

## The opportunity in early stage venture capital

January 2019

**Venture capital provides access to investment opportunities in game-changing companies with the potential to disrupt entire industries...but only if done correctly. In our experience 20% of companies drive 80% of returns, so success hinges on accessing the best opportunities. However, rather than being stacked against you, a well thought-through approach to portfolio construction, in our view, can ensure the odds are stacked in your favour.**

### **Venture capital has financed some of the biggest successes in technology of our time**

Venture capital has a rich history of delivering both strong returns for investors and helping early stage companies realise their potential.

Previous venture capital (or VC) success stories include the first US public company to be worth more than \$1 trillion, Apple, and other household names such as Microsoft, Amazon, Facebook and Google, each worth more than \$500 billion. VC has turned entire industries on their heads. The music, newspaper, and media industries have all been disrupted in this way. Furthermore, venture capital-backed healthcare companies have developed medicines that are used to defeat previously incurable diseases, while others search for a cure for cancer. It would not be an overstatement to say that venture capital has been behind many life changing developments.

From an investor's perspective, venture capital provides access to the growth stories of tomorrow<sup>1</sup> and has a track record of delivering very strong long term returns. The Cambridge Associates US Venture Capital Index has returned 19% a year over the 30 years to 2017, net of all fees and expenses<sup>2</sup>.

It is also a significant part of the investment landscape—the venture capital/growth sector makes up around a third of annual private equity fundraising volumes.

1 In contrast, public markets are increasingly capturing a larger, more mature snapshot of the corporate sector as companies elect to stay private for longer. For more information, see What is the point of the equity market? Schroders, April 2018  
2 The Cambridge Associates LLC US Venture Capital Index® is based on data compiled from 1,794 US venture capital funds (1,150 early stage, 210 late & expansion stage, and 434 multi-stage funds), including fully liquidated partnerships, formed between 1981 and 2017. The return quoted is a pooled horizon internal rate of return (IRR), net of fees, expenses, and carried interest.

**Steven Yang**  
Head of Global  
Venture Investments,  
Schroder  
Adveq



**Michael McLean**  
Investment Director,  
Schroder Adveq



**Duncan Lamont, CFA**  
Head of Research and  
Analytics, Schroders



However, it has also been described as a game of “high risk poker”.<sup>3</sup> Venture capital, if done incorrectly, can be a way to lose a significant amount of money and in the past, some investors have burned their fingers. Memories of crashing technology stocks during the Dotcom bust also haunt some investors. Invest with bad funds and you can lose most or all of your capital! However, it is important to note that losing money often results not from venture capital investing itself, but from relatively amateur mistakes that we think skilled investors can easily avoid.

This paper is split into two parts. The first sets out some counterintuitive truths about venture capital investing. Many common objections are misplaced. The second details five secrets to successful venture capital investing.

### **Venture capital – the basics**

Venture capital is early financing for start-ups that are taking an idea and trying to grow it into a large scale business. The technology and healthcare companies which are typically backed by venture capital have the potential to change entire industries and have a profound effect on the way we live our lives.

Typically, at the time of initial investment, a company receiving venture capital backing only has a few employees and co-founders and potentially a beta version (early prototype) of their product or service.

Venture capital can allow these companies to increase in scale in an efficient manner, normally over a period of several years. It can take them from this very early stage to the point where they can be generating millions, or even billions, of dollars in revenue.

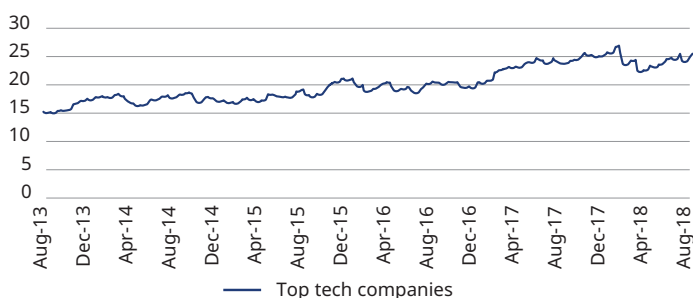
3 Michael Moritz, Sequoia Capital, <https://www.bloomberg.com/news/articles/2015-10-17/sequoia-s-michael-moritz-q-a-venture-capital-is-high-risk-poker>

## Counterintuitive truths about venture capital investing

### You do not need to time venture capital investments

Some investors look at the high valuations of publicly listed technology stocks to mean that the sector is frothy and that this is a bad time to invest in venture capital, given its technology focus.

