the Holders not less than 30 days' notice of such substitution or amendment in accordance with Condition 14 (*Notices*), which notice (the "**Substitution or Amendment Notice**") will, subject to subclause (a)(iv) of this Condition 13, be irrevocable, and state the date on which such substitution or amendment will be effective (the "**Substitution or Amendment Effective Date**");

(iv) prior to the publication of any notice pursuant to subclause (a)(iii) of this Condition 13, the Issuer shall deliver to the Fiscal Agent (A) a certificate signed by two Authorised Signatories stating that the relevant requirement or circumstance giving rise to the right to substitute or amend the terms of the Notes, as applicable, pursuant to this clause (a) of this Condition 13 is satisfied and the reasons therefor and such certificate will be conclusive and binding on the Holders, and (B) an opinion of independent legal advisers of recognised standing to the effect that circumstances entitling the Issuer to exercise its right to substitute or amend the terms of the Notes, as applicable, pursuant to this clause (a) of this Condition 13 have arisen; and

(v) no Trigger Event or Viability Event has occurred prior to the relevant Effective Date.

In connection with any substitution or amendment in accordance with this clause (a) of this Condition 13, the Issuer shall (and shall cause the Guarantor to) comply with the rules of any stock exchange on which the Notes are for the time being listed or admitted to trading.

An "**Alignment Event**" will have occurred if, as a result of any change in National Regulations at any time after the Issue Date, any Relevant Swiss Issuer would be permitted to issue or guarantee (including, without limitation, by providing a guarantee, credit support agreement or similar undertaking), or has issued or guaranteed (including, without limitation, by providing a guarantee, credit support agreement or similar undertaking), a capital instrument that (i) is eligible in full to be (A) treated as Additional Tier 1 Capital and (B) counted towards either the Going-Concern LR Requirement or the Going-Concern RWA Requirement (or both), and (ii) has terms and conditions that (A) include a write-down feature, and (B) contain one or more provisions that are, in the reasonable opinion of UBS Group AG, different in any material respect from those in these Terms and Conditions, which provisions, if they had been included in these Terms and Conditions, would have prevented the Notes from being eligible in full to be treated as Additional Tier 1 Capital and/or to be counted towards either the Going-Concern LR Requirement or the Going-Concern RWA Requirement (or both) immediately prior to such change in National Regulations.

(b) In addition to its rights under clause (a) of this Condition 13, the Issuer may, without the consent of the Holders unless so required by mandatory provisions of Swiss law, make any amendment to these Terms and Conditions that it considers to be (i) necessary or desirable to give effect to (A) any Alternative Benchmark Rate determined in accordance with clause (c) of Condition 6 (*Interest*) (including any Adjustment Spread determined in accordance with subclause (v)(A)(2) thereof and any alternative method for determining the Mid Market Swap Rate if such Alternative Benchmark Rate is unavailable on the relevant Reset Determination Date determined in accordance with subclause (v)(A)(3) thereof), or (B) the provisions of clause (a) of Condition 15 (*Issuer Substitution*) (including, without limitation, (x) if the Substitute Issuer is organised and/or resident for tax purposes in a jurisdiction other than Switzerland, any amendments to any references to the jurisdiction of "Switzerland" contained herein, including, without limitation, amendments to the definition of the term "Bankruptcy Event", the definition of the term "Business Day", the governing law of the subordination provisions set forth in Condition 4 (*Status and Subordination*) and the provisions of Condition 12 (*Events of Default*), and (y) any amendments to reflect UBS Group AG's guarantee described in subclause (a)(i)(C) of Condition 15 (*Issuer Substitution*)), or (C) the provisions of clause (b) of Condition 15 (*Issuer Substitution*), or (ii) formal, minor or technical in nature, or (iii) necessary to correct a manifest error or (iv) not materially prejudicial to the interests of the Holders.

(c) The Issuer shall notify the Holders of any amendments made pursuant to clause (b) of this Condition 13 in accordance with Condition 14 (*Notices*), which notice shall state the date on which such amendment will be effective.

