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Investment Research

Venture capital

Private markets education

Authors: Karim Cherif, Head Alternative Investments, UBS Switzerland AG; Antoinette Zuidweg, Strategist, UBS Switzerland AG

- Venture capital managers finance startup companies that they deem to have the potential for disruptive innovation.
- VC investments are often concentrated in the technology and healthcare/life sciences sectors.
- VC fund managers seek to earn a return premium above public markets through an active approach to identifying and establishing early-stage business models.

Source:UBS

Summary

- Venture capital firms finance company development through minority investments in early-stage companies.
- Target companies are typically pre-revenue/product/profit startups, seeking to establish their business models.
- VC firms often specialize in specific verticals, geographies, and technologies. Expertise in these areas is critical in evaluating the success of future business potential, given the high failure rate.
- Although acquiring minority stakes, VC firms have a high level of involvement with their portfolio companies, including defining product strategy, providing strategic and operational guidance, and sourcing industry connections.
- Venture fund managers typically expect that, in a given fund, the returns from a smaller number of high-multiple "home run" companies will more than offset the losses from all the unsuccessful companies.
- Venture capital delivered a median 24.4% pooled vintage year internal rate of return (IRR) and 2.54x total value to paid-in (TVPI) over the 1993–2018 period. The standard deviation of vintage year IRR was 28.8% and 1.43x on a TVPI basis, the highest among private equity strategies.
- VC strategies outperformed public markets by about 1427 basis points when observing Russell 2000 public market equivalent (PME) returns over the 1993–2018 period. The return premium is skewed higher due to the dot-com bubble during the mid-to-late 90s.
- Given the early-stage nature of VC targets, returns are generally less linked to economic cycles versus other private equity strategies, though dynamics within the tech and life sciences sectors can impact returns.
- VC strategies can provide a source of absolute returns to portfolios by providing access to potentially disruptive companies at the forefront of innovation.
- With significant differences in manager performance, key risks include high idiosyncratic exposure, sector concentration, and exit timing. Other, more general private market risks also apply, including significant illiquidity, limited control, and high fees.

This report is part of a series of short primers on specific private market strategies. You will find more information on the client portal. You can also contact your advisor for assistance.

Venture capital key statistics

24.35%	Median pooled IRR
~1427bp	Median annualized IRR outperformance vs. public markets
2.54x	Median pooled TVPI (total value to paid in) multiple
-12.9%	Lower quartile IRR*
86.09%	Upper quartile IRR*
0.43	Correlation to public markets

Source: Based on historical data for funds launched between vintage years 1993-2018 using Cambridge Associates data, UBS estimates. *Quartile IRR's reflect minimum and maximum value across vintage years. Data as of August 2022.

What does the venture capital strategy do?

According to Pitchbook, Venture capital (VC) has grown to more than 20% of private market assets under management (AUM) over the past 15 years. Venture capital firms finance company development through minority investments in early-stage companies. Three sub-strategies exist, including early-, mid-, and late-stage VC, which corresponds to the proof of concept, commercialization, and scaling-up stages of a company lifecycle.

Target VC investments

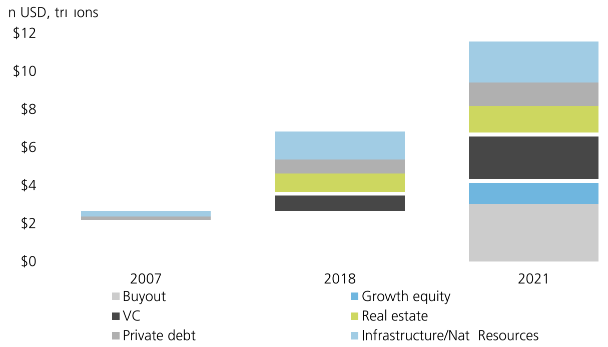
- Target companies are typically pre-revenue/product/profit startups with high technological risk. Targets seek to establish their business models and to raise investments in R&D, equipment, and intellectual property.
- VC firms often specialize in specific verticals, geographies, and technologies. Expertise in these areas is critical in evaluating the success of future business models, given the high failure rate.
- VC firms often team up with other investors to create an investment syndicate, creating synergies in industry knowledge and networks.
- Valuation for startups is not as straightforward as for mature buyout companies given the lack of cash flows. VC investors typically rely on market multiples to determine the terminal value of an investment and will seek returns in excess of a predefined multiple at the time of exit.
- Given the high-risk, high-reward nature of the strategy, VC funds tend to have a higher number of portfolio companies versus other private equity strategies.
- Venture fund managers typically expect that in a given fund, the returns from a smaller number of high-multiple "home run" companies will more than offset the losses from all the unsuccessful companies.