**Figure 1: Valuations of public technology stocks have been soaring**



Forward price/earnings multiple\*

\*Note: shows the median forward PE multiple for Apple, Facebook, Google, Amazon, Microsoft, and Intel. Source: Thomson Reuters

However, while investor concerns are understandable, they are also misplaced. First, the nature of early stage venture capital means that entry valuations are driven by strength of idea, stage of development, management team, probability of commercial success, and other factors, all of which are completely unrelated to public markets.

Secondly, venture capital and private equity more generally are long-term investments. Money is committed upfront but not drawn down for several years, with divestments typically not for several more. This phasing of drawdowns and realisations over time, limits the risk of an investor losing out by making a commitment at what turns out to be a bad time.

Thirdly, the fact that venture capital investments are likely to be held for up to 10 years before an exit is sought means that today's public market valuations are almost an irrelevance.

To give an extreme example, even many investors who allocated to venture capital during the peak of Dotcom hysteria, in 1999, managed to escape relatively unscathed. The internal rate of return ('IRR') of the (pooled) average venture capital fund was barely negative, at -0.9% a year, while top quartile funds delivered positive returns (+3.2%). Bottom quartile managers understandably fared far worse, losing -11.4% a year.<sup>4</sup> It may surprise some readers to learn that investing at the peak of the biggest technology bubble in history did not turn out too painful for investors in venture capital, so long as the worst performers were avoided. Funds that were raised in the run up to the financial crisis fared even better. The (pooled) average from the 2006 vintage year was 9% a year, with top quartile funds delivering 13% a year. Investors who shied away because of fears over a potential equity market downturn would have lost out.

4 Source: Cambridge Associates, Schroder Adveq. Rankings and performance reflect past performance which is no guarantee of future results.

In addition, it is important to distinguish between today's well-known technology champions and the technology sector or venture capital universe more generally. In the US, historically the largest market for venture capital,<sup>5</sup> an average of around 1,000 companies a year receive first round financing from venture capital.<sup>6</sup> Even in the depths of the financial crisis, start-up creation, the lifeblood of venture capital, remained at a healthy level. Furthermore, as described later, on a global level, the pool of venture capital prospects has been increasing at a rapid pace. So there is no shortage of opportunities.

### It is possible to gain access to the best venture capital funds and venture capital-backed companies

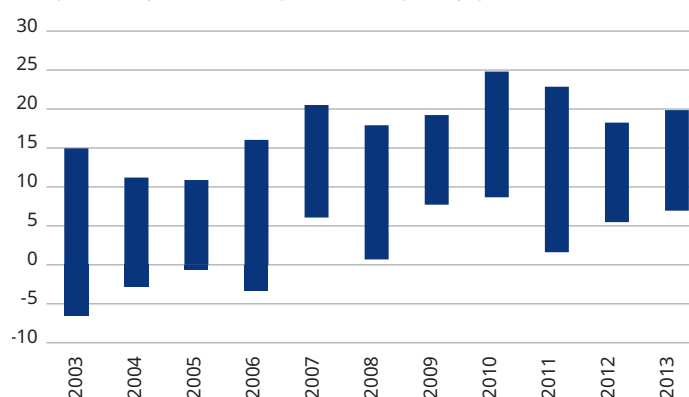
It is an uncontroversial fact that access to the best funds, and companies, is essential for success in venture capital. However, it is a misconception that these are impossible to gain access to.

The difference between winners and losers is especially marked. About 20-30% of venture capital-backed companies go out of business but around 20% end up worth over \$250 million.<sup>7</sup> Those 20% drive more than 80% of returns. To have the best chance of success, it is important to invest in funds which can access and add value at the most promising prospects.

The importance of fund selection shines through in the performance figures. Over the 2003-13 vintage years (more recent years excluded as it typically takes five years for a venture capital portfolio to develop), top quartile venture capital funds outperformed bottom quartile funds by 14.5% a year, on average. On a compound basis over the 10-12 year life of a venture capital fund, the difference is even starker.

