31 December 2019 Pillar 3 report

UBS Group and significant regulated subsidiaries and sub-groups

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" and "UBS Switzerland AG standalone"	UBS Switzerland AG on a standalone basis
"UBS Europe SE consolidated"	UBS Europe SE and its consolidated subsidiaries
"UBS Americas Holding LLC" and "UBS Americas Holding LLC consolidated"	UBS Americas Holding LLC and its consolidated subsidiaries

Table of contents

Introduction and basis for preparation

UBS Group

16 Section 1 Key metrics
19 Section 2 Regulatory exposures and risk-weighted assets
23 Section 3 Linkage between financial statements and regulatory exposures
26 Section 4 Credit risk
57 Section 5 Counterparty credit risk
67 Section 6 Comparison of A-IRB approach and standardized approach for credit risk
72 Section 7 Securitizations
80 Section 8 Market risk
90 Section 9 Operational risk
91 Section 10 Interest rate risk in the banking book
95 Section 11 Going and gone concern requirements and eligible capital
103 Section 12 Total loss-absorbing capacity
105 Section 13 Leverage ratio
108 Section 14 Liquidity coverage ratio
111 Section 15 Remuneration
112 Section 16 Requirements for global systemically important banks and related indicators

Significant regulated subsidiaries and sub-groups

114 Section 1 Introduction
114 Section 2 UBS AG standalone
118 Section 3 UBS Switzerland AG standalone
124 Section 4 UBS Europe SE consolidated
125 Section 5 UBS Americas Holding LLC consolidated

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, London, New York and Krakow.

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

www.ubs.com/investors

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

Media Relations
UBS's Media Relations team supports global media and journalists from our 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 5858
mediarelations@ubs.com

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

Office of the Group Company Secretary
The Group Company Secretary receives inquiries regarding 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

+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

+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:
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 for foreign shareholders
+1-201-680-6610

Imprint

Publisher: UBS Group AG, Zurich, Switzerland I www.ubs.com
Language: English

Scope of Basel III Pillar 3 disclosures

The Basel Committee on Banking Supervision (the BCBS) Basel III capital adequacy framework consists of three complementary pillars. Pillar 1 provides a framework for measuring minimum capital requirements for the credit, market, operational and non-counterparty-related risks faced by banks. Pillar 2 addresses the principles of the supervisory review process, emphasizing the need for a qualitative approach to supervising banks. Pillar 3 requires banks to publish a range of disclosures, mainly covering risk, capital, leverage, liquidity and remuneration.

This report provides Pillar 3 disclosures for UBS Group as well as prudential key figures and regulatory information for UBS AG standalone, UBS Switzerland AG standalone, UBS Europe SE consolidated and UBS Americas Holding LLC consolidated in the respective sections under "Significant regulated subsidiaries and sub-groups." Certain information provided in our Annual Report 2019 or other publications also serves to address Pillar 3 disclosure requirements. Where this is the case, a reference has been included in this report to the UBS publication which provides such information.

As UBS is considered a systemically relevant bank (SRB) under Swiss banking law, UBS Group AG and UBS AG are required to comply with regulations based on the Basel III framework as applicable to Swiss SRBs on a consolidated basis. Capital and other regulatory information as of 31 December 2019 for UBS Group AG consolidated is provided in the "Capital management" section of our Annual Report 2019 and for UBS AG consolidated in the "Capital management" section of the combined UBS Group AG and UBS AG Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors*.

Local regulators may also require the publication of Pillar 3 information at a subsidiary or sub-group level. Where applicable, these local disclosures are provided under "Holding company and significant regulated subsidiaries and sub-groups" at *www.ubs.com/investors*.

Significant regulatory and disclosure requirements and changes effective in or from 2019

Significant BCBS and FINMA capital adequacy, liquidity and funding, and related disclosure requirements

This Pillar 3 report has been prepared in accordance with Swiss Financial Market Supervisory Authority (FINMA) Pillar 3 disclosure requirements (FINMA Circular 2016/1 "Disclosure – banks") as revised on 31 October 2019, the underlying BCBS guidance "Revised Pillar 3 disclosure requirements" issued in January 2015, the "Frequently asked questions on the revised Pillar 3 disclosure requirements" issued in August 2016, the "Pillar 3 disclosure requirements – consolidated and enhanced framework" issued in March 2017 and the subsequent "Technical Amendment – Pillar 3 disclosure requirements – regulatory treatment of accounting provisions" issued in August 2018.

BCBS launches a consolidated framework of its standards

Following a consultation period earlier in the year, the BCBS launched a consolidated version of its global standards in December 2019, bringing together all BCBS global standards for the regulation and supervision of banks. The publication of these standards in a new format primarily focused on reorganizing existing and future requirements. While no new elements were introduced, a number of minor inconsistencies were addressed along with a list of new frequently asked questions and answers added.

Changes to Pillar 1 requirements

Revised Capital Adequacy Ordinance and the Banking Ordinance

As of 1 January 2019, we became subject to the revised Capital Adequacy Ordinance (the CAO) and the Banking Ordinance (the BO), with no material effect on UBS, as the changes were largely previously implemented by too big to fail-related decrees.

Changes to Pillar 3 disclosure requirements

We disclosed the following tables and/or narratives for the first time in 2019:

- "KM2: Key metrics – TLAC requirements (at resolution group level)" effective 31 March 2019 and applicable for UBS Group AG consolidated, the ultimate parent entity of the defined UBS resolution group, to which, in case of resolution, resolution tools (e.g., a bail-in) are expected to be applied;
- "TLAC1 – TLAC composition for G-SIBs (at resolution group level)" applicable to UBS Group AG consolidated, effective 30 June 2019;
- "TLAC2 – Material sub-group entity – creditor ranking at legal entity level" applicable to UBS Americas Holding LLC consolidated, effective 31 December 2019;
- "TLAC3 – Resolution entity – creditor ranking at legal entity level" applicable to UBS Group AG consolidated at a legal entity level, effective 30 June 2019;
- "IRRBBA – IRRBB risk management objectives and policies" applicable to UBS Group AG consolidated, effective 30 June 2019;
- "IRRBB1 – Quantitative information about IRRBB" applicable to UBS Group AG consolidated, effective 30 June 2019; and
- "IRRBBA1 – Quantitative disclosures relating to the position structure and interest rate reset of IRRBB risk" applicable to UBS Group AG consolidated, effective 30 June 2019.

Effective 30 June 2019, we have revised the "CR1 – Credit quality of assets" table to address additional disclosure requirements with regard to the allocation of the accounting provisions for credit losses between the standardized approach and the internal ratings-based approach, as required by the aforementioned BCBS Technical Amendment issued in August 2018.

The "CRB – Additional disclosures related to credit quality of assets" has been amended, effective 31 December 2019, accompanying the revisions related to "CR1 – Credit quality of assets" requiring UBS Group AG consolidated to disclose its rationale for the categorization of accounting provisions into general and specific categories under the standardized approach.

Significant model updates and accounting and methodology changes effective in 2019

Changes to accounting affecting Pillar 1 and Pillar 3 disclosures

Effective from 1 January 2019, we adopted IFRS 16, *Leases*, fundamentally changing how we account for operating leases when acting as a lessee. Upon adoption, assets and liabilities increased by USD 3.5 billion, with a corresponding increase in risk-weighted assets (RWA) and leverage ratio denominator (LRD).

Exclusion of certain collar financing transactions from credit risk RWA

As part of methodology and policy changes, as of 30 June 2019 we excluded USD 2.1 billion of certain collar financing transactions in the Investment Bank from credit risk RWA due to their non-credit bearing nature. These collar financing transactions remain subject to the market risk framework.

Model updates

In 2019, we have fully phased-in the remaining USD 2.8 billion of RWA increases related to the probability of default (PD) and loss given default (LGD) changes from the implementation of revised models for Swiss residential mortgages. In addition, the credit conversion factor for zero-balance securities-backed lending and margin loan exposures was updated in the second half of 2019, and resulted in a USD 0.8 billion increase in RWA.

Significant BCBS and FINMA requirements to be adopted in 2020 or later

Final guidance

Gone concern loss-absorbing capacity requirements

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, low-trigger loss-absorbing additional tier 1 (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. As of 1 January 2020, the combined reduction applied for resolvability measures and the aforementioned gone concern requirement reduction for the use of higher quality capital may not exceed 5.34 percentage points for the RWA-based requirement of 13.94% and 1.875 percentage points for the LRD-based requirement of 4.875%. The amount of the rebate for improved resolvability is assessed annually by FINMA, and has been phased in until 1 January 2020. Based on actions we completed by December 2018 to improve resolvability, FINMA granted a rebate on the gone concern requirement of 42.5% of the aforementioned maximum rebate in the third quarter of 2019, which resulted in a reduction of 2.27 percentage points for the RWA-based requirement and 0.80 percentage points for the LRD-based requirement. UBS also qualifies for an additional rebate for the use of low-trigger tier 2 capital instruments to fulfill gone concern requirements, allowing a further reduction of 1.33 percentage points for the RWA-based requirement and 0.38 percentage points for the LRD-based requirements.

→ **Refer to the "Capital management" section of our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors*, for information about the current capital requirements**

Revised FINMA circular on credit risk

We have adopted the standardized approach for counterparty credit risk (SA-CCR) as of 1 January 2020. SA-CCR is a comprehensive, non-modeled approach for measuring counterparty credit risk associated with over-the-counter derivatives, exchange-traded derivatives and long settlement transactions that replaces the current exposure method (CEM).

In line with the implementation date for SA-CCR, the FINMA revisions to the capital treatment concerning UBS's exposures to central counterparties also became effective on 1 January 2020. The final requirements include, among other things, a single approach for calculating capital requirements for exposures arising from UBS's contributions to the mutualized default fund resources of a qualifying central counterparty (a QCCP), and contain specific guidance regarding multi-level client structures where UBS clears its trades through intermediaries linked to a central counterparty.

The capital requirements for investments in funds in the banking book detailed in FINMA Circular 2017/7 "Credit risk – banks" were introduced on 1 January 2020. The standard requires that investments in funds that are held in the banking book are consistently treated with one of the following three approaches, which vary in their degree of risk sensitivity and conservatism: the "look-through approach," the "mandate-based approach" or the "fallback approach."

The effects of the adoptions will be presented in our 31 March 2020 Pillar 3 report, which will be available from April 2020.

Swiss Federal Council adopts new rules on gone concern capital for G-SIBs

In November 2019, the Swiss Federal Council adopted amendments to the Capital Adequacy Ordinance, which became effective 1 January 2020. The revisions introduce gone concern capital requirements for Switzerland-based intermediate parent banks of global systemically important banks (G-SIBs) on a standalone basis. As a consequence, UBS AG will be subject to (i) a gone concern capital requirement on its third-party exposure on a standalone basis, (ii) an additional gone concern capital buffer requirement equal to 30% of the Group's gone concern capital requirement on UBS AG's consolidated exposure, and (iii) a gone concern capital requirement equal to the nominal value of the gone concern instruments issued by UBS entities and held by the parent bank. A transitional period until 2024 will be granted for the buffer requirement.

Based on current estimates, and once the new requirements have been fully phased in, we expect UBS Group to be required to maintain a gone concern leverage ratio of around 75 to 100 basis points higher than what would be required to meet the Group requirements alone. The actual total loss-absorbing capital Group requirement at the end of the transition phase will depend on a number of components, including the subsidiaries' loss-absorbing capacity at the time.

The revisions also reduced the gone concern requirement of UBS Switzerland AG to 62% of the Group's gone concern requirement (before rebate) and increased the minimum gone concern requirement for the Group (after rebate) from 3% to 3.75% (based on leverage ratio denominator), effective 1 January 2022.

Finally, instruments available to meet gone concern requirements remain eligible until one year before maturity; however, the current haircut of 50% in the last year of eligibility is no longer applied under the revised rules.

Basel III finalization and adjustments to market risk framework

In December 2017, the BCBS announced the finalization of the Basel III framework, which we currently expect FINMA to implement later than the originally communicated effective date of 1 January 2022. The most significant changes include:

- placing floors on certain model inputs under the IRB approach to calculate credit risk RWA;
- requiring the use of standardized approaches for calculation of the credit valuation adjustment and for operational risk RWA;
- placing an aggregate output floor on the Group RWA equal to 72.5% of the RWA calculated using a revised standardized approach; and
- revising the leverage ratio denominator (LRD) calculation and introducing a leverage ratio surcharge for G-SIBs.

In January 2019, the BCBS also published the final rules on the minimum capital requirements for market risk (the Fundamental Review of the Trading Book). The revisions include adjustments to the risk sensitivity of the standardized approach, the calibration of certain elements of the framework and adjustments of the internal models approach. The new accord is currently expected to be introduced into national law later than the originally communicated effective date of 1 January 2022.

Leverage ratio treatment

In June 2019, the BCBS concluded to align the leverage ratio measurement of client-cleared derivatives with SA-CCR. This treatment permits both cash and non-cash forms of segregated initial margin, as well as cash and non-cash variation margin, received from a client to offset the replacement cost and potential future exposure for client-cleared derivatives only. This will help to mitigate any potential effect on the leverage ratio denominator from the finalization of the Basel III framework. We expect that the modified standardized approach for counterparty credit risk for leverage ratio purposes will become effective in concurrence with the Swiss timelines for adopting the Basel III final rule.

The BCBS also introduced a new disclosure standard, effective 1 January 2022, which sets out additional requirements for banks to disclose their leverage ratios based on quarter-end and daily average values of securities financing transactions. FINMA has not yet adopted the new disclosure standard.

Net stable funding ratio (NSFR)

Having delayed the introduction of Net Stable Funding Ratio (NSFR) requirements in Switzerland over the previous two years to align with developments in the EU and the US, the Swiss Federal Council communicated its intention in November 2019 to adopt the associated ordinance amendments in early summer 2020, and bring them into force by mid-2021. The Swiss Federal Department of Finance was mandated to finalize the regulatory texts jointly with relevant stakeholders, including affected banks, in the coming months. If implemented as originally proposed in the 2017 consultation, the introduction of NSFR could result in a significant increase in long-term funding requirements on a legal entity level.

→ **Refer to the "Treasury management" section of our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors*, for more information about the NSFR**

Pillar 3 disclosure requirements

The BCBS updated the Pillar 3 disclosure requirements, which now include new disclosure requirements on asset encumbrance and, if required by national supervisors at the jurisdictional level, on capital distribution constraints. FINMA has not yet adopted these requirements.

We will disclose "CCR8 – Exposures to central counterparties" in our Pillar 3 reporting beginning with 30 June 2020.

Significant BCBS and FINMA consultation papers

Revisions to market risk disclosure requirements and voluntary disclosure of sovereign exposures

In November 2019, the BCBS issued two consultations to seek public feedback on a set of revised disclosure requirements related to the final revisions of the market risk framework published in January 2019. The first consultative document proposes a number of changes primarily related to the introduction of the "traffic light" approach for trading desks using the internal models approach, as well as enhancements to the disclosure of the trading desk structure. The second consultative document proposes voluntary disclosures related to banks' exposures to sovereigns building upon the feedback received to the Committee's December 2017 Discussion Paper on the regulatory treatment of sovereign exposures. Comments on both consultations were due by mid-February 2020.

Limited revisions to the Credit Valuation Adjustment (CVA) risk framework

In November 2019, the BCBS issued a consultation paper proposing a set of targeted revisions to the CVA risk framework published in December 2017. The proposal implements final revisions to the market risk framework and the capital requirements for bank exposures to central counterparties into the CVA risk framework. It also considers adjustments to the scope of portfolios subject to CVA risk capital requirements and a possible calibration adjustment to the overall capital requirements calculated under the CVA standardized and basic approaches. Comments on this consultation paper were due by the end of February 2020.

Frequency and comparability of Pillar 3 disclosures

The table on the next page summarizes the reporting frequency for each disclosure as per the current FINMA requirements applicable to UBS.

In line with the FINMA-specified disclosure frequency and requirements for disclosure with regard to comparative periods, we provide quantitative comparative information as of 30 September 2019 for disclosures required on a quarterly basis. Where specifically required by FINMA and/or the BCBS, we disclose comparative information for additional reporting dates. The new TLAC2 disclosure is provided for the first time, as of 31 December 2019, in this report without comparative information.

Where required, movement commentary is aligned with the corresponding disclosure frequency required by FINMA and always refers to the latest comparative period. Throughout this report, signposts are displayed at the beginning of a section, table or chart – **Annual | Semiannual | Quarterly |** – indicating whether the disclosure is provided annually, semiannually or quarterly. A triangle symbol – ▲ ▲ ▲ – indicates the end of the signpost.

→ **Refer to our 31 March 2019, 30 June 2019 and 30 September 2019 Pillar 3 reports, available under "Pillar 3 disclosures" at *www.ubs.com/investors*, for more information about previously published quarterly movement commentary**

→ **Refer to our 30 June 2019 Pillar 3 report, available under "Pillar 3 disclosures" at *www.ubs.com/investors*, for more information about previously published semiannual movement commentary**

The following table outlines the annual, semiannual and quarterly disclosure requirements that are satisfied in this report for UBS Group and significant regulated subsidiaries and sub-groups as applicable. For specific disclosures, this report may refer to our Annual Report 2019.

FINMA reference	Disclosure title	FINMA reference	Disclosure title
Annual disclosure requirements			
OVA	Bank risk management approach	CCRA	Qualitative disclosure related to counterparty credit risk
LI1	Differences between accounting and regulatory scopes of consolidation and mapping of financial statements with regulatory risk categories	SECA	Qualitative disclosure requirements related to securitization exposures
LI2	Main sources of differences between regulatory exposure amounts and carrying amounts in financial statements	MRA	Qualitative disclosure requirements related to market risk
LIA	Explanations of differences between accounting and regulatory exposure amounts	MRB	Qualitative disclosures for banks using the internal models approach (IMA)
PV1	Prudent valuation adjustments (PVAs)	IRRBBA	Interest rate risk in the banking book (IRRBB) risk management objective and policies
GSIB1	Disclosure of G-SIB indicators	IRRBB1	Quantitative information about interest rate risk in the banking book (IRRBB)
LIQA	Liquidity risk management	IRRBBA1	Quantitative disclosures relating to the position structure and interest rate reset of IRRBB risk
CRA	General qualitative information about credit risk	REMA	Remuneration policy
CRB	Additional disclosure related to the credit quality of assets	REM1	Remuneration awarded during the financial year
CRC	Qualitative disclosure requirements related to credit risk mitigation techniques	REM2	Special payments
CRD	Qualitative disclosures on banks' use of external credit ratings under the standardized approach for credit risk	REM3	Deferred remuneration
CRE	Qualitative disclosures related to internal ratings-based (IRB) models	ORA	Qualitative disclosure requirements related to operational risk
CR9	IRB – backtesting of probability of default (PD) per portfolio		

FINMA reference	Disclosure title	FINMA reference	Disclosure title
Semiannual disclosure requirements			
CR1	Credit quality of assets	SEC1	Securitization exposures in the banking book
CR2	Changes in stock of defaulted loans, debt securities and off-balance sheet exposures	SEC2	Securitization exposures in the trading book
CR3	Credit risk mitigation techniques – overview	SEC3	Securitization exposures in the banking book and associated regulatory capital requirements – bank acting as originator or as sponsor
CR4	Standardized approach – credit risk exposure and credit risk mitigation (CRM) effects	SEC4	Securitization exposures in the banking book and associated capital requirements – bank acting as investor
CR5	Standardized approach – exposures by asset classes and risk weights	MR1	Market risk under standardized approach
CR6	IRB – credit risk exposures by portfolio and PD range	MR3	IMA values for trading portfolios
CR7	IRB – effect on risk-weighted assets (RWA) of credit derivatives used as CRM techniques	MR4	Comparison of value-at-risk (VaR) estimates with gains/losses
CR10	IRB (equities under the simple risk weight method)	CC1	Composition of regulatory capital
CCR1	Analysis of counterparty credit risk (CCR) exposure by approach	CC2	Reconciliation of regulatory capital to balance sheet
CCR2	Credit valuation adjustment (CVA) capital charge	CCA[2]	Main features of regulatory capital instruments and other TLAC-eligible instruments
CCR3	Standardized approach of CCR exposures by regulatory portfolio and risk weights	CCyB1	Geographical distribution of credit exposures used in the countercyclical capital buffer
CCR4	IRB – CCR exposures by portfolio and PD scale	TLAC1	TLAC composition for G-SIBs (at resolution group level)
CCR5	Composition of collateral for CCR exposure	TLAC2	Material sub-group entity – creditor ranking at legal entity level
CCR6	Credit derivatives exposures	TLAC3	Resolution entity – creditor ranking at legal entity level
CCR8[1]	Exposures to central counterparties		
Quarterly disclosure requirements			
KM1	Key metrics	MR2	RWA flow statements of market risk exposures under an IMA
KM2	Key metrics – TLAC requirements (at resolution group level)	LR1	Summary comparison of accounting assets vs leverage ratio exposure measure
OV1	Overview of RWA	LR2	Leverage ratio common disclosure template
CR8	RWA flow statements of credit risk exposures under IRB	LIQ1	Liquidity coverage ratio (LCR)
CCR7	RWA flow statements of CCR exposures under the internal model method (IMM)		

1 Disclosure is not required as of 31 December 2019.

2 The CCA table is published on our website. Refer to the document titled "Capital and total loss-absorbing capacity instruments of UBS Group AG consolidated and UBS AG consolidated and standalone – key features" under "Bondholder information" at *www.ubs.com/investors* for more information.

Format of Pillar 3 disclosures

As defined by FINMA, certain Pillar 3 disclosures follow a fixed format, whereas other disclosures are flexible and may be modified to a certain degree to present the most relevant information. Pillar 3 requirements are presented under the relevant FINMA table/template reference (e.g., OVA, OV1, LI1, etc.). Pillar 3 disclosures may also include row labeling (1, 2, 3, etc.) as prescribed by FINMA. Naming conventions used in our Pillar 3 disclosures are based on the FINMA guidance and may not reflect UBS naming conventions.

The FINMA-defined asset classes used within this Pillar 3 report are as follows:

- Central governments and central banks, consisting of exposures relating to governments at the level of the nation state and their central banks. The European Union is also treated as a central government.
- Banks and securities dealers, consisting of exposures to legal entities holding banking licenses and securities firms subject to adequate supervisory and regulatory arrangements, including risk-based capital requirements. Securities firms can only be assigned to this asset class if they are subject to a supervision equivalent to that of banks.
- Public-sector entities, multi-lateral development banks, consisting of exposures to institutions established on the basis of public law in different forms, such as administrative entities or public companies as well as regional governments, the Bank for International Settlements, the International Monetary Fund and eligible multi-lateral development banks recognized by FINMA.
- Corporates: specialized lending, consisting of exposures relating to income-producing real estate and high-volatility commercial real estate, commodities finance, project finance and object finance.
- Corporates: other lending, consisting of all exposures to corporates that are not specialized lending. This asset class includes private commercial entities such as corporations, partnerships or proprietorships, insurance companies and funds (including managed funds).
- Retail: residential mortgages, consisting of residential mortgages, regardless of exposure size, if the owner occupies or rents out the mortgaged property.
- Retail: qualifying revolving retail exposures, consisting of unsecured and revolving credits to individuals that exhibit appropriate loss characteristics relating to credit card relationships at UBS.
- Retail: other, consisting primarily of Lombard lending that represents loans made against the pledge of eligible marketable securities or cash, as well as exposures to small businesses, private clients and other retail customers without mortgage financing.
- Equity, consisting of instruments that have no stated or predetermined maturity and represent a residual interest in the net assets of an entity.
- Other assets, consisting of the remainder of exposures to which UBS is exposed, mainly non-counterparty-related assets.

Governance over Pillar 3 disclosures

The Board of Directors (the BoD) and senior management are responsible for establishing and maintaining an effective internal control structure over the disclosure of financial information, including Pillar 3 disclosures. In line with BCBS and FINMA requirements, we have a BoD-approved Pillar 3 disclosure governance policy in place, which includes information about the key internal controls and procedures designed to govern the preparation, review and sign-off of Pillar 3 disclosures. This Pillar 3 report has been verified and approved in line with that policy.

Risk management framework

Our Group-wide risk management framework is applied across all risk types. The table below presents an overview of risk management disclosures that are provided separately in our Annual Report 2019.

Annual |

OVA – Bank risk management approach

Pillar 3 disclosure requirement	Annual Report 2019 section	Disclosure	Annual Report 2019 page number
Business model and risk profile	Our strategy, business model and environment	– Risk factors	60–70
		– Current market climate and industry trends	31–34
	Risk, treasury and capital management	– Overview of risks arising from our business activities	105–106
		– Risk categories	107
		– Top and emerging risks	108
		– Risk appetite framework	111–114
		– Risk measurement	116–118
		– Credit risk – Key developments, Main sources of credit risk, Overview of measurement, monitoring and management techniques	119
		– Market risk – Key developments, Main sources of market risk, Overview of measurement, monitoring and management techniques	138
		– Interest rate risk in the banking book	143–146
		– Other market risk exposures	146–147
		– Country risk framework	148
		– Operational risk framework	154
		– Risk management and control principles	112
Risk governance	Risk, treasury and capital management	– Risk categories	107
		– Risk governance	109–110
		– Interest rate risk in the banking book – Risk management and governance	143
		– Treasury management – Strategy, objectives and governance	156
		– Capital management – Capital management objectives, planning and activities	175–176
Communication and enforcement of risk culture within the bank	Risk, treasury and capital management	– Risk governance	109–110
		– Risk appetite framework	111–114
		– Internal risk reporting	115
		– Operational risk framework	154
Scope and main features of risk measurement systems	Risk, treasury and capital management	– Risk measurement	116–118
		– Credit risk – Overview of measurement, monitoring and management techniques	119
		– Market risk – Overview of measurement, monitoring and management techniques	138
		– Country risk exposure measure	148
		– Advanced measurement approach model	155
Risk information reporting	Risk, treasury and capital management	– Risk governance	109–110
		– Internal risk reporting	115
		– Risk management and control principles	112

OVA – Bank risk management approach (continued)

Pillar 3 disclosure requirement	Annual Report 2019 section	Disclosure	Annual Report 2019 page number
Stress testing	Risk, treasury and capital management	– Risk appetite framework	111–114
		– Stress testing	116–117
		– Credit risk models – Stress loss	133–134
		– Market risk stress loss	139
		– Interest rate risk in the banking book	143–146
		– Other market risk exposures	146–147
		– Assets and liquidity management – Stress testing	163
Strategies and processes applied to manage, hedge and mitigate risks	Risk, treasury and capital management	– Credit risk – Overview of measurement, monitoring and management techniques	119
		– Credit risk mitigation	127–129
		– Market risk – Overview of measurement, monitoring and management techniques	138
		– Value-at-risk	139–142
		– Interest rate risk in the banking book	143–146
		– Other market risk exposures	146–147
		– Country risk exposure	148–152
		– Operational risk framework	154
		– Liabilities and funding management	164–168
		– Currency management	173
		– Risk management and control principles	112
	Consolidated financial statements	– Note 11 Derivative instruments	365–370
		– Note 23d Maximum exposure to credit risk	395–396
		– Note 24i Maximum exposure to credit risk for financial instruments measured at fair value	422
		– Note 25 Offsetting financial assets and financial liabilities	424–425

Our approach to measuring risk exposure and risk-weighted assets

Depending on the intended purpose, the measurement of risk exposure that we apply may differ. Exposures may be measured for financial accounting purposes under International Financial Reporting Standards (IFRS) for deriving our regulatory capital requirement or for internal risk management and control purposes. Our Pillar 3 disclosures are generally based on measures of risk exposure used to derive the regulatory capital required under Pillar 1. Our RWA are calculated according to the BCBS Basel III framework, as implemented by the Swiss Capital Adequacy Ordinance issued by the Swiss Federal Council and by the associated circulars issued by FINMA.

The table below provides a summary of the approaches we use for the main risk categories to determine the regulatory risk exposure and RWA.

Category	Definition of risk	Regulatory risk exposure	Risk-weighted assets (RWA)
I. Credit risk			
Credit risk	Credit risk is the risk of a loss resulting from the failure of a counterparty to meet its contractual obligations toward UBS arising from transactions such as loans, debt securities held in our banking book and undrawn credit facilities. Refer to section 4, Credit risk.	Exposure at default (EAD) is the amount we expect a counterparty to owe us at the time of a possible default. For banking products, the EAD generally equals the IFRS carrying amount as of the reporting date. 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.	We apply two approaches to measure credit risk RWA: – *Advanced internal ratings-based (A-IRB) approach*, applied for the majority of our businesses. Counterparty risk weights are determined by reference to internal probability of default and loss given default estimates. – *Standardized approach (SA)*, generally based on external ratings for a sub-set of our credit portfolio where internal measures are not available.
Non-counterparty-related risk	Non-counterparty-related risk (NCPA) denotes the risk of a loss arising from changes in value or from liquidation of assets not linked to any counterparty, for example, premises, equipment and software, and deferred tax assets on temporary differences. Refer to section 2, Regulatory exposures and risk-weighted assets.	The IFRS carrying amount is the basis for measuring NCPA exposure.	We measure non-counterparty-related risk RWA by applying prescribed regulatory risk weights to the NCPA exposure.
Equity positions in the banking book	Risk from equity positions in the banking book refers to the investment risk arising from equity positions and other relevant investments or instruments held in our banking book. Refer to section 4, Credit risk.	The IFRS carrying amount is the basis for measuring risk exposure for equity securities held in our banking book, but reflecting a net position.	We measure the RWA from equity positions in the banking book by applying prescribed regulatory risk weights to our listed and unlisted equity exposures.

Category	Definition of risk	Regulatory risk exposure	Risk-weighted assets (RWA)
II. Counterparty credit risk			
Counterparty credit risk	Counterparty credit risk is the risk that a counterparty for over-the-counter (OTC) derivatives, exchange-traded derivatives (ETDs) or securities financing transactions (SFTs) will default before the final settlement of a transaction and cause a loss to the bank if the transaction has a positive economic value at the time of default. Refer to section 5, Counterparty credit risk.	We primarily use internal models to measure counterparty credit risk exposures to third parties. All internal models are approved by FINMA. – *For OTC derivatives and ETDs* we apply the effective expected positive exposure (EEPE) and stressed expected positive exposure (stressed EPE) as defined in the Basel III framework. – *For SFTs* we apply the close-out period approach. In certain instances where risk models are not available: – *Exposure on OTC derivatives and ETDs* is calculated considering the net positive replacement values and potential future exposure. – *Exposure for SFTs* is based on the IFRS carrying amount, net of collateral mitigation.	We apply two approaches to measure counterparty credit risk RWA: – *Advanced internal ratings-based (A-IRB) approach*, applied for the majority of our businesses. Counterparty risk weights are determined by reference to internal counterparty ratings and loss given default estimates. – *Standardized approach (SA),* generally based on external ratings for a sub-set of our credit portfolio, where internal measures are not available. We apply an additional credit valuation adjustment (CVA) capital charge to hold capital against the risk of mark-to-market losses associated with the deterioration of counterparty credit quality.
Settlement risk	Settlement risk is 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. Refer to section 2, Regulatory exposures and risk-weighted assets.	The IFRS carrying amount is the basis for measuring settlement risk exposure.	We measure settlement risk RWA through the application of prescribed regulatory risk weights to the settlement risk exposure.
III. Securitization exposures in the banking book			
Securitization exposures in the banking book	Exposures arising from traditional and synthetic securitizations held in our banking book. Refer to section 7, Securitizations.	The IFRS carrying amount after eligible regulatory credit risk mitigation and credit conversion factor is the basis for measuring securitization exposure.	Consistent with BCBS, we apply the FINMA-defined hierarchy of approaches for banking book securitizations to measure RWA: – *Internal ratings-based approach (SEC-IRBA),* considering the advanced IRB risk weights, if the securitized pool largely consists of IRB positions and internal ratings are available. – *External ratings-based approach (SEC-ERBA),* if the IRB approach cannot be applied, risk weights are applied based on external ratings, provided that we are able to demonstrate our expertise in critically reviewing and challenging the external ratings. – *Standardized approach (SEC-SA) or 1,250% risk weight factor,* if none of the aforementioned approaches can be applied, we would apply the standardized approach where the delinquency status of a significant portion of the underlying exposure can be determined or a risk weight of 1,250%. For re-securitization exposures we apply either the standardized approach or a risk weight factor of 1,250%.

Category	Definition of risk	Regulatory risk exposure	Risk-weighted assets (RWA)
IV. Market risk			
Value-at-risk (VaR)	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. For regulatory VaR, the holding period is 10 days and the confidence level is 99%. Refer to section 8, Market risk.		The VaR component of market risk RWA is calculated by taking the maximum of the period-end VaR and the product of the average VaR for the 60 trading days immediately preceding the period end and a VaR multiplier. The quantity is then multiplied by a risk weight factor of 1,250% to determine RWA. The VaR multiplier is dependent on the number of VaR backtesting exceptions within the most recent 250-business-day window.
Stressed VaR (SVaR)	SVaR is a 10-day 99% VaR measure that is estimated with model parameters that are calibrated to historical data covering a one-year period of significant financial stress relevant to the firm's current portfolio. Refer to section 8, Market risk.		The derivation of SVaR RWA is similar to the one explained above for VaR. Unlike VaR, SVaR is computed weekly, and as a result the average SVaR is computed over the most recent 12 observations.
Add-on for risks-not-in-VaR (RniV)	Potential risks that are not fully captured by our VaR model are referred to as RniV. We have a framework to identify and quantify these potential risks and underpin them with capital. Refer to section 8, Market risk.		Our RniV framework is used to derive the RniV-based component of the market risk RWA, which is approved by FINMA. Starting in the second quarter of 2018, RniV and RWA resulting from RniV are recalibrated on a monthly basis. As the RWA from RniV are add-ons, they do not reflect any diversification benefits across risks capitalized through VaR and SVaR.
Incremental risk charge (IRC)	The IRC represents an estimate of the default and rating migration risk of all trading book positions with issuer risk, except for equity products and securitization exposures, measured over a one-year time horizon at a 99.9% confidence level. Refer to section 8, Market risk.		The IRC is calculated weekly, and the results are used to derive the IRC-based component of the market risk RWA. The derivation is similar to that for VaR- and SVaR-based RWA, but without a VaR multiplier.
Comprehensive risk measure (CRM)	The CRM is an estimate of the default and complex price risk, including the convexity and cross-convexity of the CRM portfolio across credit spread, correlation and recovery, measured over a one-year time horizon at a 99.9% confidence level. Refer to section 8, Market risk.		Since the second quarter of 2019, we have not held eligible correlation trading positions. Prior to then, the CRM had been calculated weekly and used to derive the CRM-based component of the market risk RWA, with the calculation subject to a floor equal to 8% of the equivalent capital charge under the specific risk measure (SRM) for the correlation trading portfolio.
Securitization / re-securitization in the trading book	Risk arising from traditional and synthetic securitizations held in our trading book. Refer to section 7, Securitizations and section 8, Market risk.	The exposure is equal to the fair value of the net long or short securitization position.	We measure trading book securitization RWA using the *Ratings-based approach,* i.e., applying risk weights based on external ratings.
V. Operational risk			
Operational risk	Operational risk is the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events, including cyber risk. Operational risk includes, among others, legal risk, conduct risk and compliance risk. Refer to section 9, Operational risk.		We use the advanced measurement approach to measure operational risk RWA in accordance with FINMA requirements.

UBS Group

Section 1 Key metrics

Key metrics of the fourth quarter of 2019

Quarterly | The KM1 and KM2 tables on the following pages are based on the Basel Committee on Banking Supervision (the BCBS) Basel III rules. The KM2 table includes a reference to the total loss-absorbing capacity (TLAC) term sheet, published by the Financial Stability Board (the FSB). The FSB provides this term sheet at *www.fsb.org/2015/11/total-loss-absorbing-capacity-tlac-principles-and-term-sheet*.

During the fourth quarter of 2019, our common equity tier 1 (CET1) capital increased by USD 0.9 billion to USD 35.6 billion, mainly due to operating profit before tax, changes in compensation-related regulatory capital accruals, foreign currency translation effects and defined benefit plans. These effects were partly offset by accruals for capital returns to shareholders, share repurchases under our share repurchase program and current tax expenses. Our tier 1 capital increased by USD 1.2 billion to USD 51.9 billion, primarily reflecting the aforementioned increase in our CET1 capital and the issuance of a USD 0.3 billion high-trigger loss-absorbing AT1 capital instrument denominated in Swiss francs.

→ **Refer to "UBS shares" in the "Capital management" section of our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors* for more information about the share repurchase program**

The TLAC available as of 31 December 2019 included CET1 capital, additional tier 1 and tier 2 capital instruments eligible under the TLAC framework, and non-regulatory capital elements of TLAC. Under the Swiss systemically relevant bank (SRB) framework, including transitional arrangements, TLAC excludes 45% of the gross unrealized gains on debt instruments measured at fair value through other comprehensive income for accounting purposes, which for regulatory capital purposes is measured at the lower of cost or market value. This amount was negligible as of 31 December 2019, but is included as available TLAC in the KM2 table in this section.

Risk-weighted assets (RWA) decreased by USD 5.4 billion to USD 259.2 billion, mainly due to decreases in operational risk RWA and market risk RWA. Leverage ratio exposure increased by USD 9 billion during the quarter, predominantly driven by currency effects and on-balance sheet assets (other than SFTs and derivatives), partly offset by a decrease in SFTs and derivatives. Average high-quality liquid assets decreased by USD 1.7 billion, reflecting higher funding consumption by the business divisions and reductions in issued debt, partly offset by higher deposit balances. Average total net cash outflows increased by USD 2.1 billion following a reduction in inflows from secured financing transaction investments, partly offset by higher average inflows from loans. ▲

Quarterly |

KM1: Key metrics

USD million, except where indicated

		31.12.19	30.9.19	30.6.19	31.3.19	31.12.18
Available capital (amounts)						
1	Common equity tier 1 (CET1)	35,582	34,673	34,948	34,658	34,119
1a	Fully loaded ECL accounting model CET1[1]	35,538	34,635	34,904	34,613	34,071
2	Tier 1	51,888	50,702	49,993	49,436	46,279
2a	Fully loaded ECL accounting model Tier 1[1]	51,844	50,664	49,949	49,391	46,231
3	Total capital	57,614	56,396	56,345	56,148	52,981
3a	Fully loaded ECL accounting model total capital[1]	57,570	56,358	56,302	56,103	52,933
Risk-weighted assets (amounts)						
4	Total risk-weighted assets (RWA)	259,208	264,626	262,135	267,556	263,747
4a	Minimum capital requirement[2]	20,737	21,170	20,971	21,404	21,100
4b	Total risk-weighted assets (pre-floor)	259,208	264,626	262,135	267,556	263,747
Risk-based capital ratios as a percentage of RWA						
5	Common equity tier 1 ratio (%)	13.73	13.10	13.33	12.95	12.94
5a	Fully loaded ECL accounting model Common equity tier 1 ratio (%)[1]	13.71	13.09	13.32	12.94	12.92
6	Tier 1 ratio (%)	20.02	19.16	19.07	18.48	17.55
6a	Fully loaded ECL accounting model Tier 1 ratio (%)[1]	20.00	19.15	19.05	18.46	17.53
7	Total capital ratio (%)	22.23	21.31	21.49	20.99	20.09
7a	Fully loaded ECL accounting model total capital ratio (%)[1]	22.21	21.30	21.48	20.97	20.07
Additional CET1 buffer requirements as a percentage of RWA						
8	Capital conservation buffer requirement (2.5% from 2019) (%)	2.50	2.50	2.50	2.50	1.88
9	Countercyclical buffer requirement (%)	0.08	0.10	0.09	0.10	0.08
9a	Additional countercyclical buffer for Swiss mortgage loans (%)	0.23	0.21	0.22	0.21	0.21
10	Bank G-SIB and/or D-SIB additional requirements (%)	1.00	1.00	1.00	1.00	0.75
11	Total of bank CET1-specific buffer requirements (%)	3.58	3.60	3.59	3.60	2.71
12	CET1 available after meeting the bank's minimum capital requirements (%)	9.23	8.60	8.83	8.45	8.44
Basel III leverage ratio						
13	Total Basel III leverage ratio exposure measure	911,325	901,914	911,379	910,993	904,598
14	Basel III leverage ratio (%)	5.69	5.62	5.49	5.43	5.12
14a	Fully loaded ECL accounting model Basel III leverage ratio (%)[1]	5.69	5.62	5.48	5.42	5.11
Liquidity coverage ratio[3]						
15	Total HQLA	166,215	167,916	176,173	186,038	173,389
16	Total net cash outflow	124,112	122,025	121,314	121,521	127,352
17	LCR (%)	134	138	145	153	136

1 The fully loaded ECL accounting model excludes the transitional relief of recognizing ECL allowances and provisions in CET1 capital in accordance with FINMA Circular 2013/1 "Eligible capital – banks." 2 Calculated as 8% of total RWA, based on total capital minimum requirements, excluding CET1 buffer requirements. 3 Calculated based on quarterly average. Refer to "Liquidity coverage ratio" in section 14 of this report for more information.

Quarterly |

KM2: Key metrics – TLAC requirements (at resolution group level)[1]

USD million, except where indicated

		31.12.19	30.9.19	30.6.19	31.3.19	31.12.18
1	Total loss-absorbing capacity (TLAC) available	89,660	88,197	87,388	87,477	83,740
1a	Fully loaded ECL accounting model TLAC available[2]	89,616	88,159	87,344	87,433	83,692
2	Total RWA at the level of the resolution group	259,208	264,626	262,135	267,556	263,747
3	TLAC as a percentage of RWA (%)	34.59	33.33	33.34	32.69	31.75
3a	Fully loaded ECL accounting model TLAC as a percentage of fully loaded ECL accounting model RWA (%)[2]	34.57	33.31	33.32	32.68	31.73
4	Leverage ratio exposure measure at the level of the resolution group	911,325	901,914	911,379	910,993	904,598
5	TLAC as a percentage of leverage ratio exposure measure (%)	9.84	9.78	9.59	9.60	9.26
5a	Fully loaded ECL accounting model TLAC as a percentage of fully loaded ECL accounting model leverage exposure measure (%)[2]	9.83	9.77	9.58	9.60	9.25
6a	Does the subordination exemption in the antepenultimate paragraph of Section 11 of the FSB TLAC Term Sheet apply?			No		
6b	Does the subordination exemption in the penultimate paragraph of Section 11 of the FSB TLAC Term Sheet apply?			No		
6c	If the capped subordination exemption applies, the amount of funding issued that ranks pari passu with excluded liabilities and that is recognized as external TLAC, divided by funding issued that ranks pari passu with excluded liabilities and that would be recognized as external TLAC if no cap was applied (%)			N/A – Refer to our response to 6b.		

1 Resolution group level is defined as the UBS Group AG consolidated level. 2 The fully loaded ECL accounting model excludes the transitional relief of recognizing ECL allowances and provisions in CET1 capital in accordance with FINMA Circular 2013/1 "Eligible capital – banks."

RWA development in the fourth quarter of 2019

Quarterly | The OV1 table below provides an overview of our risk-weighted assets (RWA) and the related minimum capital requirements by risk type. The FINMA template includes rows that are currently not applicable to UBS and therefore have been left empty.