(d) Any amendment made pursuant to this Condition 13 will be binding on the Holders in accordance with its terms.

14. NOTICES

(a) So long as the Notes are listed on the SIX Swiss Exchange, notices to Holders shall be given by the Issuer or, if applicable, by the Guarantor (i) by means of electronic publication on the internet website of the SIX Swiss Exchange (www.six-swiss-exchange.com), where notices are currently published under the address www.six-swiss-exchange.com/news/official_notices/search_en.html, or (ii) otherwise in accordance with the regulations of the SIX Swiss Exchange. Any notice will be validly given on the date of such publication or, if published more than once, on the date of the first such publication.

(b) If the Notes are for any reason no longer listed on the SIX Swiss Exchange:

(i) if the Notes are represented by one or more Global Certificates deposited with a custodian for DTC, notices to Holders shall only be required to be given by the Issuer or, if applicable, the Guarantor in accordance with clause (c) of this Condition 14; or

(ii) if the Global Certificate(s) have been exchanged for Definitive Certificates, the Issuer or, if applicable, the Guarantor shall send notices to Holders by first class mail at their respective addresses as recorded in the Register, and any such notice will be validly given on the fourth Business Day after the date of such mailing.

(c) So long as the Notes are represented by one or more Global Certificates deposited with a custodian for DTC, any notices required to be given by the Issuer or, if applicable, the Guarantor to the Holders hereunder shall also be given to the Indirect Holders through the Fiscal Agent to DTC for forwarding to the Indirect Holders. Any such notice will be validly given on the date of delivery to DTC.

15. ISSUER SUBSTITUTION

(a) *Voluntary Issuer Substitution*

(i) The Issuer (for purposes of clause (a) of this Condition 15, the "**Current Issuer**") may, without the consent of the Holders, substitute any entity (whether or not such entity is organised under the laws of Switzerland) (such substitute entity, the "**Substitute Issuer**") for itself as principal debtor under the Notes upon giving no more than 30 and no less than 10 days' notice to the Holders in accordance with Condition 14 (*Notices*), *provided* that:

(A) the Substitute Issuer is UBS Group AG or, if the Substitute Issuer is not UBS Group AG, (1) an exemption exists from the requirement to register the Substitute Issuer as an investment company under the US Investment Company Act, and (2) at least 95 per cent. of the Substitute Issuer's capital and voting rights are held, directly or indirectly, by UBS Group AG;

(B) the Current Issuer is not in default in respect of any amount payable under the Notes at the time of such substitution;

(C) if the Current Issuer is UBS Group AG, UBS Group AG has issued a guarantee for the benefit of the Holders on substantially the same terms as the Guarantee;

(D) the Current Issuer and the Substitute Issuer (1) have entered into such documents (the "**Substitution Documents**") as are necessary to give effect to such substitution and pursuant to which the Substitute Issuer has (x) undertaken in favour of each Holder to be bound by these Terms and Conditions as the principal debtor (on a subordinated basis corresponding to Condition 4 (*Status and Subordination*)) under the Notes in place of the Current Issuer and (y) assumed the obligations of the Current Issuer under the Fiscal Agency Agreement, and (2) procure that all action, conditions and things required to be taken, fulfilled and done (including, without limitation, the obtaining of any necessary consents) to ensure that the Substitution Documents represent valid, legally binding and enforceable obligations of the Substitute Issuer have been taken, fulfilled and done and are in full force and effect;

(E) if the Substitute Issuer is resident for tax purposes in a jurisdiction (the "**New Residence**") other than that in which the Current Issuer prior to such substitution was resident for tax purposes (the "**Former Residence**"), the Substitution Documents contain an undertaking by the Substitute Issuer and/or such other provisions as may be necessary to ensure that each Holder has the benefit of an undertaking in terms corresponding to the provisions of Condition 10 (*Taxation*) in relation to the payment of all amounts due and payable under, or in respect of, the Notes, with the substitution of references to the Former Residence with references to the New Residence, and an undertaking by the Substitute Issuer to indemnify each Holder against any Tax that is imposed on it by (or by any authority in or of) the New Residence and, if different, the jurisdiction of the Substitute Issuer's organisation with respect to any Note and that would not have been so imposed had the substitution not been made, as well as against any Tax, and any cost or expense, relating to such substitution;