**Figure 2: The importance of access to top funds**

Interquartile range for venture capital fund IRR by vintage year



Source: Cambridge Associates, Schroder Adveq

While the need to invest in top performing managers with strong reputations is widely recognised, the challenge is accessing them. Many restrict who they partner with. They normally prefer to work with stable and reliable Limited Partners (LPs) that have been in the business for decades,

5 1997-2017 average = 1,020. This is not unduly influenced by the Dotcom boom: 2004-17 average = 1,001

6 Venture Source 2018

7 Venture Source and Schroder Adveq, 2018

through multiple investment cycles. There is sound reasoning behind this approach. The effort involved in taking an early stage company and helping it grow should not be underestimated. Managers need to put a lot of time and energy into each of their investments. General Partners ('GPs') tend to take a board of director's role with each and dedicate a significant amount of time advising and helping companies grow. The best GPs add the most value and therefore tend to attract the best entrepreneurs.

But it is a misconception that success in venture capital is restricted to seasoned investors. Even novice investors can get access to top funds, so long as they invest through the right partner. By piggy-backing on a more experienced LP's credentials, through a co-investment or fund of funds investment, it is possible to get a seat at the top table. Without that, investors risk missing out on the top venture capital-backed companies and therefore missing out on a significant percentage of return potential in the venture capital market.

### Venture capital investing is not as risky as you might think

*"Most VC-backed companies fail, so it is too risky to invest in venture capital. Look what happened during the dot-com bubble."*

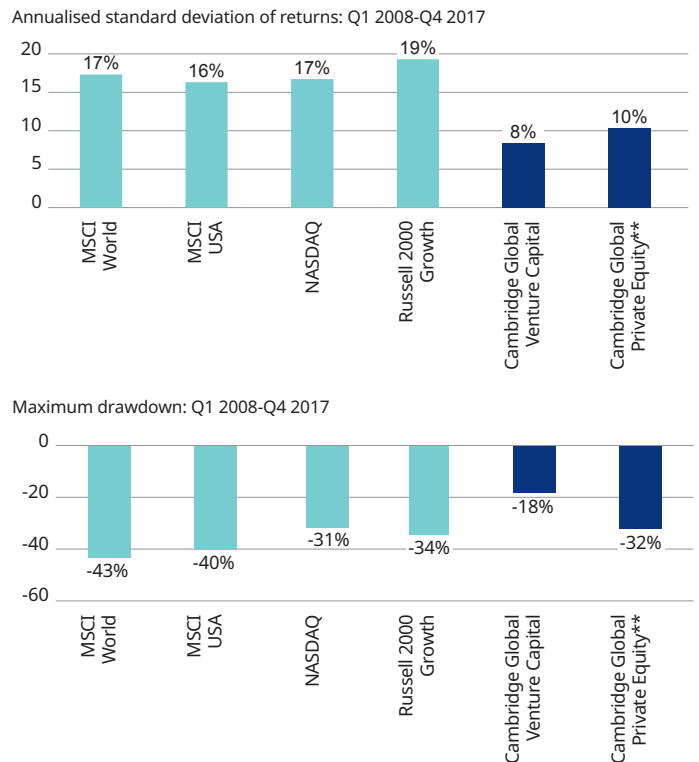
This is a common opinion of venture capital but in many respects we feel that it is also wrong. As highlighted earlier, it is true that a notable percentage of venture capital-backed companies fail to survive. However, others deliver returns of several hundred or even thousand percent. The individual nature of each investment can drive significant diversification benefits at the portfolio level. Venture capital funds normally include around 30 companies, spread across multiple sub-sectors of technology. This broad company and sector diversification helps mitigate risk, thus lowering volatility and drawdown. Even more so, venture capital fund of funds portfolios are typically diversified across several hundred underlying companies, thus lowering risk further.

One consequence is that, although individual venture capital investments are higher risk than public equity markets, venture capital portfolios are not. In fact, over the past 10 years, which includes the financial crisis, venture capital has been less volatile than public markets. It also suffered a more limited drawdown during the crisis.

One challenge to this analysis would be that venture capital investments are not always fully revalued on a regular basis, so this may be understating true risk.

To help rebut this, using simulation analysis we have quantitatively analysed venture capital risk using realised entry and exit valuations for companies which Schroder Adveq has invested in (see box, right, for more information). As they reflect actual transaction prices they are free from any valuation concerns. This analysis confirms that, although individual venture capital investments are high risk, risk declines rapidly as portfolio size increases. This is indicative of very low correlations between individual investments, driving significant diversification benefits. As a consequence, contrary to popular opinion, portfolios of venture capital investments are far less risky than might be thought.