During the fourth quarter of 2019, RWA decreased by USD 5.4 billion to USD 259.2 billion, mainly due to a decrease of USD 2.8 billion in operational risk RWA and a decrease of USD 2.7 billion in market risk RWA. Information about movements in RWA over the fourth quarter of 2019 is provided on pages 48–49 of our fourth quarter 2019 report, available under "Quarterly reporting" at *www.ubs.com/investors*, and in the respective sections of this report. More information about capital management and RWA, including details regarding movements in RWA over 2019, is provided on pages 185–187 of our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors*. ▲

Quarterly |

OV1: Overview of RWA

		RWA					Minimum capital requirements[1]
	USD million	31.12.19	30.9.19	30.6.19	31.3.19	31.12.18	31.12.19
1	Credit risk (excluding counterparty credit risk)	121,244	119,969	114,991	118,419	112,991	9,700
2	*of which: standardized approach (SA)*	*28,386*	*27,786*	*28,287*	*28,971*	*25,972*	*2,271*
2a	*of which: non-counterparty-related risk*	*13,135*	*12,678*	*12,912*	*12,779*	*9,514*	*1,051*
3	*of which: foundation internal ratings-based (F-IRB) approach*						
4	*of which: supervisory slotting approach*						
5	*of which: advanced internal ratings-based (A-IRB) approach*	*92,858*	*92,183*	*86,703*	*89,448*	*87,019*	*7,429*
6	Counterparty credit risk[2]	36,354	37,259	37,487	36,793	34,282	2,908
7	*of which: SA for counterparty credit risk (SA-CCR)[3]*	*4,699*	*5,962*	*5,793*	*5,183*	*5,415*	*376*
8	*of which: internal model method (IMM)*	*20,275*	*19,309*	*20,133*	*19,371*	*17,624*	*1,622*
8a	*of which: value-at-risk (VaR)*	*5,502*	*5,426*	*5,453*	*5,889*	*5,036*	*440*
9	*of which: other CCR*	*5,879*	*6,561*	*6,107*	*6,351*	*6,207*	*470*
10	Credit valuation adjustment (CVA)	1,900	2,458	2,553	2,631	2,816	152
11	Equity positions under the simple risk weight approach[4]	3,261	3,248	3,302	3,960	3,658	261
12	Equity investments in funds – look-through approach[5]						
13	Equity investments in funds – mandate-based approach[5]						
14	Equity investments in funds – fallback approach[5]						
15	Settlement risk	357	347	415	384	375	29
16	Securitization exposures in banking book	633	656	664	703	709	51
17	*of which securitization internal ratings-based approach (SEC-IRBA)*						
18	*of which securitization external ratings-based approach (SEC-ERBA), including internal assessment approach (IAA)*	*598*	*647*	*657*	*696*	*701*	*48*
19	*of which securitization standardized approach (SEC-SA)*	*35*	*8*	*7*	*7*	*8*	*3*
20	Market Risk	6,556	9,207	10,977	12,985	19,992	525
21	*of which: standardized approach (SA)*	*419*	*492*	*452*	*643*	*452*	*34*
22	*of which: internal model approaches (IMM)*	*6,137*	*8,714*	*10,526*	*12,343*	*19,541*	*491*
23	Capital charge for switch between trading book and banking book[6]						
24	Operational risk	77,542	80,345	80,345	80,345	77,558	6,203
25	Amounts below thresholds for deduction (250% risk weight)[4,7]	11,361	11,138	11,402	11,335	11,365	909
25a	*of which: Deferred tax assets*	*8,951*	*8,699*	*8,853*	*8,747*	*8,782*	*716*
26	Floor adjustment[8]						
27	Total	259,208	264,626	262,135	267,556	263,747	20,737

1 Calculated based on 8% of RWA. 2 Excludes settlement risk, which is separately reported in line 15 "Settlement risk." Includes RWA with central counterparties. The split between the subcomponents of counterparty credit risk refers to the calculation of the exposure measure. 3 Calculated in accordance with the current exposure method (CEM). The RWA under the standardized approach for counterparty credit risk (SA-CCR) will be presented for the first time in the 31 March 2020 Pillar 3 report. 4 Includes investments in funds. Items subject to threshold deduction treatments that do not exceed their respective threshold are risk weighted at 250% (31 December 2019: RWA USD 2,410 million; 30 September 2019: RWA USD 2,439 million; 30 June 2019: RWA USD 2,548 million; 31 March 2019: RWA USD 2,588 million; 31 December 2018: RWA USD 2,583 million) and are separately included in line 25 "Amounts below thresholds for deduction (250% risk weight)." 5 The effect of the adoption of the new regulation for the calculation of RWA for investments in funds introduced on 1 January 2020 will be presented for the first time in the 31 March 2020 Pillar 3 report. 6 Not applicable until the implementation of the final rules on the minimum capital requirements for market risk (the Fundamental Review of the Trading Book). 7 Includes items subject to threshold deduction treatments that do not exceed their respective threshold and are risk weighted at 250%. Items subject to threshold deduction treatments are significant investments in common shares of non-consolidated financial institutions (banks, insurance and other financial entities) and deferred tax assets arising from temporary differences, both of which are measured against their respective threshold. 8 No floor effect, as 80% of our Basel I RWA, including the RWA equivalent of the Basel I capital deductions, do not exceed our Basel III RWA, including the RWA equivalent of the Basel III capital deductions. For the status of the finalization of the Basel III capital framework, refer to the "Regulatory and legal developments" section of our Annual Report 2019 which outlines how the proposed floor calculation would differ in significant aspects from the current approach.

▲

The table below and on the following pages is provided on a voluntary basis to complement other disclosures provided, is aligned with the principles applied in the OV1 table and presents the net exposure at default (EAD) and RWA by risk type and FINMA-defined asset class, which forms the basis for the calculation of RWA. These exposures are further subdivided into standardized approaches and advanced internal ratings-based (A-IRB) or model-based approaches. For credit risk, the classification defines the method used to derive the risk weight factors, through either internal ratings (A-IRB) or external ratings (standardized approach). The split between standardized approaches and A-IRB or model-based approaches for counterparty credit risk refers to the exposure measure, whereas the split in templates CCR3 and CCR4 refers to the risk weighting approach. Market and operational risk RWA, excluding securitization and re-securitization in the trading book, are derived using model calculations and are therefore included in the model-based approach columns.

The table provides references to sections in this report containing more information about the specific topics.

Regulatory exposures and risk-weighted assets

31.12.19	A-IRB / model-based approach			Standardized approach[2]			Total	
USD million	Net EAD	RWA	Section or table reference	Net EAD	RWA	Section or table reference	Net EAD	RWA
Credit risk (excluding counterparty credit risk)	551,748	92,858	4	49,939	28,386	4	601,687	121,244
Central governments and central banks	138,880	2,482	CR6, CR7	10,687	938	CR4, CR5	149,567	3,420
Banks and securities dealers	17,614	6,102	CR6, CR7	5,541	1,314	CR4, CR5	23,155	7,416
Public-sector entities, multilateral development banks	8,012	844	CR6, CR7	920	238	CR4, CR5	8,932	1,082
Corporates: specialized lending	23,313	11,475	CR6, CR7			CR4, CR5	23,313	11,475
Corporates: other lending	52,533	31,836	CR6, CR7	6,017	4,824	CR4, CR5	58,550	36,660
Central counterparties				474	16		474	16
Retail	311,396	40,118	CR6, CR7	12,074	7,923	CR4, CR5	323,469	48,041
Residential mortgages	*149,255*	*29,133*		*6,466*	*2,641*		*155,721*	*31,774*
Qualifying revolving retail exposures (QRRE)	*1,944*	*687*					*1,944*	*687*
Other retail[1]	*160,197*	*10,298*		*5,608*	*5,282*		*165,805*	*15,580*
Non-counterparty-related risk				14,226	13,135	CR4, CR5	14,226	13,135
Property, equipment and software				*12,756*	*12,756*		*12,756*	*12,756*
Other				*1,470*	*378*		*1,470*	*378*
Counterparty credit risk[2]	102,536	25,777	5	70,327	10,577	5	172,863	36,354
Central governments and central banks	7,070	670	CCR3, CCR4	2,091	104	CCR3, CCR4	9,161	774
Banks and securities dealers	18,078	5,376	CCR3, CCR4	2,328	660	CCR3, CCR4	20,407	6,036
Public-sector entities, multilateral development banks	1,917	423	CCR3, CCR4	755	45	CCR3, CCR4	2,673	469
Corporates incl. specialized lending	48,331	18,759	CCR3, CCR4	17,402	7,722	CCR3, CCR4	65,733	26,481
Central counterparties	27,139	547		41,531	1,343		68,671	1,891
Retail				6,219	703	CCR3, CCR4	6,219	703
Credit valuation adjustment (CVA)		974	5, CCR2		926	5, CCR2		1,900
Equity positions in the banking book (CR)	778	3,261	4, CR10				778	3,261
Settlement risk	30	54		183	303		213	357
Securitization exposure in the banking book				188	633	7	188	633
Market risk		6,137	8	670	419	7, 8	670	6,556
Value-at-risk (VaR)		487	MR2					487
Stressed value-at risk (SVaR)		2,082	MR2					2,082
Add-on for risks-not-in-VaR (RniV)		2,344	MR2					2,344
Incremental risk charge (IRC)		1,224	MR2					1,224
Comprehensive risk measure (CRM)[3]								
Securitization / re-securitization in the trading book				670	419	MR1	670	419
Operational risk		77,542						77,542
Amounts below thresholds for deduction (250% risk weight)	964	2,410		3,580	8,951		4,544	11,361
Deferred tax assets				3,580	8,951		3,580	8,951
Significant investments in non-consolidated financial institutions	964	2,410					964	2,410
Total	656,055	209,014		124,887	50,194		780,942	259,208

Regulatory exposures and risk-weighted assets (continued)

30.6.19	A-IRB / model-based approach			Standardized approach[2]			Total	
USD million	Net EAD	RWA	Section or table reference	Net EAD	RWA	Section or table reference	Net EAD	RWA
Credit risk (excluding counterparty credit risk)	**529,925**	**86,703**	**4**	**49,922**	**28,287**	**4**	**579,847**	**114,991**
Central governments and central banks	140,098	3,064	CR6, CR7	11,017	885	CR4, CR5	151,115	3,949
Banks and securities dealers	15,953	4,762	CR6, CR7	5,132	1,172	CR4, CR5	21,086	5,934
Public-sector entities, multilateral development banks	6,822	817	CR6, CR7	949	278	CR4, CR5	7,771	1,095
Corporates: specialized lending	23,511	11,798	CR6, CR7			CR4, CR5	23,511	11,798
Corporates: other lending	52,992	29,669	CR6, CR7	6,080	4,864	CR4, CR5	59,073	34,533
Central counterparties				376	14		376	14
Retail	290,548	36,593	CR6, CR7	12,367	8,162	CR4, CR5	302,914	44,755
Residential mortgages	*145,852*	*27,678*		*6,662*	*2,860*		*152,514*	*30,538*
Qualifying revolving retail exposures (QRRE)	*1,836*	*647*					*1,836*	*647*
Other retail[1]	*142,860*	*8,269*		*5,705*	*5,302*		*148,565*	*13,571*
Non-counterparty-related risk				14,001	12,912	CR4, CR5	14,001	12,912
Property, equipment and software				*12,645*	*12,645*		*12,645*	*12,645*
Other				*1,356*	*267*		*1,356*	*267*
Counterparty credit risk[2]	**84,322**	**25,587**	**5**	**82,687**	**11,900**	**5**	**167,009**	**37,487**
Central governments and central banks	7,144	747	CCR3, CCR4	3,460	106	CCR3, CCR4	10,604	853
Banks and securities dealers	17,067	5,077	CCR3, CCR4	3,014	835	CCR3, CCR4	20,081	5,911
Public-sector entities, multilateral development banks	1,839	345	CCR3, CCR4	504	23	CCR3, CCR4	2,344	368
Corporates incl. specialized lending	42,391	19,023	CCR3, CCR4	20,343	8,761	CCR3, CCR4	62,734	27,784
Central counterparties	15,881	396		49,149	1,621		65,031	2,017
Retail				6,216	554	CCR3, CCR4	6,216	554
Credit valuation adjustment (CVA)		**1,106**	**5, CCR2**		**1,447**	**5, CCR2**		**2,553**
Equity positions in the banking book (CR)	**788**	**3,302**	**4, CR10**				**788**	**3,302**
Settlement risk	**30**	**74**		**167**	**340**		**197**	**415**
Securitization exposure in the banking book				**203**	**664**	**7**	**203**	**664**
Market risk		**10,526**	**8**	**720**	**452**	**7, 8**	**720**	**10,977**
Value-at-risk (VaR)		1,439	MR2					1,439
Stressed value-at risk (SVaR)		3,448	MR2					3,448
Add-on for risks-not-in-VaR (RniV)		4,114	MR2					4,114
Incremental risk charge (IRC)		1,524	MR2					1,524
Comprehensive risk measure (CRM)[3]								
Securitization / re-securitization in the trading book				720	452	MR1	720	452
Operational risk		**80,345**						**80,345**
Amounts below thresholds for deduction (250% risk weight)	**1,019**	**2,548**		**3,541**	**8,853**		**4,560**	**11,402**
Deferred tax assets				3,541	8,853		3,541	8,853
Significant investments in non-consolidated financial institutions	1,019	2,548					1,019	2,548
Total	**616,084**	**210,191**		**137,240**	**51,944**		**753,324**	**262,135**

Regulatory exposures and risk-weighted assets (continued)

31.12.18	A-IRB / model-based approach			Standardized approach[2]			Total	
USD million	Net EAD	RWA	Section or table reference	Net EAD	RWA	Section or table reference	Net EAD	RWA
Credit risk (excluding counterparty credit risk)	**533,587**	**87,019**	**4**	**56,467**	**25,972**	**4**	**590,054**	**112,991**
Central governments and central banks	139,632	2,537	CR6, CR7	17,854	748	CR4, CR5	157,485	3,285
Banks and securities dealers	15,454	5,272	CR6, CR7	7,456	1,842	CR4, CR5	22,910	7,114
Public-sector entities, multilateral development banks	8,093	769	CR6, CR7	1,232	349	CR4, CR5	9,324	1,118
Corporates: specialized lending	22,858	12,156	CR6, CR7			CR4, CR5	22,858	12,156
Corporates: other lending	60,639	30,588	CR6, CR7	6,467	5,010	CR4, CR5	67,106	35,599
Central counterparties				284	27		284	27
Retail	286,912	35,697	CR6, CR7	12,650	8,481	CR4, CR5	299,562	44,178
Residential mortgages	*142,413*	*26,696*		*6,685*	*2,884*		*149,098*	*29,580*
Qualifying revolving retail exposures (QRRE)	*1,772*	*624*					*1,772*	*624*
Other retail[1]	*142,726*	*8,377*		*5,966*	*5,597*		*148,692*	*13,974*
Non-counterparty-related risk				10,524	9,514	CR4, CR5	10,524	9,514
Property, equipment and software				*9,305*	*9,305*		*9,305*	*9,305*
Other				*1,219*	*209*		*1,219*	*209*
Counterparty credit risk[2]	**83,202**	**22,660**	**5**	**85,179**	**11,622**	**5**	**168,381**	**34,282**
Central governments and central banks	6,068	693	CCR3, CCR4	2,997	353	CCR3, CCR4	9,065	1,046
Banks and securities dealers	16,843	5,118	CCR3, CCR4	3,166	955	CCR3, CCR4	20,009	6,073
Public-sector entities, multilateral development banks	1,988	249	CCR3, CCR4	670	39	CCR3, CCR4	2,658	288
Corporates incl. specialized lending	41,673	16,253	CCR3, CCR4	16,850	7,849	CCR3, CCR4	58,522	24,102
Central counterparties	16,630	346		51,139	1,795		67,769	2,142
Retail				10,358	631	CCR3, CCR4	10,358	631
Credit valuation adjustment (CVA)		**1,479**	**5, CCR2**		**1,338**	**5, CCR2**		**2,816**
Equity positions in the banking book (CR)	**879**	**3,658**	**4, CR10**				**879**	**3,658**
Settlement risk	**58**	**89**		**222**	**285**		**280**	**375**
Securitization exposure in the banking book				**213**	**709**	**7**	**213**	**709**
Market risk		**19,541**	**8**	**500**	**452**	**7, 8**	**500**	**19,992**
Value-at-risk (VaR)		2,454	MR2					2,454
Stressed value-at risk (SVaR)		5,866	MR2					5,866
Add-on for risks-not-in-VaR (RniV)		8,915	MR2					8,915
Incremental risk charge (IRC)		2,299	MR2					2,299
Comprehensive risk measure (CRM)		7	MR2					7
Securitization / re-securitization in the trading book				500	452	MR1	500	452
Operational risk		**77,558**						**77,558**
Amounts below thresholds for deduction (250% risk weight)	**975**	**2,583**		**3,513**	**8,782**		**4,487**	**11,365**
Deferred tax assets				3,513	8,782		3,513	8,782
Significant investments in non-consolidated financial institutions	975	2,583					975	2,583
Total	**618,701**	**214,587**		**146,094**	**49,159**		**764,795**	**263,747**

1 Consists primarily of Lombard lending, which represents loans made against the pledge of eligible marketable securities or cash, as well as exposures to small businesses, private clients and other retail customers without mortgage financing. 2 The split between A-IRB / model-based approach and standardized approach for counterparty credit risk refers to the exposure measure, whereas the split in tables CCR3 and CCR4 refers to the risk weight approach. As of 31 December 2019, USD 97,845 million of EAD (30 June 2019: USD 95,241 million; 31 December 2018: USD 93,933 million) was subject to the A-IRB approach, and USD 6,348 million of EAD (30 June 2019: USD 6,737 million; 31 December 2018: USD 6,679 million) was subject to the standardized approach. 3 As of 30 June 2019 and 31 December 2019, the CRM-based capital requirement has not been applicable to us, as we have not held eligible correlation trading positions.

Section 3 Linkage between financial statements and regulatory exposures

This section provides information about the differences between our regulatory exposures and carrying amounts presented in our financial statements prepared in accordance with International Financial Reporting Standards (IFRS). Assets and liabilities presented in our IFRS financial statements may be subject to more than one risk framework, as explained further on the next page.

Annual |

LI1: Differences between accounting and regulatory scopes of consolidation and mapping of financial statement categories with regulatory risk categories

31.12.19	Carrying amounts as reported in published financial statements	Carrying amounts under scope of regulatory consolidation	Carrying amounts of items:				
USD million			Subject to credit risk framework[1]	Subject to counterparty credit risk framework[2]	Subject to securitization framework[3]	Subject to market risk framework	Not subject to capital requirements or subject to deduction from capital
Assets							
Cash and balances at central banks	107,068	107,068	107,068				
Loans and advances to banks	12,447	12,211	11,548	663[4]		62	
Receivables from securities financing transactions	84,245	84,245		84,245		92	
Cash collateral receivables on derivative instruments	23,289	23,289		23,289		369	
Loans and advances to customers	326,786	326,842	322,725	4,117[4]			
Other financial assets measured at amortized cost	22,980	22,542	22,230	1,524[6]			
Total financial assets measured at amortized cost	576,815	576,197	463,571	113,838		523	
Financial assets at fair value held for trading	127,514	127,488	6,275[5]	41,285[6]	117	121,397	
Derivative financial instruments	121,841	121,852		121,852		117,334	
Brokerage receivables	18,007	18,007	4,906	13,101			
Financial assets at fair value not held for trading[7]	83,944	56,255	38,435	6,937[6,8]	81	17,477	
Total financial assets measured at fair value through profit or loss	351,307	323,602	49,616	183,175	198	256,207	
Financial assets measured at fair value through other comprehensive income	6,345	6,345	6,345	217[6]			
Consolidated participations		96	96				
Investments in associates	1,051	1,051	873				178
Property, equipment and software	12,804	12,756	12,756				
Goodwill and intangible assets	6,469	6,469					6,469
Deferred tax assets	9,537	9,537[9]	3,580				6,342
Other non-financial assets	7,856	7,850	3,243			4,597	9
Total assets	972,183	943,902	540,079	297,230	198	261,327	12,998
Liabilities							
Amounts due to banks	6,570	6,570					6,570
Payables from securities financing transactions	7,778	7,778		7,778			
Cash collateral payables on derivative instruments	31,415	31,415		31,415		258	
Customer deposits	448,284	448,291					448,291
Debt issued measured at amortized cost	110,497	110,492					110,492
Other financial liabilities measured at amortized cost	9,712	9,557					9,557
Total financial liabilities measured at amortized cost	614,256	614,103		39,193		258	574,910
Financial liabilities at fair value held for trading	30,591	30,591				30,591	
Derivative financial instruments	120,880	120,883		120,883		116,300	
Brokerage payables designated at fair value	37,233	37,233					37,233
Debt issued designated at fair value	66,809	66,822				66,174	648
Other financial liabilities designated at fair value	35,940	7,795				7,601	194
Total financial liabilities measured at fair value through profit or loss	291,452	263,324		120,883		220,666	38,075
Provisions	2,974	2,974					2,974
Other non-financial liabilities	8,794	8,792					8,792
Total liabilities	917,476	889,193		160,076		220,924	624,752

1 Includes non-counterparty-related risk and equity positions in the banking book subject to the simple risk weight method of USD 19,749 million, which are excluded from the credit risk tables CR1, CR2, CR3 and CRB in section 3 of this report, resulting in IFRS carrying values reflected in the credit risk section of USD 520,330 million. However, credit risk tables CR4 and CR5 include non-counterparty-related risk and credit risk table CR10 includes equity positions in the banking book, both not subject to the threshold deduction approach. 2 Includes settlement risk, which is not included in section 5 of this report. 3 This column only consists of securitization positions in the banking book. Trading book securitizations are included in the "Subject to market risk framework" column. 4 Consists of settlement risk and margin loans, which are both subject to counterparty credit risk. 5 Includes trading portfolio assets in the banking book and traded loans. 6 Includes assets pledged as collateral, since collateral posted is subject to counterparty credit risk. 7 Funded collar trades without re-hypothecation rights are treated as non-credit bearing exposures and are excluded from the "Subject to credit risk framework" column. 8 Includes structured reverse repurchase and securities borrowing agreements, as well as other exposures subject to the counterparty credit risk framework. 9 Net of deferred tax liabilities, which are offset against prudential filters (e.g., goodwill and intangibles, as well as cash flow hedges) in the regulatory capital calculation.

Annual | The LI1 table on the previous page provides a breakdown of the IFRS balance sheet into the risk types used to calculate our regulatory capital requirements. Receivables from securities financing transactions, cash collateral receivables and payables on derivative instruments, financial assets at fair value held for trading, derivative financial instruments, and financial assets at fair value not held for trading are subject to regulatory capital charges in both the market risk and the counterparty credit risk categories. In addition, other financial assets measured at amortized cost, financial assets measured at fair value through profit or loss and financial assets measured at fair value through other comprehensive income include securities that have been pledged as collateral. These securities are also considered in the counterparty credit risk framework, as collateral pledged is subject to counterparty credit risk. ▲

LIA: Explanation of the differences between the IFRS and regulatory scopes of consolidation

Annual | The scope of consolidation for the purpose of calculating Group regulatory capital is generally the same as the consolidation scope under International Financial Reporting Standards (IFRS) and includes subsidiaries that are directly or indirectly controlled by UBS Group AG and are active in banking and finance. However, subsidiaries consolidated under IFRS whose business is outside the banking and finance sector are excluded from the regulatory scope of consolidation.

The key difference between the IFRS and regulatory scope of consolidation as of 31 December 2019 relates to investments in insurance, real estate and commercial companies, as well as investment vehicles, that are consolidated under IFRS, but not for regulatory capital purposes, where they are subject to risk-weighting.

The table below provides a list of the most significant entities that were included in the IFRS scope of consolidation but not in the regulatory scope of consolidation. These entities account for most of the difference between the "Balance sheet in accordance with IFRS scope of consolidation" and the "Balance sheet in accordance with regulatory scope of consolidation" columns in the CC2 table. Such difference is mainly related to financial assets at fair value not held for trading and other financial liabilities designated at fair value. As of 31 December 2019, entities consolidated under either the IFRS or the regulatory scope of consolidation did not report any significant capital deficiencies.

In the banking book, certain equity investments are not consolidated under IFRS nor under the regulatory scope. As of 31 December 2019, these investments mainly consisted of infrastructure holdings and joint operations (e.g., settlement and clearing institutions, stock and financial futures exchanges) and included our participation in the SIX Group. These investments are risk weighted based on applicable threshold rules.

More information about the legal structure of the UBS Group and on the IFRS scope of consolidation is provided on pages 15 and 312–313, respectively, of our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors*. ▲

Semiannual |

Main legal entities consolidated under IFRS but not included in the regulatory scope of consolidation

	31.12.19		
USD million	Total assets[1]	Total equity[1]	Purpose
UBS Asset Management Life Ltd	28,225	44	Life Insurance
UBS Life Insurance Company USA	144	43	Life insurance

1 Total assets and total equity on a standalone basis.

▲

Annual |

LI2: Main sources of differences between regulatory exposure amounts and carrying amounts in financial statements (under the regulatory scope of consolidation)

31.12.19		Total	Items subject to:			
USD million			Credit risk framework	Counterparty credit risk framework	Securitization framework	Market risk framework
1	Asset carrying amount amount under scope of regulatory consolidation (as per template LI1)	943,902	540,079[1]	297,230	198	261,327
2	Liabilities carrying amount amount under scope of regulatory consolidation[2]	(121,463)		(121,463)		
3	**Total net amount under regulatory scope of consolidation**	822,439	540,079	175,767	198	261,327
4	Off-balance sheet amounts (post-CCF; e.g., guarantees, commitments)[3]	73,424	73,412	12		
5	Differences due to prudential filters	(12,998)				
6	Derivatives: PFE and collateral mitigation (including off-balance sheet exposures)	89,762		89,762		
7	SFTs: Collateral mitigation (including off-balance sheet exposures)	(92,465)		(92,465)		
8	Other differences including collateral mitigation in the banking book	(99,219)	(6,483)		(10)	(260,657)[4]
9	**Exposure amounts considered for regulatory purposes**	780,942	607,008	173,076	188	670

1 Includes non-counterparty-related risk and equity positions in the banking book subject to the simple risk weight method of USD 19,749 million, which are excluded from the credit risk tables CR1, CR2, CR3 and CRB in section 3 of this report, resulting in IFRS carrying amounts reflected in the credit risk section of USD 520,330 million. However, credit risk tables CR4 and CR5 include non-counterparty-related risk and credit risk table CR10 includes equity positions in the banking book, both not subject to the threshold deduction approach. 2 Includes the amounts of financial instruments and cash collateral considered for netting per the relevant netting agreement in order to not exceed the net amount of financial assets presented on the balance sheet (included in row 1); i.e., over-collateralization, where it exists, is not reflected in the table. 3 Includes off-balance sheet exposures where a credit conversion factor is applied. 4 Exposure at default is only calculated for securitization exposures in the trading book, resulting in a difference between carrying amounts and exposure amounts considered for regulatory purposes. The effect on the total exposure is higher, since certain exposures are subject to regulatory capital charges in both the market risk and the counterparty credit risk categories.

Regulatory exposures

Annual | The LI2 table above illustrates the key differences between regulatory exposure amounts and accounting carrying amounts under the regulatory scope of consolidation. In addition to the accounting carrying amounts, the regulatory exposure amounts include:

– netting of financial instruments and cash collateral where an enforceable master netting agreement is in place (row 2);
– off-balance sheet amounts not related to derivatives and securities financing transactions (SFTs) (row 4);
– potential future exposure (PFE) for derivatives, offset by eligible financial collateral deductions (row 6);
– effects from the model calculation of effective expected positive exposure (EEPE) applied to derivatives (row 6);
– any collateral mitigation through the application of the close-out period approach or the comprehensive measurement approach (row 7); and
– effects of collateral mitigation in the banking book (row 8).

The regulatory exposure amount excludes prudential filters (row 5), comprising items subject to deduction from capital, which are not risk weighted. In addition, exposures that are only subject to market risk do not create any regulatory exposure, as their risk is reflected as part of our market risk RWA calculation (row 8).

Fair value measurement

The table below references additional information about fair value measurement that is provided in our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors*.

Annual |

Pillar 3 disclosure requirement	Annual Report 2019 section	Disclosure	Annual Report 2019 page number
Valuation methodologies applied, including mark-to-market and mark-to-model methodologies in use	Consolidated financial statements	– Note 24a Valuation principles – Note 24c Fair value hierarchy – Note 24f Level 3 instruments: valuation techniques and inputs	404–405 406–412 415–417
Description of the independent price verification process	Consolidated financial statements	– Note 24b Valuation governance	405
Procedures for valuation adjustments or reserves for valuing trading positions by type of instrument	Consolidated financial statements	– Note 24d Valuation adjustments	412–414

Section 4 Credit risk

Introduction

This section provides information about the exposures subject to the Basel III credit risk framework, as presented in the "Regulatory exposures and risk-weighted assets" table on pages 20–22 of this report. Information about counterparty credit risk is reflected in the "Counterparty credit risk" section on pages 57–66 of this report. Securitization positions are reported in the "Securitizations" section on pages 72–79 of this report.

The tables in this section provide details regarding the exposures used to determine the firm's credit risk-related regulatory capital requirement. The parameters applied under the advanced internal ratings-based (A-IRB) approach are generally based on the same methodologies, data and systems we use for internal credit risk quantification, except where certain treatments are specified by regulatory requirements. These include, for example, the application of regulatory prescribed floors and multipliers, and differences with respect to eligibility criteria and exposure definitions. The exposure information presented in this section may therefore differ from our internal management view disclosed in the "Risk management and control" sections of our quarterly and annual reports. Similarly, the regulatory capital prescribed measure of credit risk exposure also differs from how it is defined under International Financial Reporting Standards (IFRS).

Credit risk exposure categories

Annual | The definitions of the FINMA-defined Pillar 3 credit risk exposure categories "Loans" and "Debt securities" below, as referred to in the "CR1: Credit quality of assets" and "CR3: Credit risk mitigation techniques – overview" tables in this section, provide a link to the IFRS balance sheet structure.

The Pillar 3 category "Loans" comprises financial instruments held with the intent to collect the contractual payments and includes the following IFRS balances to the extent that they are subject to the credit risk framework:
- balances at central banks;
- *Loans and advances to banks*;
- *Loans and advances to customers*;
- *Other financial assets measured at amortized cost*, excluding money market instruments, checks and bills and other debt instruments;
- traded loans in the banking book that are included within *Financial assets at fair value held for trading*;
- brokerage receivables;
- loans including structured loans that are included within *Financial assets at fair value not held for trading*; and
- other non-financial assets.

The Pillar 3 category "Debt securities" includes the following IFRS balances to the extent that they are subject to the credit risk framework:
- money market instruments, checks and bills and other debt instruments that are included within *Other financial assets measured at amortized cost*;
- *Financial assets at fair value held for trading*, excluding traded loans;
- *Financial assets at fair value not held for trading*, excluding loans; and
- *Financial assets measured at fair value through other comprehensive income*. ▲

This section is organized in eight sub-sections:

Credit risk management

Annual | This sub-section includes a reference to disclosures on our risk management objectives and risk management process, our organizational structure and our risk governance. ▲

Credit risk exposure and credit quality of assets

Annual | Semiannual | This sub-section provides information about our credit risk exposures and credit quality of assets. ▲▲

Credit risk mitigation

Annual | Semiannual | This sub-section refers to disclosures on policies and processes for collateral evaluation and management, the use of netting and credit risk mitigation instruments. We also disclose information about our credit risk mitigation (CRM) techniques used to reduce credit risk for loans and debt securities. All secured exposures are presented in a table, irrespective of whether the standardized approach or the A-IRB approach is used for the risk-weighted assets (RWA) calculation.▲▲

Credit risk under the standardized approach

Annual | Semiannual | This sub-section provides information about the use of external credit assessment institutions (ECAIs) to determine risk weightings applied to rated counterparties, as well as quantitative information about credit risk exposures and the effect of CRM under the standardized approach. ▲▲

Credit risk under internal risk-based approaches

Annual | Semiannual | This sub-section refers to disclosures on our internal risk-based models used to calculate RWA, including information about internal model development and control, as well as characteristics of our models. It further includes tables that provide information about credit risk exposures under the A-IRB approach, including the main parameters used in A-IRB models for the calculation of capital requirements, presented by portfolio and probability of default (PD) range. ▲▲

Credit risk risk-weighted assets under the A-IRB approach

Quarterly | This sub-section comprises disclosures on the quarterly credit risk RWA development under the A-IRB approach. ▲

Backtesting

Annual | This sub-section includes disclosures on the backtesting of PD calculations. ▲

Equity exposures

Semiannual | This sub-section provides information about our equity exposures under the simple risk weight method. ▲

Credit risk management

The table below presents an overview of Pillar 3 disclosures that are provided separately in our Annual Report 2019.

Annual |

CRA – Credit risk management

Pillar 3 disclosure requirement	Annual Report 2019 section	Disclosure	Annual Report 2019 page number
Translation of the business model into the components of the bank's credit risk profile	Risk, treasury and capital management	– Key risks, risk measures and performance by business division and Corporate Center	106
		– Risk categories, Risk definitions	107
		– Credit risk profile of the Group	120
		– Main sources of credit risk	119
	Consolidated financial statements	– Note 23d Maximum exposure to credit risk	395–396
Criteria and approach used for defining credit risk management policy and for setting credit risk limits	Risk, treasury and capital management	– Risk governance	109–110
		– Risk appetite framework	111–114
		– Risk measurement	116–118
		– Credit risk – Overview of measurement, monitoring and management techniques	119
Structure and organization of the credit risk management and control function	Risk, treasury and capital management	– Risk governance	109–110
Interaction between the credit risk management, risk control, compliance and internal audit functions	Risk, treasury and capital management	– Risk governance	109–110
		– Risk appetite framework	111–114
Scope and content of the reporting on credit risk exposure to the executive management and to the board of directors	Risk, treasury and capital management	– Risk governance	109–110
		– Internal risk reporting	115
		– Credit risk profile of the Group	120
		– Risk appetite framework	111–114

▲

Credit risk exposure and credit quality of assets

Amounts shown in the tables below and on the following pages are IFRS carrying amounts according to the regulatory scope of consolidation that are subject to the credit risk framework.

Annual |

CRB: Breakdown of exposures by industry

31.12.19 *USD million*	Banks	Construction	Electricity, gas, water supply	Financial services	Hotels and restaurants	Manufacturing[2]	Mining	Private households	Public authorities	Real estate and rentals	Retail and wholesale[3]	Services	Other[4]	Total carrying amount of assets
Balances at central banks	106,265													106,265
Loans and advances to banks[1]	11,548													11,548
Loans and advances to customers[1]		2,402	955	62,173	1,653	3,354	628	201,544	1,086	15,917	6,816	20,954	5,241	322,725
Other financial assets measured at amortized cost	2,853	184	5	2,036	6	307	9	4,013	8,559	309	129	2,907	550	21,868
Total financial assets measured at amortized cost	120,667	2,586	960	64,209	1,660	3,661	636	205,558	9,645	16,226	6,946	23,861	5,792	462,406
Financial assets at fair value held for trading	1	271	16	227	0	329	7	0	5,260	3	141		7	6,262
Brokerage receivables	6	39	17	329	6	0	4	3,872	18		18	514	86	4,906
Financial assets at fair value not held for trading	12,840	56		5,300			0	196	17,681	1,208		86		37,367
Total financial assets measured at fair value through profit or loss	12,847	365	33	5,856	6	329	11	4,068	22,958	1,211	159	600	93	48,535
Financial assets measured at fair value through other comprehensive income	230			2,356					2,156			1,602		6,345
Other non-financial assets	297		0	49				463	1,314	2		890	29	3,044
Total	134,041	2,952	992	72,470	1,665	3,990	647	210,088	36,072	17,439	7,105	26,953	5,915	520,330
31.12.18														
Balances at central banks	107,622													107,622
Loans and advances to banks[1]	15,612													15,612
Loans and advances to customers[1]		2,005	777	58,944	1,806	3,963	571	196,407	2,366	14,982	7,103	20,449	5,390	314,762
Other financial assets measured at amortized cost	2,350	127	1	2,560	7	280	10	4,503	8,698	305	124	2,292	441	21,698
Total financial assets measured at amortized cost	125,584	2,132	779	61,505	1,812	4,244	581	200,910	11,063	15,287	7,227	22,741	5,831	459,695
Financial assets at fair value held for trading	93	20	76	224	2	121	25		7,777	226	23	96	52	8,735
Brokerage receivables	7	42	19	322	4		4	3,360			36	573	40	4,407
Financial assets at fair value not held for trading	13,505		1	11,752			16	1,284	22,468	291		106	30	49,452
Total financial assets measured at fair value through profit or loss	13,606	62	96	12,297	6	121	45	4,644	30,246	517	58	775	121	62,594
Financial assets measured at fair value through other comprehensive income	209			3,931				50	2,473			4		6,666
Other non-financial assets	300			53				419	1,248	1		971	28	3,021
Total	139,699	2,194	875	77,786	1,818	4,365	626	206,022	45,030	15,805	7,285	24,491	5,980	531,975

1 Loan exposure is reported in line with the IFRS definition. 2 Includes the chemicals industry. 3 Includes the food and beverages industry. 4 Consists of Transport, storage, communications and other.

▲

Annual | The table below provides a breakdown of our credit risk exposures by geographical area. The geographical distribution is based on the legal domicile of the counterparty or issuer. ▲

Annual |

CRB: Breakdown of exposures by geographical area

31.12.19							
USD million	Asia Pacific	Latin America	Middle East and Africa	North America	Switzerland	Rest of Europe	Total carrying amount of assets
Balances at central banks	8,612	0		11,251	74,335	12,068	106,265
Loans and advances to banks[1]	3,720	191	429	4,107	88	3,013	11,548
Loans and advances to customers[1]	24,148	5,377	4,861	84,674	169,229	34,436	322,725
Other financial assets measured at amortized cost	426	74	33	16,073	2,260	3,002	21,868
Total financial assets measured at amortized cost	36,905	5,642	5,322	116,105	245,912	52,519	462,406
Financial assets at fair value held for trading	213	753	0	2,897	8	2,391	6,262
Brokerage receivables	6	52	15	4,800	3	29	4,906
Financial assets at fair value not held for trading	7,726	0	30	15,148	970	13,493	37,367
Total financial assets measured at fair value through profit or loss	7,946	805	46	22,845	980	15,914	48,535
Financial assets measured at fair value through other comprehensive income	450	81	0	5,814	0	0	6,345
Other non-financial assets	126	26	3	542	355	1,992	3,044
Total	45,427	6,554	5,371	145,306	247,248	70,424	520,330
31.12.18							
Balances with central banks	6,528			15,655	70,008	15,430	107,622
Loans and advances to banks[1]	4,485	155	461	5,870	261	4,380	15,612
Loans and advances to customers[1]	23,068	5,525	4,526	81,028	164,390	36,225	314,762
Other financial assets measured at amortized cost	404	33	19	16,988	1,995	2,259	21,698
Total financial assets measured at amortized cost	**34,486**	**5,714**	**5,006**	**119,541**	**236,655**	**58,294**	**459,695**
Financial assets at fair value held for trading	1,754	631	8	3,384	30	2,928	8,735
Brokerage receivables	6	55	14	4,278	11	43	4,407
Financial assets at fair value not held for trading	16,196			16,741	2,431	14,084	49,452
Total financial assets measured at fair value through profit or loss	**17,956**	**686**	**21**	**24,403**	**2,472**	**17,055**	**62,594**
Financial assets measured at fair value through other comprehensive income	**439**	**76**		**6,151**			**6,666**
Other non-financial assets	134	29	4	481	295	2,078	3,021
Total	**53,015**	**6,504**	**5,032**	**150,575**	**239,422**	**77,427**	**531,975**

1 Loan exposure is reported in line with IFRS definition.

▲

Annual | The table below provides a breakdown of our credit risk exposure by residual maturity. Residual maturity is presented based on contract end date and does not include potential early redemption features. ▲

Annual |

CRB: Breakdown of exposures by residual maturity

31.12.19				
USD million	Due in 1 year or less	Due between 1 year and 5 years	Due over 5 years	Total carrying amount of assets
Balances at central banks	106,265			106,265
Loans and advances to banks[1]	11,520	22	6	11,548
Loans and advances to customers[1]	184,870	85,846	52,009	322,725
Other financial assets measured at amortized cost	6,281	7,736	7,851	21,868
Total financial assets measured at amortized cost	308,937	93,603	59,866	462,406
Financial assets at fair value held for trading	610	571	5,082	6,262
Brokerage receivables	4,906			4,906
Financial assets at fair value not held for trading	16,151	19,477	1,739	37,367
Total financial assets measured at fair value through profit or loss	21,667	20,048	6,821	48,535
Financial assets measured at fair value through other comprehensive income	1,054	547	4,743	6,345
Other non-financial assets	1,751	1,293		3,044
Total	333,409	115,491	71,430	520,330

31.12.18				
Balances at central banks	107,622			107,622
Loans and advances to banks[1]	15,559	34	19	15,612
Loans and advances to customers[1]	178,182	89,294	47,286	314,762
Other financial assets measured at amortized cost	6,811	6,545	8,342	21,698
Total financial assets measured at amortized cost	**308,174**	**95,874**	**55,647**	**459,695**
Financial assets at fair value held for trading	488	1,453	6,793	8,735
Brokerage receivables	4,407			4,407
Financial assets at fair value not held for trading	28,597	18,668	2,188	49,452
Total financial assets measured at fair value through profit or loss	**33,492**	**20,121**	**8,981**	**62,594**
Financial assets measured at fair value through other comprehensive income	**1,077**	**1,409**	**4,180**	**6,666**
Other non-financial assets	1,709	1,312		3,021
Total	**344,452**	**118,716**	**68,808**	**531,975**

1 Loan exposure is reported in line with the IFRS definition.

▲

Policies for past-due, non-performing and credit-impaired claims

Annual | 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 or there is other evidence that payment obligations will not be fully met without recourse to collateral.

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 those 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 one claim against a counterparty is defaulted on, generally all claims against the counterparty are treated as defaulted.

An instrument is classified as credit-impaired if the counterparty is classified as defaulted, and/or the instrument is identified as purchased or originated credit-impaired (POCI). An instrument is POCI if it has been purchased at a deep 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.

The tables on the next page provide a breakdown of impaired exposures by geographical region and industry. The amounts shown are IFRS carrying amounts. The geographical distribution is based on the legal domicile of the counterparty or issuer.▲

Annual |

CRB: Credit-impaired exposures by industry

31.12.19				
USD million	Credit-impaired exposures, gross (Stage 3)	Allowances for credit-impaired exposures	Credit-impaired exposures net of allowances	Write-offs for the year ended
Banks	1	0	1	(2)
Construction	44	(12)	33	(4)
Electricity, gas, water supply	14	0	14	(2)
Financial services	296	(62)	234	(5)
Hotels and restaurants	22	(11)	12	(7)
Manufacturing[1]	178	(103)	75	(30)
Mining	97	(53)	44	(1)
Private households	1,246	(139)	1,107	(21)
Public authorities	34	(5)	29	
Real estate and rentals	480	(36)	444	(4)
Retail and wholesale[2]	236	(167)	69	(14)
Services	125	(40)	85	(13)
Transport, storage, communications and other	206	(27)	179	(39)
Total	**2,981**	**(655)**	**2,326**	**(142)**
31.12.18				
Banks	3	(3)	0	0
Construction	33	(12)	21	(9)
Electricity, gas, water supply	14	(2)	13	(1)
Financial services	164	(48)	115	(7)
Hotels and restaurants	69	(11)	58	0
Manufacturing[1]	207	(110)	98	(81)
Mining	87	(31)	56	(5)
Private households	1,035	(151)	884	(29)
Public authorities	28	(7)	21	0
Real estate and rentals	519	(51)	467	0
Retail and wholesale[2]	251	(182)	69	(4)
Services	117	(39)	78	(5)
Transport, storage, communications and other	359	(12)	347	(67)
Total	**2,886**	**(659)**	**2,227**	**(210)**

1 Includes the chemicals industry 2 Includes the food and beverages industry.

Annual | The table below provides a breakdown of our credit risk exposures by geographical region. The geographical distribution is based on the legal domicile of the counterparty or issuer.