Leverage, holding period, and exit

- VC managers rarely use leverage to deploy capital.
- Startups raise capital in multiple successive rounds of financing and valuation dynamics evolve as the company progresses from the initial seed investment to subsequent series rounds. They may participate in one or more future financing rounds to maintain their percentage stake in a company.
- Although acquiring minority stakes, VC firms tend to have a high level of involvement with their portfolio companies, providing formal and informal counsel on strategic and operational matters and providing industry connections.
- VC managers often incorporate certain provisions to influence strategy and protect investments, including board representation, anti-dilution measures, conversion rights to common equity, and tag-along provisions that protect VC investors.
- A holding period for a VC investment can range from 5–10 years, with total fund duration around 12–13 years, at the longer end versus other PE strategies.
- The most common exit method is through an M&A transaction. The second most common is via an IPO. There are pros and cons to either method, with IPOs requiring lengthy and expensive registration requirements, but often able to command higher return realization. In recent years, alternative pathways to IPOs have emerged including SPACs and direct listings.

Fig. 1: The private market industry has grown rapidly in the last decade

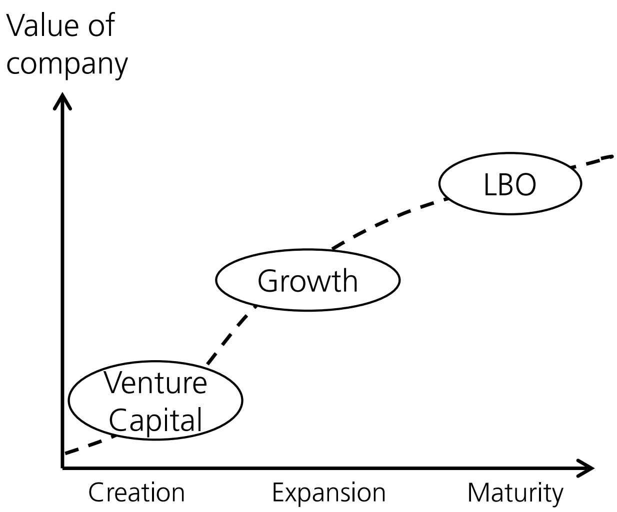
With over USD 2tn, venture capital represents more than 20% of total private markets AUM



Source: Pitchbook. Data as of 2022.

Fig. 2: Investing in a company's life cycle

VC investors typically seek to invest in startup businesses



Source: UBS

Sources of value add

Venture capital funds aim to add value to their portfolio investments via the following:

- **Identifying successful businesses with limited track records:** Given the high failure rate of VC investments (60% of deals deliver a MOIC, or multiple of invested capital, <1x), the manager's ability to identify early-stage companies that can become successful businesses is critical.
- **Providing confidence to next round of investors:** Certain high-profile VC firms can provide a vote of confidence for the next round of investors. VC firms can also source potential investors.
- **Developing product strategy:** VC firms help commercialize a product by formulating the company's value proposition and sales strategy, starting from proof of concept to establishing a successful installed base.
- **Establishing key customers:** VC firms use their network by identifying key customer groups to establish a foothold into the market. A successful entry can help the portfolio company earn a solid reputation for further opportunities.
- **Building depth in management team:** With management teams often lacking depth, VC firms help hire and establish complete teams including C-suite positions and middle management layers upon successful funding rounds.
- **Managing exit process:** VC firms tap into its transaction experience by assembling a pool of candidate acquirers, proposing potential synergies with those acquirers, conducting negotiations on behalf of the ownership syndicate, and preparing for public listing if exiting through an IPO.