**Figure 3: Venture capital has generally been less risky than the broader equity markets**

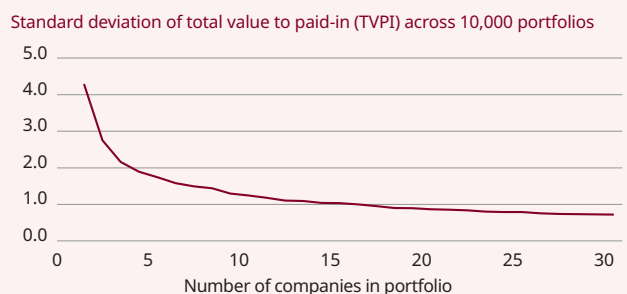


\*\* Includes buyout and growth strategies. All analysis is based on quarterly returns. Source: Bloomberg, Cambridge Associates and Schroder Adveq. For illustrative purposes only. Funds and indices shown do not reflect any recommendation to buy or sell any security. Other funds would have achieved different results.

### Our simulation analysis, explained

We have analysed the return volatility of thousands of synthetically created portfolios of thousands of underlying venture capital investments of differing sizes. Figure 4 shows a measure of return variability across these portfolios. A high figure on the vertical-axis means that there is a wide spread of returns between portfolios of a given number of investments. The chart shows how this varies as the number of portfolio companies increases.

**Figure 4: Venture capital risk declines rapidly as the number of investments in a portfolio increases**



Source: Schroder Adveq, 2018. Reflects equal-weighted portfolio simulations of TVPI. Please refer to the back of this report for important information on simulations.

## The five secrets of successful venture capital investing

Venture capital isn't as risky as investors think, it is possible to get access to top funds/companies, and timing markets isn't key. With all that in mind, how do you build a successful venture capital portfolio?

### 1. A global approach is critical

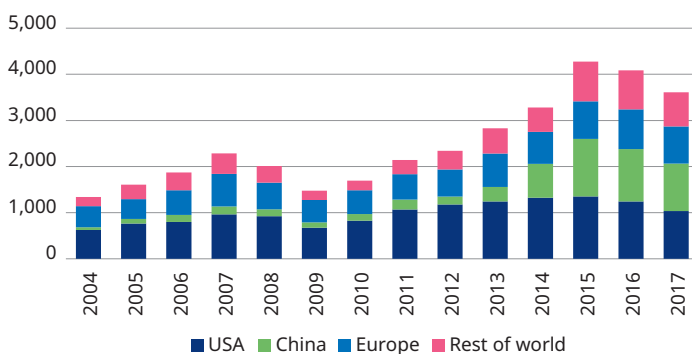
Silicon Valley in the US, the largest innovation hub in terms of companies created globally, is probably the most well-known market for venture capital. However, the industry is much more global in nature, with 10 innovation hubs spread across the US, Europe and Asia.<sup>8</sup>

Although the US has historically been the largest market for venture capital and has continued to expand, the main driver of the industry's growth over the past decade has, in fact, been elsewhere (Figure 5). Asia, specifically China, has seen the largest growth. Europe and the rest of the world have also expanded in scale.

This shift has been mirrored in the make-up of the fund industry, with a large number of Asian venture capital managers in particular having been established in the past decade.

### Figure 5: A global opportunity set for venture capital

Number of first round financings by region



Source: Venture Source, 2017

Different regions and hubs have different strengths. Silicon Valley is such a successful hub for both technology and healthcare because of the concentration of talent in the region that continues to be replenished by strong universities there. However, elsewhere in the US, Los Angeles, Boston, and New York are all key locations. In Asia, the top innovation hubs are Beijing, Shanghai, and Tokyo. China has become a technology leader in certain areas, such as electric vehicles, autonomous vehicles, gaming, and, to an emerging extent, biotechnology. Part of the driving force behind China's advancement as a technology leader is its 750 million mobile internet users, which is more than double the entire US population. This is a large market to both test and sell products into. India will also become an important region in the future due to its large population, which is increasingly adopting technology.

<sup>8</sup> Silicon Valley, Los Angeles, Boston, New York, Beijing, Shanghai, Tokyo, Berlin, London, and Paris.

In Europe, you have Berlin, London, and Paris as the major technology hubs.