Annual |

CRB: Credit-impaired exposures by geographical area

31.12.19				
USD million	Credit-impaired exposures, gross (Stage 3)	Allowances for credit-impaired exposures	Credit-impaired exposures net of allowances	Write-offs for the year ended
Asia Pacific	105	(3)	103	(46)
Latin America	67	(43)	24	(4)
Middle East and Africa	21	(1)	19	(2)
North America	938	(150)	787	(43)
Switzerland	1,456	(329)	1,127	(44)
Rest of Europe	393	(127)	266	(4)
Total	**2,981**	**(655)**	**2,326**	**(142)**
31.12.18				
Asia Pacific	79	(43)	36	(11)
Latin America	67	(45)	23	
Middle East and Africa	10	(2)	8	0
North America	742	(121)	621	(24)
Switzerland	1,696	(330)	1,366	(51)
Rest of Europe	*292*	*(118)*	*174*	*(123)*
Total	**2,886**	**(659)**	**2,227**	**(210)**

Semiannual | The CR1 table below provides a breakdown of defaulted and non-defaulted loans, debt securities and off-balance sheet exposures. The table includes a split of ECL accounting provisions based on the standardized approach and the internal ratings-based approach. More information about the net value movements related to Loans and Debt securities shown in the table is provided on page 36 in the "CR3: Credit risk mitigation techniques – overview" table.▲

Semiannual |

CR1: Credit quality of assets

USD million		Gross carrying amounts of: Defaulted exposures[1]	Gross carrying amounts of: Non-defaulted exposures	Allowances / impairments	*Of which: ECL accounting provisions for credit losses on SA exposures* – *Allocated in regulatory category of Specific (Stage 3 credit-impaired)*	*Of which: ECL accounting provisions for credit losses on SA exposures* – *Allocated in regulatory category of General (Stage 1 & 2)*	*Of which: ECL accounting provisions for credit losses on IRB exposures (Stage 1, 2, 3)*	Net values
31.12.19								
1	Loans[2]	2,981	455,494	(911)[4]	*(114)*	*(68)*	*(729)*	457,564
2	Debt securities		62,766					62,766
3	Off-balance sheet exposures[3]	132	52,725	(78)[4]	*(1)*	*(3)*	*(75)*	52,778
4	Total	3,113	570,986	(989)[4]	*(115)*	*(71)*	*(804)*	573,108
30.6.19								
1	Loans[2]	2,703	446,046	(902)[4]	*(148)*	*(56)*	*(698)*	447,847
2	Debt securities		67,788					67,788
3	Off-balance sheet exposures[3]	217	49,766	(82)[4]	*(1)*	*(2)*	*(79)*	49,901
4	**Total**	**2,920**	**563,600**	**(984)[4]**	***(149)***	***(59)***	***(776)***	**565,536**
31.12.18								
1	Loans[2]	2,886	460,119	(931)[4]	*(124)*	*(58)*	*(750)*	462,073
2	Debt securities		69,902					69,902
3	Off-balance sheet exposures[3]	268	54,124	(81)[4]	*(1)*	*(3)*	*(77)*	54,312
4	**Total**	**3,154**	**584,145**	**(1,012)[4]**	***(125)***	***(61)***	***(827)***	**586,288**

1 Defaulted exposures are in line with credit-impaired exposures (stage 3) under IFRS 9. Refer to Note 23 "Expected credit loss measurement" of our Annual Report 2019 for more information about IFRS 9. 2 Loan exposure is reported in line with the Pillar 3 definition. Refer to "Credit risk exposure categories" in this section, for more information about the classification of Loans and Debt securities. 3 Off-balance sheet exposures include unutilized credit facilities, guarantees provided and forward starting loan commitments but exclude prolongation of loans which do not increase the initially committed loan amount. Unutilized credit facilities exclude unconditionally revocable as well as uncommitted credit facilities, even if they attract RWA. Comparative figures have been adjusted to adhere to this presentation. 4 Excludes ECL on exposures subject to counterparty credit risk (31 December 2019: USD 5 million; 30 June 2019: USD 5 million; 31 December 2018: USD 4 million) and ECL on revocable off-balance sheet exposures (31 December 2019: USD 35 million; 30 June 2019: USD 41 million; 31 December 2018: USD 36 million).

▲

Semiannual | The total amount of defaulted loans and debt securities was USD 3.1 billion as of 31 December 2019. The net increase of USD 0.2 billion compared with 30 June 2019 was mainly driven by exposures outside Switzerland. ▲

Semiannual |

CR2: Changes in stock of defaulted loans, debt securities and off-balance sheet exposures

USD million		For the half year ended 31.12.19[1]	For the half year ended 30.6.19[1]
1	**Defaulted loans, debt securities and off-balance sheet exposures as of the beginning of the half year**	2,920	3,154
2	Loans and debt securities that have defaulted since the last reporting period	780	336
3	Returned to non-defaulted status	(225)	(205)
4	Amounts written off	(70)	(72)
5	Other changes	(292)	(293)
6	**Defaulted loans, debt securities and off-balance sheet exposures as of the end of the half year**	3,113	2,920

1 Off-balance sheet exposures include unutilized credit facilities, guarantees provided and forward starting loan commitments but exclude prolongation of loans which do not increase the initially committed loan amount. Unutilized credit facilities exclude unconditionally revocable as well as uncommitted credit facilities, even if they attract RWA. Comparative figures have been adjusted to adhere to this presentation.

▲

Annual | The table below provides a breakdown of total loan balances where payments have been missed. The increase in past-due amounts is mainly related to exposures outside Switzerland. The amount of past-due mortgage loans was not significant compared with the overall size of the mortgage portfolio. Amounts in the table below are IFRS carrying amounts and include the IFRS balance sheet lines *Loans and advances to customers* and *Loans and advances to banks*. ▲

Annual |

CRB: Past due exposures

USD million	31.12.19	31.12.18
1–10 days	45	53
11–30 days	178	98
31–60 days	166	74
61–90 days	90	39
>90 days	1,635	1,535
of which: mortgage loans	*675*[1]	*474*[1]
Total	2,113	**1,800**

1 Total mortgage loans as of 31 December 2019: USD 172,853 million (31 December 2018: 165,398 million).

▲

Restructured exposures

Annual | 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 offering preferential interest rates, extending 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 as defaulted. 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 tolerance.

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.

Refer to pages 135–137 of our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors* for more information about our policies for restructured exposures.

The table below provides more information about restructured exposures as of 31 December 2019. The increase is mainly related to exposures outside Switzerland. ▲

Annual |

CRB: Breakdown of restructured exposures between credit-impaired and non-credit-impaired

	Credit-impaired		Non-credit-impaired		Total	
USD million	31.12.19	31.12.18	31.12.19	31.12.18	31.12.19	31.12.18
Restructured exposures	1,152	1,114			1,152	1,114

▲

Credit risk mitigation

The table below presents an overview of Pillar 3 disclosures that are provided separately in our Annual Report 2019.

Annual |

CRC – Credit risk mitigation

Pillar 3 disclosure requirement	Annual Report 2019 section	Disclosure	Annual Report 2019 page number
Core features of policies and processes for, and an indication of the extent to which the bank makes use of, on- and off-balance sheet netting	Risk, treasury and capital management	– Traded products	125–126
	Consolidated financial statements	– Note 11 Derivative instruments	365–370
		– Note 25 Offsetting financial assets and financial liabilities	424–425
		– Note 1a item 3i Offsetting	331
Core features of policies and processes for collateral evaluation and management	Risk, treasury and capital management	– Credit risk mitigation	127–129
Information about market or credit risk concentrations under the credit risk mitigation instruments used	Risk, treasury and capital management	– Risk concentrations	118
		– Credit risk mitigation	127–129
	Consolidated financial statements	– Note 11 Derivative instruments	365–370
		– Note 23d Maximum exposure to credit risk	395-396
		– Note 24i Maximum exposure to credit risk for financial instruments measured at fair value	422
		– Note 25 Offsetting financial assets and financial liabilities	424-425

Additional information about counterparty credit risk mitigation is provided in the “Counterparty credit risk” section on pages 57–66 of this report.

Semiannual | The CR3 table below provides a breakdown of loans and debt securities into unsecured and partially or fully secured exposures, with additional information about security type.

Total carrying amount of loans increased by USD 9.7 billion to USD 457.6 billion in the second half of 2019. This was primarily driven by increased mortgage loans to customers as well as higher balances at central banks from client-driven activity that affected the funding consumption by business divisions. The total carrying amount of debt securities decreased by USD 5.0 billion to USD 62.8 billion, reflecting a reduction in government bonds and bills as well as debt instruments issued by banks.▲

Semiannual |

CR3: Credit risk mitigation techniques – overview[1]

					Secured portion of exposures partially or fully secured:		
	USD million	Exposures fully unsecured: carrying amount	Exposures partially or fully secured: carrying amount	Total: carrying amount	Exposures secured by collateral	Exposures secured by financial guarantees	Exposures secured by credit derivatives
	31.12.19						
1	Loans[2]	138,961	318,603	457,564	307,400	1,125	
2	Debt securities	62,766		62,766			
3	**Total**	**201,727**	**318,603**	**520,330**	**307,400**	**1,125**	
4	*of which: defaulted*	*504*	*1,823*	*2,327*	*1,167*	*225*	
	30.6.19						
1	Loans[2]	134,317	313,530	447,847	302,665	1,174	36
2	Debt securities	67,788		67,788			
3	**Total**	**202,104**	**313,530**	**515,635**	**302,665**	**1,174**	**36**
4	*of which: defaulted*	*342*	*1,709*	*2,051*	*1,137*	*316*	
	31.12.18						
1	Loans[2]	145,458	316,615	462,073	304,900	1,204	38
2	Debt securities	69,902		69,902			
3	**Total**	**215,360**	**316,615**	**531,975**	**304,900**	**1,204**	**38**
4	*of which: defaulted*	*412*	*1,815*	*2,227*	*1,215*	*320*	

1 Exposures in this table represent carrying amounts in accordance with the regulatory scope of consolidation. 2 Loan exposure is reported in line with the Pillar 3 definition. Refer to "Credit risk exposure categories" in this section for more information about the classification of Loans and Debt securities.

▲

Standardized approach – credit risk mitigation

Semiannual | The CR4 table below illustrates the effect of credit risk mitigation on the calculation of capital requirements under the standardized approach. In the second half of 2019, off-balance sheet exposures before CCF and CRM under the Corporates asset class increased by USD 4.6 billion to USD 8.8 billion, reflecting increases in exposures to certain clients within Global Wealth Management. ▲

Semiannual |

CR4: Standardized approach – credit risk exposure and credit risk mitigation (CRM) effects

		Exposures before CCF and CRM[1]			Exposures post-CCF and post-CRM			RWA and RWA density	
	USD million, except where indicated	On-balance sheet amount	Off-balance sheet amount	Total	On-balance sheet amount	Off-balance sheet amount	Total	RWA	RWA density in %
31.12.19									
Asset classes[2]									
1	Central governments and central banks	10,687		10,687	10,687		10,687	938	8.8
2	Banks and securities dealers	5,072	928	6,000	5,071	464	5,536	1,314	23.7
3	Public-sector entities and multilateral development banks	844	372	1,216	844	74	918	237	25.9
4	Corporates	6,310	8,823	15,133	5,847	651	6,499	4,839	74.5
5	Retail	12,141	4,071	16,212	11,974	100	12,074	7,923	65.6
6	Equity								
7	Other assets[3]	14,226		14,226	14,226		14,226	13,135	92.3
8	**Total**	49,280	14,194	63,475	48,648	1,290	49,939	28,386	56.8
30.6.19									
Asset classes[2]									
1	Central governments and central banks	11,015		11,015	11,011		11,011	882	8.0
2	Banks and securities dealers	4,415	1,203	5,618	4,412	720	5,132	1,169	22.8
3	Public-sector entities and multilateral development banks	907	323	1,231	890	64	954	281	29.5
4	Corporates	5,975	4,177	10,151	5,892	565	6,457	4,880	75.6
5	Retail	12,428	4,364	16,792	12,235	131	12,367	8,162	66.0
6	Equity								
7	Other assets[3]	14,001		14,001	14,001		14,001	12,912	92.2
8	**Total**	**48,741**	**10,067**	**58,808**	**48,442**	**1,481**	**49,922**	**28,287**	**56.7**
31.12.18									
Asset classes[2]									
1	Central governments and central banks	17,859		17,859	17,851		17,851	746	4.2
2	Banks and securities dealers	6,749	1,179	7,928	6,733	722	7,456	1,842	24.7
3	Public-sector entities and multilateral development banks	1,180	277	1,457	1,179	55	1,235	351	28.4
4	Corporates	6,146	4,523	10,669	6,087	722	6,810	5,058	74.3
5	Retail	12,786	4,230	17,016	12,437	155	12,592	8,461	67.2
6	Equity								
7	Other assets[3]	10,524		10,524	10,524		10,524	9,513	90.4
8	**Total**	**55,244**	**10,208**	**65,452**	**54,812**	**1,655**	**56,467**	**25,972**	**46.0**

1 Exposures in this table represent carrying amounts in accordance with the regulatory scope of consolidation. 2 The CRM effect is reflected in the original asset class. 3 Excludes securitization exposures and RWA under the standardized approach. Refer to the "Regulatory exposures and risk-weighted assets" table in section 2 and to section 7 of this report for more information.

▲

IRB approach – credit derivatives used as credit risk mitigation

Semiannual | The PD substitution is only applied in the RWA calculation when the PD of the hedge provider is lower than the PD of the obligor. In addition, default correlation between the obligor and the hedge provider is taken into account through the double default approach. Credit derivatives with tranched cover or first-loss protection are recognized through the securitization framework. Refer to the "CCR6: Credit derivatives exposures" table in section 5 of this report for notional and fair value information about credit derivatives used as credit risk mitigation. ▲

Semiannual |

CR7: IRB – effect on RWA of credit derivatives used as CRM techniques[1]

		31.12.19		30.6.19		31.12.18	
USD million		Pre-credit derivatives RWA	Actual RWA	Pre-credit derivatives RWA	Actual RWA	Pre-credit derivatives RWA	Actual RWA
1	Central governments and central banks – FIRB						
2	Central governments and central banks – AIRB	2,446	2,446	3,034	3,033	2,502	2,500
3	Banks and securities dealers – FIRB						
4	Banks and securities dealers – AIRB	5,911	5,911	4,755	4,755	5,240	5,240
5	Public-sector entities, multilateral development banks – FIRB						
6	Public-sector entities, multilateral development banks – AIRB	847	847	823	823	798	798
7	Corporates: specialized lending – FIRB						
8	Corporates: specialized lending – AIRB	11,525	11,525	11,835	11,835	12,172	12,172
9	Corporates: other lending – FIRB						
10	Corporates: other lending – AIRB	32,394	32,144	30,039	29,794	31,083	30,612
11	Retail: mortgage loans	29,118	29,118	27,666	27,666	26,696	26,696
12	Retail exposures: qualifying revolving retail (QRRE)	687	687	647	647	624	624
13	Retail: other	10,180	10,180	8,151	8,151	8,377	8,377
14	Equity positions (PD/LGD approach)						
15	**Total**	**93,108**	**92,858**	**86,950**	**86,703**	**87,493**	**87,019**

1 The CRM effect is reflected in the original asset class.

▲

Credit risk under the standardized approach

Annual | The standardized approach is generally applied where it is not possible to use the advanced internal ratings-based (A-IRB) approach. The standardized approach requires banks to, where possible, use risk assessments prepared by external credit assessment institutions (ECAI) or export credit agencies to determine the risk weightings applied to rated counterparties. We use three FINMA-recognized ECAI to determine the risk weights for certain counterparties according to the BCBS-defined asset classes: Standard & Poor's, Moody's Investors Service and Fitch Ratings.

The mapping of external ratings to the standardized approach risk weights is determined by FINMA and published on its website. There were no changes in the ECAI used compared with 31 December 2018.

Debt instruments are risk weighted in accordance with the specific issue ratings available. In case there is no specific issue rating published by the ECAI, the issuer rating is applied to the senior unsecured claims of that issuer subject to the conditions prescribed by FINMA. For the asset classes Retail, Equity and Other assets, we apply the regulatory prescribed risk weights independent of an external credit rating. ▲

Annual |

CRD: Qualitative disclosures on banks' use of external credit ratings under the standardized approach for credit risk

		31.12.19		
		External ratings used		
	Asset classes	Moody's	Standard & Poor's	Fitch
1	Central governments and central banks	●	●	●
2	Banks and securities dealers	●	●	●
3	Public-sector entities and multilateral development banks	●	●	●
4	Corporates	●	●	●

▲

The table below illustrates the exposures by asset classes and the risk weights applied.

Semiannual |

CR5: Standardized approach – exposures by asset classes and risk weights

USD million

	Risk weight	0%	10%	20%	35%	50%	75%	100%	150%	Others	Total credit exposures amount (post-CCF and post-CRM)
31.12.19											
Asset classes											
1	Central governments and central banks	9,540		225		58		864			10,687
2	Banks and securities dealers			4,863		673		5			5,541
3	Public-sector entities and multilateral development banks	398		256		155		110			920
4	Corporates			1,831		137	172[2]	4,348	2		6,491
5	Retail				5,846		1,622	4,496	109		12,074
6	Equity										
7	Other assets	1,091						13,135			14,226
8	**Total**	11,030		7,175	5,846	1,023	1,794	22,959	112		49,939
9	*of which: mortgage loans*				*5,846*		*99*	*521*			*6,466*
10	*of which: past due[1]*							*242*			*242*
30.6.19											
Asset classes											
1	Central governments and central banks	9,924		226		53		813			11,017
2	Banks and securities dealers			4,655		471		6			5,132
3	Public-sector entities and multilateral development banks	161		528		174		85			949
4	Corporates			1,826		147	185[2]	4,297	2		6,457
5	Retail				5,805	36	1,763	4,707	55		12,367
6	Equity										
7	Other assets	1,089						12,912			14,001
8	**Total**	**11,174**		**7,235**	**5,805**	**881**	**1,948**	**22,821**	**58**		**49,922**
9	*of which: mortgage loans*				*5,805*		*115*	*742*			*6,662*
10	*of which: past due[1]*							*86*			*86*
31.12.18											
Asset classes											
1	Central governments and central banks	17,061		42		24		727			17,854
2	Banks and securities dealers			6,259		1,192		4	0		7,456
3	Public-sector entities and multilateral development banks	101		771		330		30	0		1,232
4	Corporates			1,961		138	266[2]	4,385	2		6,751
5	Retail				5,809		1,811	4,910	120		12,650
6	Equity										
7	Other assets	1,010						9,513			10,524
8	**Total**	**18,172**		**9,033**	**5,809**	**1,684**	**2,077**	**19,570**	**122**		**56,467**
9	*of which: mortgage loans*				*5,809*		*97*	*778*			*6,685*
10	*of which: past due[1]*							*112*			*112*

1 Includes mortgage loans. 2 Relates to structured margin lending exposures based on the methodology agreed with FINMA.

Credit risk under internal ratings-based approaches

Annual | We use the A-IRB approach for calculating certain credit risk exposures. Under the A-IRB approach, the required capital for credit risk is quantified through empirical models that we have developed to estimate the probability of default (PD), loss given default (LGD), exposure at default (EAD) and other parameters, subject to FINMA approval. The table below presents an overview of Pillar 3 disclosures that are provided separately in our Annual Report 2019. ▲

Annual |

CRE – Internal ratings-based models

Pillar 3 disclosure requirement	Annual Report 2019 section	Disclosure	Annual Report 2019 page number
Internal model development, controls and changes	Risk, treasury and capital management	– Risk measurement – Credit risk models – Key features of our main credit risk models – Risk governance	116–118 129–135 130 109–110
Relationships between risk management and internal audit and independent review of IRB models	Risk, treasury and capital management	– Risk governance – Risk measurement	109–110 116–118
Scope and content of the reporting related to credit risk models	Risk, treasury and capital management	– Risk measurement – Credit risk – Overview of measurement, monitoring and management techniques – Credit risk models	116–118 119 129–135
Supervisor approval of applied approaches	Risk, treasury and capital management	– Risk measurement – Changes to models and model parameters during the period – Stress testing – Key features of our main credit risk models	116–118 135 116–117 130
Number of key models used by portfolio and the main differences between models	Risk, treasury and capital management	– Credit risk models	129–135
Description of the main characteristics of approved models	Risk, treasury and capital management	– Credit risk models	129–135

▲

Annual | Semiannual | The CR6 table on the following pages provides information about credit risk exposures under the A-IRB approach, including a breakdown of the main parameters used in A-IRB models for the calculation of capital requirements, presented by portfolio and PD range across FINMA-defined asset classes.

Under the A-IRB approach, the required capital for credit risk is quantified through empirical models that we have developed to estimate the PD, LGD, EAD and other parameters, subject to FINMA approval. The proportion of EAD covered by either the standardized or the A-IRB approach is provided in the "Regulatory exposures and risk-weighted assets" table on pages 20–22 of this report. ▲

As of 31 December 2019, exposures before the application of credit conversion factors (CCFs) increased by USD 19 billion to USD 800 billion across various asset classes, resulting in an overall RWA increase of USD 6 billion.

In the "Retail: other retail" asset class, total exposures pre-CCF increased by USD 13 billion to USD 357 billion, mainly reflecting increases in drawn and unutilized Lombard facilities. RWA for this asset class increased by USD 2 billion to USD 10 billion, due to the aforementioned increase in exposures and a change of the CCF for zero-balance securities-backed lending and margin loans exposures.

In the "Retail: residential mortgages" asset class, total exposures pre-CCF increased from USD 147 billion to USD 150 billion and RWA increased from USD 28 billion to USD 29 billion, reflecting business-driven exposure movements and the continued phasing-in of RWA increases related to PD and LGD changes from the implementation of revised models for Swiss residential mortgages.

In the "Corporates: other lending" asset class, RWA increased by USD 2 billion to USD 32 billion, primarily driven by the increase in unutilized credit facilities.

Increases in total exposures pre-CCF and RWA in the "Banks and securities dealers" asset class were driven by guarantees issued in Personal & Corporate Banking.

Information about credit risk RWA for the third quarter of 2019, including details regarding movements in RWA, is provided on pages 7–9 of our 30 September 2019 Pillar 3 report, available under "Pillar 3 disclosures" at *www.ubs.com/investors*, and for the fourth quarter of 2019 on page 50 of this report. ▲

Semiannual |

CR6: IRB – Credit risk exposures by portfolio and PD range

USD million, except where indicated	Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Total exposures pre-CCF	Average CCF in %	EAD post-CCF and post-CRM	Average PD in %	Number of obligors (in thousands)	Average LGD in %	Average maturity in years	RWA	RWA density in %	EL	Provisions[1]
Central governments and central banks as of 31.12.19													
0.00 to <0.15	138,755	207	138,961	49.4	138,852	0.0	0.1	30.4	1.0	2,455	1.8	3	
0.15 to <0.25	0		0		0	0.2	<0.1	65.8	1.0	0	41.8	0	
0.25 to <0.50	0		0		0	0.3	<0.1	45.0	1.0	0	44.4	0	
0.50 to <0.75	4		4		4	0.7	<0.1	53.1	1.1	3	77.7	0	
0.75 to <2.50	1	0	1	55.0	1	1.4	<0.1	39.4	2.5	1	111.6	0	
2.50 to <10.00	0	1	1	76.1	1	2.7	<0.1	10.2	4.4	0	33.0	0	
10.00 to <100.00	0	0	0	9.7	0	13.0	<0.1	45.0	1.0	0	206.7	0	
100.00 (default)	13	36	49	55.0	22	100.0	<0.1	21.8[3]	6.4[4]	23	106.0	11	
Subtotal	138,772	243	139,016	50.4	138,880	0.0	0.1	30.4	1.0	2,482	1.8	14	11
Central governments and central banks as of 30.6.19													
0.00 to <0.15	139,976	187	140,163	50.6	140,066	0.0	0.1	41.1	1.0	3,030	2.2	4	
0.15 to <0.25	0		0		0	0.2	<0.1	64.1	1.0	0	40.6	0	
0.25 to <0.50	1		1		1	0.3	<0.1	54.5	1.0	1	53.7	0	
0.50 to <0.75	5		5		5	0.7	<0.1	52.9	1.1	4	77.5	0	
0.75 to <2.50	1	0	1	55.0	1	1.1	<0.1	37.3	2.7	1	101.6	0	
2.50 to <10.00	0	4	4	56.3	2	3.6	<0.1	56.4	2.4	4	166.2	0	
10.00 to <100.00	0	0	0	9.8	0	13.9	<0.1	44.9	1.0	0	211.4	0	
100.00 (default)	13	37	51	55.0	23	100.0	<0.1	20.7[3]	6.3[4]	25	106.0	10	
Subtotal	139,996	228	140,224	51.4	140,098	0.0	0.1	41.1	1.0	3,064	2.2	14	12
Central governments and central banks as of 31.12.18													
0.00 to <0.15	139,551	19	139,570	46.7	139,558	0.0	0.1	29.1	1.0	2,474	1.8	3	
0.15 to <0.25	0		0		0	0.2	<0.1	55.2	1.0	0	34.7	0	
0.25 to <0.50	3	0	3	9.8	3	0.3	<0.1	54.9	1.0	1	54.2	0	
0.50 to <0.75	9		9		9	0.7	<0.1	97.9	1.1	13	143.1	0	
0.75 to <2.50	2	0	2	55.0	1	1.0	<0.1	38.3	2.6	1	101.5	0	
2.50 to <10.00	4	12	15	52.1	10	3.6	<0.1	54.3	2.7	16	162.2	0	
10.00 to <100.00	28	0	28	9.8	28	13.9	<0.1	5.0	1.0	8	27.1	0	
100.00 (default)	13	37	50	55.0	23	100.0	<0.1	20.7[3]	5.9[4]	25	106.0	10	
Subtotal	139,609	68	139,676	52.2	139,632	0.0	0.2	29.1	1.0	2,537	1.8	14	11

CR6: IRB – Credit risk exposures by portfolio and PD range (continued)

USD million, except where indicated	Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Total exposures pre-CCF	Average CCF in %	EAD post-CCF and post-CRM	Average PD in %	Number of obligors (in thousands)	Average LGD in %	Average maturity in years	RWA	RWA density in %	EL	Provisions[1]
Banks and securities dealers as of 31.12.19													
0.00 to <0.15	11,797	1,914	13,711	50.6	12,591	0.0	0.5	39.0	1.0	1,877	14.9	3	
0.15 to <0.25	691	2,191	2,882	84.3	2,304	0.2	0.3	50.4	2.1	1,335	58.0	2	
0.25 to <0.50	665	431	1,097	52.1	815	0.4	0.2	47.4	1.5	532	65.3	1	
0.50 to <0.75	478	287	765	44.2	577	0.6	0.1	45.3	1.0	478	82.8	2	
0.75 to <2.50	830	574	1,404	47.5	922	1.4	0.2	46.3	1.3	1,013	109.8	6	
2.50 to <10.00	282	462	744	44.8	377	3.6	0.2	64.4	1.1	810	214.7	9	
10.00 to <100.00	44	11	54	43.3	27	14.2	<0.1	38.2	1.2	57	212.6	4	
100.00 (default)													
Subtotal	14,786	5,870	20,657	62.2	17,614	0.3	1.5	42.0	1.2	6,102	34.6	28	11
Banks and securities dealers as of 30.6.19													
0.00 to <0.15	12,528	1,769	14,296	53.9	13,516	0.0	0.5	41.7	1.1	2,355	17.4	6	
0.15 to <0.25	836	545	1,381	39.1	670	0.2	0.3	54.9	1.3	345	51.5	1	
0.25 to <0.50	559	452	1,011	49.4	663	0.4	0.2	62.1	1.0	541	81.6	2	
0.50 to <0.75	316	206	522	40.7	354	0.6	0.1	51.3	1.1	307	86.7	1	
0.75 to <2.50	539	268	807	27.7	484	1.4	0.2	61.5	0.9	724	149.5	4	
2.50 to <10.00	244	269	513	43.4	264	5.1	0.2	51.4	1.0	488	184.7	6	
10.00 to <100.00	0	4	4	29.5	1	17.0	<0.1	12.2	1.2	1	67.9	0	
100.00 (default)													
Subtotal	15,022	3,513	18,535	47.4	15,953	0.2	1.5	44.1	1.1	4,762	29.8	20	8
Banks and securities dealers as of 31.12.18													
0.00 to <0.15	11,855	1,805	13,659	54.1	12,639	0.1	0.5	43.0	1.1	2,433	19.2	4	
0.15 to <0.25	1,011	458	1,469	45.8	793	0.2	0.3	49.3	1.3	364	45.9	1	
0.25 to <0.50	454	391	845	51.9	570	0.4	0.2	61.8	1.1	455	79.8	1	
0.50 to <0.75	167	263	430	42.4	221	0.6	0.1	62.9	1.1	243	110.0	1	
0.75 to <2.50	974	304	1,278	45.9	866	1.7	0.2	48.3	1.4	1,098	126.8	7	
2.50 to <10.00	320	388	708	44.6	363	4.7	0.2	52.5	1.0	674	185.5	9	
10.00 to <100.00	0	12	12	28.0	3	15.9	<0.1	32.5	1.0	5	165.1	0	
100.00 (default)													
Subtotal	14,780	3,621	18,401	50.0	15,454	0.3	1.5	44.8	1.1	5,272	34.1	22	7

CR6: IRB – Credit risk exposures by portfolio and PD range (continued)

USD million, except where indicated	Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Total exposures pre-CCF	Average CCF in %	EAD post-CCF and post-CRM	Average PD in %	Number of obligors (in thousands)	Average LGD in %	Average maturity in years	RWA	RWA density in %	EL	Provisions[1]
Public-sector entities, multilateral development banks as of 31.12.19													
0.00 to <0.15	6,854	754	7,609	12.8	6,951	0.0	0.3	35.3	1.1	543	7.8	1	
0.15 to <0.25	277	239	516	11.8	305	0.2	0.2	30.7	2.7	82	26.9	0	
0.25 to <0.50	608	405	1,013	25.7	713	0.3	0.2	25.3	2.5	198	27.8	1	
0.50 to <0.75	33	7	41	10.0	34	0.6	<0.1	28.7	2.7	16	47.3	0	
0.75 to <2.50	1	0	1	97.9	1	1.0	<0.1	13.4	1.2	0	18.9	0	
2.50 to <10.00	1	6	7	54.7	4	2.9	<0.1	6.0	5.0	1	17.6	0	
10.00 to <100.00													
100.00 (default)	4		4		4	100.0	<0.1		1.0[4]	4	106.0		
Subtotal	7,779	1,412	9,191	16.5	8,012	0.1	0.8	34.2	1.3	844	10.5	2	1
Public-sector entities, multilateral development banks as of 30.6.19													
0.00 to <0.15	5,615	918	6,533	19.1	5,808	0.0	0.4	35.6	1.2	514	8.9	1	
0.15 to <0.25	308	165	473	12.5	328	0.2	0.2	31.1	2.6	87	26.4	0	
0.25 to <0.50	559	336	896	22.0	633	0.3	0.2	26.6	2.6	192	30.4	1	
0.50 to <0.75	36	3	39	14.0	37	0.6	<0.1	28.8	3.1	18	48.5	0	
0.75 to <2.50	1	3	3	96.9	3	1.0	<0.1	11.3	1.1	1	18.7	0	
2.50 to <10.00	26	14	40	54.9	9	2.9	<0.1	5.5	5.0	1	16.1	0	
10.00 to <100.00													
100.00 (default)	4		4		4	100.0	<0.1		1.0[4]	4	106.0		
Subtotal	6,549	1,439	7,988	19.5	6,822	0.1	0.8	34.4	1.4	817	12.0	1	1
Public-sector entities, multilateral development banks as of 31.12.18													
0.00 to <0.15	6,816	909	7,725	19.2	6,990	0.0	0.4	37.2	1.1	433	6.2	1	
0.15 to <0.25	350	221	571	12.0	377	0.2	0.2	29.9	2.6	99	26.4	0	
0.25 to <0.50	581	332	913	24.3	662	0.3	0.2	27.4	2.7	210	31.7	1	
0.50 to <0.75	44	1	44	27.6	44	0.6	<0.1	31.7	3.0	23	51.9	0	
0.75 to <2.50	1	3	5	90.4	4	1.1	<0.1	17.8	1.1	1	28.1	0	
2.50 to <10.00	5	20	25	53.3	16	2.8	<0.1	5.5	4.9	3	17.0	0	
10.00 to <100.00													
100.00 (default)													
Subtotal	7,797	1,487	9,284	19.9	8,093	0.1	0.8	36.0	1.3	769	9.5	2	1

CR6: IRB – Credit risk exposures by portfolio and PD range (continued)

USD million, except where indicated	Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Total exposures pre-CCF	Average CCF in %	EAD post-CCF and post-CRM	Average PD in %	Number of obligors (in thousands)	Average LGD in %	Average maturity in years	RWA	RWA density in %	EL	Provisions[1]
Corporates: specialized lending as of 31.12.19													
0.00 to <0.15	1,947	420	2,367	77.3	2,271	0.1	0.4	14.9	2.1	174	7.6	0	
0.15 to <0.25	1,501	524	2,024	60.7	1,819	0.2	0.3	15.9	2.0	265	14.6	1	
0.25 to <0.50	3,812	2,141	5,953	31.3	4,464	0.4	0.6	27.3	2.0	1,436	32.2	4	
0.50 to <0.75	4,141	3,420	7,560	31.5	5,141	0.6	0.6	31.8	1.5	2,470	48.0	10	
0.75 to <2.50	7,333	2,377	9,710	36.8	8,206	1.4	1.4	31.7	1.7	5,550	67.6	37	
2.50 to <10.00	1,163	296	1,459	61.0	1,343	3.5	0.3	39.2	1.5	1,507	112.2	19	
10.00 to <100.00	0		0		0	12.0	<0.1	65.0	1.0	0	289.5	0	
100.00 (default)	167	2	168	75.9	70	100.0	0.1	58.3[3]	3.1[4]	74	106.0	98	
Subtotal	20,063	9,178	29,241	37.5	23,313	1.2	3.8	28.5	1.8	11,475	49.2	169	112
Corporates: specialized lending as of 30.6.19													
0.00 to <0.15	2,122	540	2,662	68.2	2,490	0.1	0.5	12.9	2.1	168	6.8	0	
0.15 to <0.25	1,027	180	1,207	79.9	1,171	0.2	0.3	17.7	2.0	197	16.8	0	
0.25 to <0.50	3,709	2,145	5,854	32.3	4,365	0.4	0.6	27.8	1.9	1,435	32.9	4	
0.50 to <0.75	4,605	3,061	7,667	28.8	5,427	0.6	0.6	30.8	1.6	2,568	47.3	11	
0.75 to <2.50	7,814	2,534	10,348	36.9	8,749	1.4	1.5	32.6	1.6	5,972	68.3	39	
2.50 to <10.00	1,089	246	1,336	56.0	1,226	3.4	0.3	39.5	1.5	1,371	111.8	16	
10.00 to <100.00													
100.00 (default)	177	13	190	18.9	82	100.0	0.1	51.1[3]	2.5[4]	87	106.0	97	
Subtotal	20,544	8,720	29,264	36.3	23,511	1.3	3.8	28.9	1.7	11,798	50.2	169	113
Corporates: specialized lending as of 31.12.18													
0.00 to <0.15	1,853	327	2,180	71.4	2,087	0.1	0.4	13.5	1.9	137	6.6	0	
0.15 to <0.25	994	161	1,155	77.4	1,118	0.2	0.3	18.3	1.9	190	17.0	0	
0.25 to <0.50	3,712	2,006	5,718	40.3	4,496	0.4	0.6	30.9	1.8	1,627	36.2	5	
0.50 to <0.75	4,446	2,875	7,321	34.0	5,360	0.6	0.6	32.1	1.6	2,643	49.3	11	
0.75 to <2.50	7,379	2,467	9,846	36.0	8,266	1.3	1.5	33.7	1.6	5,819	70.4	38	
2.50 to <10.00	1,195	289	1,483	64.4	1,381	3.3	0.4	40.5	1.7	1,581	114.5	18	
10.00 to <100.00													
100.00 (default)	232	46	278	53.5	150	100.0	0.1	38.5[3]	1.8[4]	159	106.0	107	
Subtotal	19,810	8,171	27,981	39.7	22,858	1.6	3.8	30.6	1.7	12,156	53.2	180	121

CR6: IRB – Credit risk exposures by portfolio and PD range (continued)

USD million, except where indicated	Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Total exposures pre-CCF	Average CCF in %	EAD post-CCF and post-CRM	Average PD in %	Number of obligors (in thousands)	Average LGD in %	Average maturity in years	RWA	RWA density in %	EL	Provisions[1]
Corporates: other lending as of 31.12.19													
0.00 to <0.15	13,796	18,886	32,682	34.4	16,701	0.0	3.4	37.3	1.8	3,682	22.0	9	
0.15 to <0.25	3,965	5,479	9,444	37.2	5,489	0.2	1.6	32.5	2.4	2,016	36.7	3	
0.25 to <0.50	4,094	3,403	7,497	35.3	5,233	0.4	2.5	33.6	2.0	2,715	51.9	6	
0.50 to <0.75	2,997	2,434	5,431	41.0	4,060	0.6	2.4	32.9	1.8	2,207	54.4	8	
0.75 to <2.50	9,093	8,342	17,435	37.9	12,372	1.4	11.1	30.8	2.1	9,329	75.4	52	
2.50 to <10.00	4,303	7,958	12,261	38.5	7,399	4.1	4.9	32.1	2.4	10,543	142.5	100	
10.00 to <100.00	319	286	604	58.8	487	17.6	0.1	13.6	1.8	506	103.9	11	
100.00 (default)	1,091	166	1,257	44.9	790	100.0	0.7	33.1[3]	2.7[4]	838	106.0	385	
Subtotal	39,657	46,955	86,612	36.6	52,533	2.7	26.6	33.5	2.0	31,836	60.6	575	554
Corporates: other lending as of 30.6.19													
0.00 to <0.15	15,564	20,154	35,718	37.6	18,265	0.0	3.9	37.9	1.7	3,777	20.7	25	
0.15 to <0.25	4,176	5,345	9,521	39.3	5,573	0.2	1.7	34.0	2.4	2,173	39.0	3	
0.25 to <0.50	3,207	4,024	7,231	39.8	4,776	0.4	2.5	34.4	2.3	2,626	55.0	6	
0.50 to <0.75	3,733	2,418	6,151	40.4	4,814	0.6	2.6	33.6	1.9	2,959	61.5	10	
0.75 to <2.50	8,838	5,029	13,867	44.4	11,167	1.4	11.2	29.3	2.1	7,502	67.2	44	
2.50 to <10.00	4,015	7,707	11,722	40.0	7,107	4.0	4.8	31.3	2.3	9,301	130.9	87	
10.00 to <100.00	259	326	584	55.5	439	15.5	0.1	14.7	1.8	434	98.8	8	
100.00 (default)	1,074	186	1,260	42.5	851	100.0	0.7	30.3[3]	2.6[4]	898	106.0	376	
Subtotal	40,865	45,188	86,054	39.5	52,992	2.7	27.4	33.8	2.0	29,669	56.0	560	521
Corporates: other lending as of 31.12.18													
0.00 to <0.15	18,566	21,196	39,763	37.4	20,917	0.0	3.9	36.7	1.8	5,157	24.7	8	
0.15 to <0.25	4,347	6,500	10,847	37.4	6,099	0.2	1.6	33.4	2.4	2,417	39.6	4	
0.25 to <0.50	3,604	4,593	8,197	40.3	5,328	0.4	2.5	30.2	2.2	2,612	49.0	6	
0.50 to <0.75	3,111	2,516	5,627	43.6	4,204	0.6	2.6	37.8	1.8	2,906	69.1	10	
0.75 to <2.50	7,481	6,155	13,637	41.2	10,142	1.4	11.4	26.4	2.3	5,980	59.0	38	
2.50 to <10.00	9,116	7,861	16,977	39.3	12,321	3.4	4.8	18.1	2.2	9,783	79.4	85	
10.00 to <100.00	297	285	582	52.8	449	15.3	0.1	16.7	2.0	484	107.8	9	
100.00 (default)	1,385	409	1,794	41.5	1,178	100.0	0.7	22.7[3]	2.5[4]	1,249	106.0	385	
Subtotal	47,908	49,516	97,424	38.9	60,639	3.1	27.5	29.9	2.1	30,588	50.4	546	533

CR6: IRB – Credit risk exposures by portfolio and PD range (continued)

USD million, except where indicated	Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Total exposures pre-CCF	Average CCF in %	EAD post-CCF and post-CRM	Average PD in %	Number of obligors (in thousands)	Average LGD in %	Average maturity in years	RWA	RWA density in %	EL	Provisions[1]
Retail: residential mortgages as of 31.12.19													
0.00 to <0.15	64,019	1,427	65,447	60.5	64,883	0.1	129.2	18.5		2,692	4.1	10	
0.15 to <0.25	14,093	290	14,383	75.6	14,312	0.2	21.0	22.5		1,324	9.3	6	
0.25 to <0.50	21,278	505	21,783	81.3	21,688	0.3	28.4	23.3		3,238	14.9	18	
0.50 to <0.75	14,121	363	14,484	87.7	14,439	0.6	16.2	24.0		3,377	23.4	22	
0.75 to <2.50	22,450	1,358	23,808	80.0	23,536	1.3	28.5	26.7		10,025	42.6	85	
2.50 to <10.00	8,416	318	8,734	82.6	8,678	4.4	10.8	23.5		6,479	74.7	90	
10.00 to <100.00	981	26	1,007	94.8	1,006	15.8	1.2	22.6		1,245	123.8	35	
100.00 (default)	735	2	737	67.1	711	100.0	1.1	3.5[3]		754	106.0	26	
Subtotal	146,093	4,290	150,383	74.3	149,255	1.2	236.3	21.7		29,133	19.5	292	110
Retail: residential mortgages as of 30.6.19													
0.00 to <0.15	63,360	1,448	64,808	58.1	64,200	0.1	129.9	19.0		2,602	4.1	11	
0.15 to <0.25	13,740	307	14,047	71.8	13,961	0.2	21.0	22.9		1,260	9.0	6	
0.25 to <0.50	21,020	549	21,569	76.4	21,439	0.4	28.2	23.8		3,150	14.7	18	
0.50 to <0.75	13,774	396	14,170	82.2	14,100	0.6	15.7	24.3		3,236	22.9	22	
0.75 to <2.50	21,465	1,350	22,815	74.3	22,468	1.3	28.1	27.6		9,574	42.6	84	
2.50 to <10.00	7,816	312	8,128	80.2	8,066	4.4	9.8	24.4		5,947	73.7	85	
10.00 to <100.00	882	22	904	84.2	901	15.6	1.2	24.4		1,148	127.4	34	
100.00 (default)	739	7	746	38.9	717	100.0	1.1	3.3[3]		760	106.0	24	
Subtotal	142,796	4,392	147,188	70.1	145,852	1.2	235.0	22.2		27,678	19.0	283	123
Retail: residential mortgages as of 31.12.18													
0.00 to <0.15	62,193	1,272	63,465	56.8	62,916	0.1	129.5	19.4		2,460	3.9	10	
0.15 to <0.25	13,409	229	13,638	69.0	13,567	0.2	20.7	23.3		1,186	8.7	6	
0.25 to <0.50	20,155	479	20,634	81.1	20,544	0.4	27.8	24.2		2,955	14.4	18	
0.50 to <0.75	13,276	425	13,701	87.8	13,649	0.6	15.4	24.5		3,063	22.4	21	
0.75 to <2.50	21,252	1,318	22,570	77.9	22,278	1.3	27.1	28.3		9,433	42.3	85	
2.50 to <10.00	7,608	260	7,868	83.5	7,825	4.3	10.2	25.1		5,715	73.0	85	
10.00 to <100.00	912	25	937	84.2	933	15.3	1.2	24.4		1,140	122.2	35	
100.00 (default)	723	5	729	68.8	702	100.0	1.1	3.6[3]		744	106.0	25	
Subtotal	139,529	4,013	143,542	72.5	142,413	1.2	232.8	22.6		26,696	18.7	286	151

CR6: IRB – Credit risk exposures by portfolio and PD range (continued)