(F) if the Substitute Issuer is not UBS Group AG, the FINMA has approved such substitution (if such approval is then required under applicable Swiss laws and regulations), and the Current Issuer and the Substitute Issuer have obtained all other necessary governmental and other approvals and consents for such substitution and for the performance by the Substitute Issuer of its obligations under the Substitution Documents;

(G) if the Substitute Issuer is not organised under the laws of Switzerland, the Substitute Issuer has appointed a process agent as its agent in Switzerland to receive service of process on its behalf in relation to any legal proceedings arising out of or in connection with the Notes; and

(H) such substitution does not give rise to a Tax Event or a Regulatory Event.

(ii) Upon any substitution pursuant to subclause (a)(i) of this Condition 15, (A) the Substitute Issuer will succeed to, and be substituted for, and may exercise every right and power of, the Current Issuer under the Notes with the same effect as if the Substitute Issuer had been named as Issuer in these Terms and Conditions, (B) the Current Issuer will be released from its obligations under the Notes and (C) if the Substitute Issuer is UBS Group AG, the Guarantee will cease to exist.

(iii) After giving effect to any substitution pursuant to subclause (a)(i) of this Condition 15, (A) if the Substitute Issuer is UBS Group AG, all references to the

"Guarantor" or the "Guarantee" in the Notes and these Terms and Conditions will cease to apply, except that the references to the "Guarantee" in the definition of "Compliant Securities" and in subclause (a)(i)(C) of this Condition 15 will remain applicable and such references to the "Guarantee" will be deemed to mean the Guarantee as in effect immediately prior to such substitution, and (B) in all cases, (x) references to the "Issuer" in the Notes and these Terms and Conditions will be references to the Substitute Issuer, and (y) references to the "Tax Jurisdiction" in the Notes and these Terms and Conditions will be read and construed as including the jurisdiction of establishment of the Substitute Issuer and, if different, the jurisdiction in which the Substitute Issuer is resident for tax purposes instead of or in addition to (as the case may be) references to the jurisdiction of establishment of the Issuer and Switzerland.

(b) *Automatic Issuer Substitution*

(i) Upon the occurrence of a Guarantee Event at any time on or after the Issue Date but prior to the occurrence of a Trigger Event or a Viability Event, UBS Group AG will, without the consent of the Holders, automatically be substituted for the Issuer for all purposes under the Notes and these Terms and Conditions on the Automatic Issuer Substitution Effective Date (such substitution, an "**Automatic Issuer Substitution**"). Any such Automatic Issuer Substitution will automatically take place on the Automatic Issuer Substitution Effective Date without requiring any action to be taken and without regard to the conditions that would be applicable to a voluntary substitution pursuant to clause (a) of this Condition 15.

(ii) A "**Guarantee Event**" will have occurred if (A) the Issuer or the Guarantor has obtained an opinion of independent legal advisers of recognised standing to the effect that UBS Group AG's guarantee of the Issuer's payment obligations under the Notes set forth in section 1 of the Guarantee is not in full force and effect, or (B) a Holder has notified the Issuer that the Guarantor has claimed that its guarantee of the Issuer's payment obligations under the Notes set forth in section 1 of the Guarantee is not in full force and effect and such claim has not been remedied during the 30-day period following the date of such notice, unless, in the case of each of clauses (A) and (B), such guarantee is not (or is claimed by the Guarantor not to be) in full force and effect as a result of the voluntary substitution by the Issuer of UBS Group AG for itself as principal debtor under the Notes in accordance with clause (a) of this Condition 15 or a merger of the Issuer and UBS Group AG.