A narrow focus on only one region would miss potentially game-changing opportunities in other areas of the world. Globalisation and the resultant dispersion of technology talent around the world makes this an even more pressing issue. This is why a global approach to venture capital investing is so crucial.

### 2. Focus on topics of the future

The two main areas to concentrate on within venture capital are technology and healthcare. The top venture capital managers will be investing in the next-generation themes but these are constantly changing and certain topics come and go.

The rapid, persistent increase in computing power predicted by Moore's Law<sup>9</sup> over 50 years ago has been the driving force behind the quick adoption and acceleration of technology innovation. Today we have 50 times more computing power in our mobile phones than in the Deep Blue supercomputer that beat a world chess champion for the first time in 1997. They are also 120 million times faster than the supercomputers that sent a man to the moon in 1969. Ten years ago, the top venture capital managers were focused on what were then emerging topics, such as social networking, cloud computing and Software-as-a-Service. However, those themes have mostly been played out. Today, venture capital managers are now focused on some of the following topics: autonomous vehicles, artificial intelligence (AI), gene editing, curing cancer, electric vehicles, blockchain and digital health. Two of the more important enabling technologies which are a current focus are gene editing technology and AI/machine learning. Gene editing technology has the potential to drive advancements in curing diseases that currently do not have an effective cure. Drugs to cure various types of cancer are one application as are orphan diseases and central nervous system disorders. In recent years, venture capital played a crucial role in curing diseases such as Hepatitis C, retinal dystrophy, Leukemia, and other diseases. This has all been possible from breakthroughs in bio technology, such as new drug creation and gene editing.

AI and machine learning (ML) are projected to have a profound impact on the rate of technological progress. Growth in processing power (measured in calculations per second) has been exponential and by 2050, it is predicted that consumers will be able to buy a device with the computational power of all mankind for the price of a refrigerator today. This date is known as the technological singularity.

AI and ML are primed to disrupt multiple industries, including: finance, legal, government, manufacturing, retail, agriculture, energy, transportation, insurance, and customer service. For example, AI has been one of the driving forces behind the advancement of autonomous vehicles we have

<sup>9</sup> The prediction that the number of transistors on a computer chip will double every two years, leading to a doubling in computer processing power every two years.

seen in the last few years. Several automotive companies have acquired venture capital-backed companies to accelerate the technology development. In healthcare,

ML algorithms already shorten time to market for multiple drug development programs and help to detect health anomalies across many diseases more effectively than doctors. Internet-of-Things (IoT) devices have proliferated in recent years and AI is allowing new ways for these devices to interact with each other and provide advanced analytics for both the energy and retail sectors.

This is an exciting time to invest in technology and venture capital is the driving force behind the technology that is empowering exponential AI growth.

### 3. Maximise “portfolio quality density”

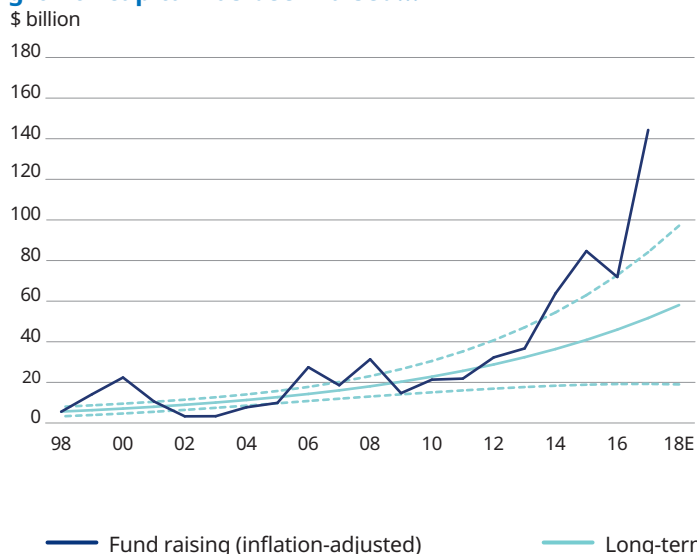
The statistical distribution around the top 20% of companies driving about 80% of total venture capital market returns has remained the same for several decades.<sup>10</sup> If you don't have a concentrated portfolio of those top 20% companies then your venture capital returns will get diluted by the losers in the portfolio. This is why quality density matters in venture capital.