USD million, except where indicated	Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Total exposures pre-CCF	Average CCF in %	EAD post-CCF and post-CRM	Average PD in %	Number of obligors (in thousands)	Average LGD in %	Average maturity in years	RWA	RWA density in %	EL	Provisions[1]
Retail: qualifying revolving retail exposures (QRRE) as of 31.12.19[2]													
0.00 to <0.15													
0.15 to <0.25													
0.25 to <0.50													
0.50 to <0.75													
0.75 to <2.50	107	373	480		148	1.7	36.3	47.0		41	28.0	1	
2.50 to <10.00	1,282	5,632	6,915		1,776	2.7	947.4	42.0		625	35.2	19	
10.00 to <100.00													
100.00 (default)	33		33		20	100.0	24.4	40.0[3]		21	106.0	13	
Subtotal	1,422	6,006	7,428		1,944	3.6	1,008.2	42.4		687	35.3	34	28
Retail: qualifying revolving retail exposures (QRRE) as of 30.6.19[2]													
0.00 to <0.15													
0.15 to <0.25													
0.25 to <0.50													
0.50 to <0.75													
0.75 to <2.50	108	364	472		150	1.7	36.5	47.0		42	28.0	1	
2.50 to <10.00	1,205	5,534	6,740		1,669	2.7	913.1	42.0		587	35.2	18	
10.00 to <100.00													
100.00 (default)	28		28		17	100.0	23.0	41.1[3]		18	106.0	12	
Subtotal	1,342	5,898	7,240		1,836	3.5	972.6	42.4		647	35.2	31	26
Retail: qualifying revolving retail exposures (QRRE) as of 31.12.18[2]													
0.00 to <0.15													
0.15 to <0.25													
0.25 to <0.50													
0.50 to <0.75													
0.75 to <2.50	103	348	450		142	1.7	34.6	47.0		40	28.0	1	
2.50 to <10.00	1,166	5,213	6,378		1,614	2.7	860.5	42.0		568	35.2	18	
10.00 to <100.00													
100.00 (default)	26		26		16	100.0	21.4	40.0[3]		17	106.0	11	
Subtotal	1,294	5,560	6,855		1,772	3.5	916.5	42.4		624	35.2	29	24

CR6: IRB – Credit risk exposures by portfolio and PD range (continued)

USD million, except where indicated	Original on-balance sheet gross exposure	Off-balance sheet exposures pre-CCF	Total exposures pre-CCF	Average CCF in %	EAD post-CCF and post-CRM	Average PD in %	Number of obligors (in thousands)	Average LGD in %	Average maturity in years	RWA	RWA density in %	EL	Provisions[1]
Retail: other retail as of 31.12.19													
0.00 to <0.15	108,053	226,115	334,169	18.4	149,666	0.0	201.8	32.5		6,535	4.4	20	
0.15 to <0.25	1,977	3,610	5,587	18.9	2,660	0.2	4.5	29.7		304	11.4	1	
0.25 to <0.50	1,405	2,235	3,640	18.2	1,811	0.4	2.2	34.4		385	21.3	2	
0.50 to <0.75	837	1,193	2,031	18.4	1,056	0.6	1.7	33.1		315	29.9	2	
0.75 to <2.50	2,793	7,052	9,845	15.0	3,846	1.1	42.5	35.4		1,568	40.8	14	
2.50 to <10.00	860	773	1,633	16.5	980	5.6	1.4	64.5		1,073	109.5	41	
10.00 to <100.00	166	26	192	31.9	175	15.4	0.7	30.8		115	65.7	9	
100.00 (default)	4	7	11	2.3	4	100.0	<0.1	42.5[3]		4	106.0	5	
Subtotal	116,096	241,012	357,108	18.3	160,197	0.1	254.9	32.8		10,298	6.4	95	9
Retail: other retail as of 30.6.19													
0.00 to <0.15	105,756	214,575	320,331	12.7	132,852	0.0	194.1	30.6		5,467	4.1	17	
0.15 to <0.25	2,106	3,678	5,784	16.4	2,709	0.2	5.8	29.1		302	11.2	1	
0.25 to <0.50	1,373	2,070	3,443	16.3	1,709	0.4	2.6	29.7		314	18.4	2	
0.50 to <0.75	1,294	2,312	3,606	11.6	1,563	0.6	1.8	29.6		545	34.9	3	
0.75 to <2.50	2,128	7,275	9,403	14.2	3,160	1.1	44.9	31.0		1,131	35.8	11	
2.50 to <10.00	551	645	1,196	20.9	685	4.0	1.8	33.9		401	58.6	9	
10.00 to <100.00	158	46	204	19.6	167	15.5	0.5	26.6		93	55.8	7	
100.00 (default)	19	1	19	38.0	14	100.0	<0.1	34.3[3]		15	106.0	5	
Subtotal	113,385	230,601	343,986	12.8	142,860	0.1	251.4	30.6		8,269	5.8	54	11
Retail: other retail as of 31.12.18													
0.00 to <0.15	104,165	202,715	306,881	13.4	131,207	0.0	195.3	30.7		5,404	4.1	17	
0.15 to <0.25	2,718	4,373	7,091	14.7	3,361	0.2	6.2	26.3		340	10.1	2	
0.25 to <0.50	2,256	2,434	4,690	12.8	2,567	0.4	2.6	32.1		508	19.8	3	
0.50 to <0.75	1,283	1,519	2,803	12.6	1,474	0.6	1.8	28.7		527	35.8	3	
0.75 to <2.50	2,193	6,013	8,207	14.4	3,140	1.1	48.1	29.4		1,080	34.4	10	
2.50 to <10.00	680	850	1,530	12.1	782	4.2	1.5	31.9		390	49.8	10	
10.00 to <100.00	156	89	245	18.9	173	16.4	0.7	28.1		104	60.2	8	
100.00 (default)	27	8	34	2.1	22	100.0	<0.1	19.4[3]		23	106.0	5	
Subtotal	113,478	218,002	331,480	13.4	142,726	0.1	256.2	30.6		8,377	5.9	57	16
Total 31.12.19	484,669	314,965	799,634	22.9	551,748	0.7	1,532.1	29.4	1.3[5]	92,858	16.8	1,208	836
Total 30.6.19	480,500	299,979	780,479	18.6	529,925	0.7	1,492.5	31.8	1.3[5]	86,703	16.4	1,133	815
Total 31.12.18	484,205	290,438	774,644	19.6	533,587	0.8	1,439.3	28.5	1.4[5]	87,019	16.3	1,135	864

1 In line with the Pillar 3 guidance, provisions are only provided for the sub-totals by asset class. 2 For the calculation of column "EAD post-CCF and post-CRM," a balance factor approach is used instead of a CCF approach. The EAD is calculated by multiplying the on-balance sheet exposure with a fixed factor of 1.4. 3 Average LGD for defaulted exposures disclosed in the table are not used to calculate RWA. The disclosed number is derived using ECL accounting provisions (Stage 3) divided by total exposures pre-CCF. 4 Average maturity for defaulted exposures disclosed in the table is not used to calculate RWA. 5 Retail asset classes are excluded from the average maturity as they are not subject to maturity treatment.

Credit risk risk-weighted assets under the A-IRB approach

This sub-section provides disclosures on the quarterly credit risk RWA development for the credit risk measured under the A-IRB approach. The table below provides definitions applied in the CR8 table below.

Definitions of credit risk and counterparty credit risk RWA movement table components for CR8 and CCR7

The references in the table below refer to the line numbers provided in the movement tables on this page and page 58 of this report.

Reference	Description	Definition
2	**Asset size**	Movements arising in the ordinary course of business, such as new transactions, sales and write-offs.
3	**Asset quality / Credit quality of counterparties**	Movements resulting from changes in the underlying credit quality of counterparties. These are caused by changes to risk parameters, such as counterparty ratings, loss given default estimates or credit hedges.
4	**Model updates**	Movements arising from the implementation of new models and from parameter changes to existing models. The RWA effect of model updates is estimated based on the portfolio at the time of the implementation of the change.
5	**Methodology and policy**	Movements due to methodological changes in calculations driven by regulatory policy changes, including revisions to existing regulations, new regulations and add-ons mandated by the regulator. The effect of methodology and policy changes on RWA is estimated based on the portfolio at the time of the implementation of the change.
6	**Acquisitions and disposals**	Movements as a result of disposal or acquisition of business operations, quantified based on the credit risk exposures as of the end of the quarter preceding a disposal or following an acquisition. Purchases and sales of exposures in the ordinary course of business are reflected under *Asset size*.
7	**Foreign exchange movements**	Movements as a result of exchange rate changes of the transaction currencies against the US dollar.
8	**Other**	Movements due to changes that cannot be attributed to any other category.

Development in the fourth quarter of 2019

Quarterly | Credit risk RWA under the A-IRB approach increased by USD 0.7 billion to USD 92.9 billion as of 31 December 2019.

The RWA decrease from asset size movements of USD 1.9 billion was predominantly driven by decreases in traded loans, term loan exposures and unutilized credit facilities in the Investment Bank's Corporate Client Solutions business.

The increase in RWA from model updates of USD 0.9 billion was mainly driven by the continued phasing-in of RWA increases related to probability of default (PD) and loss given default (LGD) changes from the implementation of revised models for Swiss residential mortgages, which resulted in an RWA increase of USD 0.4 billion in Personal & Corporate Banking and USD 0.1 billion in Global Wealth Management. In addition, a change of the credit conversion factor for zero-balance securities-backed lending and margin loans exposures increased RWA in Global Wealth Management by USD 0.4 billion. ▲

Quarterly |

CR8: RWA flow statements of credit risk exposures under IRB

	USD million	For the quarter ended 31.12.19	For the quarter ended 30.9.19	For the quarter ended 30.6.19	For the quarter ended 31.3.19
1	RWA as of the beginning of the quarter	92,183	86,703	89,448	87,019
2	Asset size	(1,936)	5,830	(1,454)	3,212
3	Asset quality	55	472	(989)	(70)
4	Model updates	868	861	520	430
5	Methodology and policy			(2,119)	(102)
6	Acquisitions and disposals			(53)	
7	Foreign exchange movements	1,688	(1,313)	976	(667)
8	Other		(370)	375	(374)
9	RWA as of the end of the quarter	92,858	92,183	86,703	89,448

▲

Backtesting

Annual | More information about backtesting of credit models is provided on pages 134 of our Annual Report 2019. ▲

Annual |

CR9: IRB – Backtesting of probability of default (PD) per portfolio[1]

PD range	External rating equivalent Moody's	External rating equivalent Standard & Poor's	External rating equivalent Fitch	Weighted average PD in %	Arithmetic average PD by obligors in %	Number of obligors (in thousands) End of previous year	Number of obligors (in thousands) End of the year	Defaulted obligors in the year	*of which: new defaulted obligors in the year*	Average historical annual default rate in %[2]
Central governments and central banks as of 31.12.19										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.0	0.0	< 0.1	< 0.1	0	*0*	0.0
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	< 0.1	< 0.1	0	*0*	0.0
0.25 to <0.50	Baa3	BBB–	BBB–	0.3	0.3	< 0.1	< 0.1	0	*0*	0.0
0.50 to <0.75	Ba1	BB+	BB+	0.7	0.7	< 0.1	< 0.1	0	*0*	0.0
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	2.0	1.4	< 0.1	< 0.1	0	*0*	0.0
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–	3.6	3.3	< 0.1	< 0.1	0	*0*	0.0
10.00 to <100.00	Caa to C	CCC to C	CCC to C	13.9	13.0	< 0.1	< 0.1	0	*0*	0.0
Subtotal				0.1	1.4	< 0.1	< 0.1	0	*0*	0.0
Central governments and central banks as of 31.12.18										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.0	0.0	< 0.1	< 0.1	0	*0*	0.0
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	< 0.1	< 0.1	0	*0*	0.0
0.25 to <0.50	Baa3	BBB–	BBB–	0.3	0.3	< 0.1	< 0.1	0	*0*	0.0
0.50 to <0.75	Ba1	BB+	BB+	0.7	0.6	< 0.1	< 0.1	0	*0*	0.0
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	1.2	1.5	< 0.1	< 0.1	0	*0*	0.0
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–	2.7	3.3	< 0.1	< 0.1	0	*0*	0.0
10.00 to <100.00	Caa to C	CCC to C	CCC to C	13.3	13.0	< 0.1	< 0.1	0	*0*	0.0
Subtotal				0.0	1.5	< 0.1	< 0.1	0	*0*	0.0
Banks and securities dealers as of 31.12.19										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.1	0.1	0.5	0.5	0	*0*	0.0
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	0.3	0.3	0	*0*	0.1
0.25 to <0.50	Baa3	BBB–	BBB–	0.4	0.4	0.2	0.2	0	*0*	0.0
0.50 to <0.75	Ba1	BB+	BB+	0.6	0.6	< 0.1	< 0.1	0	*0*	0.1
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	1.7	1.4	0.2	0.2	0	*0*	0.2
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–	4.7	3.1	0.2	0.2	0	*0*	0.3
10.00 to <100.00	Caa to C	CCC to C	CCC to C	15.9	16.0	< 0.1	< 0.1	0	*0*	1.1
Subtotal				0.4	0.7	1.4	1.4	0	*0*	0.1

CR9: IRB – Backtesting of probability of default (PD) per portfolio (continued)[1]

PD range	External rating equivalent Moody's	External rating equivalent Standard & Poor's	External rating equivalent Fitch	Weighted average PD in %	Arithmetic average PD by obligors in %	Number of obligors (in thousands) End of previous year	Number of obligors (in thousands) End of the year	Defaulted obligors in the year	*of which: new defaulted obligors in the year*	Average historical annual default rate in %[2]
Banks and securities dealers as of 31.12.18										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.1	0.1	0.5	0.5	0	*0*	0.0
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	0.3	0.3	0	*0*	0.1
0.25 to <0.50	Baa3	BBB–	BBB–	0.4	0.3	0.2	0.2	1	*0*	0.0
0.50 to <0.75	Ba1	BB+	BB+	0.6	0.6	0.1	< 0.1	0	*0*	0.2
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	1.2	1.2	0.1	0.2	0	*0*	0.2
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–	4.4	3.3	0.2	0.2	0	*0*	0.3
10.00 to <100.00	Caa to C	CCC to C	CCC to C	12.3	14.3	< 0.1	< 0.1	0	*0*	1.2
Subtotal				0.3	0.8	1.4	1.4	1	*0*	0.1
Public-sector entities, multilateral development banks as of 31.12.19										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.0	0.1	0.4	0.3	0	*0*	0.0
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	0.2	0.2	0	*0*	0.0
0.25 to <0.50	Baa3	BBB–	BBB–	0.3	0.3	0.2	0.2	0	*0*	0.0
0.50 to <0.75	Ba1	BB+	BB+	0.6	0.6	< 0.1	< 0.1	1	*0*	0.6
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	1.2	1.3	< 0.1	< 0.1	0	*0*	0.0
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–			0.0	< 0.1	0	*0*	0.0
10.00 to <100.00	Caa to C	CCC to C	CCC to C			0.0	0.0	0	*0*	8.3
Subtotal				0.1	0.2	0.8	0.7	1	*0*	0.0
Public-sector entities, multilateral development banks as of 31.12.18										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.0	0.1	0.3	0.4	0	*0*	0.0
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	0.1	0.2	0	*0*	0.0
0.25 to <0.50	Baa3	BBB–	BBB–	0.3	0.3	0.2	0.2	0	*0*	0.0
0.50 to <0.75	Ba1	BB+	BB+	0.6	0.6	< 0.1	< 0.1	0	*0*	0.0
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	1.7	1.2	< 0.1	< 0.1	0	*0*	0.0
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–	2.7	2.7	< 0.1	0.0	0	*0*	0.0
10.00 to <100.00	Caa to C	CCC to C	CCC to C			0.0	0.0	0	*0*	9.1
Subtotal				0.1	0.2	0.7	0.8	0	*0*	0.0

CR9: IRB – Backtesting of probability of default (PD) per portfolio (continued)[1]

	External rating equivalent	External rating equivalent	External rating equivalent		Arithmetic	Number of obligors (in thousands)				
PD range	Moody's	Standard & Poor's	Fitch	Weighted average PD in %	average PD by obligors in %	End of previous year	End of the year	Defaulted obligors in the year	*of which: new defaulted obligors in the year*	Average historical annual default rate in %[2]
Corporates: specialized lending as of 31.12.19										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.1	0.1	0.4	0.4	0	*0*	0.1
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	0.3	0.3	1	*0*	0.1
0.25 to <0.50	Baa3	BBB–	BBB–	0.4	0.4	0.6	0.6	0	*0*	0.1
0.50 to <0.75	Ba1	BB+	BB+	0.6	0.6	0.6	0.6	0	*0*	0.2
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	1.3	1.4	1.5	1.4	4	*0*	0.4
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–	3.3	3.5	0.4	0.3	6	*0*	1.3
10.00 to <100.00	Caa to C	CCC to C	CCC to C			0.0	0.0	0	*0*	6.1
Subtotal				1.6	1.1	3.7	3.7	11	*0*	0.3
Corporates: specialized lending as of 31.12.18										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.1	0.1	0.3	0.4	0	*0*	0.1
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	0.3	0.3	0	*0*	0.0
0.25 to <0.50	Baa3	BBB–	BBB–	0.4	0.4	0.6	0.6	1	*0*	0.1
0.50 to <0.75	Ba1	BB+	BB+	0.6	0.6	0.6	0.6	2	*0*	0.2
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	1.4	1.4	1.7	1.5	7	*0*	0.4
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–	3.3	3.4	0.4	0.4	10	*0*	1.3
10.00 to <100.00	Caa to C	CCC to C	CCC to C	11.7	13.0	< 0.1	0.0	1	*0*	6.7
Subtotal				1.6	1.2	3.9	3.7	21	*0*	0.3
Corporates: other lending as of 31.12.19										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.1	0.1	3.8	3.3	6	*0*	0.0
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	1.6	1.6	5	*0*	0.0
0.25 to <0.50	Baa3	BBB–	BBB–	0.4	0.4	2.4	2.4	8	*2*	0.2
0.50 to <0.75	Ba1	BB+	BB+	0.6	0.6	2.5	2.4	10	*1*	0.3
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	1.4	1.5	11.2	11.0	86	*3*	0.5
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–	3.4	3.9	4.7	4.9	131	*2*	1.8
10.00 to <100.00	Caa to C	CCC to C	CCC to C	15.3	15.2	0.1	< 0.1	15	*1*	10.8
Subtotal				2.8	1.5	26.3	25.7	261	*9*	0.3

CR9: IRB – Backtesting of probability of default (PD) per portfolio (continued)[1]

PD range	External rating equivalent Moody's	External rating equivalent Standard & Poor's	External rating equivalent Fitch	Weighted average PD in %	Arithmetic average PD by obligors in %	Number of obligors (in thousands) End of previous year	End of the year	Defaulted obligors in the year	*of which: new defaulted obligors in the year*	Average historical annual default rate in %[2]
Corporates: other lending as of 31.12.18										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.1	0.1	2.2	3.8	3	*1*	0.0
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	1.1	1.6	3	*0*	0.0
0.25 to <0.50	Baa3	BBB–	BBB–	0.4	0.4	1.8	2.4	15	*0*	0.1
0.50 to <0.75	Ba1	BB+	BB+	0.6	0.6	1.7	2.5	6	*1*	0.3
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	1.4	1.5	7.9	11.2	83	*3*	0.4
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–	4.4	4.1	4.3	4.7	133	*1*	1.7
10.00 to <100.00	Caa to C	CCC to C	CCC to C	14.8	15.3	0.1	0.1	19	*0*	10.6
Subtotal				2.9	1.6	19.1	26.3	262	*6*	0.3
Retail: residential mortgages as of 31.12.19										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.1	0.1	129.5	129.2	88	*0*	0.0
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	20.7	21.0	29	*0*	0.1
0.25 to <0.50	Baa3	BBB–	BBB–	0.4	0.4	27.8	28.4	49	*0*	0.1
0.50 to <0.75	Ba1	BB+	BB+	0.6	0.6	15.4	16.2	89	*0*	0.3
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	1.3	1.3	27.0	28.5	85	*1*	0.4
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–	4.3	4.2	10.2	10.8	98	*0*	1.2
10.00 to <100.00	Caa to C	CCC to C	CCC to C	15.3	15.7	1.2	1.2	39	*0*	3.4
Subtotal				1.2	0.6	231.7	235.2	477	*1*	0.2
Retail: residential mortgages as of 31.12.18										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.1	0.1	112.2	129.5	74	*0*	0.0
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	22.3	20.7	30	*1*	0.1
0.25 to <0.50	Baa3	BBB–	BBB–	0.4	0.4	31.6	27.8	58	*0*	0.1
0.50 to <0.75	Ba1	BB+	BB+	0.6	0.6	17.1	15.4	112	*6*	0.3
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	1.3	1.3	29.8	27.0	119	*0*	0.4
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–	4.3	3.8	13.3	10.2	135	*2*	1.2
10.00 to <100.00	Caa to C	CCC to C	CCC to C	15.9	16.1	0.8	1.2	25	*0*	3.4
Subtotal				1.2	0.6	227.1	231.7	553	*9*	0.2

CR9: IRB – Backtesting of probability of default (PD) per portfolio (continued)[1]

PD range	External rating equivalent Moody's	External rating equivalent Standard & Poor's	External rating equivalent Fitch	Weighted average PD in %	Arithmetic average PD by obligors in %	Number of obligors (in thousands) End of previous year	End of the year	Defaulted obligors in the year	*of which: new defaulted obligors in the year*	Average historical annual default rate in %[2]
Retail: other retail as of 31.12.19										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.0	0.0	195.3	201.8	15	*1*	0.0
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	6.2	4.5	1	*0*	0.1
0.25 to <0.50	Baa3	BBB–	BBB–	0.4	0.4	2.6	2.2	1	*0*	0.1
0.50 to <0.75	Ba1	BB+	BB+	0.6	0.6	1.8	1.7	0	*0*	0.1
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	1.1	1.0	48.1	42.5	6	*1*	0.0
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–	4.2	3.4	1.5	1.4	0	*0*	0.1
10.00 to <100.00	Caa to C	CCC to C	CCC to C	16.4	21.3	0.7	0.7	0	*0*	0.0
Subtotal				0.1	0.3	256.2	254.9	23	*2*	0.0
Retail: other retail as of 31.12.18										
0.00 to <0.15	Aaa to A3	AAA to A–	AAA to AA–	0.0	0.0	206.2	195.3	8	*4*	0.0
0.15 to <0.25	Baa1 to Baa2	BBB+ to BBB	BBB+ to BBB	0.2	0.2	5.5	6.2	0	*0*	0.1
0.25 to <0.50	Baa3	BBB–	BBB–	0.4	0.4	3.6	2.6	0	*0*	0.1
0.50 to <0.75	Ba1	BB+	BB+	0.6	0.6	2.0	1.8	0	*0*	0.1
0.75 to <2.50	Baa2 to Ba3	BB to BB–	BB to BB–	1.0	1.0	55.9	48.1	0	*0*	0.0
2.50 to <10.00	B1 to B3	B+ to B–	B+ to B–	3.6	3.5	2.5	1.5	0	*0*	0.1
10.00 to <100.00	Caa to C	CCC to C	CCC to C	17.4	21.3	3.6	0.7	0	*0*	0.0
Subtotal				0.3	0.3	279.3	256.2	8	*4*	0.0

1 This table covers all Pillar 1 PD models that are approved by FINMA and are subject to a yearly confirmation / backtesting. Refer to the table "Key features of our main credit risk models" under "Credit risk models" in the "Risk management and control" section of our Annual Report 2019 for more information. 2 We use 12 years of data for the calculation of the "average historical annual default rate."

Equity exposures

The table below provides information about our equity exposures under the simple risk weight method.

Semiannual |

CR10: IRB (equities under the simple risk-weight method)[1]

USD million, except where indicated	On-balance sheet amount	Off-balance sheet amount	Risk weight in %[2]	Exposure amount[3]	RWA[2]
31.12.19					
Exchange-traded equity exposures	34		300	34	107
Other equity exposures	1,010		400	744	3,154
Total	1,043			777	3,261
30.6.19					
Exchange-traded equity exposures	50		300	37	119
Other equity exposures	999		400	751	3,182
Total	1,049			788	3,302
31.12.18					
Exchange-traded equity exposures	66		300	65	208
Other equity exposures	1,122		400	814	3,450
Total	1,188			879	3,658

1 This table includes investment in funds (until 31 December 2019), and excludes significant investments in the common shares of non-consolidated financial institutions (banks, insurance and other financial entities) that are subject to the threshold treatment and risk weighted at 250%. 2 RWA are calculated post-application of the A-IRB multiplier of 6%, therefore the respective risk weight is higher than 300% and 400%. 3 The exposure amount for equities in the banking book is based on the net position.

Introduction

Annual | This section provides information about the exposures subject to the Basel III counterparty credit risk framework, as presented in the "Regulatory exposures and risk-weighted assets" table on pages 20–22 of this report.

Counterparty credit risk (CCR) arises from over-the-counter (OTC) and exchange-traded derivatives (ETDs), securities financing transactions (SFTs) and long settlement transactions. Within traded products, we determine the regulatory credit exposure on the majority of our derivatives portfolio by applying the effective expected positive exposure (EEPE) and stressed expected positive exposure (stressed EPE) as defined in the Basel III framework. For the rest of the portfolio, we apply the current exposure method (CEM) based on the replacement value of derivatives in combination with a regulatory prescribed add-on. For the majority of securities financing transactions (securities borrowing, securities lending, margin lending, repurchase agreements and reverse repurchase agreements), we determine the regulatory credit exposure using the close-out period (COP) approach. ▲

This section is structured into three sub-sections:

Counterparty credit risk management

Annual | This sub-section refers to disclosures regarding our risk management objectives, policies and risk management process, operating limits for CCR exposures, wrong-way risks and the effect of a credit rating downgrade. ▲

Counterparty credit risk risk-weighted assets

Quarterly | This sub-section comprises disclosures on the quarterly CCR risk-weighted assets (RWA) development. ▲

Counterparty credit risk exposure

Semiannual | This sub-section provides information about our CCR exposures, credit valuation adjustment (CVA), capital charge and credit derivatives exposures. This section excludes CCR exposures to central counterparties. CVA is separately covered in the CCR2 table. ▲

Counterparty credit risk management

The table below presents an overview of Pillar 3 disclosures that are provided separately in our Annual Report 2019.

Annual |

CCRA – Counterparty credit risk management

Pillar 3 disclosure requirement	Annual Report 2019 section	Disclosure	Annual Report 2019 page number
Risk management objectives and policies related to counterparty credit risk	Risk, treasury and capital management	– Traded products	125–126
		– Credit hedging	129
		– Mitigation of settlement risk	129
	Consolidated financial statements	– Note 1a item 3e Securities borrowing / lending and repurchase / reverse repurchase transactions	323
		– Note 1a item 3j Hedge accounting	331–332
		– Note 11 Derivative instruments	365–370
The method used to assign the operating limits defined in terms of internal capacity for counterparty credit exposures and for CCP exposures	Risk, treasury and capital management	– Risk governance	109–110
		– Portfolio and position limits	118
		– Credit risk – Overview of measurement, monitoring and management techniques	119
		– Credit hedging	129
		– Credit risk models	129–135
Policies relating to guarantees and other risk mitigants, and counterparty risk assessment	Risk, treasury and capital management	– Credit risk mitigation	127–129
	Consolidated financial statements	– Note 11 Derivative instruments	365–370
		– Note 25 Offsetting financial assets and financial liabilities	424–425
Policies with respect to wrong-way risk exposures	Risk, treasury and capital management	– Exposure at default	131-132
The effect on the bank of a credit rating downgrade (i.e., amount of collateral that the bank would be required to provide)	Risk, treasury and capital management	– Credit ratings	167-168

▲

Counterparty credit risk risk-weighted assets

Quarterly | CCR RWA under the internal model method (IMM) increased by USD 1.0 billion to USD 20.3 billion during the fourth quarter of 2019, primarily due to increased market volatility affecting the derivative exposures. For definitions of counterparty credit risk RWA movement table components, refer to "Definitions of credit risk and counterparty credit risk RWA movement table components for CR8 and CCR7" in the "Credit risk" section on page 50 of this report. ▲

Quarterly |

CCR7: RWA flow statements of CCR exposures under internal model method (IMM) and value-at-risk (VaR)

		For the quarter ended 31.12.19			For the quarter ended 30.9.19			For the quarter ended 30.6.19			For the quarter ended 31.3.19		
	USD million	Derivatives	SFTs	Total	Derivatives	SFTs	Total	Derivatives	SFTs	Total	Derivatives	SFTs	Total
		Subject to IMM	Subject to VaR		Subject to IMM	Subject to VaR		Subject to IMM	Subject to VaR		Subject to IMM	Subject to VaR	
1	RWA as of the beginning of the quarter	19,309	5,426	24,736	20,133	5,453	25,587	19,371	5,889	25,260	17,624	5,036	22,660
2	Asset size	909	64	973	(648)	106	(543)	727	(603)	124	1,147	900	2,047
3	Credit quality of counterparties	(138)	(194)	(332)	(5)	(80)	(85)	9	(85)	(76)	15	(189)	(174)
4	Model updates		127	127									
5	Methodology and policy								244	244	621	150	771
5a	*of which: regulatory add-ons*										*450*	*150*	*600*
6	Acquisitions and disposals												
7	Foreign exchange movements	194	79	273	(170)	(53)	(223)	26	9	35	(36)	(8)	(44)
8	Other												
9	RWA as of the end of the quarter	20,275	5,502	25,777	19,309	5,426	24,736	20,133	5,453	25,587	19,371	5,889	25,260

▲

Counterparty credit exposure

Semiannual | This sub-section provides information about our CCR exposures, credit valuation adjustment (CVA) capital charge and credit derivatives exposures. This sub-section excludes CCR exposures to central counterparties; CVA is separately covered in the CCR2 table.

Exposure at default (EAD) post credit-risk mitigation (CRM) related to CCR increased by USD 2.2 billion to USD 104.2 billion and RWA decreased by USD 1.0 billion to USD 34.5 billion as of 31 December 2019. EAD post-CRM on derivative exposures increased by USD 1.8 billion to USD 56.7 billion, mainly driven by higher client activity levels in the Investment Bank increasing the exposures under IMM, partly offset by lower exposure of certain equity options after a change in measurement method from the CEM to the EPE measurement method. RWA on derivative exposures decreased by USD 0.9 billion to USD 23.7 billion due to reduced exposures in the Investment Bank's Foreign Exchange, Rates and Credit business, partly offset by higher RWA from the aforementioned increase in client activity levels in the Investment Bank. ▲

Semiannual |

CCR1: Analysis of counterparty credit risk (CCR) exposure by approach

USD million, except where indicated	Replacement cost	Potential future exposure	EEPE	Alpha used for computing regulatory EAD	EAD post-CRM	RWA
31.12.19						
1 SA-CCR (for derivatives)[1]	5,276[2]	5,947		1.0	11,224	3,376
2 Internal model method (for derivatives)			28,391	1.6	45,426	19,896
3 Simple approach for credit risk mitigation (for SFTs)						
4 Comprehensive approach for credit risk mitigation (for SFTs)					17,572	5,858
5 VaR (for SFTs)					29,971	5,333
6 Total					**104,192**	**34,463**
30.6.19						
1 SA-CCR (for derivatives)[1]	5,767[2]	6,723		1.0	12,490	4,297
2 Internal model method (for derivatives)			26,468	1.6	42,349	19,874
3 Simple approach for credit risk mitigation (for SFTs)						
4 Comprehensive approach for credit risk mitigation (for SFTs)					21,048	5,982
5 VaR (for SFTs)					26,091	5,317
6 Total					**101,978**	**35,470**
31.12.18						
1 SA-CCR (for derivatives)[1]	8,670[2]	8,168		1.0	16,838	3,664
2 Internal model method (for derivatives)			25,889	1.6	41,423	17,375
3 Simple approach for credit risk mitigation (for SFTs)						
4 Comprehensive approach for credit risk mitigation (for SFTs)					17,202	6,163
5 VaR (for SFTs)					25,149	4,939
6 Total					**100,612**	**32,140**

1 Calculated in accordance with the current exposure method (CEM), as presented in this table. From 1 January 2020 onwards, the "SA-CCR (for derivatives)" row will be calculated based on the standardized approach for counterparty credit risk (SA-CCR). 2 Replacement costs include collateral mitigation for on- and off-balance sheet exposures related to CCR for derivative transactions.

▲

Semiannual | In addition to the default risk capital requirements for CCR based on the advanced internal ratings-based or standardized approach, we are required to add a capital charge to derivatives to cover the risk of mark-to-market losses associated with the deterioration of counterparty credit quality, referred to as the CVA. The advanced CVA value-at-risk (VaR) approach has been used to calculate the CVA capital charge where we apply IMM. Where this is not the case, the standardized CVA approach has been applied. More information about our portfolios subject to the CVA capital charge as of 31 December 2019 is provided in the CCR2 table below. ▲

Semiannual |

CCR2: Credit valuation adjustment (CVA) capital charge

	31.12.19		30.6.19		31.12.18	
USD million	EAD post-CRM[1]	RWA	EAD post-CRM[1]	RWA	EAD post-CRM[1]	RWA
Total portfolios subject to the advanced CVA capital charge	21,662	974	22,052	1,106	26,680	1,479
1 (i) VaR component (including the 3× multiplier)		180		205		271
2 (ii) Stressed VaR component (including the 3× multiplier)		794		900		1,208
3 All portfolios subject to the standardized CVA capital charge	4,630	926	4,842	1,447	4,946	1,338
4 Total subject to the CVA capital charge	**26,292**	**1,900**	**26,894**	**2,553**	**31,626**	**2,816**

1 Includes EAD of the underlying portfolio subject to the respective CVA charge.

▲

Semiannual | The CCR3 table below provides information about our CCR under the standardized approach. Total CCR exposures decreased by USD 0.4 billion to USD 6.3 billion, primarily driven by exposure decreases in the Investment Bank's Corporate Client Solutions business. ▲

Semiannual |

CCR3: Standardized approach – CCR exposures by regulatory portfolio and risk weights

USD million

	Risk weight	0%	10%	20%	50%	75%	100%	150%	Others	Total credit exposure
	Regulatory portfolio as of 31.12.19									
1	Central governments and central banks	207								207
2	Banks and securities dealers			63	72		4			140
3	Public-sector entities and multilateral development banks			31	446		11			488
4	Corporates			9	101	3,952	1,302	26		5,389
5	Retail					1	123			124
6	Equity									
7	Other assets									
8	Total	207		102	620	3,954	1,439	26		6,348
	Regulatory portfolio as of 30.6.19									
1	Central governments and central banks	169					3			172
2	Banks and securities dealers			112	117		3			232
3	Public-sector entities and multilateral development banks			99	228		71			398
4	Corporates			22	105	4,213	1,472	2		5,813
5	Retail					5	117			123
6	Equity									
7	Other assets									
8	Total	169		232	450	4,218	1,666	2		6,737
	Regulatory portfolio as of 31.12.18									
1	Central governments and central banks	202					0			202
2	Banks and securities dealers			31	176	0	4	0		210
3	Public-sector entities and multilateral development banks			0						1
4	Corporates				99	4,974	1,045	0		6,119
5	Retail					18	128			147
6	Equity									
7	Other assets									
8	Total	202		32	275	4,993	1,177	0		6,679

▲

Semiannual | Information about RWA, including details of movements in CCR RWA, is provided on pages 6–9 of our 30 September 2019 Pillar 3 report, available under "Pillar 3 disclosures" at *www.ubs.com/investors*, and on page 58 of this report.

The CCR4 table below and on the following pages provides a breakdown of the key parameters used for the calculation of capital requirements under the advanced internal ratings-based (A-IRB) approach, by PD range across FINMA-defined asset classes. As of 31 December 2019, EAD post-CRM increased by USD 2.6 billion to USD 97.8 billion, while RWA decreased by USD 0.7 billion, resulting in a decrease in RWA density. The net increase in EAD post-CRM was mainly driven by new transactions from clients of the Investment Bank's Equities business with favorable credit ratings, especially in the "Corporates: including specialized lending" asset class. The corresponding increase in RWA due to the aforementioned increase in EAD post-CRM was completely offset by lower RWA from corporate clients with a PD scale of 0.5 to <0.75, due to reduced exposure in the Investment Bank's Foreign Exchange, Rates and Credit business after parameter updates for EPE measurement and lower exposures in Corporate Center and the Investment Bank's Equities business. ▲

Semiannual |

CCR4: IRB – CCR exposures by portfolio and PD scale

USD million, except where indicated	EAD post-CRM	Average PD in %	Number of obligors (in thousands)	Average LGD in %	Average maturity in years[3]	RWA	RWA density in %
Central governments and central banks as of 31.12.19							
0.00 to <0.15	8,443	0.0	0.1	35.4	0.4	490	5.8
0.15 to <0.25	129	0.2	<0.1	50.3	0.6	37	28.6
0.25 to <0.50	261	0.3	<0.1	53.1	0.7	149	57.3
0.50 to <0.75	108	0.7	<0.1	55.0	1.0	87	80.4
0.75 to <2.50	13	1.0	<0.1	44.7	0.8	11	87.2
2.50 to <10.00							
10.00 to <100.00							
100.00 (default)							
Subtotal	8,954	0.1	0.1	36.3	0.4	774	8.6
Central governments and central banks as of 30.6.19							
0.00 to <0.15	9,795	0.0	0.1	33.4	0.3	489	5.0
0.15 to <0.25	200	0.2	<0.1	44.8	1.0	64	32.3
0.25 to <0.50	213	0.3	<0.1	55.0	1.0	116	54.5
0.50 to <0.75	195	0.7	<0.1	54.2	1.0	151	77.4
0.75 to <2.50	23	0.9	<0.1	53.3	0.5	20	85.2
2.50 to <10.00	5	2.6	<0.1	80.0	1.0	11	198.1
10.00 to <100.00							
100.00 (default)							
Subtotal	10,432	0.1	0.2	34.5	0.3	851	8.2
Central governments and central banks as of 31.12.18							
0.00 to <0.15	8,415	0.0	0.1	44.0	0.3	740	8.8
0.15 to <0.25	197	0.2	<0.1	65.3	0.9	93	47.0
0.25 to <0.50	128	0.3	<0.1	84.3	1.0	106	83.4
0.50 to <0.75	100	0.7	<0.1	45.0	1.0	85	85.1
0.75 to <2.50	23	1.0	<0.1	53.8	0.8	21	90.2
2.50 to <10.00	0	2.6	<0.1	88.8	1.0	0	229.2
10.00 to <100.00							
100.00 (default)							
Subtotal	8,864	0.1	0.2	45.1	0.5	1,046	11.8

CCR4: IRB – CCR exposures by portfolio and PD scale (continued)

USD million, except where indicated	EAD post-CRM	Average PD in %	Number of obligors (in thousands)	Average LGD in %	Average maturity in years[3]	RWA	RWA density in %
Banks and securities dealers as of 31.12.19							
0.00 to <0.15	13,108	0.1	0.4	48.9	0.8	2,539	19.4
0.15 to <0.25	4,287	0.2	0.2	48.7	0.8	1,568	36.6
0.25 to <0.50	1,615	0.4	0.2	46.6	0.7	766	47.4
0.50 to <0.75	650	0.7	0.1	63.1	0.8	632	97.3
0.75 to <2.50	573	1.1	0.1	38.6	0.9	404	70.5
2.50 to <10.00	33	3.2	<0.1	73.5	1.0	71	217.8
10.00 to <100.00	1	14.9	<0.1	90.0	1.0	6	431.9
100.00 (default)							
Subtotal	20,267	0.2	1.1	48.9	0.8	5,985	29.5
Banks and securities dealers as of 30.6.19							
0.00 to <0.15	13,548	0.1	0.4	49.3	0.8	2,706	20.0
0.15 to <0.25	3,892	0.2	0.2	48.9	0.9	1,422	36.5
0.25 to <0.50	1,490	0.4	0.2	43.4	0.7	651	43.7
0.50 to <0.75	559	0.7	0.1	60.3	1.1	545	97.5
0.75 to <2.50	303	1.3	0.2	63.4	0.7	370	122.2
2.50 to <10.00	57	3.7	0.1	74.0	1.0	132	233.9
10.00 to <100.00							
100.00 (default)							
Subtotal	19,849	0.2	1.1	49.4	0.8	5,827	29.4
Banks and securities dealers as of 31.12.18							
0.00 to <0.15	13,103	0.1	0.4	50.5	0.8	2,672	20.4
0.15 to <0.25	3,927	0.2	0.2	48.3	0.8	1,415	36.0
0.25 to <0.50	1,458	0.4	0.2	49.9	0.8	764	52.4
0.50 to <0.75	636	0.7	0.1	58.8	0.8	551	86.7
0.75 to <2.50	352	1.2	0.2	63.7	0.8	432	122.8
2.50 to <10.00	320	7.5	0.1	12.0	0.2	132	41.2
10.00 to <100.00		13.0	<0.1	66.0	1.0	10	0.0
100.00 (default)							
Subtotal	19,799	0.3	1.1	49.9	0.8	5,976	30.2

CCR4: IRB – CCR exposures by portfolio and PD scale (continued)

USD million, except where indicated	EAD post-CRM	Average PD in %	Number of obligors (in thousands)	Average LGD in %	Average maturity in years[3]	RWA	RWA density in %
Public-sector entities, multilateral development banks as of 31.12.19							
0.00 to <0.15	2,102		0.1	36.1	1.1	133	6.3
0.15 to <0.25	58	0.2	<0.1	86.5	1.0	27	46.7
0.25 to <0.50	4	0.4	<0.1	86.9	1.0	4	114.7
0.50 to <0.75							
0.75 to <2.50	0	1.0	<0.1	35.0	1.0	0	60.4
2.50 to <10.00							
10.00 to <100.00							
100.00 (default)	22	100.0	<0.1		3.4	23	106.0
Subtotal	2,185	1.0	0.1	37.2	1.1	187	8.6
Public-sector entities, multilateral development banks as of 30.6.19							
0.00 to <0.15	1,886	0.0	0.1	37.0	1.1	122	6.5
0.15 to <0.25	31	0.2	<0.1	58.4	1.1	10	33.4
0.25 to <0.50	7	0.3	<0.1	73.8	1.0	6	90.9
0.50 to <0.75							
0.75 to <2.50	1	1.0	<0.1	75.5	1.0	1	168.4
2.50 to <10.00							
10.00 to <100.00							
100.00 (default)	22	100.0	<0.1			23	106.0
Subtotal	1,946	1.2	0.1	37.2	1.1	163	8.4
Public-sector entities, multilateral development banks as of 31.12.18							
0.00 to <0.15	2,519	0.0	0.1	43.7	1.1	223	8.8
0.15 to <0.25	86	0.2	<0.1	53.2	1.1	28	32.3
0.25 to <0.50	39	0.4	<0.1	61.3	1.0	24	62.6
0.50 to <0.75			<0.1	0.0	0.0		0.0
0.75 to <2.50	0	1.0	<0.1	35.0	1.0	0	60.4
2.50 to <10.00	0	2.7	<0.1	35.0	1.0	0	87.4
10.00 to <100.00							
100.00 (default)	12	100.0	<0.1			13	106.0
Subtotal	2,657	0.5	0.1	44.1	1.1	288	10.8

CCR4: IRB – CCR exposures by portfolio and PD scale (continued)

USD million, except where indicated	EAD post-CRM	Average PD in %	Number of obligors (in thousands)	Average LGD in %	Average maturity in years[3]	RWA	RWA density in %
Corporates: including specialized lending as of 31.12.19[1]							
0.00 to <0.15	40,175	0.0	11.6	35.7	0.5	5,807	14.5
0.15 to <0.25	6,620	0.2	1.7	57.5	0.7	4,217	63.7
0.25 to <0.50	2,305	0.4	0.8	83.7	0.9	3,494	151.6
0.50 to <0.75	3,351	0.6	0.9	36.9	0.6	3,000	89.5
0.75 to <2.50	5,708	1.2	1.5	28.9	0.5	4,655	81.5
2.50 to <10.00	2,182	3.2	0.2	10.1	0.2	940	43.1
10.00 to <100.00	2	14.9	<0.1	90.0	1.0	10	431.9
100.00 (default)	1	100.0	<0.1		1.0	1	106.0
Subtotal	60,344	0.3	16.7	38.4	0.6	22,125	36.7
Corporates: including specialized lending as of 30.6.19[1]							
0.00 to <0.15	36,389	0.0	12.7	35.2	0.6	5,205	14.3
0.15 to <0.25	7,062	0.2	1.7	53.2	0.7	4,116	58.3
0.25 to <0.50	2,222	0.4	0.9	82.1	0.9	3,312	149.1
0.50 to <0.75	3,661	0.6	1.0	57.1	0.6	4,879	133.3
0.75 to <2.50	5,367	1.2	1.7	28.0	0.5	4,388	81.8
2.50 to <10.00	2,219	3.2	0.4	12.2	0.2	1,190	53.6
10.00 to <100.00							
100.00 (default)	1	100.0	<0.1			1	106.0
Subtotal	56,921	0.3	18.5	39.1	0.6	23,092	40.6
Corporates: including specialized lending as of 31.12.18[1]							
0.00 to <0.15	35,475	0.0	12.0	35.0	0.6	4,717	13.3
0.15 to <0.25	6,761	0.2	1.6	51.0	0.6	3,688	54.6
0.25 to <0.50	2,194	0.4	0.9	78.3	1.0	2,815	128.3
0.50 to <0.75	2,351	0.6	1.0	68.2	0.6	3,668	156.0
0.75 to <2.50	4,311	1.2	1.6	28.2	0.7	3,569	82.8
2.50 to <10.00	1,311	3.2	0.3	13.8	0.4	819	62.4
10.00 to <100.00	0	13.0	<0.1	5.0	1.0	0	36.7
100.00 (default)	1	100.0	<0.1			1	106.0
Subtotal	52,403	0.3	17.3	39.3	0.6	19,276	36.8

CCR4: IRB – CCR exposures by portfolio and PD scale (continued)

USD million, except where indicated	EAD post-CRM	Average PD in %	Number of obligors (in thousands)	Average LGD in %	Average maturity in years[3]	RWA	RWA density in %
Retail: other retail as of 31.12.19							
0.00 to <0.15	5,355	0.0	13.1	31.1		223	4.2
0.15 to <0.25	31	0.2	0.1	27.0		3	10.4
0.25 to <0.50	32	0.4	0.1	31.5		6	19.5
0.50 to <0.75	44	0.6	0.1	44.5		17	38.5
0.75 to <2.50	591	1.0	10.7	29.9		312	52.7
2.50 to <10.00	40	3.4	0.1	28.8		17	43.2
10.00 to <100.00	2	21.5	<0.1	28.9		1	70.1
100.00 (default)							
Subtotal	6,095	0.2	24.1	31.1		579	9.5
Retail: other retail as of 30.6.19							
0.00 to <0.15	5,299	0.0	16.9	28.9		205	3.9
0.15 to <0.25	83	0.2	0.3	27.3		9	10.5
0.25 to <0.50	38	0.4	0.2	29.8		7	18.4
0.50 to <0.75	57	0.6	0.1	42.4		21	36.7
0.75 to <2.50	603	1.0	11.6	29.6		186	30.8
2.50 to <10.00	12	2.9	0.4	28.7		5	42.3
10.00 to <100.00	2	21.8	<0.1	37.0		2	90.4
100.00 (default)							
Subtotal	6,093	0.2	29.5	29.1		433	7.1
Retail: other retail as of 31.12.18							
0.00 to <0.15	9,749	0.0	15.1	28.0		362	3.7
0.15 to <0.25	19	0.2	0.3	28.2		2	10.8
0.25 to <0.50	126	0.4	0.1	29.5		23	18.2
0.50 to <0.75	30	0.6	0.1	28.0		7	24.2
0.75 to <2.50	271	1.1	9.0	29.6		87	32.1
2.50 to <10.00	11	2.9	0.1	27.9		5	42.0
10.00 to <100.00	4	21.3	<0.1	30.1		3	70.4
100.00 (default)							
Subtotal	10,211	0.1	24.6	28.1		489	4.8
Total 31.12.19	97,845	0.3	42.1	39.9	0.6[2]	29,651	30.3
Total 30.6.19	95,241	0.3	49.4	40.1	0.7[2]	30,366	31.9
Total 31.12.18	93,933	0.2	43.4	41.0	0.7[2]	27,075	28.8

1 Includes exposures to managed funds. 2 Retail asset classes are excluded from the average maturity as they are not subject to maturity treatment. 3 Average maturity for defaulted exposures disclosed in the table is not used to calculate RWA.