(iii) Upon any Automatic Issuer Substitution, (A) UBS Group AG will, without the need for the amendment of existing, or the entry into of additional documentation, succeed to, and be substituted for, and may exercise every right and power of, the Issuer under the Notes with the same effect as if UBS Group AG had been named as Issuer in these Terms and Conditions, (B) the Issuer will be released from its obligations under the Notes and (C) the Guarantee will cease to exist.

(iv) After giving effect to any Automatic Issuer Substitution, (A) references to the "Issuer" in the Notes and these Terms and Conditions will be references to UBS Group AG, and (B) all references to the "Guarantor" or the "Guarantee" in the Notes and these Terms and Conditions will cease to apply, except that the references to the "Guarantee" in the definition of "Compliant Securities" and in subclause (a)(i)(C) of this Condition 15 will remain applicable and such references to the "Guarantee" will be deemed to mean the Guarantee as in effect immediately prior to such Automatic Issuer Substitution.

(v) Upon the occurrence of a Guarantee Event, the Issuer will provide notice to the Fiscal Agent and the Holders in accordance with Condition 14 (*Notices*) no later than the Automatic Issuer Substitution Effective Date, which notice will (A) state that a Guarantee Event has occurred and an Automatic Issuer Substitution has taken or will take place, as the case may be, and (B) specify the Automatic Issuer

Substitution Effective Date on which such Automatic Issuer Substitution has taken or will take place.

16. CONSOLIDATION, MERGER OR SALE

The Issuer will not consolidate with, merge with or into, or sell, convey, transfer or otherwise dispose of all or substantially all of its property and assets (as an entirety or substantially as an entirety in one transaction or a series of related transactions) to, any Person (other than with, into or to UBS Group AG or any Person of which at least 95 per cent. of such Person's capital and voting rights are held, directly or indirectly, by UBS Group AG) or permit any Person to merge with or into the Issuer unless (a) the Issuer will be the continuing Person, or (b) the Person formed by such consolidation or into which the Issuer is merged or that acquired such property and assets of the Issuer expressly assumes in writing (or, in the case of an acquisition of property and assets, guarantees) all of the obligations of the Issuer under the Notes.

17. FURTHER ISSUES

The Issuer may from time to time without the consent of the Holders issue further notes and, *provided* that such notes have the same terms and conditions as the Notes in all respects (or in all respects except for the issue date and/or first date on which interest is paid), such further notes will be consolidated and form a single series with the Notes. If the Issuer issues any such further notes pursuant to this Condition 17, references in these Terms and Conditions to "**Notes**" include such further notes, unless the context otherwise requires.

18. CURRENCY INDEMNITY

Any amount received or recovered by any Holder in a currency other than USD (whether as a result of, or of the enforcement of, a judgment or order of a court of any jurisdiction, in the insolvency, winding-up or dissolution of the Issuer or otherwise) under the Notes will only constitute a discharge of the Issuer to the extent of the amount in USD that such Holder is able to purchase with the amount so received or recovered in such other currency on the date of such receipt or recovery (or, if it is not practicable to purchase USD with such amount on such date, on the first date on which it is practicable to do so). If the amount of USD that such Holder is able to purchase is less than the amount owed by the Issuer to such Holder under the Notes, the Issuer shall indemnify such Holder against any loss sustained by it as a result. In addition, the Issuer shall indemnify such Holder for the costs of making such purchase. For purposes of this Condition 17, it is sufficient for the relevant Holder to demonstrate that it would have suffered a loss had an actual purchase been made. The indemnities under this Condition 17 will (a) constitute a separate and independent obligation from the Issuer's other obligations hereunder, (b) give rise to a separate and independent cause of action, (c) apply irrespective of any indulgence granted by any Holder and (d) continue in full force and effect despite any other judgment, order, claim or proof for a liquidated amount in respect of any amount due under the Notes or any other judgment or order.