Performance analysis

Introduction to vintage year returns

- Private market returns are assessed using vintage year performance, which reflects the sum of all cash flows (contributions, distributions) from funds incepted in the referenced year.
- For example, if hypothetical fund ABC reported vintage year 2005 IRR of 15%, ABC was incepted in 2005 and the IRR reflects all investment activity performed over the course of its lifecycle: contributions and distributions made in 2005, 2006, 2007, etc., until the end of the fund, which typically lasts 12–13 years.
- If hypothetical fund XYZ reported vintage year 2008 TVPI of 1.3x, the fund returned USD 1.30 for every USD 1 invested through the duration of the fund's life.

Historical performance and comparisons versus public market returns

- Using Cambridge Associates data, venture capital delivered a median 24.4% pooled vintage year IRR and 2.54x TVPI over the 1993–2018 period.
- The standard deviation of vintage year IRR was 28.8% and 1.43x on a TVPI basis over the 1993–2018 period.
- VC strategies outperformed public markets when observing public market equivalent (PME) returns. With the Russell 2000 PME of 10.1%, VC outperformed listed equities by about 1427bps over the 1993–2018 period.
- However, we note that this return premium is skewed higher due to the dot-com bubble during the mid-to-late 90s. When measuring the return premium

excluding these periods (2000–2018), the median premium narrows to 697bps net of fees.

- VC outperformed the Russell 2000 PME in 21 out of 26 vintage years during the 1993–2018 period.
- We observe significant differences in lower quartile versus upper quartile performance of VC funds, indicating elevated dispersion between fund managers and highlighting the importance of manager due diligence.

How do VC returns compare versus other private equity strategies?

- VC generated the highest median TVPI and median IRR versus that of buyout and growth equity.
- VC funds target startup stage companies. As a consequence, VC returns exhibit the highest variability versus other strategies when observing the standard deviation in IRR and TVPI multiples.
- Per vintage year, VC returns show the highest amount of outlier years versus other strategies. VC recorded the only negative IRR vintage years.

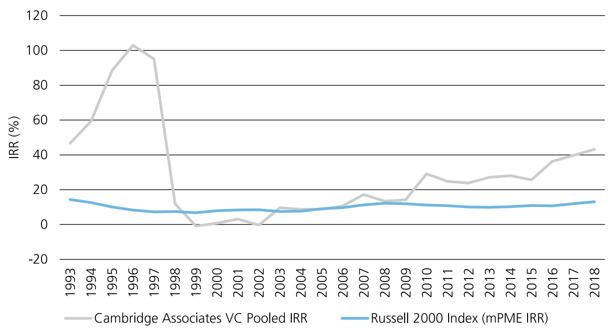
Table 1: Median pooled performance for vintage years 1993–2018

	Global Buyout	Global Growth	US Venture Capital
Median Pooled IRR (%)	16.28	14.73	24.35
Std Deviation IRR (%)	6.48	10.69	28.75
Median Pooled TVPI	1.92x	1.97x	2.54x
Std Deviation TVPI	0.24x	0.56x	1.43x

Source: Cambridge Associates, UBS. Data as of August 2022

Fig. 3: VC pooled IRR vs. Russell 2000

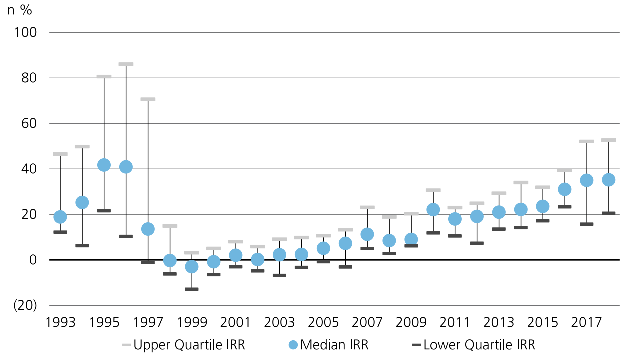
VC has outperformed public markets in 21 out of 26 vintage years between 1993 and 2018



Source: Cambridge Associates, UBS. Data as of August 2022.