Semiannual |

The fair value of collateral posted for securities financing transactions decreased by USD 12.5 billion to USD 466.8 billion, resulting from client activities in the Investment Bank and Corporate Center.▲

Semiannual |

CCR5: Composition of collateral for CCR exposure[1]

	Collateral used in derivative transactions						Collateral used in SFTs	
	Fair value of collateral received			Fair value of posted collateral			Fair value of collateral received	Fair value of posted collateral
USD million	Segregated[2]	Unsegregated	Total	Segregated[3]	Unsegregated	Total		
31.12.19								
Cash – domestic currency	2,369	18,398	20,767	1,179	7,736	8,915	30,621	76,209
Cash – other currencies		18,735	18,735	1,429	12,308	13,736	8,955	31,899
Sovereign debt	6,432	6,150	12,582	8,373	5,243	13,616	232,051	162,091
Other debt securities		2,231	2,231	1,643	409	2,052	78,903	28,532
Equity securities	4,391	18	4,409	4,138	180	4,317	290,369	168,088
Total	13,192	45,532	58,725	16,761	25,874	42,635	640,899	466,820
30.6.19								
Cash – domestic currency	2,492	17,321	19,813	1,584	6,508	8,093	30,459	78,118
Cash – other currencies		20,106	20,106	1,658	13,742	15,400	10,467	41,381
Sovereign debt	6,569	6,780	13,349	8,301	6,009	14,310	229,076	169,360
Other debt securities		3,177	3,177	1,441	1,026	2,467	99,247	40,954
Equity securities	3,776	28	3,804	999	566	1,565	266,468	149,513
Total	**12,837**	**47,412**	**60,249**	**13,983**	**27,852**	**41,835**	**635,717**	**479,327**
31.12.18								
Cash – domestic currency	2,042	16,958	19,000	1,221	6,980	8,200	33,134	72,932
Cash – other currencies		19,784	19,285	1,591	13,808	15,399	12,987	49,636
Sovereign debt	5,552	8,656	14,208	7,995	5,444	13,439	252,257	176,260
Other debt securities		2,277	2,277	812	135	946	79,359	32,851
Equity securities	4,778	23	4,801	1,570	1,465	3,035	243,027	145,939
Total	**12,372**	**47,698**	**59,571**	**13,190**	**27,831**	**41,020**	**620,764**	**477,617**

1 This table includes collateral received and posted with and without the right of rehypothecation, but excludes securities placed with central banks related to undrawn credit lines and for payment, clearing and settlement purposes for which there were no associated liabilities or contingent liabilities. 2 Includes collateral received in derivative transactions, primarily initial margins, that is placed with a third-party custodian and to which UBS has access only in the case of counterparty default. 3 Includes collateral posted to central counterparties, where we apply a 0% risk weight for trades that we have entered into on behalf of a client and where the client has signed a legally enforceable agreement stipulating that the default risk of that central counterparty is carried by the client.

▲

Semiannual | Notionals for credit derivatives decreased by USD 6.2 billion for protection bought and by USD 5.2 billion for protection sold, primarily due to compression activities in the Investment Bank's Foreign Exchange, Rates and Credit business and Equities business. In addition, certain credit options in the Investment Bank's Corporate Client Solutions business were unwound. ▲

Semiannual |

CCR6: Credit derivatives exposures

	31.12.19		30.6.19		31.12.18	
USD million	Protection bought	Protection sold	Protection bought	Protection sold	Protection bought	Protection sold
Notionals[1]						
Single-name credit default swaps	37,578	38,687	37,191	42,151	43,265	44,875
Index credit default swaps	32,426	27,887	36,410	29,482	37,006	32,309
Total return swaps	3,692	1,606	4,236	1,697	4,726	1,976
Credit options	3,757	56	5,861	57	4,065	57
Other credit derivatives						
Total notionals	77,452	68,236	**83,698**	**73,388**	**89,063**	**79,218**
Fair values						
Positive fair value (asset)	*682*	*1,338*	*947*	*1,314*	*1,117*	*815*
Negative fair value (liability)	*2,050*	*916*	*2,059*	*1,260*	*1,612*	*1,232*

1 Includes notional amounts for client-cleared transactions.

▲

Background

Annual | In accordance with current prudential regulations, FINMA has approved our use of the advanced internal ratings-based (A-IRB) approach for calculating the required capital for the majority of our credit risk exposures.

The principal differences between the standardized approach (the SA) and the A-IRB approach identified below are based on the current SA rules without consideration of the material revisions announced by the Basel Committee on Banking Supervision (the BCBS) in December 2017.

We believe that advanced approaches which adequately capture economic risks are paramount for the appropriate representation of the capital requirements related to risk-taking activities. Within a strong risk control framework and in combination with robust stress testing practices, strict risk limits, as well as leverage and liquidity requirements, advanced approaches promote a proactive risk culture, setting the right incentives to prudently manage risks.

Refer to the "Introduction and basis for preparation" section of this report for information about FINMA-defined asset classes.▲

Key methodological differences between the A-IRB approach and current SA

Annual | In line with the BCBS objective, the aim of the A-IRB approach is to balance the maintenance of prudent levels of capital while encouraging, where appropriate, the use of advanced risk management techniques. By design, the calibration of the current SA and the A-IRB approach is such that low-risk, short-maturity, well-collateralized portfolios across the various asset classes (with the exception of Central governments and central banks) receive lower risk weights under the A-IRB than under the current SA rules. Accordingly, risk-weighted assets (RWA) and capital requirements under the current SA would be substantially higher than under the A-IRB approach for lower-risk portfolios. Conversely, RWA for higher-risk portfolios are higher under the A-IRB approach than under the current SA.

Methodological differences primarily arise due to the measurement of exposure at default (EAD) and the risk weights applied. In both cases, the treatment of risk mitigation such as collateral can have a significant effect.

EAD measurement

For the measurement of EAD, the main methodological differences relate to derivatives, driven by the differences between the internal model method (the IMM) and the regulatory prescribed current exposure method (the CEM).

The model-based approaches to derive estimates of EAD for derivatives and securities financing transactions reflect the detailed characteristics of individual transactions. They model the range of possible exposure outcomes across all transactions within the same legally enforceable netting set at various future time points. The modeling assesses the net amount that may be owed to us or that we may owe to others, taking into account the effect of correlated market moves over the potential time it could take to close out a position. The calculation considers current market conditions and is therefore sensitive to deteriorations in the market environment.

In contrast, EADs under the regulatory prescribed rules are calculated as replacement costs at the balance sheet date plus regulatory add-ons, which take into account potential future market movements but at predetermined fixed rates, not sensitive to changes in market conditions. These add-ons are crudely differentiated by reference to only five product types and three maturity buckets. Moreover, the current regulatory prescribed rules calculation gives very limited recognition to the benefits of diversification across transactions covered under the same legally enforceable netting agreement. As a result, large diversified portfolios, such as those arising from our activities with other market-making banks, will generate much higher EAD under the current regulatory prescribed rules than under our internal model-based approaches.

Risk weights

Under the A-IRB approach, risk weights are assigned according to the bank's internal credit assessment of the counterparty to determine the probability of default (the PD) and loss given default (the LGD).

The PD is an estimate of the likelihood of a counterparty defaulting on its contractual obligations over the next 12 months. It is assessed using rating tools tailored to the various categories of counterparties. Statistically developed scorecards, 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. PD is not only an integral part of the credit risk measurement, but also an important input for determining the level of credit approval required for any given transaction. Moreover, for the purpose of capital underpinning, the majority of counterparty PDs are subject to a floor.

The LGD is the magnitude of the likely loss if there is a default. The calculation takes into account the 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. Importantly, LGD considers 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, with our estimates being supported by our internal historical loss data and external information where available.

The combination of PD and LGD determined at the counterparty level results in a highly granular level of differentiation of the economic risk from different borrowers and transactions.

In contrast, the SA risk weights are largely reliant on external rating agencies' assessments of the credit quality of the counterparty, with a 100% risk weight typically being applied where no external rating is available. Even where external ratings are available, there is only a coarse granularity of risk weights, with only four primary risk weights used for differentiating counterparties, with the addition of a 0% risk weight for AA– or better rated central governments and central banks. Risk weights of 35%, 75% and 100% are used for mortgages and retail exposures not in default, respectively.

The SA does not differentiate across transaction maturities except for interbank lending, albeit in a very simplistic manner considering only shorter or longer than three months. This has clear limitations. For example, the economic risk of a six-month loan to, for example, a BB-rated US corporate is significantly different to that of a 10-year loan to the same borrower. This difference is evident from the distinction of PD levels based on ratings assigned by external rating agencies through their separate ratings for short-term and long-term debt for a given issuer.

The SA typically assigns lower risk weights to sub-investment grade counterparties than the A-IRB approach, thereby potentially understating the economic risk. Conversely, investment grade counterparties typically receive higher risk weights under the SA than under the A-IRB approach.

Maturity is also an important factor for all asset classes except Retail, with the A-IRB approach producing a higher capital requirement for longer maturity exposures than for shorter maturity exposures.

Additionally, under the A-IRB approach we calculate expected loss measures that are deducted from common equity tier 1 (CET1) capital to the extent that they exceed general provisions, which is not the case under the SA.

Given the divergence between the SA and the economic risk, which is better represented under the A-IRB approach, particularly for lower-grade counterparties, there is a risk that applying the SA could incentivize higher risk-taking without a commensurate increase in required capital. ▲

Comparison of the A-IRB approach EAD and leverage ratio denominator by asset class

Annual | The following table shows EAD, average risk weight, RWA and leverage ratio denominator (LRD) for the asset classes Central governments and central banks; Multi-lateral development banks (MDBs) and Public-sector entities (PSEs); Banks and securities dealers; Corporates; and Retail credit risk and counterparty credit risk exposures subject to the A-IRB approach. LRD is the exposure measure used for the leverage ratio.

LRD estimates presented in the table reflect the credit risk and counterparty credit risk components of exposures only and are therefore not representative of the LRD requirement at bank level overall. The LRD estimates exclude exposures subject to market risk, non-counterparty-related risk and SA credit risk to provide a like-for-like comparison with the A-IRB credit risk EAD disclosed below. ▲

Annual |

Comparison of A-IRB approach EAD and leverage ratio denominator by asset class

31.12.19	A-IRB, credit and counterparty credit risk			LRD
in USD billion, except where indicated	Net EAD	Average RW %	RWA	
Central governments and central banks	148	2	3	162
Multilateral development banks	4	2	0	4
Public-sector entities	6	16	1	7
Banks and securities dealers	38	32	12	66
Corporates	136	48	65	222
Retail	317	13	41	284
of which: Residential mortgages	*149*	*20*	*29*	*154*
of which: Lombard lending	*166*	*6*	*11*	*124*
Total	**650**	**19**	**123**	**744**

▲

Comparison of the A-IRB approach, the SA and LRD by asset class

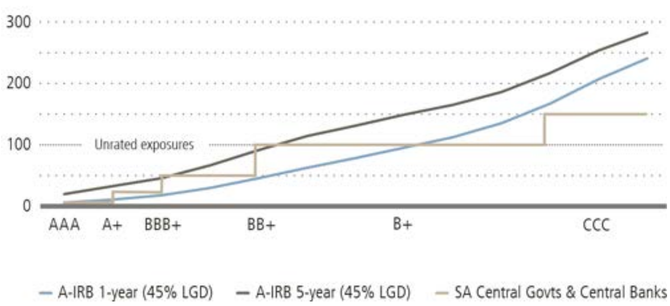
Annual | The differences between the A-IRB approach, the SA and LRD per asset class are discussed below and on the following pages.

Asset classes Central governments and central banks, and Public sector entities, multi-lateral development banks

The regulatory net EAD for Central governments and central banks, MDBs and PSEs as of 31 December 2019 was USD 158 billion under the A-IRB approach. Since the vast majority of our exposure is driven by exposures to banking products, the LRD is broadly in line with the A-IRB net EAD and we would expect a similar amount under the SA.

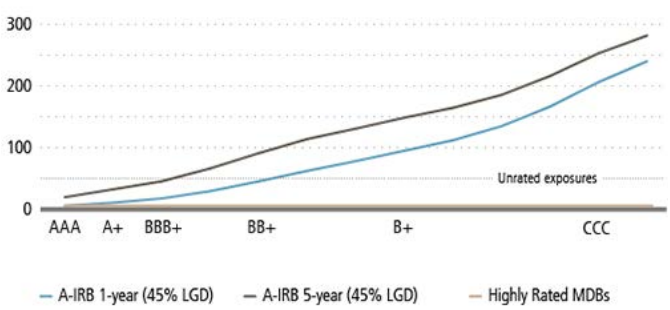
The charts on this page provide comparisons of risk weights for exposures to the asset class Central governments and central banks and the sub-asset classes (i) highly rated MDBs and (ii) other MDBs and PSEs calculated under the A-IRB approach and the SA. Risk weights under the A-IRB approach are shown for one-year and five-year maturities, both assuming an LGD of 45%. Our internal A-IRB ratings have been mapped to external ratings based on the long-term average of one-year default rates available from the major credit rating agencies, as described on page 131 of our Annual Report 2019.

Comparison of risk weights – Central governments and central banks



The SA assigns a zero risk weight to central governments and central banks rated AA– and better, and to highly rated MDB counterparties, while the A-IRB approach generally assigns risk weights higher than zero to even the highest-quality sovereign counterparties.

Comparison of risk weights – Highly rated MDBs

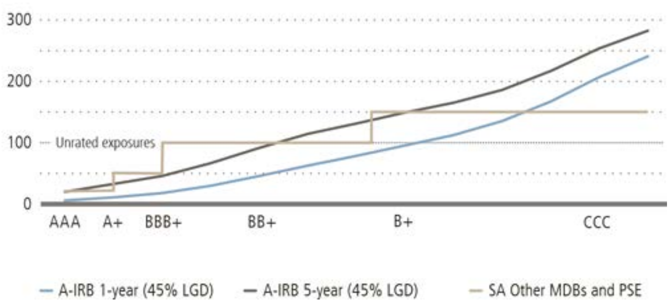


For other MDB and PSE counterparties rated AA– and better, the risk weight applied under the SA is 20%.

Despite the zero risk weights under the SA for central governments and central banks rated AA– and better, and for highly rated MDB counterparties, we would expect an increase in average risk weight under the SA. Counterparties contributing to higher risk weights under the SA include sovereign wealth funds, which attract a 100% risk weight despite being generally considered very low risk, and short-term repurchase agreement transactions with central banks rated below AA–.

However, as the asset class is not a significant driver of RWA, we would expect any resulting increase in RWA to be relatively small.

Comparison of risk weights – Other MDBs and PSEs

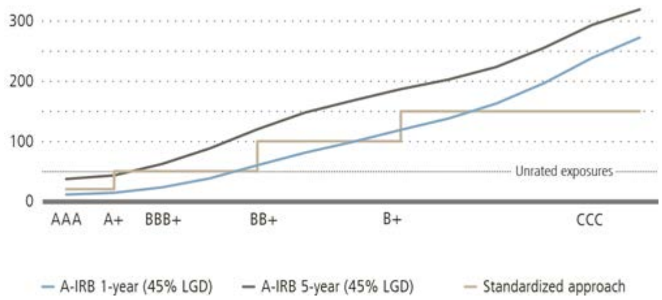


Asset class Banks and securities dealers

The regulatory net EAD for the asset class Banks and securities dealers as of 31 December 2019 was USD 38 billion under the A-IRB approach. The A-IRB net EAD is lower than the LRD, as a result of collateral mitigation on derivatives and securities financing transactions. We would expect the net EAD to increase under the SA related to derivatives and securities financing transactions within the Investment Bank, due to the aforementioned methodological differences between the calculation of EAD under the two approaches.

The chart below provides a comparison of risk weights for Banks and securities dealers exposures calculated under the A-IRB approach and the SA.

Comparison of risk weights – Banks and securities dealers



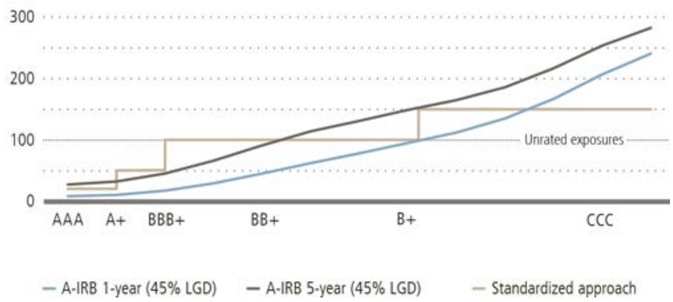
The vast majority of our exposure with Banks and securities dealers is of investment grade quality. The average contractual maturity of this exposure is closer to the one-year example provided in the chart above. Therefore, we would expect a higher average risk weight under the SA than the 25% average risk weight under the A-IRB approach. In combination with higher EAD, we would expect this to lead to significantly higher RWA for Banks and securities dealers under the SA.

Asset class Corporates

The regulatory net EAD for the asset class Corporates as of 31 December 2019 was USD 136 billion under the A-IRB approach. The A-IRB net EAD is lower than the LRD, as a result of collateral mitigation on derivatives and securities financing transactions. We would expect the EAD to be higher under the regulatory prescribed rules related to derivatives and securities financing transactions, due to the aforementioned methodological differences between the calculation of EAD under the two approaches. Derivatives and securities financing transactions account for 44% of the EAD for this asset class as of 31 December 2019.

The following chart provides a comparison of risk weights for Corporates exposures calculated under the A-IRB approach and the SA. These exposures primarily arise from corporate lending and derivatives trading within the Investment Bank, and lending to large corporate clients and small and medium-sized enterprises within Switzerland. The comparison does not include the FINMA-required multiplier applied to the Investment Bank's Corporates exposures under the A-IRB approach.

Comparison of risk weights – Corporates



Investment grade counterparties typically receive higher risk weights under the SA than under the A-IRB approach. The majority of our Corporates exposures fall into this category. We would therefore expect risk weights for Corporates to be generally higher under the SA.

In addition, SA risk weights rely on external ratings, with a default weighting of 100% being applied where no external rating is available. Typically, counterparties with no external rating are riskier and thus have higher risk weights under the A-IRB approach. However, managed funds, which comprise nearly one-third of our Corporates EAD, typically have no debt and are therefore unrated. The SA applies a 100% risk weight to exposures to such funds. Under A-IRB, these funds are considered very low risk and as of 31 December 2019 had an average risk weight of 15%. We believe the SA significantly overstates the associated risk.

Conversely, for certain exposures, we consider the risk weight of 100% under the SA resulting from the absence of an external rating as insufficient, as evident from the hypothetical leveraged finance counterparty example in the table below. ▲

Annual | **Comparison of risk weights as a function of internal rating assessment**

The table assumes two counterparties without external rating assignments.

	Interest payment coverage (EBITDA / total interest payments)	Total debt /EBITDA	Debt /assets	Liquidity (fraction of assets that are liquid)	Internal rating assessment	Exposure maturity	A-IRB risk weight range	SA risk weight
Managed funds	NA	NA	0	100%	AAA–A	< 1Y	10–20%	100%
Leveraged finance counterparty	< 2	> 2.5	> 50%	0%	BB–C	> 5Y	100–250%	100%

▲

Asset class Retail

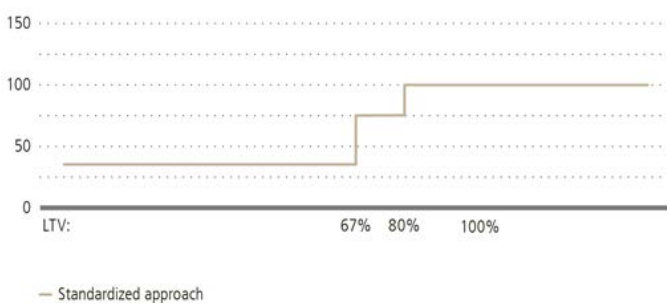
Sub-asset class Residential mortgages

The regulatory net EAD for the sub-asset class Residential mortgages as of 31 December 2019 was USD 149 billion under the A-IRB approach. Since the vast majority of our exposures is driven by banking products, the LRD is broadly in line with the A-IRB net EAD and we would expect a similar amount under the SA.

Due to the size of our personal and corporate banking business in Switzerland, our domestic portfolios represent a significant portion of our overall lending exposures, with the largest being loans secured by residential properties. Our internal models assign risk weights to such loans by considering the debt service capacity of borrowers as well as the availability of other collateral, among other factors. These are important considerations for the Swiss market, where there is legal recourse to the borrower.

In contrast, and different to the assignment of risk weights for the aforementioned asset classes, the SA is less complex and only differentiates the risk weights based on loan-to-value (LTV) ranges, as shown in the chart below.

SA risk weights – Residential mortgages



The vast majority of our exposures would attract the minimum 35% risk weight under the SA, compared with an average of 20% as of 31 December 2019, observed under the A-IRB approach.

The difference is largely due to the current SA rules not giving benefit to the portion of exposures with an LTV below 67%. The vast majority of exposures fall within this category, as shown in the "Swiss mortgages: distribution of net exposure at default (EAD) across exposure segments and loan-to-value (LTV) buckets" table on page 123 of our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors*.

Sub-asset class Lombard lending

Annual | The regulatory net EAD for the sub-asset class Lombard loans as of 31 December 2019 was USD 166 billion under the A-IRB approach and mainly arises in our wealth management business.

Eligible collateral is more limited under the SA than under A-IRB. However, the haircuts applied to collateral under the A-IRB approach are generally greater than those prescribed under the SA. Given this, we would expect the overall effect of applying current SA rules to be limited for this portfolio. ▲

Section 7 Securitizations

Introduction

Annual | This section provides details of traditional and synthetic securitization exposures in the banking and trading book based on the revised Basel III securitization framework, applicable since 1 January 2018.

In a traditional securitization, a pool of loans (or other debt obligations) is transferred to structured entities that have been established to own the loan pool and to issue tranched securities to third-party investors referencing this pool of loans. In a synthetic securitization, legal ownership of securitized pools of assets is typically retained, but associated credit risk is transferred to structured entities typically through guarantees, credit derivatives or credit-linked notes. Hybrid structures with a mix of traditional and synthetic features are disclosed as synthetic securitizations.

We act in different roles in securitization transactions. As originator, we create or purchase financial assets, which are then securitized in traditional or synthetic securitization transactions, enabling us to transfer significant risk to third-party investors. As sponsor, we manage, provide financing for or advise on securitization programs. In line with the Basel III framework, sponsoring includes underwriting activities. In all other cases, we act as an investor by taking securitization positions. ▲

Objectives, roles and involvement

Securitization in the banking book

Annual | Securitization positions held in the banking book include legacy risk positions in Non-core and Legacy Portfolio within Corporate Center. In 2019, for the majority of securitization carrying amounts on the balance sheet, we acted as an originator or investor. Securitization and re-securitization positions in the banking book are measured at fair value, reflecting market prices where available, or based on our internal pricing models. ▲

Securitization in the trading book

Annual | Securitizations held in the trading book are part of trading activities, including market-making and client facilitation, that could result in retention of certain securitization positions as an investor, including those that we may have originated or sponsored. In the trading book, securitization and re-securitization positions are measured at fair value, reflecting market prices where available, or based on our internal pricing models. ▲

Type of structured entities and affiliated entities involved in securitization transactions

Annual | For securitization transactions, the type of structured entities or special purpose vehicles employed is selected as appropriate based on the type of transaction undertaken. Examples include limited liability companies, common law trusts and depositor entities.

Refer to "Note 31 Interests in subsidiaries and other entities" on pages 458-463 of our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors* for further information about interests in structured entities. ▲

Managing and monitoring of the credit and market risk of securitization positions

Annual | The banking book securitization and re-securitization portfolio is subject to specific risk monitoring, which may include interest rate and credit spread sensitivity analysis, as well as inclusion in firm-wide earnings-at-risk, capital-at-risk and combined stress test metrics.

The trading book securitization positions are also subject to multiple risk limits, such as management value-at-risk (VaR) and stress limits, as well as market value limits. As part of managing risks within predefined risk limits, traders may utilize hedging and risk mitigation strategies. Hedging may, however, expose us to basis risks, as the hedging instrument and the position being hedged may not always move in parallel. Such basis risks are managed within the overall limits. Any retained securitization from origination activities and any purchased securitization positions are governed by risk limits together with any other trading positions. Legacy trading book securitization exposure is subject to the same management VaR limit framework. Additionally, risk limits are used to control the unwinding, novation and asset sales process on an ongoing basis. ▲

Accounting policies

Annual | Refer to "Consolidation" on pages 312–313 in "Note 1 Summary of significant accounting policies" in the "Consolidated financial statements" section of our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors,* for information about accounting policies that relate to securitization activities. ▲

Regulatory capital treatment of securitization exposures

Annual | In line with the revised securitization framework for banking book securitization exposures, we apply the following approaches to calculate the associated risk-weighted assets (RWA):

- we use external ratings (external ratings-based approach (SEC-ERBA)), if available, from Standard & Poor's, Moody's Investors Service and Fitch Ratings for securitization exposures, provided that we are able to demonstrate our expertise in both critically challenging and reviewing the external ratings; or
- if we cannot apply the ERBA method, we apply the standardized approach (SEC-SA) where the delinquency status of a significant portion of the underlying exposure can be determined or a risk weight of 1,250%. Re-securitization positions are either treated under the standardized approach or with a 1,250% risk weight.

The selection of the external credit assessment institutions (ECAIs) is based on the primary rating agency concept. This concept is applied, in principle, to avoid having the credit assessment by one ECAI applied to one or more tranches and by another ECAI to the other tranches, unless this is the result of the application of the specific rules for multiple assessments. If any two of the aforementioned rating agencies have issued a rating for a particular exposure, we apply the lower of the two credit ratings. If all three rating agencies have issued a rating for a particular exposure, we apply the middle of the three credit ratings. As of 31 December 2019, UBS did not use internal ratings for the purpose of the RWA calculation for securitization positions in the banking book. ▲

Securitization exposures in the banking and trading book

Semiannual | The SEC1 and SEC2 tables outline the carrying amounts on the balance sheet in the banking and trading books as of 31 December 2019, 30 June 2019 and 31 December 2018. The activity is further broken down by our role (originator, sponsor or investor) and by securitization type (traditional or synthetic). Amounts disclosed under the "Traditional" column of these tables reflect the total outstanding notes at par value issued by the securitization vehicle at issuance. For synthetic securitization transactions, the amounts disclosed generally reflect the balance sheet carrying amounts of the securitized exposures at issuance.

The SEC3 and SEC4 tables provide the regulatory capital requirements associated with the securitization exposure differentiated by our role in the securitization process.

Development of securitization exposures in the second half of 2019

In the second half of 2019, securitization exposures in the banking book decreased from USD 203 million to USD 188 million, reflecting amortization of exposure. The securitization exposures in the trading book decreased from USD 390 million to USD 352 million, mainly arising from secondary trading in commercial mortgage-backed securities in the Investment Bank.

For information about the development of exposures in the first half of 2019, refer to our 30 June 2019 Pillar 3 report, available under "Pillar 3 disclosures" at *www.ubs.com/investors*. ▲

Semiannual |

SEC1: Securitization exposures in the banking book

	Bank acts as originator			Bank acts as sponsor			Bank acts as originator & sponsor			Bank acts as investor			Total
USD million	Traditional	Synthetic	Subtotal	Traditional	Synthetic	Subtotal	Traditional	Synthetic	Subtotal	Traditional	Synthetic	Subtotal	
31.12.19													
Asset classes													
1 Retail (total)	81		81							1		1	82
2 of which: residential mortgage	*81*		*81*							*1*		*1*	*82*
3 of which: credit card receivables													
4 of which: student loans													
5 of which: consumer loans													
6 of which: other retail exposures													
7 Wholesale (total)				0		0				106		106	106
8 *of which: loans to corporates or SME*													
9 of which: commercial mortgage				*0*		*0*							*0*
10 of which: lease and receivables													
11 of which: trade receivables													
12 of which: other wholesale										*106*		*106*	*106*
13 Re-securitization													
14 Total securitization / re-securitization (including retail and wholesale)	81		81	0		0				107		107	188
30.6.19													
Asset classes													
1 Retail (total)	84		84							1		1	85
2 of which: residential mortgage	*84*		*84*							*1*		*1*	*85*
3 of which: credit card receivables													
4 of which: student loans													
5 of which: consumer loans													
6 of which: other retail exposures													
7 Wholesale (total)				0		0				118		118	118
8 *of which: loans to corporates or SME*													
9 of which: commercial mortgage				*0*		*0*							*0*
10 of which: lease and receivables													
11 of which: trade receivables													
12 of which: other wholesale										*118*		*118*	*118*
13 Re-securitization													
14 Total securitization / re-securitization (including retail and wholesale)	**84**		**84**	**0**		**0**				**119**		**119**	**203**
31.12.18													
Asset classes													
1 Retail (total)	87		87							1		1	88
2 of which: residential mortgage	*87*		*87*							*1*		*1*	*88*
3 of which: credit card receivables													
4 of which: student loans													
5 of which: consumer loans													
6 of which: other retail exposures													
7 Wholesale (total)				0		0				125		125	126
8 *of which: loans to corporates or SME*													
9 of which: commercial mortgage				*0*		*0*							*0*
10 of which: lease and receivables													
11 of which: trade receivables													
12 of which: other wholesale										*126*		*126*	*126*
13 Re-securitization													
14 Total securitization / re-securitization (including retail and wholesale)	**87**		**87**	**0**		**0**				**126**		**126**	**213**

▲

Semiannual |

SEC2: Securitization exposures in the trading book

		Bank acts as originator			Bank acts as sponsor			Bank acts as originator & sponsor			Bank acts as investor			Total
	USD million	Traditional	Synthetic	Subtotal	Traditional	Synthetic	Subtotal	Traditional	Synthetic	Subtotal	Traditional	Synthetic	Subtotal	
	31.12.19													
	Asset classes													
1	Retail (total)	2		2	6		6				15		15	23
2	*of which: residential mortgage*	*2*		*2*	*6*		*6*				*15*		*15*	*23*
3	*of which: credit card receivables*													
4	*of which: student loans*													
5	*of which: consumer loans*													
6	*of which: other retail exposures*													
7	Wholesale (total)	26		26	43		43	171		171	77		77	316
8	*of which: loans to corporates or SME*													
9	*of which: commercial mortgage*	*26*		*26*	*43*		*43*	*171*		*171*	*77*		*77*	*316*
10	*of which: lease and receivables*													
11	*of which: trade receivables*													
12	*of which: other wholesale*													
13	Re-securitization		3	3							10		10	13
14	**Total securitization / re-securitization (including retail and wholesale)**	**28**	**3**	**31**	**49**		**49**	**171**		**171**	**102**		**102**	**352**
	30.6.19													
	Asset classes													
1	Retail (total)	2		2	6		6				14		14	23
2	*of which: residential mortgage*	*2*		*2*	*6*		*6*				*14*		*14*	*23*
3	*of which: credit card receivables*													
4	*of which: student loans*													
5	*of which: consumer loans*													
6	*of which: other retail exposures*													
7	Wholesale (total)	21		21	1		1	299		299	29		29	351
8	*of which: loans to corporates or SME*													
9	*of which: commercial mortgage*	*21*		*21*	*1*		*1*	*299*		*299*	*28*		*28*	*350*
10	*of which: lease and receivables*													
11	*of which: trade receivables*													
12	*of which: other wholesale*										*1*		*1*	*1*
13	Re-securitization		6	6							10		10	16
14	**Total securitization / re-securitization (including retail and wholesale)**	**24**	**6**	**30**	**7**		**7**	**299**		**299**	**53**		**53**	**390**
	31.12.18													
	Asset classes													
1	Retail (total)	3		3	7		7				13		13	22
2	*of which: residential mortgage*	*3*		*3*	*7*		*7*				*13*		*13*	*22*
3	*of which: credit card receivables*													
4	*of which: student loans*													
5	*of which: consumer loans*													
6	*of which: other retail exposures*													
7	Wholesale (total)	1	4	5	1		1	222		222	16		16	244
8	*of which: loans to corporates or SME*													
9	*of which: commercial mortgage*	*1*		*1*	*1*		*1*	*222*		*222*	*14*		*14*	*238*
10	*of which: lease and receivables*													
11	*of which: trade receivables*													
12	*of which: other wholesale*		*4*	*4*							*3*		*3*	*6*
13	Re-securitization		3	3				1		1	10		10	13
14	**Total securitization / re-securitization (including retail and wholesale)**	**4**	**6**	**10**	**8**		**8**	**223**		**223**	**39**		**39**	**280**

Semiannual |

SEC3: Securitization exposures in the banking book and associated regulatory capital requirements – bank acting as originator or as sponsor

	Total exposure values	Exposure values (by RW bands)					Exposure values (by regulatory approach)				Total RWA	RWA (by regulatory approach)				Total capital charge after cap	Capital charge after cap			
USD million		≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	SEC-IRBA	SEC-ERBA	SEC-SA	1250%		SEC-IRBA	SEC-ERBA	SEC-SA	1250%		SEC-IRBA	SEC-ERBA	SEC-SA	1250%
31.12.19																				
Asset classes																				
1 Total exposures	81				61	21		74	7		557		529	28		45		42	2	
2 Traditional securitization	81				61	21		74	7		557		529	28		45		42	2	
3 of which: securitization	*81*				*61*	*21*		*74*	*7*		*557*		*529*	*28*		*45*		*42*	*2*	
4 of which: retail underlying	*81*				*61*	*21*		*74*	*7*		*556*		*529*	*28*		*45*		*42*	*2*	
5 of which: wholesale	*0*				*0*	*0*					*0*			*0*		*0*			*0*	
6 of which: re-securitization	*0*					*0*					*0*					*0*				
7 of which: senior																				
8 of which: non-senior																				
9 Synthetic securitization																				
10 of which: securitization																				
11 of which: retail underlying																				
12 of which: wholesale																				
13 of which: re-securitization																				
14 of which: senior																				
15 of which: non-senior																				
30.6.19																				
Asset classes																				
1 Total exposures	84				64	21		84	0		580		580	0		46		46	0	
2 Traditional securitization	84				64	21		84	0		580		580	0		46		46	0	
3 of which: securitization	*84*				*64*	*21*		*84*	*0*		*580*		*580*	*0*		*46*		*46*	*0*	
4 of which: retail underlying	*84*				*64*	*21*		*84*			*580*		*580*			*46*		*46*		
5 of which: wholesale	*0*				*0*	*0*			*0*		*0*			*0*		*0*			*0*	
6 of which: re-securitization	*0*					*0*					*0*					*0*				
7 of which: senior																				
8 of which: non-senior																				
9 Synthetic securitization																				
10 of which: securitization																				
11 of which: retail underlying																				
12 of which: wholesale																				
13 of which: re-securitization																				
14 of which: senior																				
15 of which: non-senior																				

SEC3: Securitization exposures in the banking book and associated regulatory capital requirements – bank acting as originator or as sponsor (continue)

USD million	Total exposure values	Exposure values (by RW bands) ≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	Exposure values (by regulatory approach) SEC-IRBA	SEC-ERBA	SEC-SA	1250%	Total RWA	RWA (by regulatory approach) SEC-IRBA	SEC-ERBA	SEC-SA	1250%	Total capital charge after cap	Capital charge after cap SEC-IRBA	SEC-ERBA	SEC-SA	1250%
31.12.18																				
Asset classes																				
1 Total exposures	87			0	67	20		87			589		589			47		47		
2 Traditional securitization	87			0	67	20		87			589		589			47		47		
3 of which: securitization	*87*			*0*	*67*	*20*		*87*			*589*		*589*			*47*		*47*		
4 of which: retail underlying	*87*				*67*	*20*		*87*			*589*		*589*			*47*		*47*		
5 of which: wholesale	*0*			*0*				*0*			*0*		*0*			*0*		*0*		
6 of which: re-securitization																				
7 of which: senior																				
8 of which: non-senior																				
9 Synthetic securitization																				
10 of which: securitization																				
11 of which: retail underlying																				
12 of which: wholesale																				
13 of which: re-securitization																				
14 of which: senior																				
15 of which: non-senior																				

Semiannual |

SEC4: Securitization exposures in the banking book and associated regulatory capital requirements – bank acting as investor

	Total exposure values	Exposure values (by RW bands)					Exposure values (by regulatory approach)				Total RWA	RWA (by regulatory approach)				Total capital charge after cap	Capital charge after cap			
USD million		≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	SEC-IRBA	SEC-ERBA	SEC-SA	1250%		SEC-IRBA	SEC-ERBA	SEC-SA	1250%		SEC-IRBA	SEC-ERBA	SEC-SA	1250%
31.12.19																				
Asset classes																				
1 Total exposures	107			106		1		106		1	76		69		7	6		6		1
2 Traditional securitization	107			106		1		106		1	76		69		7	6		6		1
3 of which: securitization	*107*			*106*		*1*		*106*		*1*	*76*		*69*		*7*	*6*		*6*		*1*
4 of which: retail underlying	*1*					*1*				*1*	*7*				*7*	*1*				*1*
5 of which: wholesale	*106*			*106*				*106*			*69*		*69*			*6*		*6*		
6 of which: re-securitization																				
7 of which: senior																				
8 of which: non-senior																				
9 Synthetic securitization																				
10 of which: securitization																				
11 of which: retail underlying																				
12 of which: wholesale																				
13 of which: re-securitization																				
14 of which: senior																				
15 of which: non-senior																				
30.6.19																				
Asset classes																				
1 Total exposures	119			118		1		118		1	84		77		7	7		6		1
2 Traditional securitization	119			118		1		118		1	84		77		7	7		6		1
3 of which: securitization	*119*			*118*		*1*		*118*		*1*	*84*		*77*		*7*	*7*		*6*		*1*
4 of which: retail underlying	*1*					*1*				*1*	*7*				*7*	*1*		*0*		*1*
5 of which: wholesale	*118*			*118*				*118*			*77*		*77*			*6*		*6*		
6 of which: re-securitization																				
7 of which: senior																				
8 of which: non-senior																				
9 Synthetic securitization																				
10 of which: securitization																				
11 of which: retail underlying																				
12 of which: wholesale																				
13 of which: re-securitization																				
14 of which: senior																				
15 of which: non-senior																				

SEC4: Securitization exposures in the banking book and associated regulatory capital requirements – bank acting as investor (continue)

	Total exposure values	Exposure values (by RW bands)					Exposure values (by regulatory approach)				Total RWA	RWA (by regulatory approach)				Total capital charge after cap	Capital charge after cap			
USD million		≤20% RW	>20% to 50% RW	>50% to 100% RW	>100% to <1250% RW	1250% RW	SEC-IRBA	SEC-ERBA	SEC-SA	1250%		SEC-IRBA	SEC-ERBA	SEC-SA	1250%		SEC-IRBA	SEC-ERBA	SEC-SA	1250%
31.12.18																				
Asset classes																				
1 Total exposures	126			49	77	1		126		1	121		112		8	10		9		1
2 Traditional securitization	126			49	77	1		126		1	121		112		8	10		9		1
3 of which: securitization	*126*			*49*	*77*	*1*		*126*		*1*	*121*		*112*		*8*	*10*		*9*		*1*
4 of which: retail underlying	*1*					*1*				*1*	*8*				*8*	*1*				*1*
5 of which: wholesale	*126*			*49*	*77*			*126*			*112*		*112*			*9*		*9*		
6 of which: re-securitization																				
7 of which: senior																				
8 of which: non-senior																				
9 Synthetic securitization																				
10 of which: securitization																				
11 of which: retail underlying																				
12 of which: wholesale																				
13 of which: re-securitization																				
14 of which: senior																				
15 of which: non-senior																				

Section 8 Market risk

Overview

The amount of capital required to underpin market risk in the regulatory trading book is calculated using a variety of methods approved by FINMA. The components of market risk risk-weighted assets (RWA) are value-at-risk (VaR), stressed VaR (SVaR), an add-on for risks that are potentially not fully modeled in VaR (RniV), the incremental risk charge (IRC), the comprehensive risk measure (CRM) for the correlation portfolio and the securitization framework for securitization positions in the trading book. More information about each of these components is detailed on the following pages.