19. RULE 144A INFORMATION

If at any time the Issuer (a) is not a wholly-owned subsidiary of UBS Group AG and (b) is neither a reporting company under Section 13 or Section 15(d) of the US Exchange Act, nor exempt from reporting pursuant to Rule 12g3-2(b) under the US Exchange Act, the Issuer will comply with any applicable requirements of Rule 144A(d)(4) under the US Securities Act in relation to the Notes.

20. NO SET-OFF BY HOLDERS

Subject to applicable law, each Holder and Indirect Holder, by acceptance of any direct or beneficial interest in a Note, agrees that it will not, and waives its right to, exercise, claim or plead any right of set-off, compensation or retention with respect to any amount owed to it by the Issuer or the Guarantor in respect of, or arising in connection with, the Notes or the Guarantee.

21. NO CONVERSION

Notwithstanding the powers of the FINMA under articles 25 *et seq.* of the FBA or pursuant to any successor or analogous Swiss law or regulation applicable to bank holding companies in Switzerland such as UBS Group AG, the Notes shall under no circumstances be converted into equity of the Issuer or the Guarantor, and shall only absorb losses pursuant to these Terms and Conditions.

22. **GOVERNING LAW AND JURISDICTION**

(a) The Notes shall be governed by and construed in accordance with the laws of Switzerland.

(b) The courts of the Canton of Zurich (venue being the City of Zurich) shall have exclusive jurisdiction to settle any disputes that may arise out of or in connection with the Notes.

Exhibit 4.19

Additional Tier 1 capital (Basel III-compliant)

Issuer	UBS Group AG, or other employing entities of the UBS group
ISIN	-
Issue Date	31.12.18 [1]
Currency	CHF
Nominal (million)	[2]
Coupon Rate	3.40% / 6.85% [3]
Maturity Date	perpetual [4]
First Call Date	1 March 2024 [5]

[1] Issuance date of DCCP from a capital perspective. It does not correspond to grant date for employees.
[2] Please, refer to the table "Capital instruments of UBS Group AG (consolidated) and UBS AG (consolidated and standalone) - Key features" for information on the outstanding amount.
[3] Applicable to CHF-denominated and USD-denominated issues, respectively and not payable to MRTs and SMFs, both as defined within this document.
[4] Subject to forfeiture and vesting provisions.
[5] For SMFs, as defined within this document, 1 March 2025 and 1 March 2026

Deferred Contingent Capital Plan 2018/19 (DCCP)

Summary description of the terms and conditions of DCCP as a capital instrument

Overview	Issues under the DCCP are made by UBS Group AG or certain other employing entities to key contributors at UBS Group AG or any of its subsidiaries (together, the "Group"). Eligibility is determined by the Issuer and issues are granted at its sole discretion.
Issuer	UBS Group AG or certain other employing entities of the UBS group
Type of instrument	Non-transferable contingent right against the Issuer to receive (i) discretionary annual interest equivalent payments on the nominal value of a hypothetical perpetual Additional Tier 1 ("AT1") security notionally issued by UBS Group AG at grant (the "Notional Bond"), and (ii) at redemption, as determined by the Issuer in its sole discretion, either the value of the Notional Bond in cash or perpetual AT1 securities issued or guaranteed by UBS Group AG or any other member of the Group of equivalent value (in each case net of any applicable taxes and social security contributions to the employee's account). For DCCP awarded to EU Material Risk Takers (MRT)[1] and individuals performing designated Senior Management Functions (SMF)[2] there will be no contingent right to receive discretionary annual interest payments; only non-transferable contingent right against the Issuer to receive the amount indicated under (ii) above.
Conditional Interest Equivalents	Subject to (i) the conditions set out under "Trigger Event or Viability Event" and "Forfeiture and Vesting Provisions" and (ii) the discretionary and mandatory interest cancellation provisions as set out below, interest equivalents will be payable annually in arrears on the nominal value of the Notional Bond at a rate of 3.40% for CHF-denominated issues and 6.85% for USD-denominated issues. The Issuer may, at its discretion, elect to cancel any interest equivalent that is otherwise scheduled to be paid on any interest payment date. In addition, without limitation to the foregoing, payments of interest equivalents will not be made unless sufficient distributable items (i.e., net profits carried forward and freely distributable reserves)