Fig. 4: VC return dispersion per vintage year between 1993–2018

High level of dispersions within each vintage year show importance of manager selection



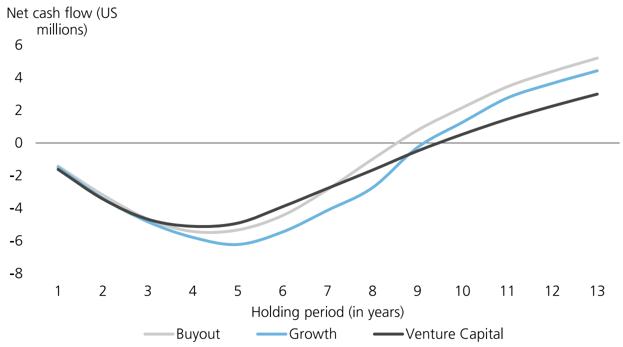
Source: Cambridge Associates, UBS. Data as of August 2022.

Venture capital and the business cycle

- Given the early-stage nature of VC targets, returns are susceptible to idiosyncratic risk and are generally less linked to economic cycles compared to other private equity strategies.
- However, the market environment can influence company revenue growth, entry/exit valuations, IPO/M&A sentiment, and levels of dry powder.
- Sentiment in the technology and healthcare/life sciences can drive strategy returns given deal activity concentration in these sectors.
- VC returns were highest during the 1996 vintage year. This period preceded a strong rise in valuation multiples leading up to the dot-com bubble.
- VC returns were lowest during the dot-com bubble, with (1)–2% IRR for 1999–2002 vintages.
- When observing performance before the financial crisis, VC returns in 2006–2007 vintage years outperformed the Russell 2000 PME by about 263bps. However, before the dot-com bubble in 1999–2000, VC IRR underperformed the Russell 2000 PME by about 720bps.
- When observing performance during the financial crisis, VC returns in the 2008 vintage year outperformed the Russell 2000 PME by 119bps. During the dot-com bubble in 2001–2002, VC returns underperformed the Russell 2000 PME by 700bps.

Fig. 5: Cumulative net cash flows of various private equity strategies ("J" curve)

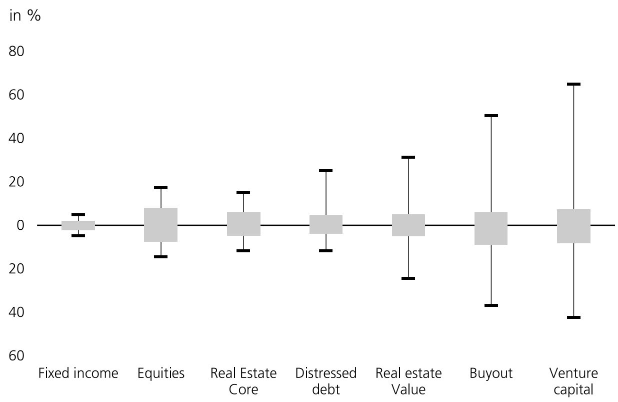
VC strategies typically last to break even versus other PE strategies



Source: Pitchbook, UBS. Figures normalized to USD 10m commitment.

Fig. 6: Public vs. private manager fund returns

VC exhibits highest dispersion compared to other private strategies and traditional markets



Source: Pitchbook, Bloomberg, UBS. Dispersion of fund returns relative to median performance. Data references 1995-2018 for private market funds, 1995-2021 for traditional equity and fixed income funds. Data as of August 2022.

Venture capital in your portfolio

- VC strategies (especially early and mid stage) are less correlated to equity markets versus that of buyout or growth equity strategies and can provide a differentiated source of returns to investor portfolios.
- VC strategies can provide a source of absolute returns to portfolios by providing access to potentially disruptive companies at the forefront of innovation.
- The types of companies targeted by VC mangers typically do not trade on public markets due to their unproven business models.
- VC funds have taken 9–10 years to break even when measuring historical cash flows. This duration is longer than that of buyout strategies given that investment in earlier stage companies can take longer to develop and realize value.
- VC fund managers seek to earn a return premium through an active approach to identifying and partnering with companies to establish successful business models.