As mentioned earlier, it is crucial to focus on established, typically access-restricted GPs when investing in early stage venture capital. The top quartile GPs tend to have the highest quality deal flow and attract the top entrepreneurs, which in turn provide the strongest investment returns. Characteristics include strong brand value, with a repeatable track record of exiting several game changing companies and evidence of value they have added at their portfolio companies.

In addition to building a core portfolio of the top access-restricted GPs, it is also important to selectively add new emerging GPs, who have the potential to be a top 20

10 Source: Schroder Adveq study of venture portfolio companies going back to 1994

**Figure 6: An overabundance of late stage venture/ growth capital has been raised...**



Late stage/growth capital includes 50% of SoftBank Vision Fund and includes investment activity from non-traditional sources of capital (e.g. corporate investors). Source: Preqin, Pitchbook, Zero2IPO, Schroder Adveq 2018

ranked venture capital firm in the coming years. These tend to have previous experience at the top venture capital funds or were previously successful entrepreneurs/operators at top technology companies.

### 4. Do not get over-excited and be cautious about frothy parts of the market

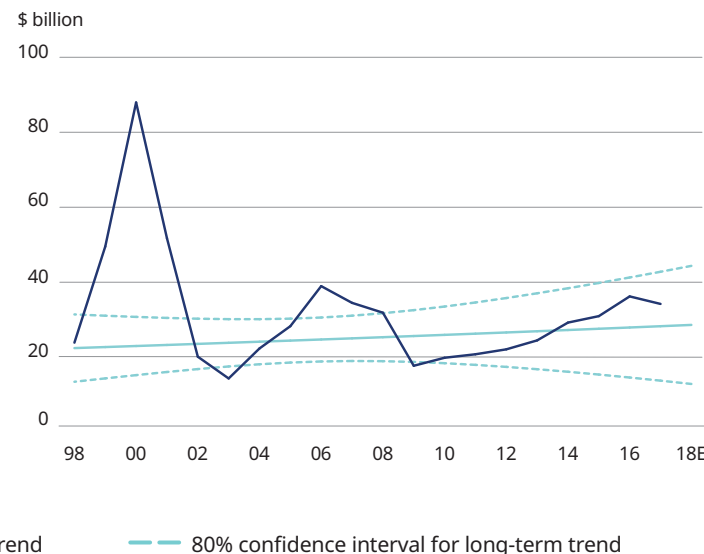
Although we argued earlier that the structure of private equity funds means that venture capital investors need not be intimidated by high valuations in the publicly listed technology sector, that does not mean they should be blind to dynamics in the private equity market.

Our research<sup>11</sup> has found a statistically significant inverse relationship between fundraising volumes and future performance. This intuitively makes sense. High levels of fundraising lead to increased dry powder, tougher competition for deals, higher prices being paid and lower subsequent returns. The reverse is also true with slack periods for fundraising foreshadowing an environment more conducive to performance. We have quantified and formalised this relationship in the Schroder Adveq Fund Raising Indicator ('FRI').<sup>12</sup> It evaluates fundraising cycles and normalises the magnitude of cyclical over- or under-fundraising in a way that permits comparison across regions and sectors. In this way, it can be used to identify areas of the market that are better placed to deliver returns and those which may be best avoided.

The Schroder Adveq FRI currently suggests that the late stage venture capital market is at risk of overheating due to large sums of money having been raised in recent years (Figure 6) at a rate of increase well above the long term trend. Valuations of late-stage venture capital investments have also been soaring—in the US, the median late-stage company is worth six times more than it was five years ago.

11 Where should you invest in private equity today?, Schroder Adveq, September 2018  
12 See footnote 11

**..but early stage venture capital fundraising is in a healthier state**



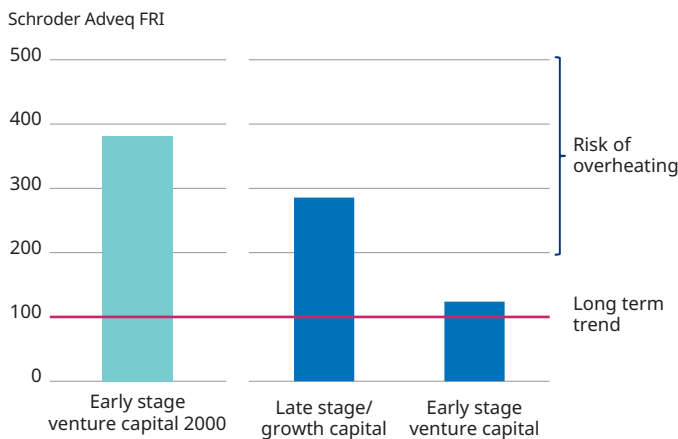
## Why has this occurred?