[1] Based on European Banking Authority's guidelines.
[2] According to UK Prudential Regulation Authority's and Financial Conduct Authority's rules.

	of UBS Group AG are available.
Maturity date	Issues under the DCCP have no scheduled maturity date. Notwithstanding the foregoing, but subject to the conditions set out under "Trigger Event or Viability Event" and "Forfeiture and Vesting Provisions", issues to US taxpayers will mature and be settled on or about 1 March 2024 (the "First Call Date"). The Notional Bond underlying such issues will have no scheduled maturity date.
Trigger Event or Viability Event	All outstanding issuances under the DCCP (or, in case of a Trigger Event (as defined below), all outstanding awards under the DCCP in relation to which a Trigger Event has occurred) will be automatically and permanently written down to zero, no further amounts will be due or paid thereunder and such awards will be permanently cancelled, if: a) the reported Common Equity Tier 1 ratio of the Group set forth in UBS Group AG 's quarterly financial accounts, results, the annual report, or in any reviewed interim measurement published upon the instruction of the Swiss Financial Market Supervisory Authority FINMA ("FINMA"), falls below 7% or, with respect to grants awarded to Group Executive Board members, 10%, as of the relevant balance sheet date (each, a "Trigger Event"); provided that a Trigger Event shall not be deemed to have occurred and the relevant awards under the DCCP will not be written down and cancelled if FINMA has agreed in writing that such action is not necessary or appropriate under the circumstances; or b) FINMA provides UBS Group AG with written notice of its determination that amounts outstanding under the DCCP are required to be written down to prevent the insolvency, bankruptcy or failure of UBS Group AG; or c) UBS Group AG has received a commitment of direct or indirect extraordinary support from the public sector that FINMA has determined and confirmed in writing to UBS Group AG is necessary to prevent the insolvency, bankruptcy or failure of UBS Group AG (an event described in clause (b) or (c), a "Viability Event").
Conditional Redemption	Subject to the conditions set out under "Trigger Event or Viability Event" and "Forfeiture and Vesting Provisions", the Issuer may, at its sole discretion, redeem any issuance by way of either a cash payment or delivery of AT1 securities on the First Call Date, provided that, where the Issuer has elected to redeem an issuance by way of a cash payment, a

	redemption will not occur until FINMA has approved it. DCCP issuances to SMFs may be redeemed by the Issuer on the same basis, in equal quantities on 1 March 2025 and 1 March 2026 respectively. In case of a redemption by way of delivery of securities, the securities will be perpetual AT1 securities issued or guaranteed by UBS or any other member of the Group with substantially the same terms and provisions consistent with the Notional Bond, including but not limited to, the same Trigger and Liability Events and the aggregate value of the AT1 securities shall, subject to rounding, equal the value of the Notional Bond (net of any applicable taxes and social security contributions). For issuances granted to US taxpayers, redemption will be on the First Call Date, such that if FINMA approval for any cash settlement has not been given, issuances must be settled by delivery of AT1 securities, on or about that date. Any AT1 securities delivered at settlement shall be marketable subordinated UBS Group AG debt instruments in the AT1 category having such terms and provisions consistent with the Notional Bond terms and provisions as determined by UBS Group AG in its sole discretion on or prior to the Grant Date.
Forfeiture and Vesting Provisions	Subject to the conditions set out under "Trigger Event or Viability Event", issuances under the DCCP will vest after a minimum of five years. An outstanding unvested issuance under the DCCP will generally be forfeited and cancelled, and no further interest equivalents will generally be due or paid, due to termination of employment or harmful acts by the employee. In certain circumstances, vesting of outstanding awards under the DCCP may be subject to conditions relating to the performance of the Group and/or the employee's business division and similar conditions. In addition, with respect to any award granted to Group Executive Board members, if the Group does not generate an adjusted pre-tax profit with respect to any financial year ending during or after the year of grant, but prior to the relevant vesting date, the nominal amount of such award will be reduced by 20% of the nominal amount of such award on the relevant grant date. In case of death or disability, an outstanding unvested issuance under the DCCP will vest on the date that the employee's employment contract terminates due to death or disability. Vesting may be accelerated, and forfeiture provisions may be relaxed, in case of early termination of the DCCP by, or change of control in, UBS Group AG.