Risks

- Risks of investing in VC funds include blind pool structure, potential for unwanted or unintended sector risks or concentration, and competition for investment opportunities from strategic buyers and other VC firms.
- Given the complex nature of pooling together financial, business, and managerial resources, there are execution risks in enacting transformational change, particularly as a minority investor.
- VC investments are historically riskier versus other private equity strategies, with around 60% of deals returning a TVPI below 1x. Fund returns will be dependent on outlier investments that generate enough to offset losses in the portfolio.
- VC fund managers may encounter dilution on their investments upon subsequent fundraising rounds. Improved valuation of underlying investments can offset this dilution.
- Startup companies are vulnerable to business and financial risk given high sensitivity to competitive pressure and limited financial resources. Sector exposure tends to tilt toward technology and healthcare/life sciences areas.
- Ability of private equity funds to exit portfolio company investments and return capital to investors is dependent on prevailing equity market conditions.
- Other, more general private market risks also apply, including significant illiquidity of fund vehicles, limited control, disclosure, and transparency on underlying holdings, and high fees. These risks cannot be fully eliminated, but can be reduced through extensive institutional due diligence and rigorous investment and monitoring processes.

Appendix

Selected definitions

- **Correlation**: the degree to which the fluctuations of one variable are similar to those of another.
- **Leverage**: the use of borrowed capital or instruments to increase the potential return (but also potential losses) of an investment, a simple example is a mortgage used in real estate transactions.
- **Leveraged buyout funds**: a private equity strategy using borrowed capital to gain control of a company.
- **Illiquidity premia**: the premium that an investor can demand depending on how difficult it is to convert the underlying security can be converted to cash.
- **Multiples**: a term that measures some aspect of a company's financial well-being, determined by dividing one metric by another metric. The metric in the numerator is typically larger than the one in the denominator, because the top metric is usually supposed to be many times larger than the bottom metric.
- **Multiple expansion**: describes the way a particular valuation metric increases to reflect a higher value assigned to an underlying investment.
- **Value add**: describes the operational, business, or structural improvements private market managers seek through underlying portfolio investments.
- **Cash flows**: cash flow is the net amount of cash and cash-equivalents being transferred into and out of a fund.
- **Public Market Equivalent (PME):** a method that converts public market returns to a benchmark that can be compared to private market returns.
- **IRR**: a return method used to evaluate private market investments and reflects the discount rate at which the present value of an investment's future cash flow equals the cost of the investment.
- **TVPI (Total Value to Paid In**): a return metric that describes the total capital distributed back to the investor + residual value left in the fund divided by invested capital.
- **Exit**: the time period in which an investor can convert holdings into cash to be liquidated over a designated period of time.
- **IPO**: the first sale of stock by a private company to the public. Also referred to as an "initial public offering."
- **Standard deviation**: a measure of the degree to which individual values vary from the distribution mean. The higher the number, the greater the risk.
- **Dry powder**: refers to cash reserves kept on hand by a private markets firm to cover future obligations, purchase assets or make acquisitions.
- **J-curve**: illustrates a period of initial negative cash flows (contributions) towards positive cash flows (distributions back to the investor) over a period of time.
- **Sponsor**: the general partner in a limited partnership who organizes and signs up investors.
- **Secondary buyout**: describes a sale between private market firms
- **Trade sale/strategic sale**: describes a sale of a business to another business operating in a similar industry.
- **Senior debt**: loans or debt securities that have claim prior to junior obligations and equity on a corporation's assets in the event of liquidation.