The table below presents an overview of Pillar 3 disclosures separately provided in our Annual Report 2019.

Annual |

MRA – Market risk

Pillar 3 disclosure requirement	Annual Report 2019 section	Disclosure	Annual Report 2019 page number
Strategies and processes of the bank for market risk	Risk, treasury and capital management	– Risk appetite framework	111–114
		– Market risk – Overview of measurement, monitoring and management techniques	138
		– Market risk stress loss, Value-at-risk	139–142
	Consolidated financial statements	– Note 11 Derivative instruments	365–370
Structure and organization of the market risk management function	Risk, treasury and capital management	– Key risks, risk measures and performance by business division and Corporate Center	106
		– Risk governance	109–110
Scope and nature of risk reporting and measurement systems	Risk, treasury and capital management	– Internal risk reporting	115
		– Main sources of market risk, Overview of measurement, monitoring and management techniques	138

Market risk risk-weighted assets

Market risk RWA development in the fourth quarter of 2019

Quarterly | The three main components that contribute to market risk RWA are VaR, SVaR and IRC. VaR and SVaR components include the RWA charge for RniV. From 30 June 2019 onward, the comprehensive risk measure (CRM)-based capital requirement has no longer been applicable to us, as we no longer hold eligible correlation trading positions.

The MR2 table on the next page provides a breakdown of the market risk RWA under an internal models approach movement in the fourth quarter of 2019 across these components, according to the movement categories defined by the Basel Committee on Banking Supervision. These categories are described below. ▲

Definitions of market risk RWA movement table components for MR2

References in the table below link to the line numbers provided in the movement table on the next page.

Reference	Description	Definition
1/8c	**RWA as of previous and current reporting period end (end of period)**	Quarter-end RWA.
1a/8b	**Regulatory adjustment**	Indicates the difference between rows 1 and 1b, and 8c and 8a, respectively.
1b/8a	**RWA at previous and current quarter end (end of day)**	For a given component (e.g., VaR), this refers to the RWA computed whenever that component's snapshot quarter-end figure is higher than the 60-day average for regulatory VaR, and the 12-week average for SVaR and IRC, thus determining the quarter-end RWA. The regulatory adjustment would be zero if the quarter-end RWA were triggered by the snapshot quarter-end figure.
	Movement of end-of-day RWA	
2	**Movement in risk levels**	Movements due to changes in positions and risk levels.
3	**Model updates/changes**	Movements due to routine updates to model parameters and model changes.
4	**Methodology and policy**	Movements due to methodological changes in calculations driven by regulatory policy changes, including revisions of existing regulations, new regulations and add-ons mandated by the regulator.
5	**Acquisitions and disposals**	Movements due to the disposal or acquisition of business operations, quantified based on the market risk exposures at the end of the quarter preceding a disposal or following an acquisition. Purchases and sales of exposures in the ordinary course of business are reflected in "Movements in risk levels."
6	**Foreign exchange movements**	Movements due to changes in exchange rates. Note that the effect of movements in exchange rates is captured in "Movement in risk levels," since exchange rate movements are part of the effects of market movements on risk levels.
7	**Other**	Movements due to changes that cannot be attributed to any other category.

RWA flow

Quarterly |

Market risk RWA decreased by USD 2.6 billion to USD 6.1 billion in the fourth quarter of 2019, driven by lower average regulatory value-at-risk (VaR) and stressed VaR levels observed in the Investment Bank's Equities business and, to a lesser extent, from model updates, primarily related to the ongoing parameter update of the VaR model. This was partly offset by an increase from regulatory add-ons which reflect updates from the monthly risks-not-in-VaR (RniV) assessment.

The VaR multiplier remained unchanged, at 3, compared with the third quarter of 2019. ▲

Quarterly I

MR2: RWA flow statements of market risk exposures under an internal models approach[1]

	USD million	VaR	Stressed VaR	IRC	CRM	Other	Total RWA
1	**RWA as of 31.12.18**	**5,085**	**12,149**	**2,299**	**7**		**19,541**
1a	*Regulatory adjustment*	*(2,167)*	*(8,470)*	*(1,059)*	*(7)*		*(11,702)*
1b	RWA at previous quarter-end (end of day)	2,918	3,680	1,240	0		7,838
2	*Movement in risk levels*	*(1,771)*	*(831)*	*(26)*			*(2,628)*
3	*Model updates / changes*	*(12)*	*41*				*29*
4	*Methodology and policy*						
5	*Acquisitions and disposals*						
6	*Foreign exchange movements*						
7	*Other*	*(205)*	*(495)*		*0*		*(700)*
8a	RWA at the end of the reporting period (end of day)	929	2,395	1,214	0		4,539
8b	*Regulatory adjustment*	*2,298*	*5,506*		*0*		*7,804*
8c	**RWA as of 31.3.19**	**3,227**	**7,901**	**1,214**	**0**		**12,343**
1	**RWA as of 31.3.19**	**3,227**	**7,901**	**1,214**	**0**		**12,343**
1a	*Regulatory adjustment*	*(2,298)*	*(5,506)*		*0*		*(7,804)*
1b	RWA at previous quarter-end (end of day)	929	2,395	1,214	0		4,539
2	*Movement in risk levels*	*(163)*	*(442)*	*168*			*(438)*
3	*Model updates / changes*	*(27)*	*(32)*	*(70)*			*(128)*
4	*Methodology and policy*						
5	*Acquisitions and disposals*						
6	*Foreign exchange movements*						
7	*Other*	*(53)*	*(71)*		*0*		*(124)*
8a	RWA at the end of the reporting period (end of day)	687	1,850	1,312			3,849
8b	*Regulatory adjustment*	*1,874*	*4,591*	*212*			*6,677*
8c	**RWA as of 30.6.19**	**2,561**	**6,441**	**1,524**			**10,526**
1	**RWA as of 30.6.19**	**2,561**	**6,441**	**1,524**			**10,526**
1a	*Regulatory adjustment*	*(1,874)*	*(4,591)*	*(212)*			*(6,677)*
1b	RWA at previous quarter-end (end of day)	687	1,850	1,312			3,849
2	*Movement in risk levels*	*987*	*1,295*	*(61)*			*2,222*
3	*Model updates / changes*	*(909)*	*(1,749)*	*136*			*(2,522)*
4	*Methodology and policy*						
5	*Acquisitions and disposals*						
6	*Foreign exchange movements*						
7	*Other*	*(49)*	*(127)*				*(176)*
8a	RWA at the end of the reporting period (end of day)	716	1,270	1,388			3,374
8b	*Regulatory adjustment*	*1,481*	*3,837*	*23*			*5,341*
8c	**RWA as of 30.9.19**	**2,197**	**5,107**	**1,411**			**8,714**
1	RWA as of 30.9.19	2,197	5,107	1,411			8,714
1a	*Regulatory adjustment*	*(1,481)*	*(3,837)*	*(23)*			*(5,341)*
1b	RWA at previous quarter-end (end of day)	716	1,270	1,388			3,374
2	*Movement in risk levels*	*(166)*	*49*	*(164)*			*(280)*
3	*Model updates / changes*	*(126)*	*(92)*				*(218)*
4	*Methodology and policy*						
5	*Acquisitions and disposals*						
6	*Foreign exchange movements*						
7	*Other*	*95*	*285*				*380*
8a	RWA at the end of the reporting period (end of day)	519	1,512	1,224			3,255
8b	*Regulatory adjustment*	*382*	*2,500*				*2,882*
8c	RWA as of 31.12.19	901	4,012	1,224			6,137

1 Components that describe movements in RWA are presented in italics.

Securitization positions in the trading book

Semiannual | Our exposure to securitization positions in the trading book includes exposures arising from secondary trading in commercial mortgage-backed securities in the Investment Bank, and limited positions in Non-core and Legacy Portfolio within Corporate Center that we continue to wind down. Refer to the "Regulatory exposures and risk-weighted assets" table on pages 20–22 of this report and to the "Securitizations" section of this report for more information.

The table below provides information about market risk RWA from securitization exposures in the trading book. ▲

Semiannual |

MR1: Market risk under standardized approach

		RWA		
	USD million	31.12.19	30.6.19	31.12.18
	Outright products			
1	Interest rate risk (general and specific)			
2	Equity risk (general and specific)			
3	Foreign exchange risk			
4	Commodity risk			
	Options			
5	Simplified approach			
6	Delta-plus method			
7	Scenario approach			
8	Securitization	419	452	452
9	**Total**	**419**	**452**	**452**

▲

Annual | The table below presents an overview of Pillar 3 disclosures separately provided in our Annual Report 2019. ▲

Annual |

MRB – Internal models approach

Pillar 3 disclosure requirement	Annual Report 2019 section	Disclosure	Annual Report 2019 page number
Description of activities and risks covered by the VaR models and stressed VaR models	Risk, treasury and capital management	– Value-at-risk	139–142
		– Main sources of market risk	138
VaR models applied by different entities within the Group	Risk, treasury and capital management	– Main sources of market risk	138
		– Value-at-risk	139–142
General description of VaR and stressed VaR models	Risk, treasury and capital management	– Value-at-risk	139–142
Main differences between the VaR and stressed VaR models used for management purposes and for regulatory purposes	Risk, treasury and capital management	– Value-at-risk	139–142
Further information on VaR models	Risk, treasury and capital management	– Value-at-risk	139–142
		– Market risk stress loss	139
		– Market risk – Overview of measurement, monitoring and management techniques	138
	Consolidated financial statements	– Note 24 Fair value measurement	404–423
Description of stress testing applied to modeling parameters	Consolidated financial statements	– Note 24 Fair value measurement	404–423
Description of backtesting approach	Risk, treasury and capital management	– Backtesting of VaR	141–142
		– VaR model confirmation	142

▲

Regulatory calculation of market risk

Semiannual | The MR3 table below shows minimum, maximum, average and period-end regulatory VaR, stressed VaR, the IRC and the comprehensive risk capital charge. Since the second quarter of 2019, we have not held eligible correlation trading positions.

During the second half of 2019, average 10-day 99% regulatory and stressed VaR decreased due to our continued focus on managing tail risks. ▲

Semiannual |

MR3: IMA values for trading portfolios

USD million		For the six-month period ended 31.12.19	For the six-month period ended 30.6.19	For the six-month period ended 31.12.18
	VaR (10-day 99%)			
1	Maximum value	78	88	107
2	Average value	19	31	38
3	Minimum value	0	17	6
4	Period end	16	24	79
	Stressed VaR (10-day 99%)			
5	Maximum value	96	143	202
6	Average value	51	74	93
7	Minimum value	22	45	35
8	Period end	45	61	98
	Incremental risk charge (99.9%)			
9	Maximum value	139	141	247
10	Average value	104	107	193
11	Minimum value	76	87	99
12	Period end	98	105	99
	Comprehensive risk capital charge (99.9%)			
13	Maximum value			5
14	Average value			1
15	Minimum value			0
16	Period end			0
17	Floor (standardized measurement method)			0

▲

Value-at-risk

VaR definition

Annual | 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 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 SVaR for the calculation of regulatory capital. 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 present. In deriving SVaR, we search for the largest 10-day holding period VaR for the current portfolio of the Group across all one-year look-back windows that fall into the interval from 1 January 2007 to present. SVaR is computed weekly. ▲

Derivation of VaR- and SVaR-based RWA

Annual | VaR and SVaR are used to derive the VaR and SVaR components of the market risk Basel III RWA, as shown in the "Regulatory exposures and risk-weighted assets" table on pages 20–22 of this report. This calculation takes the maximum of the respective period-end VaR measure and the product of the average VaR measure for the 60 trading days immediately preceding the period end and a VaR multiplier set by FINMA. The VaR multiplier, which was 3.0 as of 31 December 2019, is dependent upon the number of VaR backtesting exceptions within a 250-business-day window. When the number of exceptions is greater than four, the multiplier increases gradually from three to a maximum of four if 10 or more backtesting exceptions occur. This is then multiplied by a risk weight factor of 1,250% to determine RWA.

In addition to the VaR multiplier, at the time of the structural change to our VaR model in the first quarter of 2016, FINMA introduced a model multiplier of 1.3 to be applied in the calculation of VaR and SVaR RWA. This model multiplier was temporarily introduced to offset a reduction in VaR at the time, pending other improvements to the VaR model, which are expected to increase VaR. This temporary multiplier has not yet been removed.

This calculation is set out in the table below. ▲

Annual |

Calculation of VaR- and SVaR-based RWA as of 31 December 2019

USD million	Period-end VaR (A)	60-day average VaR (B)	VaR multiplier (C)	Model multiplier (D)	Max. (A, B x C) x D (E)	Risk weight factor (F)	Basel III RWA (E x F)
VaR (10-day 99%)	16	10	3.00	1.3	39	1,250%	487
Stressed VaR (10-day 99%)	45	43	3.00	1.3	167	1,250%	2,082

▲

MR4: Comparison of VaR estimates with gains/losses

Semiannual | VaR backtesting is a performance measurement process in which the 1-day VaR prediction is compared with the realized 1-day profit or 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 a like-for-like comparison. A backtesting exception occurs when backtesting revenues are lower than the previous day's backtesting VaR.

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 under "VaR limitations" in the "Risk management and control" section of our Annual Report 2019, 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 Group Chief Market & Treasury Risk Officer. Backtesting exceptions are also reported to internal and external auditors and to the relevant regulators.

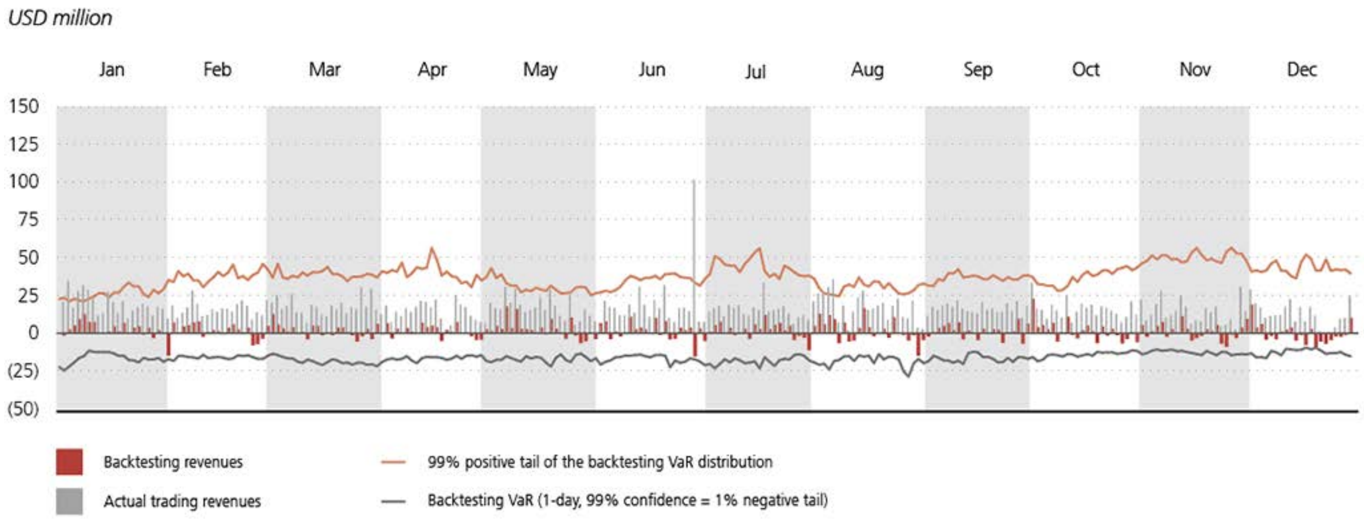
The "Group: development of regulatory backtesting revenues and actual trading revenues against backtesting VaR" chart below shows the 12-month development of backtesting VaR against the Group's backtesting revenues and actual trading revenues for 2019. The chart shows both the 99% and the 1% backtesting VaR. The asymmetry between the negative and positive tails is a result of 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.

There were no new Group VaR backtesting exceptions in the second half of 2019. The total number of backtesting exceptions within the most recent 250-business-day window decreased from 1 to 0. Correspondingly, the FINMA VaR multiplier used to compute regulatory and stressed VaR RWA remained unchanged at 3 throughout the period. ▲

Semiannual |

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.

▲

Risks-not-in-VaR

Risks-not-in-VaR definition

Annual | We have a framework to identify and quantify potential risks that are not entirely captured by our VaR model. We refer to these as risks-not-in-VaR (RniV). This framework is used to underpin these potential risks with regulatory capital, calculated as a multiple of VaR and SVaR.

Our VaR model can be split into two components: the P&L representation and the risk factor model. This gives rise to two RniV categories: P&L representation RniV and risk factor RniV. P&L representation RniV arises from approximations made by the VaR model to quantify the effect of risk factor changes on the profit and loss of positions and portfolios. Risk factor RniV originate from an inadequate modeling of the stochastic behavior of the risk factors. ▲

Risks-not-in-VaR quantification

Annual | The RniV quantification is conducted on the basis of a quantitative approach that was developed within the Risk Methodology department and that has been approved by FINMA. We quantify RniV on a monthly basis. The framework applies to both categories of RniV: P&L representation RniV as well as risk factor RniV. ▲

Risks-not-in-VaR mitigation

Annual | Material RniV items are monitored and controlled by means and measures other than VaR, such as position limits and stress limits. Additionally, there are ongoing initiatives to extend the VaR model to better capture these risks. ▲

Derivation of RWA add-on for risks-not-in-VaR

Annual |

The RniV framework is used to derive the RniV-based component of the market risk Basel III RWA, using the aforementioned approach, which is approved by FINMA and is subject to recalibration at least once a quarter. As RWA from RniV are add-ons, they do not reflect any diversification benefits across risks capitalized through VaR and SVaR.

The RniV VaR and SVaR capital ratios applicable as of 31 December 2019 were 85% and 93%, respectively.

FINMA continues to require that RniV stressed VaR capital is floored at RniV VaR capital. ▲

Annual |

Calculation of RniV-based RWA as of 31 December 2019

USD million	Period-end RWA (A)	RniV add-on (B)	RniV RWA (A x B)
Regulatory VaR	487	85%	414
Stressed VaR	2,082	93%	1,930
Total RniV RWA			2,344

▲

Incremental risk charge

Annual | Incremental risk charge (IRC) is the potential loss due to the defaults or credit migrations of issuers of non-securitized credit instruments in the trading book. IRC is calculated as the portfolio loss at the 99.9th percentile of the portfolio loss distribution over a one-year time horizon. It uses a multi-factor model applying the constant position assumption for all positions in the IRC portfolio: all positions are kept unchanged over a one-year time period.

The portfolio loss distribution is estimated using a Monte Carlo simulation approach. The simulation is performed in two steps: first, the distribution of credit ratings (including the defaulted state) at the one-year time horizon is estimated by a portfolio rating migration model; and, second, default and migration losses conditional on credit events generated by the migration model are calculated and aggregated.

The portfolio rating migration model is of the Merton type: migrations of credit ratings are considered to be functions of the underlying asset value of a firm. The correlation structure of asset values is based on the FIS APT factor model with factor loadings and volatilities homogenized within region-industry-size buckets. For the government bucket, a conservative expert-based correlation value is used. The transition matrix approach is utilized to set migration and default thresholds. The transition matrix for sovereign obligors is calibrated to the history of S&P sovereign ratings. The transition matrix for non-sovereigns is calibrated to the history of UBS internal ratings.

For each position related to a defaulted obligor, default losses are calculated based on the maximum default exposure measure (the loss in the case of a default event assuming zero recovery) and a random recovery concept. To account for potential basis risk between instruments, different recovery values may be generated for different instruments even if they belong to the same issuer. To calculate rating migration losses, a linear (delta) approximation is used. A loss resulting from a migration event is calculated as a change in the average credit spread due to the rating change, multiplied by the corresponding sensitivity of a position to changes in credit spreads.

The validation of the IRC model relies heavily on sensitivity analyses embedded into the annual model reconfirmation. ▲

Derivation of IRC-based RWA

Annual | IRC is calculated weekly and the results are used to derive the IRC-based component of the market risk Basel III RWA, as shown in the "Regulatory exposures and risk-weighted assets" table on pages 20–22 of this report. The derivation is similar to that for VaR- and SVaR-based RWA, but without a VaR multiplier, and is shown below. ▲

Annual |

Calculation of IRC-based RWA as of 31 December 2019

USD million	Period-end IRC (A)	Average of last 12 weeks IRC (B)	Max (A, B) (C)	Risk weight factor (D)	Basel III RWA (C x D)
	98	93	98	1,250%	1,224

▲

Comprehensive risk measure

Annual | The comprehensive risk measure (the CRM) is an estimate of the default and complex price risk, including the convexity and cross-convexity of the CRM portfolio across credit spread, correlation and recovery, measured over a one-year time horizon at a 99.9% confidence level. The calculation assumes a static portfolio with trade aging, a modeling choice consistent with the portfolio being hedged in a back-to-back manner. The model scope covers collateralized debt obligation (CDO) swaps, credit-linked notes (CLNs), 1st- and nth-to-default swaps and CLNs and hedges for these positions, including single-name credit default swaps (CDSs), CLNs and index CDSs.

The CRM profit and loss distribution is estimated using a Monte Carlo simulation of defaults, loss given default (LGD) rates and market data changes over the next 12 months where spreads follow their own stochastic processes and are correlated to defaults. The risk engine loads the definition of all trades and, for each Monte Carlo scenario, generates the trade cash flows over the next 12 months and revalues the trades on the horizon date. The revaluation relies on sampled FX rates, credit spreads and index bases and introduces a correlation skew by using stochastic correlations and stochastic LGD rates. The correlation skew is calibrated at irregular intervals. The 99.9% negative quantile of the resulting profit and loss distribution is then taken to be the CRM result. Our CRM methodology is subject to minimum qualitative standards.

Since the second quarter of 2019, we have not held eligible correlation trading positions and therefore the CRM-based capital requirement has not been applicable to us. ▲

Section 9 Operational risk

Annual | The table below presents an overview of Pillar 3 disclosures separately provided in our Annual Report 2019. ▲

Annual |

ORA: Operational risk

Pillar 3 disclosure requirement	Annual Report 2019 section	Disclosure	Annual Report 2019 page number
Details of the approach for operational risk capital assessment for which the bank qualifies	Risk, treasury and capital management	– Operational risk framework	154
Description of the advanced measurement approaches (AMA) for operational risk	Risk, treasury and capital management	– Advanced measurement approach model	155

▲

Section 10 Interest rate risk in the banking book

Annual | The disclosures in this section take into account FINMA Circular 2019/2, which sets out minimum standards for the measurement, management, monitoring and control of interest rate risks in the banking book. ▲

Annual |

Interest rate risk in the banking book

Pillar 3 disclosure requirement	Annual Report 2019 section	Disclosure	Annual Report 2019 page number
The nature of interest rate risk in the banking book and key assumptions applied	Risk, treasury and capital management	– Interest rate risk in the banking book	143–146

▲

Annual | Sources of interest rate risk in the banking book

Interest rate risk in the banking book (IRRBB) arises from balance sheet positions such as *Loans and advances to banks*, *Loans and advances to customers*, *Financial assets at fair value not held for trading*, *Financial assets measured at amortized cost*, *Customer deposits*, *Debt issued measured at amortized cost*, and derivatives, including those used for cash flow hedge accounting purposes. These positions may affect other comprehensive income (OCI) or the income statement, depending on their accounting treatment.

Our largest banking book interest rate exposures arise from customer deposits and lending products in Global Wealth Management and Personal & Corporate Banking. The inherent interest rate risks are generally transferred from Global Wealth Management and Personal & Corporate Banking to Group Treasury, to manage them centrally within Corporate Center. This allows for the netting of interest rate risks across different sources, while leaving the originating businesses with commercial margin and volume management. The residual interest rate risk is mainly hedged with interest rate swaps, to the vast majority of which we apply hedge accounting. Short-term exposures and high-quality liquid assets classified as Financial assets at fair value not held for trading are hedged with derivatives accounted for on a mark-to-market basis. Long-term fixed-rate debt issued is hedged with interest rate swaps designated in fair value hedge accounting relationships.

Risk management and governance

IRRBB is measured using a number of metrics, the most relevant of which are the following:

– Interest rate sensitivities to parallel shifts in yield curves, calculated as changes in the present value of future cash flows irrespective of accounting treatment. These are also the key risk factors for statistical and stress-based measures, such as value-at-risk and stress scenarios (including Economic Value of Equity (EVE) sensitivity), and are measured and reported with a daily frequency. EVE sensitivity is the exposure arising from the most adverse regulatory interest rate scenario after netting across currencies. In addition to the regulatory measure, we apply an internal EVE sensitivity metric that includes equity, goodwill, real estate and additional tier 1 (AT1) capital instruments.

– Net interest income (NII) sensitivity assesses the change in NII over a set time horizon compared with the baseline NII, which we internally calculate by 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. The internal NII sensitivity, which includes the contribution from cash held at central banks, unlike the Pillar 3 disclosure requirements, is measured and reported on a monthly basis.

We actively manage IRRBB, with the objective of reducing the volatility of NII, while keeping the EVE sensitivity within set internal risk limits.

EVE and NII sensitivity are monitored against limits and triggers, both at consolidated and at significant legal entity levels. We also assess the sensitivity of EVE and NII under stressed market conditions by applying a suite of parallel and non-parallel interest rate scenarios, as well as specific economic scenarios.

The Interest Rate Risk in the Banking Book Strategy Committee, which is a sub-committee of the Group Asset and Liability Committee (ALCO), and, where relevant, ALCOs at a legal entity level, perform independent oversight over the management of IRRBB. IRRBB is also subject to Group Internal Audit and model governance.

→ **Refer to "Group Internal Audit" in the "Corporate governance" section of this report and to "Risk measurement" in this section for more information**

Key modeling assumptions

The cash flows from customer deposits and lending products used in the calculation of EVE sensitivity exclude commercial margins and other spread components, are aggregated for each business day and are discounted using risk-free rates. Our external issuances are discounted using UBS's senior debt curve, and capital instruments are modeled to the first call date. NII sensitivity is calculated over a one-year time horizon, assuming constant balance sheet structure and volumes, and considers the flooring effect of embedded interest rate options.

The average repricing maturity of non-maturing deposits and loans is determined via replication portfolio strategies that are designed to protect product margin. Optimal replicating portfolios are determined at a granular currency- and product-specific level by simulating and applying a real-world market rate model to historically calibrated client rate and volume models.

We use an econometric prepayment model to forecast prepayment rates on US mortgage loans in UBS Bank USA, as well as agency mortgage-backed securities (MBSs) held in various liquidity portfolios of UBS Americas Holding LLC consolidated. These prepayment rates are used to forecast both mortgage loan and MBS balances under various macroeconomic scenarios. The prepayment model is used for a variety of purposes, including risk management and regulatory stress testing. Mortgages in Switzerland and fixed-term deposits generally do not carry similar optionality, due to prepayment and early redemption penalties.

Economic value and net interest income sensitivity

The interest rate risk sensitivity figures presented in the IRRBB1 table below represent the effect of six interest rate scenarios defined by FINMA on the theoretical present value of the banking book as well as the effect of the two parallel shock scenarios on the net interest income of the banking book. EVE sensitivity excludes equity, goodwill, real estate and additional tier 1 (AT1) capital instruments.

As of 31 December 2019, the most adverse of the six FINMA interest rate scenarios with regard to EVE was the "Parallel up" scenario, resulting in a change of the economic value of equity of negative USD 5.0 billion, representing a pro forma reduction of 9.6% of tier 1 capital, which is well below the regulatory outlier test of 15% of tier 1 capital. The immediate effect of the "Parallel up" scenario on tier 1 capital as of 31 December 2019 would be a reduction of 1.3%, or USD 0.7 billion, arising from the part of our banking book that is measured at fair value through profit or loss and from the financial assets measured at fair value through other comprehensive income.

The more adverse of the two parallel interest rate scenarios with regard to NII over the next 12 months was the "Parallel up" scenario, resulting in a potential change of negative USD 0.6 billion. This excludes the contribution from cash held at central banks as per FINMA Pillar 3 disclosure requirements. With the inclusion of the cash held at central banks, the NII would increase by USD 0.6 billion under the "Parallel up" scenario. ▲

Annual |

IRRBB1: Quantitative information about IRRBB

As of 31.12.19	Delta EVE – Change of economic value of equity		Delta NII – Change of Net interest income[1]	
USD million	31.12.19	30.6.19	31.12.19	30.6.19
Parallel up[2]	(5,003)	(4,504)	(608)	(355)
Parallel down[2]	4,316	3,807	48	204
Steepener[3]	(816)	(749)		
Flattener[4]	(337)	(298)		
Short-term up[5]	(2,166)	(1,908)		
Short-term down[6]	2,292	2,048		
Maximum[7]	(5,003)	(4,504)	(608)	(355)

Period	31.12.19	30.6.19
Tier 1 capital	51,888	49,993

1 Disclosure of the NII sensitivity is only required for the two parallel shock scenarios. The NII sensitivity estimates reflect the impact of immediate changes in interest rates, relative to constant rates, and assume no change to balance sheet size and structure, constant foreign exchange rates and no specific management action. Furthermore, the change in NII does not include the contribution from cash held at central banks. 2 Rates across all tenors move by ±150 bps for Swiss franc, ±200 bps for euro and US dollar and ±250 bps for pound sterling. 3 Short-term rates decrease and long-term rates increase. 4 Short-term rates increase and long-term rates decrease. 5 Short-term rates increase more than long-term rates. 6 Short-term rates decrease more than long-term rates. 7 "Maximum" indicates the most adverse interest rate scenario as shown in the table.

IRRBBA1: Quantitative disclosures relating to the position structure and interest rate reset of IRRBB risk

As of 31.12.19		Volume[1]				Average interest rate repricing period (in years)		Maximum interest rate repricing period (in years) for exposures with modeled interest rate repricing dates	
USD million, except where indicated		Total	*of which: CHF*	*of which: EUR*	*of which: USD*	Total	*of which: CHF*	Total	*of which: CHF*
Determined repricing period[2]	Loans and advances to banks	11,913	*4,969*	*3,705*	*3,199*	0.73	*0.94*		
	Loans and advances to customers	145,829	*36,282*	*12,071*	*79,396*	0.73	*1.48*		
	Money market mortgages	41,311	*41,311*			0.14	*0.14*		
	Fixed-rate mortgages	84,164	*84,164*			4.11	*4.11*		
	Financial investments	47,022	*1,182*	*5,259*	*32,279*	1.73	*3.15*		
	Other receivables	182,792	*0*	*14,691*	*125,810*	0.11	*0.09*		
	Receivables from interest rate derivatives	635,141	*86,494*	*107,881*	*356,096*	1.26	*1.12*		
	Amounts due to banks	(4,752)	*(3,388)*	*0*	*(1,201)*	1.12	*1.13*		
	Customer deposits	(52,106)	*(130)*	*(354)*	*(41,316)*	0.39	*1.55*		
	Medium-term notes	(88)	*(88)*	*0*		1.27	*2.57*		
	Bonds and covered bonds	(87,075)	*(9,854)*	*(22,935)*	*(46,310)*	2.27	*4.77*		
	Other liabilities	(84,427)	*0*	*(12,054)*	*(48,968)*	0.06	*0.01*		
	Liabilities from interest rate derivatives	(635,931)	*(109,901)*	*(79,752)*	*(335,227)*	0.64	*0.90*		
Undetermined repricing period[3]	Loans and advances to banks								
	Loans and advances to customers	19,202	*1,997*	*2,785*	*12,843*	1.34	*0.88*		
	Variable-rate mortgages	19,817			*16,383*	2.98			
	Other receivables on sight	2,105	*2,105*			1.32	*1.32*		
	Liabilities on sight in personal and current accounts	(277,888)	*(90,043)*	*(52,891)*	*(113,900)*	1.19	*1.23*		
	Other liabilities on sight								
	Liabilities from customer deposits, callable but not transferable	(109,018)	*(109,018)*			2.23	*2.23*		
	Total	428,030	*203,163*	*55,677*	*143,125*	1.14	*1.72*	10	*10*

1 The volume figures cover only banking book positions and are risk-based measures which differ from the accounting values on the IFRS balance sheet. 2 Receivables and payables from securities financing transactions are reported on a gross basis, consistent with our interest rate risk management and monitoring process. Subordinated liabilities are excluded. 3 Swiss franc variable-rate mortgages and balances associated to loans and advances to banks with a combined volume below USD 1 billion are reported under loans and advances to customers, consistent with our interest rate risk management and monitoring process.

▲

Annual |

IRRBBA1: Quantitative disclosures relating to the position structure and interest rate reset of IRRBB risk

As of 30.6.19		Volume[1]				Average interest rate repricing period (in years)		Maximum interest rate repricing period (in years) for exposures with modeled interest rate repricing dates	
USD million, except where indicated		Total	*of which: CHF*	*of which: EUR*	*of which: USD*	Total	*of which: CHF*	Total	*of which: CHF*
Determined repricing period [2]	Loans and advances to banks	12,193	*4,459*	*3,628*	*4,086*	0.69	*0.91*		
	Loans and advances to customers	144,803	*35,569*	*12,117*	*73,908*	0.64	*1.38*		
	Money market mortgages	39,551	*39,551*			0.15	*0.15*		
	Fixed-rate mortgages	83,709	*83,709*	*0*	*0*	4.13	*4.13*		
	Financial investments	50,450	*1,231*	*4,974*	*31,685*	1.80	*3.72*		
	Other receivables	172,358		*26,125*	*95,684*	0.13	*0.10*		
	Receivables from interest rate derivatives	687,361	*104,235*	*145,253*	*353,448*	1.29	*0.98*		
	Amounts due to banks	(12,816)	*(3,360)*	*(11)*	*(9,269)*	1.37	*1.46*		
	Customer deposits	(52,696)	*(195)*	*(1,284)*	*(39,129)*	0.40	*0.49*		
	Medium-term notes	(75)	*(73)*	*(1)*		2.73	*2.72*		
	Bonds and covered bonds	(97,060)	*(9,984)*	*(32,653)*	*(46,605)*	1.81	*5.05*		
	Other liabilities	(117,535)	*0*	*(22,200)*	*(64,966)*	0.11	*0.01*		
	Liabilities from interest rate derivatives	(687,321)	*(127,566)*	*(93,615)*	*(341,800)*	0.68	*0.86*		
Undetermined repricing period[3]	Loans and advances to banks								
	Loans and advances to customers	15,739	*2,030*	*3,114*	*9,186*	1.17	*0.91*		
	Variable-rate mortgages	17,921			*14,482*	3.92			
	Other receivables on sight	2,173	*2,173*			1.31	*1.31*		
	Liabilities on sight in personal and current accounts	(261,637)	*(83,101)*	*(55,465)*	*(101,572)*	1.30	*1.32*		
	Other liabilities on sight								
	Liabilities from customer deposits, callable but not transferable	(112,048)	*(112,048)*			2.16	*2.16*		
	Total	**409,519**	***199,352***	***58,579***	***125,241***	**1.20**	***1.74***	**10**	***10***

1 The volume figures cover only banking book positions and are risk-based measures which differ from the accounting values on the IFRS balance sheet. 2 Receivables and payables from securities financing transactions are reported on a gross basis, consistent with our interest rate risk management and monitoring process. Subordinated liabilities are excluded. 3 Swiss franc variable-rate mortgages and balances associated to loans and advances to banks with a combined volume below USD 1 billion are reported under loans and advances to customers, consistent with our interest rate risk management and monitoring process.

Section 11 Going and gone concern requirements and eligible capital

The table below provides details regarding the Swiss systemically relevant bank (SRB) going and gone concern capital requirements as required by FINMA. More information about capital management is provided on pages 175–189 of our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors*.

Quarterly |

Swiss SRB going and gone concern requirements and information

	Swiss SRB, including transitional arrangements				Swiss SRB as of 1.1.20			
As of 31.12.19	RWA		LRD		RWA		LRD	
USD million, except where indicated	in %		in %		in %		in %	
Required going concern capital								
Total going concern capital	13.71	35,543	4.50	41,010	14.25[1]	36,943	4.88[1]	44,427
Common equity tier 1 capital	9.81	25,434	3.20	29,162	9.95	25,797	3.38	30,757
of which: minimum capital	*4.90*	*12,701*	*1.70*	*15,493*	*4.50*	*11,664*	*1.50*	*13,670*
of which: buffer capital	*4.60*	*11,924*	*1.50*	*13,670*	*5.14*	*13,323*	*1.88*	*17,087*
of which: countercyclical buffer	*0.31*	*810*			*0.31*	*810*		
Maximum additional tier 1 capital	3.90	10,109	1.30	11,847	4.30	11,146	1.50	13,670
of which: additional tier 1 capital	*3.10*	*8,035*	*1.30*	*11,847*	*3.50*	*9,072*	*1.50*	*13,670*
of which: additional tier 1 buffer capital	*0.80*	*2,074*			*0.80*	*2,074*		
Eligible going concern capital								
Total going concern capital	22.01	57,056	6.26	57,056	20.02	51,888	5.69	51,888
Common equity tier 1 capital	13.73	35,582	3.90	35,582	13.73	35,582	3.90	35,582
Total loss-absorbing additional tier 1 capital	8.28	21,474	2.36	21,474	6.29	16,306	1.79	16,306
of which: high-trigger loss-absorbing additional tier 1 capital	*5.36*	*13,892*	*1.52*	*13,892*	*5.36*	*13,892*	*1.52*	*13,892*
of which: low-trigger loss-absorbing additional tier 1 capital[2]	*0.93*	*2,414*	*0.26*	*2,414*	*0.93*	*2,414*	*0.26*	*2,414*
of which: low-trigger loss-absorbing tier 2 capital[3]	*1.99*	*5,168*	*0.57*	*5,168*				
Required gone concern capital								
Total gone concern loss-absorbing capacity	9.51	24,662	3.27	29,789	10.34	26,805	3.70	33,719
of which: base requirement	*10.52*	*27,269*	*3.63*	*33,036*	*12.86*	*33,334*	*4.50*	*41,010*
of which: additional requirement for market share and LRD[4]	*0.81*	*2,100*	*0.28*	*2,563*	*1.08*	*2,799*	*0.38*	*3,417*
of which: applicable reduction on requirements	*(1.82)*	*(4,706)*	*(0.64)*	*(5,810)*	*(3.60)*	*(9,329)*	*(1.17)*	*(10,708)*
of which: rebate granted (equivalent to 42.5% of maximum rebate)	*(1.82)*	*(4,706)*	*(0.64)*	*(5,810)*	*(2.27)*	*(5,883)*	*(0.80)*	*(7,262)*
of which: reduction for usage of low-trigger tier 2 capital instruments					*(1.33)*	*(3,446)*	*(0.38)*	*(3,446)*
Eligible gone concern capital								
Total gone concern loss-absorbing capacity	12.57	32,585	3.58	32,585	14.56	37,753	4.14	37,753
Total tier 2 capital	0.87	2,263	0.25	2,263	2.87	7,431	0.82	7,431
of which: low-trigger loss-absorbing tier 2 capital	*0.67*	*1,724*	*0.19*	*1,724*	*2.66*	*6,892*	*0.76*	*6,892*
of which: non-Basel III-compliant tier 2 capital	*0.21*	*540*	*0.06*	*540*	*0.21*	*540*	*0.06*	*540*
TLAC-eligible senior unsecured debt	11.70	30,322	3.33	30,322	11.70	30,322	3.33	30,322
Total loss-absorbing capacity								
Required total loss-absorbing capacity	23.23	60,205	7.77	70,799	24.59	63,748	8.58	78,146
Eligible total loss-absorbing capacity	34.58	89,641	9.84	89,641	34.58	89,641	9.84	89,641

1 Includes applicable add-ons of 1.08% for RWA and 0.375% for LRD. 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 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, as reflected in this table. Under the revised Capital Adequacy Ordinance issued in November 2019, effective 1 January 2020, the 50% haircut is no longer applied; refer to "Revised gone concern capital requirements in Switzerland" in the "Introduction and basis for preparation" section of this report for more information. 4 A lower add-on requirement for market share was applied in the fourth quarter of 2019, of which 0.27% was applied for RWA and 0.09% for LRD under the transitional rules, 0.36% was applied for RWA and 0.125% for LRD under the final rules as of 1 January 2020.

Semiannual | The CCyB1 table below provides details of the underlying exposures and risk-weighted assets (RWA) used in the computation of the countercyclical buffer requirement of UBS Group AG. Further information about the methodology of geographical allocation used is provided on page 149 of our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors*. The countercyclical capital buffer for Sweden increased from 2% to 2.5%, effective from 19 September 2019, whereas the rate for Hong Kong decreased from 2.5% to 2% on 14 October 2019. France introduced a countercyclical buffer requirement of 0.25%, effective from 1 July 2019. ▲

Semiannual |

CCyB1: Geographical distribution of credit exposures used in the countercyclical capital buffer

USD million, except where indicated

Geographical breakdown	Countercyclical capital buffer rate, %	Exposure values and / or risk-weighted assets used in the computation of the countercyclical capital buffer		Bank-specific countercyclical capital buffer rate, %	Countercyclical amount
		Exposure values[1]	Risk-weighted assets		
Hong Kong	2.00	6,302	1,753		
Sweden	2.50	1,115	314		
United Kingdom	1.00	38,495	8,846		
France	0.25	6,148	1,118		
Sum		52,060	12,031		
Total		548,846	159,407	0.08	218

1 Includes private sector exposures in the countries that are Basel Committee on Banking Supervision member jurisdictions under categories "Credit risk," "Counterparty credit risk," "Equity positions in the banking book," "Settlement risk," "Securitization exposures in the banking book" and "Amounts below thresholds for deduction" as shown in the "Regulatory exposures and risk-weighted assets" table in section 2 of this report.