Status	In the event of the liquidation or winding up of the Issuer under circumstances that do not coincide with the occurrence of a Trigger Event or a Viability Event, the holder will have a claim ranking junior to all rights and claims of priority creditors of the Issuer (i.e., claims in respect of obligations of the Issuer (i) that are unsubordinated or (ii) that are subordinated (including Tier 2 instruments) and do not, or are expressly not stated to, rank *pari passu* with, or junior to, the Issuer's obligations under the DCCP or any of the Issuer's obligations ranking *pari passu* with the Issuer's obligations under the DCCP).
Governing Law	Swiss law / in certain cases, New York law

Exhibit 12

CERTIFICATION UNDER SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002

I, Sergio Ermotti, certify that:

1. I have reviewed this annual report on Form 20-F of UBS Group AG;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:
    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c. Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d. Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and
5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: March 15, 2019

_/s/ Sergio Ermotti___
Name: Sergio Ermotti
Title: Group Chief Executive Officer

CERTIFICATION UNDER SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002

I, Sergio Ermotti, certify that:

1. I have reviewed this annual report on Form 20-F of UBS AG;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:
    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c. Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d. Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and
5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: March 15, 2019

_/s/ Sergio Ermotti ___ _____________
Name: Sergio Ermotti
Title: President of the Executive Board

CERTIFICATION UNDER SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002

I, Kirt Gardner, certify that:

1. I have reviewed this annual report on Form 20-F of UBS Group AG;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:
    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c. Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d. Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and
5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: March 15, 2019

_/s/ Kirt Gardner ________________
Name: Kirt Gardner
Title: Group Chief Financial Officer

CERTIFICATION UNDER SECTION 302 OF THE
SARBANES-OXLEY ACT OF 2002

I, Kirt Gardner, certify that:

1. I have reviewed this annual report on Form 20-F of UBS AG;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;
4. The company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:
    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
    c. Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
    d. Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and
5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):
    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and
    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: March 15, 2019

/s/ Kirt Gardner __________
Name: Kirt Gardner
Title: Chief Financial Officer

Exhibit 13

CERTIFICATION PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, Chapter 63 of Title 18, United States Code), the undersigned officer of UBS Group AG, a Swiss corporation (the "Company"), hereby certifies, to such officer's knowledge, that:

The Annual Report on Form 20-F for the year ended December 31, 2018 (the "Report") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. §§ 78m or 78o(d)) and information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 15, 2019

_/s/ Sergio Ermotti _______________
Name: Sergio Ermotti
Title: Group Chief Executive Officer

The foregoing certification is being furnished solely pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, Chapter 63 of Title 18, United States Code) and is not being filed as part of the Report or as a separate disclosure document.

CERTIFICATION PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, Chapter 63 of Title 18, United States Code), the undersigned officer of UBS AG, a Swiss banking corporation (the "Company"), hereby certifies, to such officer's knowledge, that:

The Annual Report on Form 20-F for the year ended December 31, 2018 (the "Report") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. §§ 78m or 78o(d)) and information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 15, 2019

_/s/ Sergio Ermotti ________________
Name: Sergio Ermotti
Title: President of the Executive Board

The foregoing certification is being furnished solely pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, Chapter 63 of Title 18, United States Code) and is not being filed as part of the Report or as a separate disclosure document.