- **Junior debt**: loan or security that ranks below other loans or securities with regard to claims on assets or earnings. In the case of borrower default, creditors who own subordinated debt won't be paid out until after senior debt holders are paid in full.
- **Vintage year**: is the year in which the first influx of investment capital is delivered to a project or company. This marks when capital is contributed by venture capital, a private equity fund or a partnership drawing down from its investors.
- **M&A**: mergers and acquisitions is a general term that refers to the consolidation of companies or assets through various types of financial transactions. M&A can include a number of different transactions, such as mergers, acquisitions, consolidations, tender offers, purchase of assets and management acquisitions.
- **Blind pool**: money collected from several people which is put into a fund and invested for their profit. It is left unspecified which properties are to be acquired.
- **Unit economics**: a measure of direct revenues and costs on a unit basis for a particular business model.
- **Minority stake**: reflects a non-controlling interest that is less than 50% of a particular entity.
- **Spin off**: describes the separation of an independent company from a larger parent.
- **Control provisions**: designed to provide a level of influence over significant operational and business matters.
- **Redemption rights**: gives investors the right to force a company to repurchase their shares after a period of time.
- **Idiosyncratic risk**: risk associated with a narrow set of factors pertaining to a particular company. Risk that has little association with overall market risk.
- **Tag-along provisions**: provides a minority shareholder the right to join in on a sale of a company that is initiated by a majority shareholder.

Non-Traditional Assets

Non-traditional asset classes are alternative investments that include hedge funds, private equity, real estate, and managed futures (collectively, alternative investments). Interests of alternative investment funds are sold only to qualified investors, and only by means of offering documents that include information about the risks, performance and expenses of alternative investment funds, and which clients are urged to read carefully before subscribing and retain. An investment in an alternative investment fund is speculative and involves significant risks. Specifically, these investments (1) are not mutual funds and are not subject to the same regulatory requirements as mutual funds; (2) may have performance that is volatile, and investors may lose all or a substantial amount of their investment; (3) may engage in leverage and other speculative investment practices that may increase the risk of investment loss; (4) are long-term, illiquid investments, there is generally no secondary market for the interests of a fund, and none is expected to develop; (5) interests of alternative investment funds typically will be illiquid and subject to restrictions on transfer; (6) may not be required to provide periodic pricing or valuation information to investors; (7) generally involve complex tax strategies and there may be delays in distributing tax information to investors; (8) are subject to high fees, including management fees and other fees and expenses, all of which will reduce profits.

Interests in alternative investment funds are not deposits or obligations of, or guaranteed or endorsed by, any bank or other insured depository institution, and are not federally insured by the Federal Deposit Insurance Corporation, the Federal Reserve Board, or any other governmental agency. Prospective investors should understand these risks and have the financial ability and willingness to accept them for an extended period of time before making an investment in an alternative investment fund and should consider an alternative investment fund as a supplement to an overall investment program.

In addition to the risks that apply to alternative investments generally, the following are additional risks related to an investment in these strategies:

- Hedge Fund Risk: There are risks specifically associated with investing in hedge funds, which may include risks associated with investing in short sales, options, small-cap stocks, “junk bonds,” derivatives, distressed securities, non-U.S. securities and illiquid investments.
- Managed Futures: There are risks specifically associated with investing in managed futures programs. For example, not all managers focus on all strategies at all times, and managed futures strategies may have material directional elements.
- Real Estate: There are risks specifically associated with investing in real estate products and real estate investment trusts. They involve risks associated with debt, adverse changes in general economic or local market conditions, changes in governmental, tax, real estate and zoning laws or regulations, risks associated with capital calls and, for some real estate products, the risks associated with the ability to qualify for favorable treatment under the federal tax laws.
- Private Equity: There are risks specifically associated with investing in private equity. Capital calls can be made on short notice, and the failure to meet capital calls can result in significant adverse consequences including, but not limited to, a total loss of investment.
- Foreign Exchange/Currency Risk: Investors in securities of issuers located outside of the United States should be aware that even for securities denominated in U.S. dollars, changes in the exchange rate between the U.S. dollar and the issuer’s “home” currency can have unexpected effects on the market value and liquidity of those securities. Those securities may also be affected by other risks (such as political, economic or regulatory changes) that may not be readily known to a U.S. investor.

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