▲

Semiannual | The CC2 table below and on the following page provides a reconciliation of the IFRS balance sheet to the balance sheet according to the regulatory scope of consolidation as defined by the BCBS and FINMA. Lines in the balance sheet under the regulatory scope of consolidation are expanded and referenced where relevant to display all components that are used in the "CC1: Composition of regulatory capital" table. Refer to the "Linkage between financial statements and regulatory exposures" section of this report for more information about the most significant entities consolidated under IFRS but not included in the regulatory scope of consolidation. ▲

Semiannual |

CC2: Reconciliation of accounting balance sheet to balance sheet under the regulatory scope of consolidation

As of 31.12.19	Balance sheet in accordance with IFRS scope of consolidation	Effect of deconsolidated entities for regulatory consolidation	Effect of additional consolidated entities for regulatory consolidation	Balance sheet in accordance with regulatory scope of consolidation	Ref[1]
USD million					
Assets					
Cash and balances at central banks	107,068	0		107,068	
Loans and advances to banks	12,447	(236)		12,211	
Receivables from securities financing transactions	84,245			84,245	
Cash collateral receivables on derivative instruments	23,289			23,289	
Loans and advances to customers	326,786	56		326,842	
Other financial assets measured at amortized cost	22,980	(438)		22,542	
Total financial assets measured at amortized cost	576,815	(618)		576,197	
Financial assets at fair value held for trading	127,514	(27)		127,488	
of which: assets pledged as collateral that may be sold or repledged by counterparties	*41,285*			*41,285*	
Derivative financial instruments	121,841	11		121,852	
Brokerage receivables	18,007			18,007	
Financial assets at fair value not held for trading	83,944	(27,689)		56,255	
Total financial assets measured at fair value through profit or loss	351,307	(27,705)		323,602	
Financial assets measured at fair value through other comprehensive income	6,345	0		6,345	
Consolidated participations	0	96		96	
Investments in associates	1,051			1,051	
of which: goodwill	*178*			*178*	*4*
Property, equipment and software	12,804	(48)		12,756	
Goodwill and intangible assets	6,469			6,469	
of which: goodwill	*6,272*			*6,272*	*4*
of which: intangible assets	*197*			*197*	*5*
Deferred tax assets	9,537	0		9,537	
of which: deferred tax assets recognized for tax loss carry-forwards	*5,965*			*5,965*	*6*
of which: deferred tax assets on temporary differences	*3,572*	*0*		*3,572*	*10*
Other non-financial assets	7,856	(6)		7,850	
of which: net defined benefit pension and other post-employment assets	*9*			*9*	*8*
Total assets	972,183	(28,281)		943,902	

CC2: Reconciliation of accounting balance sheet to balance sheet under the regulatory scope of consolidation (continued)

As of 31.12.19	Balance sheet in accordance with IFRS scope of consolidation	Effect of deconsolidated entities for regulatory consolidation	Effect of additional consolidated entities for regulatory consolidation	Balance sheet in accordance with regulatory scope of consolidation	Ref[1]
USD million					
Liabilities					
Amounts due to banks	6,570			6,570	
Payables from securities financing transactions	7,778			7,778	
Cash collateral payables on derivative instruments	31,415	0		31,415	
Customer deposits	448,284	7		448,291	
Debt issued measured at amortized cost	110,497	(4)		110,492	
of which: amount eligible for high-trigger loss-absorbing additional tier 1 capital	*11,931*			*11,931*	*9*
of which: amount eligible for low-trigger loss-absorbing additional tier 1 capital	*2,414*			*2,414*	*9*
of which: amount eligible for low-trigger loss-absorbing tier 2 capital	*6,892*			*6,892*	*11*
of which: amount eligible for capital instruments subject to phase-out from tier 2 capital	*540*			*540*	*12*
Other financial liabilities measured at amortized cost	9,712	(155)		9,557	
Total financial liabilities measured at amortized cost	614,256	(153)		614,103	
Financial liabilities at fair value held for trading	30,591	0		30,591	
Derivative financial instruments	120,880	3		120,883	
Brokerage payables designated at fair value	37,233			37,233	
Debt issued designated at fair value	66,809	13		66,822	
Other financial liabilities designated at fair value	35,940	(28,145)		7,795	
Total financial liabilities measured at fair value through profit or loss	291,452	(28,128)		263,324	
Provisions	2,974	0		2,974	
Other non-financial liabilities	8,794	(2)		8,792	
of which: amount eligible for high-trigger loss-absorbing capital (Deferred Contingent Capital Plan (DCCP))[2]	*1,595*			*1,595*	*9*
of which: deferred tax liabilities related to goodwill	*272*			*272*	*4*
of which: deferred tax liabilities related to other intangible assets	*2*			*2*	*5*
Total liabilities	917,476	(28,283)		889,193	
Equity					
Share capital	338			338	1
Share premium	18,064			18,064	1
Treasury shares	(3,326)			(3,326)	3
Retained earnings	34,154	(14)		34,141	2
Other comprehensive income recognized directly in equity, net of tax	5,303	15		5,318	3
of which: unrealized gains / (losses) from cash flow hedges	*1,260*			*1,260*	*7*
Equity attributable to shareholders	54,533	2		54,534	
Equity attributable to non-controlling interests	174			174	
Total equity	54,707	2		54,709	
Total liabilities and equity	972,183	(28,281)		943,902	

1 References link the lines of this table to the respective reference numbers provided in the "References" column in the "CC1: Composition of regulatory capital" table in this section. 2 IFRS carrying amount of total DCCP liabilities was USD 1,855 million as of 31 December 2019. Refer to the "Compensation" section of our Annual Report 2019 for more information about the DCCP.

Semiannual | The CC1 table below and on the following pages provides the composition of capital in the format prescribed by the BCBS and FINMA, and is based on BCBS Basel III rules, unless stated otherwise. Reference is made to items reconciling to the balance sheet under the regulatory scope of consolidation as disclosed in the "CC2: Reconciliation of accounting balance sheet to balance sheet under the regulatory scope of consolidation" table.

Refer to the documents titled "Capital and total loss-absorbing capacity instruments of UBS Group AG consolidated and UBS AG consolidated and standalone – key features" and "UBS Group AG consolidated capital instruments and TLAC-eligible senior unsecured debt" under "Bondholder information" at *www.ubs.com/investors* for an overview of the main features of our regulatory capital instruments, as well as the full terms and conditions. ▲

Semiannual |

CC1: Composition of regulatory capital

As of 31.12.19		Amounts	References[1]
USD million except where indicated			
	Common Equity Tier 1 capital: instruments and reserves		
1	Directly issued qualifying common share (and equivalent for non-joint stock companies) capital plus related stock surplus	18,402	1
2	Retained earnings	34,141	2
3	Accumulated other comprehensive income (and other reserves)	1,992	3
4	Directly issued capital subject to phase-out from CET1 (only applicable to non-joint stock companies)		
5	Common share capital issued by subsidiaries and held by third parties (amount allowed in group CET1)		
6	**Common Equity Tier 1 capital before regulatory adjustments**	54,534	
	Common Equity Tier 1 capital: regulatory adjustments		
7	Prudent valuation adjustments	(104)	
8	Goodwill (net of related tax liability)	(6,178)	4
9	Other intangibles other than mortgage servicing rights (net of related tax liability)	(195)	5
10	Deferred tax assets that rely on future profitability, excluding those arising from temporary differences (net of related tax liability)[2]	(6,121)	6
11	Cash flow hedge reserve	(1,260)	7
12	Shortfall of provisions to expected losses	(495)	
13	Securitization gain on sale		
14	Gains and losses due to changes in own credit risk on fair valued liabilities	48	
15	Defined benefit pension fund net assets	(9)	8
16	Investments in own shares (if not already subtracted from paid-in capital on reported balance sheet)[3]	(1,767)	9
17	Reciprocal cross-holdings in common equity		
17a	Qualified holdings where a significant influence is exercised with other owners (CET1 instruments)		
17b	Immaterial investments (CET1 items)		
18	Investments in the capital of banking, financial and insurance entities that are outside the scope of regulatory consolidation, where the bank does not own more than 10% of the issued share capital (amount above 10% threshold)		
19	Significant investments in the common stock of banking, financial and insurance entities that are outside the scope of regulatory consolidation (amount above 10% threshold)		
20	Mortgage servicing rights (amount above 10% threshold)		
21	Deferred tax assets arising from temporary differences (amount above 10% threshold, net of related tax liability)	(221)	10
22	Amount exceeding the 15% threshold		
23	*of which: significant investments in the common stock of financials*		
24	*of which: mortgage servicing rights*		
25	*of which: deferred tax assets arising from temporary differences*		
26	Expected losses on equity investment under the PD / LGD approach		
26a	Further adjustments to financial statements in accordance with a recognized international accounting standard	(32)	
26b	Other adjustments	(2,620)	
27	Regulatory adjustments applied to Common Equity Tier 1 due to insufficient Additional Tier 1 and Tier 2 to cover deductions		
28	**Total regulatory adjustments to Common Equity Tier 1**	(18,953)	
29	**Common Equity Tier 1 capital (CET1)**	35,582	

CC1: Composition of regulatory capital (Continued)

As of 31.12.19		Amounts	References[1]
USD million except where indicated			
	Additional Tier 1 capital: instruments		
30	Directly issued qualifying additional Tier 1 instruments plus related stock surplus	16,317	
31	*of which: classified as equity under applicable accounting standards*		
32	*of which: classified as liabilities under applicable accounting standards*	*16,317*	
33	Directly issued capital instruments subject to phase-out from additional Tier 1		
34	Additional Tier 1 instruments (and CET1 instruments not included in row 5) issued by subsidiaries and held by third parties (amount allowed in group AT1)		
35	*of which: instruments issued by subsidiaries subject to phase-out*		
36	**Additional Tier 1 capital before regulatory adjustments[4]**	16,317	
	Additional Tier 1 capital: regulatory adjustments		
37	Investments in own additional Tier 1 instruments	(11)	
38	Reciprocal cross-holdings in additional Tier 1 instruments		
38a	Qualified holdings where a significant influence is exercised with other owners (AT1 instruments)		
38b	Immaterial investments (AT1 instruments)		
39	Investments in the capital of banking, financial and insurance entities that are outside the scope of regulatory consolidation, where the bank does not own more than 10% of the issued common share capital of the entity (amount above 10% threshold)		
40	Significant investments in the capital of banking, financial and insurance entities that are outside the scope of regulatory consolidation		
41	Other adjustments		
42	Regulatory adjustments applied to additional Tier 1 due to insufficient Tier 2 to cover deductions		
42a	Regulatory adjustments applied to CET1 capital due to insufficient additional Tier 1 to cover deductions		
43	**Total regulatory adjustments to additional Tier 1 capital**	(11)	
44	**Additional Tier 1 capital (AT1)**	16,306	9
45	**Tier 1 capital (T1 = CET1 + AT1)**	51,888	
	Tier 2 capital: instruments and provisions		
46	Directly issued qualifying Tier 2 instruments plus related stock surplus	5,187[5]	11
47	Directly issued capital instruments subject to phase-out from Tier 2	557	12
48	Tier 2 instruments (and CET1 and AT1 instruments not included in rows 5 or 34) issued by subsidiaries and held by third parties (amount allowed in group Tier 2)		
49	*of which: instruments issued by subsidiaries subject to phase-out*		
50	Provisions		
51	**Tier 2 capital before regulatory adjustments**	5,744	
	Tier 2 capital: regulatory adjustments		
52	Investments in own Tier 2 instruments[6]	(18)	12
53	Reciprocal cross-holdings in Tier 2 instruments and other TLAC liabilities		
53a	Qualified holdings where a significant influence is exercised with other owners (T2 instruments and other TLAC instruments)		
53b	Immaterial investments (T2 instruments and other TLAC instruments)		
54	Investments in the capital and other TLAC liabilities of banking, financial and insurance entities that are outside the scope of regulatory consolidation, where the bank does not own more than 10% of the issued common share capital of the entity (amount above 10% threshold)		
55	Significant investments in the capital and other TLAC liabilities of banking, financial and insurance entities that are outside the scope of regulatory consolidation (net of eligible short positions)		
56	Other adjustments		
56a	Excess of the adjustments, which are allocated to the AT1 capital		
57	**Total regulatory adjustments to Tier 2 capital**	(18)	
58	**Tier 2 capital (T2)**	5,726	
59	**Total regulatory capital (TC = T1 + T2)**	57,614	
60	**Total risk-weighted assets**	259,208	

CC1: Composition of regulatory capital (Continued)

As of 31.12.19		Amounts	References[1]
USD million except where indicated			
	Capital ratios and buffers		
61	Common Equity Tier 1 (as a percentage of risk-weighted assets)	13.73	
62	Tier 1 (as a percentage of risk-weighted assets)	20.02	
63	Total capital (as a percentage of risk-weighted assets)	22.23	
64	Institution-specific buffer requirement (capital conservation buffer plus countercyclical buffer requirements plus higher loss absorbency requirement, expressed as a percentage of risk-weighted assets)[7]	3.58	
65	*of which: capital conservation buffer requirement*	*2.50*	
66	*of which: bank-specific countercyclical buffer requirement*	*0.08*	
67	*of which: higher loss absorbency requirement*	*1.00*	
68	Common Equity Tier 1 (as a percentage of risk-weighted assets) available after meeting the bank's minimum capital requirements	9.23	
	Amounts below the thresholds for deduction (before risk weighting)		
72	Non-significant investments in the capital and other TLAC liabilities of other financial entities	1,698	
73	Significant investments in the common stock of financial entities	904	
74	Mortgage servicing rights (net of related tax liability)		
75	Deferred tax assets arising from temporary differences (net of related tax liability)	3,580	
	Applicable caps on the inclusion of provisions in Tier 2		
76	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to standardized approach (prior to application of cap)		
77	Cap on inclusion of provisions in Tier 2 under standardized approach		
78	Provisions eligible for inclusion in Tier 2 in respect of exposures subject to internal ratings-based approach (prior to application of cap)		
79	Cap for inclusion of provisions in Tier 2 under internal ratings-based approach		
	Capital instruments subject to phase-out arrangements (only applicable between 1 Jan 2018 and 1 Jan 2022) according to CAO Art. 141		
80	Current cap on CET1 instruments subject to phase-out arrangements		
81	Amount excluded from CET1 due to cap (excess over cap after redemptions and maturities)		
82	Current cap on AT1 instruments subject to phase-out arrangements		
83	Amount excluded from AT1 due to cap (excess over cap after redemptions and maturities)		
84	Current cap on T2 instruments subject to phase-out arrangements	1,730	
85	Amount excluded from T2 due to cap (excess over cap after redemptions and maturities)		

1 References link the lines of this table to the respective reference numbers provided in the "References" column in the "CC2: Reconciliation of accounting balance sheet to balance sheet under the regulatory scope of consolidation" table in this section. 2 IFRS netting for deferred tax assets and liabilities is reversed for items deducted from CET1 capital. 3 Includes USD 367 million in DCCP-related charge for regulatory capital purposes. 4 Includes an AT1 instrument in the amount of USD 1.25 billion, the call of which was announced on 10 January 2020 (call date 19 February 2020). 5 Consists of instruments with a IFRS carrying amount of USD 6.9 billion less amortization of instruments where remaining maturity is more than one year, and 45% of the gross unrealized gains on debt instruments measured at fair value through other comprehensive income, which are measured at the lower of cost or market value for regulatory capital purposes. 6 Consists of own instruments for phase-out tier 2 capital of USD 17.7 million. 7 BCBS requirements are exceeded by our Swiss SRB requirements. Refer to the "Capital management" section of our Annual Report 2019 for more information about the Swiss SRB requirements.

Prudent valuation

Annual | The PV1 table below provides a breakdown of prudent valuation adjustments to CET1 capital. These adjustments are incremental to the ones made under IFRS, which include adjustments for liquidity and model uncertainty as well as credit, funding and debit 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.

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.

To ensure compliance with the prudent valuation requirements, UBS has established systems, controls and governance around the valuation of positions measured at fair value.

Further details on the valuation adjustments in the financial accounts and related governance are provided in "Note 24 Fair value measurement" on pages 412–414 of our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors*.

As of 31 December 2019, there have been no significant changes in the prudent valuation adjustments compared with the prior year. ▲

Annual |

PV1: Prudent valuation adjustments (PVA)

As of 31.12.19									
USD million		Equity	Interest rates	FX	Credit	Commodities	Total	*Of which: In the trading book*	*Of which: In the banking book*
1	Closeout uncertainty, of which:	(9)	(70)	0	(25)	0	(104)	(25)	(79)
2	*Mid-market value*								
3	*Closeout cost*								
4	*Concentration*	(9)	(70)	0	(25)	0	(104)	*(25)*	*(79)*
5	Early termination								
6	Model risk								
7	Operational risk								
8	Investing and funding costs								
9	Unearned credit spreads								
10	Future administrative costs								
11	Other								
12	**Total adjustment**	(9)	(70)	0	(25)	0	(104)	*(25)*	*(79)*
As of 31.12.18									
1	Closeout uncertainty, of which:	(29)	(75)	0	(16)	0	(120)	*(46)*	*(74)*
2	*Mid-market value*								
3	*Closeout cost*								
4	*Concentration*	*(29)*	*(75)*	*0*	*(16)*	*0*	*(120)*	*(46)*	*(74)*
5	Early termination								
6	Model risk								
7	Operational risk								
8	Investing and funding costs								
9	Unearned credit spreads								
10	Future administrative costs								
11	Other								
12	**Total adjustment**[1]	(29)	(75)	0	(16)	0	(120)	*(46)*	*(74)*

1 Valuation adjustments recognized already under the financial accounting standards reflect an estimated total life-to-date loss of USD 663 million as of 31 December 2019 (31 December 2018: USD 890 million), of which valuation adjustments account for an estimated life-to-date loss of USD 300 million (31 December 2018: USD 388 million) for liquidity and of USD 266 million (31 December 2018: USD 327 million) for model uncertainty. Further details are provided in "Note 24 Fair value measurement" in the "Consolidated financial statements" section of our Annual Report 2019.

▲

Resolution group – composition of total loss-absorbing capacity (TLAC)

Semiannual |

The TLAC1 table below is based on Basel Committee on Banking Supervision (BCBS) phase-in rules, and only applicable for UBS Group AG as the ultimate parent entity of the defined UBS resolution group, to which, in case of resolution, resolution tools (e.g., a bail-in) are expected to be applied.

In the second half of 2019, we issued three high-trigger loss absorbing additional tier 1 (AT1) capital instruments totaling USD 1.3 billion denominated in Australian dollars, Singapore dollars and Swiss francs, which contributed to the total eligible AT1 instruments of USD 16.3 billion. Non-regulatory capital instruments increased by USD 0.6 billion to USD 30.3 billion as of 31 December 2019, mainly driven by three issuances amounting to USD 1.7 billion denominated in US dollars and Australian dollars, partly offset by a USD 0.9 billion decrease in the eligibility of two total loss-absorbing capacity (TLAC) instruments and foreign currency and other effects of USD 0.2 billion. ▲

Semiannual |

TLAC1: TLAC composition for G-SIBs (at resolution group level)

	USD million, except where indicated	31.12.19	30.6.19
	Regulatory capital elements of TLAC and adjustments		
1	Common Equity Tier 1 capital (CET1)	35,582	34,948
2	Additional Tier 1 capital (AT1) before TLAC adjustments	16,306	15,045
3	AT1 ineligible as TLAC as issued out of subsidiaries to third parties		
4	Other adjustments		
5	**Total AT1 instruments eligible under the TLAC framework**	16,306	15,045
6	Tier 2 capital (T2) before TLAC adjustments	5,726	6,353
7	Amortized portion of T2 instruments where remaining maturity > 1 year	1,724	1,322
8	T2 capital ineligible as TLAC as issued out of subsidiaries to third parties		
9	Other adjustments		
10	**Total T2 instruments eligible under the TLAC framework**	7,450	7,675
11	**TLAC arising from regulatory capital**	59,338	57,668
	Non-regulatory capital elements of TLAC		
12	External TLAC instruments issued directly by the bank and subordinated to excluded liabilities		
13	External TLAC instruments issued directly by the bank which are not subordinated to excluded liabilities but meet all other TLAC term sheet requirements[1]	30,322	
14	*of which: amount eligible as TLAC after application of the caps*		
15	External TLAC instruments issued by funding vehicles prior to 1 January 2022[1]		29,721
16	Eligible ex ante commitments to recapitalize a G-SIB in resolution		
17	**TLAC arising from non-regulatory capital instruments before adjustments**	30,322	29,721
	Non-regulatory capital elements of TLAC: adjustments		
18	TLAC before deductions	89,660	87,388
19	Deductions of exposures between multiple-point-of-entry (MPE) resolution groups that correspond to items eligible for TLAC (not applicable to SPE G-SIBs)		
20	Deduction of investments in own other TLAC liabilities		
21	Other adjustments to TLAC		
22	**TLAC after deductions**	89,660	87,388
	Risk-weighted assets and leverage exposure measure for TLAC purposes		
23	Total risk-weighted assets adjusted as permitted under the TLAC regime	259,208	262,135
24	Leverage exposure measure	911,325	911,379
	TLAC ratios and buffers		
25	TLAC (as a percentage of risk-weighted assets adjusted as permitted under the TLAC regime)	34.59	33.34
26	TLAC (as a percentage of leverage exposure)	9.84	9.59
27	CET1 (as a percentage of risk-weighted assets) available after meeting the resolution group's minimum capital and TLAC requirements	9.23	8.83
28	Institution-specific buffer requirement (capital conservation buffer plus countercyclical buffer requirements plus higher loss absorbency requirement, expressed as a percentage of risk-weighted assets)	3.58	3.59
29	*of which: capital conservation buffer requirement*	*2.50*	*2.50*
30	*of which: bank-specific countercyclical buffer requirement*	*0.08*	*0.09*
31	*of which: higher loss absorbency requirement*	*1.00*	*1.00*

1 TLAC instruments issued by UBS Group Funding (Switzerland) AG were transferred to UBS Group AG as the issuer on 11 October 2019.

▲

Resolution entity – creditor ranking at legal entity level

Semiannual | The TLAC3 table below provides an overview of the creditor ranking structure of the resolution entity, UBS Group AG, on a standalone basis.

UBS Group AG issues loss-absorbing additional tier 1 capital instruments and TLAC-eligible senior unsecured debt. In the fourth quarter of 2019, UBS Group AG assumed all outstanding capital and debt instruments that were previously issued by UBS Group Funding (Switzerland) AG.

→ **Refer to "Note 1 Corporate information" of the financial statements for UBS Group AG standalone as of 31 December 2019 for more information about the issuer substitution**

UBS Group AG grants Deferred Contingent Capital Plan (DCCP) awards to UBS Group employees. Awards granted since February 2015 qualify as Basel III AT1 capital on a UBS Group consolidated basis and totaled USD 1,962 million as of 31 December 2019 (30 June 2019: USD 2,014 million). The related liabilities of UBS Group AG on a standalone basis of USD 1,583 million (30 June 2019: USD 1,493 million) are not included in the table below, as these do not give rise to a current claim until the awards are legally vested.

As of 31 December 2019, the TLAC available on a UBS Group AG consolidated basis amounted to USD 89,660 million (30 June 2019: USD 87,388 million).

→ **Refer to "Bondholder information" at *www.ubs.com/investors* for more information**

→ **Refer to the "TLAC1: TLAC composition for G-SIBs (at resolution group level)" table in this section for more information about TLAC for UBS Group AG consolidated**

The financial statements for UBS Group AG standalone as of 31 December 2019 are provided under "Holding company and significant regulated subsidiaries and sub-groups" at *www.ubs.com/investors.* ▲

Semiannual |

TLAC3 – creditor ranking at legal entity level for the resolution entity, UBS Group AG

As of 31.12.19		Creditor ranking			Total
USD million		1	2	3	
1	Description of creditor ranking	Common shares (most junior)[2]	Additional Tier 1	Bail-in debt and pari passu liabilities (most senior)	
2	Total capital and liabilities net of credit risk mitigation[1]	39,452	14,699	34,668	88,818
3	Subset of row 2 that are excluded liabilities				
4	Total capital and liabilities less excluded liabilities (row 2 minus row 3)	39,452	14,699[3]	34,668[5]	88,818
5	Subset of row 4 that are potentially eligible as TLAC	39,452	14,150	31,603	85,204
6	Subset of row 5 with 1 year ≤ residual maturity < 2 years			3,000	3,000
7	Subset of row 5 with 2 years ≤ residual maturity < 5 years			16,276	16,276
8	Subset of row 5 with 5 years ≤ residual maturity < 10 years			10,616	10,616
9	Subset of row 5 with residual maturity ≥ 10 years, but excluding perpetual securities			1,711	1,711
10	Subset of row 5 that is perpetual securities	39,452	14,150[4]		53,602

1 No credit risk mitigation is applied to capital and liabilities for UBS Group AG standalone. 2 Common shares including the associated reserves are equal to equity attributable to shareholders as disclosed in the UBS Group AG standalone financial statements as of 31 December 2019, which were prepared in accordance with the principles of the Swiss Law on Accounting and Financial Reporting (32nd title of the Swiss Code of Obligations). 3 Includes interest expense accrued on AT1 capital instruments which does not qualify as TLAC. 4 Includes an AT1 instrument in the amount of USD 1.25 billion, the call of which was announced on 10 January 2020 (call date 19 February 2020). 5 Includes interest expense accrued on bail-in debt, interest-bearing liabilities which comprise loans from UBS AG and UBS Switzerland AG, negative replacement values as well tax liabilities which are not excluded liabilities under Swiss law that rank pari passu to bail-in debt.

▲

Basel III leverage ratio

Quarterly | The Basel Committee on Banking Supervision (the BCBS) leverage ratio is calculated by dividing the period-end tier 1 capital by the period-end leverage ratio denominator (LRD), as summarized in the table below. ▲

Quarterly |

BCBS Basel III leverage ratio

USD million, except where indicated

	31.12.19	30.9.19	30.6.19	31.3.19	31.12.18
Total tier 1 capital	51,888	50,702	49,993	49,436	46,279
BCBS total exposures (leverage ratio denominator)	911,325	901,914	911,379	910,993	904,598
BCBS Basel III leverage ratio (%)	5.7	**5.6**	**5.5**	**5.4**	**5.1**

▲

Quarterly | The LRD consists of IFRS on-balance sheet assets and off-balance sheet items. Derivative exposures are adjusted for a number of items, including replacement value and eligible cash variation margin netting, the current exposure method add-on and net notional amounts for written credit derivatives. The LRD also includes an additional charge for counterparty credit risk related to securities financing transactions (SFTs).

The "Reconciliation of IFRS total assets to BCBS Basel III total on-balance sheet exposures excluding derivatives and securities financing transactions" table on the next page shows the difference between total IFRS assets per IFRS consolidation scope and the BCBS total on-balance sheet exposures. Those exposures are the starting point for calculating the BCBS LRD as shown in the "LR2: BCBS Basel III leverage ratio common disclosure" table in this section. The difference is due to the application of the regulatory scope of consolidation for the purpose of the BCBS calculation. In addition, carrying amounts for derivative financial instruments and SFTs are deducted from IFRS total assets. They are measured differently under BCBS leverage ratio rules and are therefore added back in separate exposure line items in the LR2 table. ▲

Difference between the Swiss SRB and BCBS leverage ratio

Quarterly | The LRD is the same under Swiss SRB and BCBS rules. However, there is a difference in the capital numerator between the two frameworks. Under BCBS rules, only common equity tier 1 and additional tier 1 capital are included in the numerator. Under Swiss SRB, we are required to meet going as well as gone concern leverage ratio requirements. Therefore, depending on the requirement, the numerator includes tier 1 capital instruments, tier 2 capital instruments and/or TLAC-eligible senior unsecured debt. ▲

Quarterly |

Reconciliation of IFRS total assets to BCBS Basel III total on-balance sheet exposures excluding derivatives and securities financing transactions

USD million	31.12.19	30.9.19	31.12.18
On-balance sheet exposures			
IFRS total assets	972,183	973,118	958,351
Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation	(28,281)	(25,850)	(22,277)
Adjustment for investments in banking, financial, insurance or commercial entities that are outside the scope of consolidation for accounting purposes but consolidated for regulatory purposes			
Adjustment for fiduciary assets recognized on the balance sheet pursuant to the operative accounting framework but excluded from the leverage ratio exposure measure			
Less carrying amount of derivative financial instruments in IFRS total assets[1]	(145,141)	(159,917)	(149,821)
Less carrying amount of securities financing transactions in IFRS total assets[2]	(108,471)	(119,727)	(123,154)
Adjustments to accounting values			
On-balance sheet items excluding derivatives and securities financing transactions, but including collateral	**690,291**	**667,624**	**663,099**
Asset amounts deducted in determining BCBS Basel III tier 1 capital	(13,284)	(15,562)	(13,831)
Total on-balance sheet exposures (excluding derivatives and securities financing transactions)	**677,007**	**652,062**	**649,268**

1 Consists of derivative financial instruments and cash collateral receivables on derivative instruments in accordance with the regulatory scope of consolidation. 2 Consists of receivables from securities financing transactions, margin loans, prime brokerage receivables and financial assets at fair value not held for trading related to securities financing transactions in accordance with the regulatory scope of consolidation.

Quarterly |

LR1: BCBS Basel III leverage ratio summary comparison

	USD million	31.12.19	30.9.19	31.12.18
1	Total consolidated assets as per published financial statements	972,183	973,118	958,351
2	Adjustment for investments in banking, financial, insurance or commercial entities that are consolidated for accounting purposes but outside the scope of regulatory consolidation[1]	(41,565)	(41,412)	(36,108)
3	Adjustment for fiduciary assets recognized on the balance sheet pursuant to the operative accounting framework but excluded from the leverage ratio exposure measure			
4	Adjustments for derivative financial instruments	(56,179)	(64,266)	(54,454)
5	Adjustment for securities financing transactions (i.e., repos and similar secured lending)	8,984	9,260	7,774
6	Adjustment for off-balance sheet items (i.e., conversion to credit equivalent amounts of off-balance sheet exposures)	27,902	25,214	29,035
7	Other adjustments			
8	**Leverage ratio exposure (leverage ratio denominator)**	**911,325**	**901,914**	**904,598**

1 Includes assets that are deducted from tier 1 capital.

Quarterly | During the fourth quarter of 2019, LRD increased by USD 9 billion to USD 911 billion. On-balance sheet exposures (excluding derivatives and SFTs) increased by USD 25 billion, mainly due to currency effects of USD 13 billion as well as higher trading portfolio assets and cash and balances with central banks. Other off-balance sheet exposures increased by USD 3 billion, reflecting guarantees issued in Personal & Corporate Banking. Derivative exposures decreased by USD 7 billion as a result of compression activities and market-driven movements, as well as trade expiries. SFTs decreased by USD 12 billion due to trade roll-offs and lower levels of client demand. ▲

→ **Refer to "Leverage ratio denominator" in the "Capital management" section of our Annual Report 2019, available under "Annual reporting" at www.ubs.com/investors for more information**

Quarterly |

LR2: BCBS Basel III leverage ratio common disclosure

	USD million, except where indicated	31.12.19	30.9.19	31.12.18
	On-balance sheet exposures			
1	On-balance sheet items excluding derivatives and SFTs, but including collateral	690,291	667,624	663,099
2	(Asset amounts deducted in determining Basel III tier 1 capital)	(13,284)	(15,562)	(13,831)
3	Total on-balance sheet exposures (excluding derivatives and SFTs)	677,007	652,062	649,268
	Derivative exposures			
4	Replacement cost associated with all derivatives transactions (i.e., net of eligible cash variation margin)	38,253	42,484	43,007
5	Add-on amounts for PFE associated with all derivatives transactions	81,484	84,565	85,503
6	Gross-up for derivatives collateral provided where deducted from the balance sheet assets pursuant to the operative accounting framework	0	0	0
7	(Deductions of receivables assets for cash variation margin provided in derivatives transactions)	(14,700)	(15,236)	(13,717)
8	(Exempted CCP leg of client-cleared trade exposures)	(18,401)	(17,895)	(21,556)
9	Adjusted effective notional amount of all written credit derivatives[1]	66,707	70,968	76,901
10	(Adjusted effective notional offsets and add-on deductions for written credit derivatives)[2]	(64,382)	(69,236)	(74,771)
11	Total derivative exposures	88,961	95,651	95,366
	Securities financing transaction exposures			
12	Gross SFT assets (with no recognition of netting), after adjusting for sale accounting transactions	200,010	240,069	213,710
13	(Netted amounts of cash payables and cash receivables of gross SFT assets)	(91,539)	(120,342)	(90,555)
14	CCR exposure for SFT assets	8,984	9,260	7,774
15	Agent transaction exposures			0
16	Total securities financing transaction exposures	117,455	128,987	130,928
	Other off-balance sheet exposures			
17	Off-balance sheet exposure at gross notional amount	86,627	81,600	88,075
18	(Adjustments for conversion to credit equivalent amounts)	(58,725)	(56,386)	(59,039)
19	Total off-balance sheet items	27,902	25,214	29,035
	Total exposures (leverage ratio denominator)	911,325	901,914	904,598
	Capital and total exposures (leverage ratio denominator)			
20	Tier 1 capital	51,888	50,702	46,279
21	Total exposures (leverage ratio denominator)	911,325	901,914	904,598
	Leverage ratio			
22	Basel III leverage ratio (%)	5.7	5.6	5.1

1 Includes protection sold, including agency transactions. 2 Protection sold can be offset with protection bought on the same underlying reference entity, provided that the conditions according to the Basel III leverage ratio framework and disclosure requirements are met.

▲

Section 14 Liquidity coverage ratio

Liquidity coverage ratio

Quarterly | We monitor the Liquidity coverage ratio (the LCR) in all significant currencies in order to manage any currency mismatch between high-quality liquid assets (HQLA) and the net expected cash outflows in times of stress. ▲

Pillar 3 disclosure requirement	Annual Report 2019 section	Disclosure	Annual Report 2019 page number
Concentration of funding sources	Treasury management	– Liabilities by product and currency	166
Currency mismatch in the LCR	Treasury management	– Liquidity coverage ratio	159

High-quality liquid assets

Quarterly | HQLA must be easily and immediately convertible into cash at little or no loss of value, especially during a period of stress. HQLA are assets that are of low risk and are unencumbered. Other characteristics of HQLA are ease and certainty of valuation, low correlation with risky assets, listing on a developed and recognized exchange, existence of an active and sizable market, and low volatility. Based on these characteristics, HQLA are categorized as Level 1 (primarily central bank reserves and government bonds) or Level 2 (primarily US and European agency bonds as well as non-financial corporate covered bonds). Level 2 assets are subject to regulatory haircuts and caps. ▲

Quarterly |

High-quality liquid assets

	Average 4Q19[1]			Average 3Q19[1]			Average 4Q18[1]		
USD billion	Level 1 weighted liquidity value[2]	Level 2 weighted liquidity value[2]	Total weighted liquidity value[2]	Level 1 weighted liquidity value[2]	Level 2 weighted liquidity value[2]	Total weighted liquidity value[2]	Level 1 weighted liquidity value[2]	Level 2 weighted liquidity value[2]	Total weighted liquidity value[2]
Cash balances[3]	100		100	99		99	96		96
Securities	52	14	66	53	16	69	65	12	78
Total high-quality liquid assets[4]	152	14	166	**152**	**16**	**168**	**161**	**12**	**173**

1 Calculated based on an average of 64 data points in the fourth quarter of 2019, 66 data points in the third quarter of 2019 and 64 data points in the fourth quarter of 2018. 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.

▲

LCR development during the fourth quarter of 2019

Quarterly | In the fourth quarter of 2019, the UBS Group LCR decreased by 4 percentage points to 134%, remaining above the 110% Group LCR minimum communicated by the Swiss Financial Market Supervisory Authority (FINMA). The LCR decrease was primarily driven by lower average HQLA balances reflecting higher funding consumption by the business divisions and reductions in issued debt, partly offset by higher deposit balances. Additionally, average net cash outflows increased following a reduction in inflows from secured financing transaction investments, partly offset by higher average inflows from loans. ▲

Quarterly |

LIQ1: Liquidity coverage ratio

	USD billion, except where indicated	Average 4Q19[1] Unweighted value	Average 4Q19[1] Weighted value[2]	Average 3Q19[1] Unweighted value	Average 3Q19[1] Weighted value[2]	Average 4Q18[1] Unweighted value	Average 4Q18[1] Weighted value[2]
	High-quality liquid assets						
1	High-quality liquid assets	169	166	171	168	176	173
	Cash outflows						
2	Retail deposits and deposits from small business customers	243	28	241	28	234	26
3	*of which: stable deposits*	*32*	*1*	*31*	*1*	*35*	*1*
4	*of which: less stable deposits*	*211*	*27*	*210*	*27*	*199*	*25*
5	Unsecured wholesale funding	190	106	188	106	182	102
6	*of which: operational deposits (all counterparties)*	*41*	*10*	*41*	*10*	*42*	*10*
7	*of which: non-operational deposits (all counterparties)*	*136*	*83*	*135*	*83*	*129*	*80*
8	*of which: unsecured debt*	*13*	*13*	*12*	*12*	*12*	*12*
9	Secured wholesale funding		74		75		76
10	Additional requirements:	63	22	71	22	76	24
11	*of which: outflows related to derivatives and other transactions*	*32*	*14*	*37*	*15*	*40*	*16*
12	*of which: outflows related to loss of funding on debt products[3]*	*1*	*1*	*0*	*0*	*1*	*1*
13	*of which: committed credit and liquidity facilities*	*31*	*7*	*34*	*7*	*35*	*7*
14	Other contractual funding obligations	14	12	14	12	14	12
15	Other contingent funding obligations	238	6	238	6	247	5
16	**Total cash outflows**		**248**		**249**		**246**
	Cash inflows						
17	Secured lending	307	81	304	87	295	79
18	Inflows from fully performing exposures	65	29	62	28	66	29
19	Other cash inflows	13	13	12	12	10	10
20	**Total cash inflows**	**385**	**123**	**379**	**127**	**370**	**119**

	USD billion, except where indicated	Average 4Q19[1] Total adjusted value[4]	Average 3Q19[1] Total adjusted value[4]	Average 4Q18[1] Total adjusted value[4]
	Liquidity coverage ratio			
21	High-quality liquid assets	166	168	173
22	Net cash outflows	124	122	127
23	**Liquidity coverage ratio (%)**	**134**	**138**	**136**

1 Calculated based on an average of 64 data points in the fourth quarter of 2019, 66 data points in the third quarter of 2019 and 64 data points in the fourth quarter of 2018. 2 Calculated after the application of haircuts and inflow and outflow rates. 3 Includes outflows related to loss of funding on asset-backed securities, covered bonds, other structured financing instruments, asset-backed commercial papers, structured entities (conduits), securities investment vehicles and other such financing facilities. 4 Calculated after the application of haircuts and inflow and outflow rates as well as, where applicable, caps on Level 2 assets and cash inflows.

▲

Liquidity risk management

Annual | The table below presents an overview of risk management disclosures related to risks resulting from liquidity and funding activities that are provided separately in our Annual Report 2019. ▲

Annual |

LIQA – Liquidity risk management

Pillar 3 disclosure requirement	Annual Report 2019 section	Disclosure	Annual Report 2019 page number
Liquidity risk management including risk tolerance and target / limit setting, monitoring and reporting including policies and practices as well as governance and governance structure	Treasury management	– Strategy, objectives and governance	156
Funding risk strategy and management: objective, diversification of funding sources, limits and targets approach	Treasury management	– Liabilities and funding management	164–168
Liquidity risk management and strategy: objective, diversification of liquid assets, limits and targets approach	Treasury management	– Assets and liquidity management	157–163
Stress testing approach and stress scenario description	Treasury management	– Stress testing	163
Contingency funding plan	Treasury management	– Contingency funding plan	163
Asset encumbrance (encumbered, unencumbered and assets that cannot be pledged as collateral); unencumbered assets by currency, limitations on the transferability of liquidity	Treasury management	– Asset encumbrance Unencumbered assets available to secure funding on a Group and/or legal entity level by currency Trapped liquidity at Group level (High-quality liquid assets paragraph)	160–163 158
Maturity of assets and liabilities to provide a view on the balance sheet and off-balance sheet structure	Treasury management	– Maturity analysis of assets and liabilities	168–169

▲

Section 15 Remuneration

Annual | Pillar 3 disclosures on remuneration are separately provided on pages 218 and 236–282 in our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors*. ▲

Section 16 Requirements for global systemically important banks and related indicators

Annual | The Financial Stability Board (the FSB) determined that UBS is a global systemically important bank (G-SIB), using an indicator-based methodology adopted by the Basel Committee on Banking Supervision (the BCBS). Banks that qualify as G-SIBs are required to disclose the 12 indicators for assessing the systemic importance of G-SIBs as defined by the BCBS. These indicators are used for the G-SIB score calculation and cover five categories: size, cross-jurisdictional activity, interconnectedness, substitutability / financial institution infrastructure, and complexity.

Based on the published indicators, G-SIBs are subject to additional CET1 capital buffer requirements in a range from 1.0% to 3.5%. In November 2019, the FSB determined that the requirement for UBS continues to be 1.0%. As our Swiss SRB Basel III capital requirements exceed the BCBS requirements including the G-SIB buffer, we are not affected by these additional G-SIB requirements.

In July 2018, the BCBS published a revised assessment methodology and higher loss absorbency requirements. These will come into effect in 2021, with the corresponding surcharge applied as of January 2023. We do not expect these changes to result in an increase of our additional CET1 capital buffer requirement.

We provide our G-SIB indicators as of 31 December 2018 under "Pillar 3 disclosures" at *www.ubs.com/investors*. Our G-SIB indicators as of 31 December 2019 will be published in July 2020 under "Pillar 3 disclosures" at *www.ubs.com/investors*. ▲

Significant regulated subsidiaries and sub-groups

Section 1 Introduction

The sections below include capital and other regulatory information as of 31 December 2019 for UBS AG standalone, UBS Switzerland AG standalone, UBS Europe SE consolidated and UBS Americas Holding LLC consolidated.

Capital information in this section is based on Pillar 1 capital requirements. Entities may be subject to significant additional Pillar 2 requirements, which represent additional amounts of capital considered necessary and agreed with regulators based on the risk profile of the entities.

Section 2 UBS AG standalone

Key metrics of the fourth quarter of 2019

Quarterly | The table below is based on the Basel Committee on Banking Supervision (BCBS) Basel III rules. During the fourth quarter of 2019, common equity tier 1 (CET1) capital decreased by USD 0.9 billion to USD 49.5 billion, mainly due to accruals for capital returns, partly offset by operating profit. Tier 1 capital decreased by USD 0.7 billion to USD 63.9 billion as the aforementioned decrease in CET1 was partly offset by an additional USD 0.3 billion of high-trigger loss-absorbing AT1 capital instruments. Risk-weighted assets (RWA) decreased by USD 9.2 billion to USD 288.0 during the fourth quarter of 2019, primarily driven by decreases in credit and counterparty credit risk RWA related to third parties and Group entities. Leverage ratio exposure decreased by USD 21 billion, mainly due to a decrease in on-balance sheet exposures from securities financing transactions and derivatives. Average high-quality liquid assets decreased by USD 2.5 billion driven by lower average cash balances reflecting higher funding consumption by the business divisions and decreases in issued debt. Average total net cash outflows decreased by USD 1.6 billion, reflecting lower average outflows from intercompany transactions. ▲

Quarterly |

KM1: Key metrics

USD million, except where indicated

		31.12.19	30.9.19	30.6.19	31.3.19	31.12.18
Available capital (amounts)						
1	Common equity tier 1 (CET1)	49,521	50,458	51,261	49,024	49,411
1a	Fully loaded ECL accounting model CET1[1]	49,518	50,456	51,258	49,021	49,411
2	Tier 1	63,893	64,545	64,315	61,839	59,595
2a	Fully loaded ECL accounting model tier 1[1]	63,891	64,543	64,312	61,836	59,595
3	Total capital	69,576	70,194	70,612	68,542	66,295
3a	Fully loaded ECL accounting model total capital[1]	69,574	70,191	70,609	68,539	66,295
Risk-weighted assets (amounts)						
4	Total risk-weighted assets (RWA)	287,999	297,200	294,348	300,734	292,888
4a	Minimum capital requirement[2]	23,040	23,776	23,548	24,059	23,431
4b	Total risk-weighted assets (pre-floor)	287,999	297,200	294,348	300,734	292,888
Risk-based capital ratios as a percentage of RWA						
5	Common equity tier 1 ratio (%)	17.19	16.98	17.41	16.30	16.87
5a	Fully loaded ECL accounting model CET1 ratio (%)[1]	17.19	16.98	17.41	16.30	16.87
6	Tier 1 ratio (%)	22.19	21.72	21.85	20.56	20.35
6a	Fully loaded ECL accounting model tier 1 ratio (%)[1]	22.18	21.72	21.85	20.56	20.35
7	Total capital ratio (%)	24.16	23.62	23.99	22.79	22.63
7a	Fully loaded ECL accounting model total capital ratio (%)[1]	24.16	23.62	23.99	22.79	22.63
Additional CET1 buffer requirements as a percentage of RWA						
8	Capital conservation buffer requirement (2.5% from 2019) (%)	2.50	2.50	2.50	2.50	1.88
9	Countercyclical buffer requirement (%)	0.07	0.08	0.08	0.09	0.07
9a	Additional countercyclical buffer for Swiss mortgage loans (%)	0.00	0.00	0.00	0.00	0.00
10	Bank G-SIB and/or D-SIB additional requirements (%)[3]					
11	Total of bank CET1-specific buffer requirements (%)	2.57	2.58	2.58	2.59	1.95
12	CET1 available after meeting the bank's minimum capital requirements (%)	12.69	12.48	12.91	11.80	12.37
Basel III leverage ratio						
13	Total Basel III leverage ratio exposure measure	589,127	609,656	618,704	617,329	601,013
14	Basel III leverage ratio (%)	10.85	10.59	10.40	10.02	9.92
14a	Fully loaded ECL accounting model Basel III leverage ratio (%)[1]	10.84	10.59	10.39	10.02	9.92
Liquidity coverage ratio[4]						
15	Total HQLA	73,805	76,330	82,201	86,690	76,456
16	Total net cash outflow	53,960	55,607	56,626	51,434	55,032
17	LCR (%)	137	137	145	169	139

1 The fully loaded ECL accounting model excludes the transitional relief of recognizing ECL allowances and provisions in CET1 capital in accordance with FINMA Circular 2013/1 "Eligible capital – banks." 2 Calculated as 8% of total RWA, based on total capital minimum requirements, excluding CET1 buffer requirements. 3 Swiss SRB going concern requirements and information for UBS AG standalone is provided on the following pages in this section. 4 Calculated based on quarterly average. Refer to "Liquidity coverage ratio" in this section for more information.