CERTIFICATION PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, Chapter 63 of Title 18, United States Code), the undersigned officer of UBS Group AG, a Swiss corporation (the "Company"), hereby certifies, to such officer's knowledge, that:

The Annual Report on Form 20-F for the year ended December 31, 2018 (the "Report") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. §§ 78m or 78o(d)) and information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 15, 2019

_/s/ Kirt Gardner _____ ______________
Name: Kirt Gardner
Title: Group Chief Financial Officer

The foregoing certification is being furnished solely pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, Chapter 63 of Title 18, United States Code) and is not being filed as part of the Report or as a separate disclosure document.

CERTIFICATION PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002
(Subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code)

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, Chapter 63 of Title 18, United States Code), the undersigned officer of UBS AG, a Swiss banking corporation (the "Company"), hereby certifies, to such officer's knowledge, that:

The Annual Report on Form 20-F for the year ended December 31, 2018 (the "Report") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. §§ 78m or 78o(d)) and information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 15, 2019

_/s/ Kirt Gardner ____________
Name: Kirt Gardner
Title: Chief Financial Officer

The foregoing certification is being furnished solely pursuant to section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of section 1350, Chapter 63 of Title 18, United States Code) and is not being filed as part of the Report or as a separate disclosure document.

Exhibit 15.1

Zurich, 15 March 2019

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in each of the following registration statements of UBS Group AG, UBS AG and their affiliates:

(1) on Form F-3 (Registration Number 333-225551), and each related prospectus currently outstanding under such registration statement,
(2) on Form S-8 (Registration Numbers 333-200634; 333-200635; 333-200641; 333-200665; 333-215254; 333-215255; and 333-228653), and each related prospectus currently outstanding under any of the aforementioned registration statements,
(3) the base prospectus of Corporate Asset Backed Corporation (CABCO) dated 23 June 2004 (Registration Number 333-111572),
(4) the Form 8-K of CABCO dated 23 June 2004 (SEC FileNumber 001-13444), and
(5) the Prospectus Supplements relating to the CABCO Series 2004-101 Trust dated 10 May 2004 (Registration Number 033-91744) and 17 May 2004 (Registration Number 033-91744-05),

of our reports dated 14 March 2019, with respect to the consolidated financial statements·of UBS Group AG and the effectiveness of internal control over financial reporting of UBS Group AG, included in this Annual Report (Form 20-F) for the year ended 31 December 2018, filed with the Securities and Exchange Commission.

Ernst & Young Ltd

/s/ Marie-Laure Delarue
Marie-Laure Delarue
Licensed Audit Expert

/s/ Ira S. Fitlin
Ira S. Fitlin
Certified Public Accountant (U.S.)

Exhibit 15.2

Zurich, 15 March 2019

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in each of the following registration statements of UBS Group AG, UBS AG and their affiliates:

(1) on Form F-3 (Registration Number 333-225551), and each related prospectus currently outstanding under such registration statement,
(2) on Form S-8 (Registration Numbers 333-200634; 333-200635; 333-200641; 333-200665; 333-215254; 333-215255; and 333-228653), and each related prospectus currently outstanding under any of the aforementioned registration statements,
(3) the base prospectus of Corporate Asset Backed Corporation (CABCO) dated 23 June 2004 (Registration Number 333-111572),
(4) the Form 8-K of CABCO dated 23 June 2004 (SEC FileNumber 001-13444), and
(5) the Prospectus Supplements relating to the CABCO Series 2004-101 Trust dated 10 May 2004 (Registration Number 033-91744) and 17 May 2004 (Registration Number 033-91744-05),

of our reports dated 14 March 2019, with respect to the consolidated financial statements of UBS AG and the effectiveness of internal control over financial reporting of UBS AG, included in this Annual Report (Form 20-F) for the year ended 31 December 2018, filed with the Securities and Exchange Commission.

Ernst & Young Ltd

/s/ Marie-Laure Delarue
Marie-Laure Delarue
Licensed Audit Expert

/s/ Ira S. Fitlin
Ira S. Fitlin
Certified Public Accountant (U.S.)