▲

Swiss SRB going concern requirements and information

UBS AG standalone is considered a systemically relevant bank (SRB) under Swiss banking law and is subject to capital regulations on a standalone basis. Under Swiss SRB regulations, article 125 "Reliefs for financial groups and individual institutions" of the Capital Adequacy Ordinance stipulates that the Swiss Financial Market Supervisory Authority (FINMA) may grant, under certain conditions, capital relief to individual institutions to ensure that an individual institution's compliance with the capital requirements does not lead to a de facto overcapitalization of the group of which it is a part.

FINMA granted relief concerning the regulatory capital requirements of UBS AG on a standalone basis by means of decrees issued on 20 December 2013 and 20 October 2017, the latter effective as of 1 July 2017 and partly replacing the former.

The FINMA decree issued in 2017 established the measure of total going concern capital for UBS AG. Common equity tier 1 (CET1) and high-trigger additional tier 1 capital instruments are eligible as going concern capital, and low-trigger tier 2 capital instruments remained eligible to meet high-trigger AT1 requirements until the earlier of (i) their maturity or the first call date or (ii) 31 December 2019.

Capital requirements based on RWA and the leverage ratio denominator (the LRD) are the same under both the phase-in and fully applied rules. The capital requirements based on RWA include a minimum CET1 capital requirement of 9.64% plus the effects from countercyclical buffers (CCyBs), and a total going concern capital requirement of 13.94% plus the effects from CCyBs. The capital requirements based on LRD include a minimum CET1 capital requirement of 3.375% and a total going concern leverage ratio requirement of 4.875%. For direct and indirect investments, including holding of regulatory capital instruments of UBS AG in subsidiaries that are active in banking and finance, the FINMA decree introduced a risk-weighting approach, with a phase-in period until 1 January 2028. Starting from 1 July 2017, these investments have been risk weighted at 200%. From 1 January 2019, the risk weights are being gradually raised 5 percentage points per year for Switzerland-domiciled investments and 20 percentage points per year for foreign-domiciled investments until the fully applied risk weights are 250% and 400%, respectively.

→ **Refer to the "Introduction and basis of preparation" section of this report for more information about the revised gone concern requirements**

Quarterly |

Swiss SRB going concern requirements and information

	Swiss SRB, including transitional arrangements				Swiss SRB as of 1.1.20, after transition arrangements			
As of 31.12.19	RWA		LRD		RWA		LRD	
USD million, except where indicated	in %[1]		in %[1]		in %		in %	
Required going concern capital								
Total going concern capital	14.01[2]	40,353	4.88[2]	28,720	14.01[2]	52,453	4.88[2]	28,720
Common equity tier 1 capital	9.71	27,970	3.38	19,883	9.71	36,356	3.38	19,883
of which: minimum capital	*4.50*	*12,960*	*1.50*	*8,837*	*4.50*	*16,846*	*1.50*	*8,837*
of which: buffer capital	*5.14*	*14,803*	*1.88*	*11,046*	*5.14*	*19,242*	*1.88*	*11,046*
of which: countercyclical buffer	*0.07*	*206*			*0.07*	*268*		
Maximum additional tier 1 capital	4.30	12,384	1.50	8,837	4.30	16,097	1.50	8,837
of which: additional tier 1 capital	*3.50*	*10,080*	*1.50*	*8,837*	*3.50*	*13,102*	*1.50*	*8,837*
of which: additional tier 1 buffer capital	*0.80*	*2,304*			*0.80*	*2,995*		
Eligible going concern capital								
Total going concern capital	23.14	66,632	11.31	66,632	16.42	61,479	10.44	61,479
Common equity tier 1 capital	17.19	49,521	8.41	49,521	13.23	49,521	8.41	49,521
Total loss-absorbing additional tier 1 capital[3]	5.94	17,111	2.90	17,111	3.19	11,958	2.03	11,958
of which: high-trigger loss-absorbing additional tier 1 capital	*4.15*	*11,958*	*2.03*	*11,958*	*3.19*	*11,958*	*2.03*	*11,958*
of which: low-trigger loss-absorbing tier 2 capital	*1.79*	*5,153*	*0.87*	*5,153*				
Total loss-absorbing capacity								
Required total loss-absorbing capacity	14.01	40,353	4.88	28,720	14.01	40,353	4.88	28,720
Eligible total loss-absorbing capacity	23.14	66,632	11.31	66,632	16.42	61,479	10.44	61,479

1 Requirements as stipulated by FINMA decree. These exceed the requirements according to the transitional arrangements of the Swiss Capital Adequacy Ordinance (the CAO), which require a minimum total going concern capital ratio of 13.4% plus the effect of the countercyclical buffer (CCyB) of 0.07%, of which 9.5% plus the effect of CCyB of 0.07% must be satisfied with CET1 capital, as well as a minimum total going concern leverage ratio of 4.5%, of which 3.2% must be satisfied with CET1 capital. As of 1 January 2020, the capital requirements as per the revised CAO will apply. 2 Includes applicable add-ons of 1.08% for RWA and 0.375% for LRD. 3 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. Outstanding low-trigger loss-absorbing tier 2 capital instruments are subject to amortization starting five years prior to their maturity.

Quarterly |

Swiss SRB going concern information

	Swiss SRB, including transitional arrangements			Swiss SRB as of 1.1.20, after transition arrangements		
USD million, except where indicated	31.12.19	30.9.19	31.12.18	31.12.19	30.9.19	31.12.18
Eligible going concern capital						
Total going concern capital	66,632	67,267	63,225	61,479	62,142	57,217
Total tier 1 capital	61,479	62,142	57,217	61,479	62,142	57,217
Common equity tier 1 capital	49,521	50,458	49,411	49,521	50,458	49,411
Total loss-absorbing additional tier 1 capital	11,958	11,684	7,805	11,958	11,684	7,805
of which: high-trigger loss-absorbing additional tier 1 capital	*11,958*	*11,684*	*7,805*	*11,958*	*11,684*	*7,805*
Total tier 2 capital	5,153	5,125	6,008			
of which: low-trigger loss-absorbing tier 2 capital[1]	*5,153*	*5,125*	*6,008*			
Risk-weighted assets / leverage ratio denominator						
Risk-weighted assets	287,999	297,200	292,888	374,351	382,770	383,578
of which: direct and indirect investments in Swiss-domiciled subsidiaries[2]	*34,418*	*32,803*	*31,711*	*41,973*	*40,004*	*39,639*
of which: direct and indirect investments in foreign-domiciled subsidiaries[2]	*96,307*	*95,784*	*82,762*	*175,104*	*174,153*	*165,525*
Leverage ratio denominator	589,127	609,656	601,013	589,127	609,656	601,013
Capital and loss-absorbing capacity ratios (%)						
Going concern capital ratio	23.1	22.6	21.6	16.4	16.2	14.9
of which: common equity tier 1 capital ratio	*17.2*	*17.0*	*16.9*	*13.2*	*13.2*	*12.9*
Leverage ratios (%)						
Going concern leverage ratio	11.3	11.0	10.5	10.4	10.2	9.5
of which: common equity tier 1 leverage ratio	*8.4*	*8.3*	*8.2*	*8.4*	*8.3*	*8.2*

1 Outstanding low-trigger loss-absorbing tier 2 capital instruments qualify as going concern capital until the earlier of (i) their maturity or first call date or (ii) 31 December 2019, and are subject to amortization starting five years prior to their maturity. 2 Carrying amount for direct and indirect investments including holding of regulatory capital instruments in Swiss-domiciled subsidiaries (31 December 2019: USD 16,789 million; 31 December 2018: USD 15,856 million), and for direct and indirect investments including holding of regulatory capital instruments in foreign-domiciled subsidiaries (31 December 2019: USD 43,776 million; 31 December 2018: USD 41,381 million), is risk weighted at 205% and 220%, respectively, for the current year (31 December 2018: the applicable risk weight was 200% for both Swiss-domiciled and foreign-domiciled investments). Risk weights will gradually increase by 5 percentage points per year for Swiss-domiciled investments and 20 percentage points per year for foreign-domiciled investments until the fully applied risk weights of 250% and 400%, respectively, are applied.

▲

Reconciliation of Swiss banking law equity to Swiss SRB common equity tier 1 capital

USD billion	31.12.19	31.12.18
Equity – Swiss banking law[1]	51.7	51.1
Deferred tax assets	0.2	0.5
Valuation differences for investments in subsidiaries	1.7	1.6
Accruals for proposed dividends to UBS Group AG	(3.9)	(3.3)
Other	(0.2)	(0.5)
Common equity tier 1 capital	49.5	49.4

1 Equity under Swiss banking law is adjusted to derive equity in accordance with IFRS and then further adjusted to derive common equity tier 1 (CET1) capital in accordance with Swiss SRB requirements.

Leverage ratio information

Quarterly |

Swiss SRB leverage ratio denominator

USD billion	31.12.19	31.12.18
Leverage ratio denominator		
Swiss GAAP total assets	478.9	480.0
Difference between Swiss GAAP and IFRS total assets	122.3	118.6
Less: derivative exposures and SFTs[1]	(220.4)	(236.7)
On-balance sheet exposures (excluding derivative exposures and SFTs)	380.8	**361.9**
Derivative exposures	94.8	99.3
Securities financing transactions	92.6	114.2
Off-balance sheet items	21.7	26.1
Items deducted from Swiss SRB tier 1 capital	(0.8)	(0.5)
Total exposures (leverage ratio denominator)	589.1	**601.0**

1 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 in this table.

▲

Quarterly |

BCBS Basel III leverage ratio

USD million, except where indicated	31.12.19	30.9.19	30.6.19	31.3.19	31.12.18
Total tier 1 capital	63,893	64,545	64,315	61,839	59,595
Total exposures (leverage ratio denominator)	589,127	609,656	618,704	617,329	601,013
BCBS Basel III leverage ratio (%)	10.8	**10.6**	**10.4**	**10.0**	**9.9**

▲

Liquidity coverage ratio

Quarterly | UBS AG is required to maintain a minimum liquidity coverage ratio of 105% as communicated by FINMA. ▲

Quarterly |

Liquidity coverage ratio

	Weighted value[1]	
USD billion, except where indicated	Average 4Q19[2]	Average 4Q18[2]
High-quality liquid assets	74	76
Total net cash outflows	54	55
of which: cash outflows	*160*	*169*
of which: cash inflows	*106*	*114*
Liquidity coverage ratio (%)	137	**139**

1 Calculated after the application of haircuts and inflow and outflow rates. 2 Calculated based on an average of 64 data points in the fourth quarter of 2019 and 64 data points in the fourth quarter of 2018.

▲

Section 3 UBS Switzerland AG standalone

Key metrics of the fourth quarter of 2019

Quarterly | The table below is based on the Basel Committee on Banking Supervision (the BCBS) Basel III rules.

During the fourth quarter of 2019, common equity tier 1 (CET1) capital remained stable. Risk-weighted assets (RWA) increased by CHF 1.7 billion to CHF 99.7 billion, primarily due to an increase in the Basel I RWA floor. Leverage ratio exposure decreased by CHF 7 billion, mainly due to a decrease of on-balance sheet exposures from securities financing transactions.

Average high-quality liquid assets increased by CHF 2.3 billion as a result of greater average cash balances, reflecting a reduction in secured financing transactions, partly offset by decreased customer deposits. Average total net cash outflows increased by CHF 2.3 billion, reflecting greater average outflows from intercompany transactions. ▲

Quarterly |

KM1: Key metrics

CHF million, except where indicated

		31.12.19	30.9.19	30.6.19	31.3.19	31.12.18
Available capital (amounts)						
1	Common equity tier 1 (CET1)	10,895	10,875	10,654	10,463	10,225
1a	Fully loaded ECL accounting model CET1[1]	10,890	10,871	10,649	10,457	10,225
2	Tier 1	15,606	15,124	14,894	14,712	14,468
2a	Fully loaded ECL accounting model tier 1[1]	15,601	15,120	14,889	14,706	14,468
3	Total capital	15,606	15,124	14,894	14,712	14,468
3a	Fully loaded ECL accounting model total capital[1]	15,601	15,120	14,889	14,706	14,468
Risk-weighted assets (amounts)						
4	Total risk-weighted assets (RWA)	99,667	97,927	96,640	96,067	95,646
4a	Minimum capital requirement[2]	7,973	7,834	7,731	7,685	7,652
4b	Total risk-weighted assets (pre-floor)	89,234	90,338	91,013	90,068	91,457
Risk-based capital ratios as a percentage of RWA						
5	Common equity tier 1 ratio (%)	10.93	11.10	11.02	10.89	10.69
5a	Fully loaded ECL accounting model CET1 ratio (%)[1]	10.93	11.10	11.02	10.89	10.69
6	Tier 1 ratio (%)	15.66	15.44	15.41	15.31	15.13
6a	Fully loaded ECL accounting model tier 1 ratio (%)[1]	15.65	15.44	15.41	15.31	15.13
7	Total capital ratio (%)	15.66	15.44	15.41	15.31	15.13
7a	Fully loaded ECL accounting model total capital ratio (%)[1]	15.65	15.44	15.41	15.31	15.13
Additional CET1 buffer requirements as a percentage of RWA[3]						
8	Capital conservation buffer requirement (2.5% from 2019) (%)	2.50	2.50	2.50	2.50	1.88
9	Countercyclical buffer requirement (%)	0.01	0.01	0.01	0.01	0.01
9a	Additional countercyclical buffer for Swiss mortgage loans (%)	0.57	0.57	0.57	0.58	0.56
10	Bank G-SIB and/or D-SIB additional requirements (%)[4]					
11	Total of bank CET1-specific buffer requirements (%)	2.51	2.51	2.51	2.51	1.88
12	CET1 available after meeting the bank's minimum capital requirements (%)	6.43	6.60	6.52	6.39	6.19
Basel III leverage ratio						
13	Total Basel III leverage ratio exposure measure	302,304	309,750	311,212	310,545	306,487
14	Basel III leverage ratio (%)	5.16	4.88	4.79	4.74	4.72
14a	Fully loaded ECL accounting model Basel III leverage ratio (%)[1]	5.16	4.88	4.78	4.74	4.72
Liquidity coverage ratio[5]						
15	Total HQLA	67,105	64,835	67,160	71,392	67,427
16	Total net cash outflow	51,561	49,242	48,761	51,945	52,846
17	LCR (%)	130	132	138	137	128

1 The fully loaded ECL accounting model excludes the transitional relief of recognizing ECL allowances and provisions in CET1 capital in accordance with FINMA Circular 2013/1 "Eligible capital – banks." 2 Calculated as 8% of total RWA, based on total capital minimum requirements, excluding CET1 buffer requirements. 3 As Annex 8 of the Swiss Capital Adequacy Ordinance (the CAO) does not apply to the systemically relevant banks, we can abstain from disclosing the information required in lines 12a–12e. We nevertheless provides information about the Swiss sector-specific countercyclical buffer in row 9a pursuant to Art. 44 CAO. 4 Swiss SRB going concern requirements and information for UBS Switzerland AG are provided on the next page. 5 Calculated based on quarterly average. Refer to "Liquidity coverage ratio" in this section for more information.

▲

Swiss SRB going and gone concern requirements and information

Quarterly | UBS Switzerland AG is considered a systemically relevant bank (SRB) under Swiss banking law and is subject to capital regulations on a standalone basis. As of 31 December 2019, the transitional going concern capital and leverage ratio requirements for UBS Switzerland AG standalone were 13.98%, including a countercyclical buffer of 0.58%, and 4.5%, respectively. The gone concern requirements under transitional arrangements were 9.51% for the RWA-based requirement and 3.27% for the LRD-based requirement. ▲

The Swiss SRB framework and requirements applicable to UBS Switzerland AG standalone are consistent with those applicable to UBS Group AG consolidated and are described in the "Capital management" section of our Annual Report 2019, available under "Annual reporting" at *www.ubs.com/investors*.

→ **Refer to "Regulatory framework" in the "Capital Management" section of our Annual Report 2019 for more information about loss-absorbing capacity, leverage ratio requirements and gone concern rebate**

→ **Refer to "Additional information" in the "Capital Management" section of our Annual Report 2019 for more information about the joint liability of UBS AG and UBS Switzerland AG**

Quarterly |

Swiss SRB going and gone concern requirements and information

	Swiss SRB, including transitional arrangements				Swiss SRB as of 1.1.20			
As of 31.12.19	RWA		LRD		RWA		LRD	
CHF million, except where indicated	in %[1]		in %		in %		in %	
Required going concern capital								
Total going concern capital	13.98	13,937	4.50	13,604	14.52[2]	14,475	4.88[2]	14,737
Common equity tier 1 capital	10.08	10,050	3.20	9,674	10.22	10,189	3.38	10,203
of which: minimum capital	*4.90*	*4,884*	*1.70*	*5,139*	*4.50*	*4,485*	*1.50*	*4,535*
of which: buffer capital	*4.60*	*4,585*	*1.50*	*4,535*	*5.14*	*5,123*	*1.88*	*5,668*
of which: countercyclical buffer	*0.58*	*582*			*0.58*	*582*		
Maximum additional tier 1 capital	3.90	3,887	1.30	3,930	4.30	4,286	1.50	4,535
of which: additional tier 1 capital	*3.10*	*3,090*	*1.30*	*3,930*	*3.50*	*3,488*	*1.50*	*4,535*
of which: additional tier 1 buffer capital	*0.80*	*797*			*0.80*	*797*		
Eligible going concern capital								
Total going concern capital	15.66	15,606	5.16	15,606	15.66	15,606	5.16	15,606
Common equity tier 1 capital	10.93	10,895	3.60	10,895	10.93	10,895	3.60	10,895
Total loss-absorbing additional tier 1 capital	4.73	4,711	1.56	4,711	4.73	4,711	1.56	4,711
of which: high-trigger loss-absorbing additional tier 1 capital	*4.73*	*4,711*	*1.56*	*4,711*	*4.73*	*4,711*	*1.56*	*4,711*
Required gone concern capital								
Total gone concern loss-absorbing capacity	9.51	9,483	3.27	9,882	8.64	8,614	3.02	9,137
of which: base requirement	*10.52*	*10,485*	*3.63*	*10,959*	*12.86*	*12,817*	*4.50*	*13,604*
of which: additional requirement for market share and LRD	*0.81*	*807*	*0.28*	*850*	*1.08*	*1,076*	*0.38*	*1,134*
of which: applicable reduction on requirements[3]	*(1.82)*	*(1,810)*	*(0.64)*	*(1,927)*	*(5.30)*	*(5,280)*	*(1.85)*	*(5,600)*
Eligible gone concern capital								
Total gone concern loss-absorbing capacity	10.95	10,915	3.61	10,915	10.95	10,915	3.61	10,915
TLAC-eligible debt	10.95	10,915	3.61	10,915	10.95	10,915	3.61	10,915
Total loss-absorbing capacity								
Required total loss-absorbing capacity	23.50	23,420	7.77	23,485	23.17	23,089	7.90	23,874
Eligible total loss-absorbing capacity	26.61	26,521	8.77	26,521	26.61	26,521	8.77	26,521

1 The total loss-absorbing capacity ratio requirement of 23.50% is the current requirement based on the transitional rules of the Swiss Capital Adequacy Ordinance including the rebate on the gone concern requirements. In addition, FINMA has defined a total capital ratio requirement, which is the sum of 14.4% and the effect of countercyclical buffer (CCyB) requirements of 0.58%, of which 10% plus the effect of CCyB requirements must be satisfied with CET1 capital. 2 Includes applicable add-ons of 1.08% for RWA and 0.375% for LRD. 3 The rebate granted for Swiss SRBs including transitional arrangements was 42.5% of the maximum rebate, whereas the rebate granted for Swiss SRBs as of 1 January 2020 is 38% of UBS Group AG's gone concern requirement before applicable reductions.

▲

Swiss SRB loss-absorbing capacity

Quarterly |

Swiss SRB going and gone concern information[1]

CHF million, except where indicated	31.12.19	30.9.19	31.12.18
Eligible going concern capital			
Total going concern capital	15,606	15,124	14,468
Total tier 1 capital	15,606	15,124	14,468
Common equity tier 1 capital	10,895	10,875	10,225
of which: high-trigger loss-absorbing additional tier 1 capital	*4,711*	*4,249*	*4,243*
Eligible gone concern capital			
Total gone concern loss-absorbing capacity	10,915	10,948	10,932
TLAC-eligible debt	10,915	10,948	10,932
Total loss-absorbing capacity			
Total loss-absorbing capacity	26,521	26,072	25,400
Risk-weighted assets / leverage ratio denominator			
Risk-weighted assets	99,667	97,927	95,646
Leverage ratio denominator	302,304	309,750	306,487
Capital and loss-absorbing capacity ratios (%)			
Going concern capital ratio	15.7	15.4	15.1
of which: common equity tier 1 capital ratio	*10.9*	*11.1*	*10.7*
Gone concern loss-absorbing capacity ratio	11.0	11.2	11.4
Total loss-absorbing capacity ratio	26.6	26.6	26.6
Leverage ratios (%)			
Going concern leverage ratio	5.2	4.9	4.7
of which: common equity tier 1 leverage ratio	*3.6*	*3.5*	*3.3*
Gone concern leverage ratio	3.6	3.5	3.6
Total loss-absorbing capacity leverage ratio	8.8	8.4	8.3

1 The numbers disclosed in the table are identical for Swiss SRB (including transitional arrangement) requirements and Swiss SRB requirements applicable as of 1 January 2020.

▲

Reconciliation of Swiss banking law equity to Swiss SRB common equity tier 1 capital

CHF billion	31.12.19	31.12.18
Equity – Swiss banking law[1]	12.7	13.8
Deferred tax assets	0.1	0.2
Goodwill and intangible assets	(0.3)	(1.3)
Accruals for proposed dividends to shareholders	(1.3)	(2.2)
Other	(0.3)	(0.3)
Common equity tier 1 capital	10.9	10.2

1 Equity under Swiss banking law is adjusted to derive equity in accordance with IFRS and then further adjusted to derive common equity tier 1 (CET1) capital in accordance with Swiss SRB requirements.

Leverage ratio information

Quarterly |

Swiss SRB leverage ratio denominator

CHF billion	31.12.19	31.12.18
Leverage ratio denominator		
Swiss GAAP total assets	285.0	293.0
Difference between Swiss GAAP and IFRS total assets	3.6	1.8
Less: derivative exposures and SFTs[1]	(17.3)	(32.5)
On-balance sheet exposures (excluding derivative exposures and SFTs)	271.3	**262.3**
Derivative exposures	4.4	3.7
Securities financing transactions	12.7	28.5
Off-balance sheet items	14.2	12.4
Items deducted from Swiss SRB tier 1 capital	(0.3)	(0.5)
Total exposures (leverage ratio denominator)	302.3	**306.5**

1 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 in this table.

Quarterly |

BCBS Basel III leverage ratio

CHF million, except where indicated	31.12.19	30.9.19	30.6.19	31.3.19	31.12.18
Total tier 1 capital	15,606	15,124	14,894	14,712	14,468
Total exposures (leverage ratio denominator)	302,304	309,750	311,212	310,545	306,487
BCBS Basel III leverage ratio (%)	5.2	**4.9**	**4.8**	**4.7**	**4.7**

Liquidity coverage ratio

Quarterly | UBS Switzerland AG, as a Swiss SRB, is required to maintain a minimum liquidity coverage ratio of 100%.

Quarterly |

Liquidity coverage ratio

	Weighted value[1]	
CHF billion, except where indicated	Average 4Q19[2]	Average 4Q18[2]
High-quality liquid assets	67	67
Total net cash outflows	52	53
of which: cash outflows	*84*	*86*
of which: cash inflows	*33*	*34*
Liquidity coverage ratio (%)	130	**128**

1 Calculated after the application of haircuts and inflow and outflow rates. 2 Calculated based on an average of 64 data points in the fourth quarter of 2019 and 64 data points in the fourth quarter of 2018.

Capital instruments

Quarterly |

Capital instruments of UBS Switzerland AG – key features

Presented according to issuance date.

		Share capital	Additional tier 1 capital					
1	Issuer	UBS Switzerland AG, Switzerland	UBS Switzerland AG, Switzerland	UBS Switzerland AG, Switzerland	UBS Switzerland AG, Switzerland	UBS Switzerland AG, Switzerland	UBS Switzerland AG, Switzerland	UBS Switzerland AG, Switzerland
1a	Instrument number	1	2	3	4	5	6	7
2	Unique identifier (e.g., CUSIP, ISIN or Bloomberg identifier for private placement)	-	-					
3	Governing law(s) of the instrument	Swiss	Swiss					
3a	Means by which enforceability requirement of Section 13 of the TLAC Term Sheet is achieved (for other TLAC-eligible instruments governed by foreign law)	n/a	n/a					
	Regulatory treatment							
4	Transitional Basel III rules[1]	CET1 – Going concern capital	Additional tier 1 capital					
5	Post-transitional Basel III rules[2]	CET1 – Going concern capital	Additional tier 1 capital					
6	Eligible at solo / group / group and solo	UBS Switzerland AG consolidated and standalone	UBS Switzerland AG consolidated and standalone					
7	Instrument type (types to be specified by each jurisdiction)	Ordinary shares	Loan[4]					
8	Amount recognized in regulatory capital (currency in millions, as of most recent reporting date)[1]	CHF 10.0	CHF 1,500	CHF 500	CHF 1,000	CHF 825	USD 425	CHF 475
9	Par value of instrument	CHF 10.0	CHF 1,500	CHF 500	CHF 1,000	CHF 825	USD 425	CHF 475
10	Accounting classification[3]	Equity attributable to UBS Switzerland AG shareholders	Due to banks held at amortized cost					
11	Original date of issuance	–	1 April 2015	11 March 2016	18 December 2017	12 December 2018	12 December 2018	11 December 2019
12	Perpetual or dated	–	Perpetual					
13	Original maturity date	–	–					
14	Issuer call subject to prior supervisory approval	–	Yes					
15	Optional call date, contingent call dates and redemption amount	–	First optional repayment date: 1 April 2020	First optional repayment date: 11 March 2021	First optional repayment date: 18 December 2022	First optional repayment date: 12 December 2023	First optional repayment date: 12 December 2023	First optional repayment date: 11 December 2024
			Repayable at any time after the first optional repayment date. Repayment subject to FINMA approval. Optional repayment amount: principal amount, together with any accrued and unpaid interest thereon					
16	Subsequent call dates, if applicable	–	Early repayment possible due to a tax or regulatory event. Repayment due to tax event subject to FINMA approval. Repayment amount: principal amount, together with accrued and unpaid interest					

Capital instruments of UBS Switzerland AG – key features (continued)

	Coupons							
17	Fixed or floating dividend / coupon	–	Floating					
18	Coupon rate and any related index	–	6-month CHF Libor + 370 bps per annum semiannually	3-month CHF Libor + 459 bps per annum quarterly	3-month CHF Libor + 250 bps per annum quarterly	3-month CHF Libor + 489 bps per annum quarterly	3-month USD Libor + 547 bps per annum quarterly	3-month CHF Libor + 433 bps per annum quarterly
19	Existence of a dividend stopper	–	No					
20	Fully discretionary, partially discretionary or mandatory	Fully discretionary	Fully discretionary					
21	Existence of step-up or other incentive to redeem	–	No					
22	Non-cumulative or cumulative	Non-cumulative	Non-cumulative					
23	Convertible or non-convertible	–	Non-convertible					
24	If convertible, conversion trigger(s)	–	–					
25	If convertible, fully or partially	–	–					
26	If convertible, conversion rate	–	–					
27	If convertible, mandatory or optional conversion	–	–					
28	If convertible, specify instrument type convertible into	–	–					
29	If convertible, specify issuer of instrument it converts into	–	–					
30	Write-down feature	–	Yes					
31	If write-down, write-down trigger(s)	–	Trigger: CET1 ratio is less than 7% FINMA determines a write-down necessary to ensure UBS Switzerland AG's viability; or UBS Switzerland AG receives a commitment of governmental support that FINMA determines necessary to ensure UBS Switzerland AG's viability. Subject to applicable conditions					
32	If write-down, fully or partially	–	Fully					
33	If write-down, permanent or temporary	–	Permanent					
34	If temporary write-down, description of write-up mechanism	–	–					
34a	Type of subordination	Statutory	Contractual					
35	Position in subordination hierarchy in liquidation (specify instrument type immediately senior to instrument in the insolvency creditor hierarchy of the legal entity concerned).	Unless otherwise stated in the articles of association, once debts are paid back, the assets of the liquidated company are divided between the shareholders pro rata based on their contributions and considering the preferences attached to certain categories of shares (Art. 745, Swiss Code of Obligations)	Subject to any obligations that are mandatorily preferred by law, all obligations of UBS Switzerland AG that are unsubordinated or that are subordinated and do not rank junior, such as all classes of share capital, or at par, such as tier 1 instruments					
36	Non-compliant transitioned features	–	–					
37	If yes, specify non-compliant features	–	–					

1 Based on Swiss SRB (including transitional arrangement) requirements. 2 Based on Swiss SRB requirements applicable as of 1 January 2020. 3 As applied in UBS Switzerland AG's financial statements under Swiss GAAP. 4 Loans granted by UBS AG, Switzerland.

Section 4 UBS Europe SE consolidated

Quarterly | The table below provides information about the regulatory capital components, capital ratios, leverage ratio and liquidity of UBS Europe SE consolidated based on the Pillar 1 requirements.

During the fourth quarter of 2019, common equity tier 1 (CET1) capital was stable. Risk-weighted assets (RWA) increased by EUR 0.7 billion to EUR 15.1 billion, mainly as a result of an increase in credit risk RWA. Leverage ratio exposure decreased by EUR 8.3 billion, reflecting a decrease in securities financing transactions, derivative exposures and cash held at central banks. Average high-quality liquid assets remained stable. Average total net cash outflows increased by EUR 0.4 billion, mainly due to treasury activities.

Entities may also be subject to significant Pillar 2 requirements, which represent additional amounts of capital considered necessary and agreed with regulators based on the risk profile of the entities. ▲

Quarterly |

KM1: Key metrics[1,2,3]

EUR million, except where indicated		31.12.19	30.9.19	30.6.19	31.3.19
Available capital (amounts)					
1	Common equity tier 1 (CET1)	3,486	3,528	3,543	3,568
2	Tier 1	3,776	3,818	3,833	3,858
3	Total capital	3,776	3,818	3,833	3,858
Risk-weighted assets (amounts)					
4	Total risk-weighted assets (RWA)	15,146	14,407	13,725	14,432
4a	Minimum capital requirement[4]	1,212	1,153	1,098	1,155
Risk-based capital ratios as a percentage of RWA					
5	Common equity tier 1 ratio (%)	23.0	24.5	25.8	24.7
6	Tier 1 ratio (%)	24.9	26.5	27.9	26.7
7	Total capital ratio (%)	24.9	26.5	27.9	26.7
Additional CET1 buffer requirements as a percentage of RWA					
8	Capital conservation buffer requirement (2.5% from 2019) (%)	2.5	2.5	2.5	2.5
9	Countercyclical buffer requirement (%)	0.3	0.3	0.2	0.2
10	Bank G-SIB and/or D-SIB additional requirements (%)				
11	Total of bank CET1-specific buffer requirements (%)	2.8	2.8	2.7	2.7
12	CET1 available after meeting the bank's minimum capital requirements (%)[5]	16.9	18.5	19.9	18.7
Basel III leverage ratio					
13	Total Basel III leverage ratio exposure measure	41,924	50,199	52,291	51,060
14	Basel III leverage ratio (%)[6]	9.0	7.6	7.3	7.6
Liquidity coverage ratio[7]					
15	Total HQLA	14,393	14,309	14,367	14,770
16	Total net cash outflow[8]	9,976	9,624	8,773	7,465
17	LCR (%)[8]	147	151	165	198

1 Based on applicable EU Basel III rules. 2 As a result of the cross-border merger of UBS Limited into UBS Europe SE effective 1 March 2019, UBS Europe SE became a significant regulated subsidiary of UBS Group AG. The size, scope and business model of the merged entity is now materially different. Comparatives for 31 December 2018 have not been provided in the table because data produced on the same basis is not available. 3 There is no local disclosure requirement for the net stable funding ratio as at 31 December 2019. 4 Calculated as 8% of total RWA, based on total capital minimum requirements, excluding CET1 buffer requirements. 5. This represents the CET1 ratio which is available for meeting buffer requirements. It is calculated as the CET1 ratio minus 4.5% and after considering, where applicable, CET1 capital which has been used to meet tier 1 and/or total capital ratio requirements under Pillar 1. Comparative figures have been adjusted to adhere to this presentation. 6 On the basis of tier 1 capital. 7 Figures as of 31 December 2019 are based on a ten-month average, as of 30 September 2019 on a seven-month average and as of 30 June 2019 on a four-month average, rather than a twelve-month average, as data produced on the same basis is only available for the period since the cross-border merger. For 31 March 2019, month-end reporting date values are disclosed. 8 Revised calculation excludes inflows from overdrafts which we cannot demand repayment of within 30 days. Comparative figures and ratios have been adjusted accordingly.

▲

Quarterly | The table below provides information about the regulatory capital components and capital ratios, as well as the leverage ratio, of UBS Americas Holding LLC consolidated, based on the Pillar 1 requirements (i.e., US Basel III standardized rules).

During the fourth quarter of 2019, common equity tier 1 (CET1) capital was stable. Risk-weighted assets (RWA) increased by USD 1.1 billion to USD 54.1 billion, mainly driven by higher credit risk RWA. Leverage ratio exposure increased by USD 3.7 billion during the quarter, primarily driven by higher average assets.

Entities may also be subject to significant Pillar 2 requirements, which represent additional amounts of capital considered necessary and agreed with regulators based on the risk profile of the entities. ▲

Quarterly |

KM1: Key metrics[1,2]

USD million, except where indicated

		31.12.19	30.9.19	30.6.19	31.3.19	31.12.18[3]
Available capital (amounts)						
1	Common equity tier 1 (CET1)	11,939	11,868	12,900	12,028	11,746
2	Tier 1	14,987	14,923	15,055	14,170	13,887
3	Total capital	15,702	15,640	15,772	14,882	14,601
Risk-weighted assets (amounts)						
4	Total risk-weighted assets (RWA)	54,058	52,947	53,892	55,313	54,063
4a	Minimum capital requirement[4]	4,325	4,236	4,311	4,425	4,325
Risk-based capital ratios as a percentage of RWA						
5	Common equity tier 1 ratio (%)	22.1	22.4	23.9	21.7	21.7
6	Tier 1 ratio (%)	27.7	28.2	27.9	25.6	25.7
7	Total capital ratio (%)	29.0	29.5	29.3	26.9	27.0
Additional CET1 buffer requirements as a percentage of RWA						
8	Capital conservation buffer requirement (2.5% from 2019) (%)	2.5	2.5	2.5	2.5	1.9
9	Countercyclical buffer requirement (%)[5]					
10	Bank G-SIB and/or D-SIB additional requirements (%)[6]					
11	Total of bank CET1-specific buffer requirements (%)	2.5	2.5	2.5	2.5	1.9
12	CET1 available after meeting the bank's minimum capital requirements (%)[7]	17.6	17.9	19.4	17.2	17.2
Basel III leverage ratio						
13	Total Basel III leverage ratio exposure measure	127,290	123,632	123,008	124,981	122,829
14	Basel III leverage ratio (%)[8]	11.8	12.1	12.2	11.3	11.3

1 For UBS Americas Holding LLC based on applicable US Basel III rules. 2 There is no local disclosure requirement for liquidity coverage ratio or net stable funding ratio for UBS Americas Holding LLC as of 31 December 2019. 3 Figures as of or for the quarter ended 31 December 2018 have been adjusted for consistency with the full-year audited financial statements and / or local regulatory reporting, which were finalized after the publication of our Annual Report 2018 and our 31 December 2018 Pillar 3 report on 15 March 2019. 4 Calculated as 8% of total RWA, based on total capital minimum requirements, excluding CET1 buffer requirements. 5 UBS Americas Holding LLC is currently not subject to the countercyclical buffer requirement. 6 Not applicable as requirements have not been proposed. 7 This represents the CET1 ratio which is available for meeting buffer requirements. It is calculated as the CET1 ratio minus 4.5% and after considering, where applicable, CET1 capital which has been used to meet tier 1 and/or total capital ratio requirements. Figures as of 30 June 2019, 31 March 2019 and 31 December 2018 have been adjusted to adhere to this presentation. 8 On the basis of tier 1 capital.

▲

Material sub-group entity – creditor ranking at legal entity level

Semiannual | The TLAC2 table below provides an overview of the creditor ranking structure of UBS Americas Holding LLC on a standalone basis.

As of 31 December 2019, UBS Americas Holding LLC had a total loss-absorbing capacity of USD 20,487 million after regulatory capital deductions and adjustments. This amount included Tier 1 capital of USD 14,987 million and USD 5,500 million of internal long-term debt which is eligible as internal TLAC issued to UBS AG, a wholly owned subsidiary of the UBS Group AG resolution entity. ▲

Semiannual |

TLAC2 – Material sub-group entity – creditor ranking at legal entity level

As of 31.12.19		Creditor ranking				Total
USD million		1	2	3	4	
1	Is the resolution entity the creditor / investor?	No	No	No	No	
2	Description of creditor ranking	Common Equity (most junior)[1]	Preferred Shares (Additional tier 1)	Subordinated debt	Unsecured loans and other pari passu liabilities (most senior)	
3	Total capital and liabilities net of credit risk mitigation	25,127	3,150	600	21,891	50,768
4	Subset of row 3 that are excluded liabilities				944	944
5	Total capital and liabilities less excluded liabilities (row 3 minus row 4)	25,127	3,150	600	20,947	49,824
6	Subset of row 5 that are eligible as TLAC	25,127	3,150		5,500	33,777
7	Subset of row 6 with 1 year ≤ residual maturity < 2 years					
8	Subset of row 6 with 2 years ≤ residual maturity < 5 years				2,200	2,200
9	Subset of row 6 with 5 years ≤ residual maturity < 10 years				3,300	3,300
10	Subset of row 6 with residual maturity ≥ 10 years, but excluded perpetual securities					
11	Subset of row 6 that is perpetual securities	25,127	3,150			28,277

1 Equity attributable to shareholders, which includes share premium and reserves.

▲

Abbreviations frequently used in our financial reports

A

ABS asset-backed securities
AEI automatic exchange of information
AGM Annual General Meeting of shareholders
A-IRB advanced internal ratings-based
AIV alternative investment vehicle
ALCO Asset and Liability Committee
AMA advanced measurement approach
AML anti-money laundering
AoA Articles of Association
APAC Asia Pacific
APM alternative performance measure
ARR alternative reference rate
ARS auction rate securities
ASF available stable funding
AT1 additional tier 1
AuM assets under management

B

BCBS Basel Committee on Banking Supervision
BEAT base erosion and anti-abuse tax
BIS Bank for International Settlements
BoD Board of Directors
BVG Swiss occupational pension plan

C

CAO Capital Adequacy Ordinance
CCAR Comprehensive Capital Analysis and Review
CCF credit conversion factor
CCP central counterparty
CCR counterparty credit risk
CCRC Corporate Culture and Responsibility Committee
CCyB countercyclical buffer
CDO collateralized debt obligation
CDS credit default swap
CEA Commodity Exchange Act
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
CLS Continuous Linked Settlement
CMBS commercial mortgage-backed security
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)
CST combined stress test
CVA credit valuation adjustment

D

DBO defined benefit obligation
DCCP Deferred Contingent Capital Plan
DJSI Dow Jones Sustainability Indices
DM discount margin
DOJ US Department of Justice
D-SIB domestic systemically important bank
DTA deferred tax asset
DVA debit valuation adjustment

E

EAD exposure at default
EB Executive Board
EBA European Banking Authority
EC European Commission
ECB European Central Bank
ECL expected credit loss
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
ESG environmental, social and governance
ETD exchange-traded derivatives
ETF exchange-traded fund
EU European Union
EUR euro
EURIBOR Euro Interbank Offered Rate
EVE economic value of equity
EY Ernst & Young (Ltd)

F

FA financial advisor
FCA UK Financial Conduct Authority
FCT foreign currency translation
FINMA Swiss Financial Market Supervisory Authority
FMIA Swiss Financial Market Infrastructure Act

Abbreviations frequently used in our financial reports (continued)

FSB	Financial Stability Board
FTA	Swiss Federal Tax Administration
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	pound sterling
GDP	gross domestic product
GEB	Group Executive Board
GIA	Group Internal Audit
GIIPS	Greece, Italy, Ireland, Portugal and Spain
GMD	Group Managing Director
GRI	Global Reporting Initiative
GSE	government sponsored entities
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 rate
IFRIC	International Financial Reporting Interpretations Committee
IFRS	International Financial Reporting Standards
IHC	intermediate holding company
IMA	internal models approach
IMM	internal model method
IRB	internal ratings-based
IRC	incremental risk charge
IRRBB	interest rate risk in the banking book
ISDA	International Swaps and Derivatives Association
K	
KRT	Key Risk Taker
L	
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
LTIP	Long-Term Incentive Plan
LTV	loan-to-value
M	
M&A	mergers and acquisitions
MiFID II	Markets in Financial Instruments Directive II
MRT	Material Risk Taker
N	
NAV	net asset value
NCL	Non-core and Legacy Portfolio
NII	net interest income
NRV	negative replacement value
NSFR	net stable funding ratio
NYSE	New York Stock Exchange
O	
OCA	own credit adjustment
OCI	other comprehensive income
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
PRV	positive replacement value
Q	
QRRE	qualifying revolving retail exposures
R	
RBA	role-based allowances
RBC	risk-based capital
RbM	risk-based monitoring
RMBS	residential mortgage-backed securities
RniV	risks not in VaR
RoAE	return on attributed equity
RoCET1	return on CET1 capital
RoTE	return on tangible equity
RoU	right-of-use
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 or Special Administrative Region
SBC Swiss Bank Corporation
SDG Sustainable Development Goal
SE structured entity
SEC US Securities and Exchange Commission
SEEOP Senior Executive Equity Ownership Plan
SFT securities financing transaction
SI sustainable investing
SICR significant increase in credit risk
SIX SIX Swiss Exchange
SME small and medium-sized corporate clients
SMF Senior Management Function
SNB Swiss National Bank
SPPI solely payments of principal and interest
SRB systemically relevant bank
SRM specific risk measure
SVaR stressed value-at-risk

T

TBTF too big to fail
TCJA US Tax Cuts and Jobs Act
TLAC total loss-absorbing capacity
TTC through-the-cycle

U

UoM units of measure
USD US dollar

V

VaR value-at-risk
VAT value added tax

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.

Cautionary Statement | This report and the information contained herein are provided solely for information purposes, and are not to be construed as solicitation of an offer to buy or sell any securities or other financial instruments in Switzerland, the United States or any other jurisdiction. No investment decision relating to securities of or relating to UBS Group AG, UBS AG or their affiliates should be made on the basis of this report. Refer to UBS's Annual Report 2019, available at *www.ubs.com/investors*, for additional information.

Rounding | Numbers presented throughout this report may not add up precisely to the totals provided in the tables and text. Percentages, percent changes, and adjusted results are calculated on the basis of unrounded figures. Information about absolute changes between reporting periods, which is provided in text and which 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

www.ubs.com