For one, venture capital-backed companies have been staying private longer with the median time to a liquidity event (IPO, or sale to another financial or corporate investor) being roughly 10 years. This compares with roughly five to six years in the past. Many of these technology and technology-enabled companies are generating strong growth and achieving revenue of more than \$1 billion, but are deciding to forego the public markets. This has led to a proliferation of so-called “unicorns”, venture capital-backed companies valued at more than \$1 billion. There are currently 258 “unicorn” companies globally, up from only a handful seven years ago.

This creates demand for larger sums of late stage financing than in the past. Previously the public market would have provided much of this, but latterly it has been the late stage venture capital market. Investors have also flocked to the sector, attracted by the prospect of capturing some of this growth. Given the size of these companies, “pre-IPO” financing rounds, a focus for late stage venture capital, have increased considerably. Both the demand and supply-side have played a part in the rapid growth of the market.

In contrast, capital flows for early stage investments have remained relatively stable and median pre-money valuations across the US, Europe, and Asia have increased only modestly. The Schroder AdvEq FRI confirms that early stage venture capital is better positioned to deliver strong returns than the more crowded late stage market (Figure 7).

**Figure 7: Late stage venture capital is at risk of overheating but the early stage market is better positioned**



Source: Schroder AdvEq, 2018

In addition, while the growth of the late stage market creates challenges for investors in that space, it is a positive for the early stage market. It creates a larger pool of capital for early stage investors to sell into as an exit, in addition to the IPO or merger and acquisition routes, or for less dilutive follow-on financing.

The long-term nature of private equity investing means that market timing is less of an issue than in public markets. However, portfolios can be improved by tilting new commitments towards less crowded parts of the market where competition is weaker. It is easy to get

excited about headline grabbing companies but a more disciplined approach is likely to be more successful. The early stage venture capital market beats the late stage market hands-down on this front at present.

## 5. Mix primaries, secondaries and co-investments

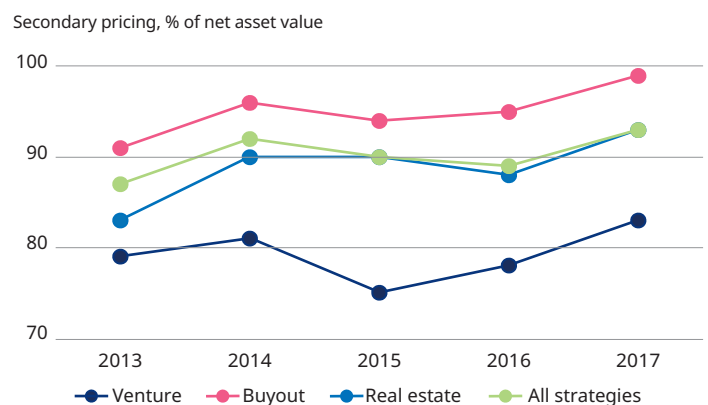
Investing in the top venture capital managers is a necessary step to building a high performing venture capital portfolio. However, further enhancements can also be made.

Given the significant dispersion in returns, we think that a portfolio approach spread across multiple GPs can help mitigate risk and give more certainty over returns. The specialised nature of many venture capital GPs also means that a portfolio diversified in this way can better cover different industries, topics and regions without compromising portfolio quality density.

Investments in secondaries (funds which buy stakes in existing funds from LPs) and co-investments (where an LP invests in specific deals alongside a GP rather than via a fund structure), both also have the potential to add considerable value.

Secondary private equity transactions typically take place at a discount to the net asset value (‘NAV’) of the stake in question—this is the price the selling investor has to pay for exiting an illiquid investment early. The average venture capital secondary discount has been in the 17-25% range over the last five years (Figure 8), much greater than elsewhere. The compelling discounts in venture capital secondaries help to mitigate the j-curve effect<sup>13</sup> that naturally occurs in venture capital investing.

**Figure 8: Venture capital secondaries offer a bigger discount than elsewhere**



Source: Source: Greenhill, December 2017

Co-investments serve a different but equally valuable function—they can enhance portfolio quality density (described earlier). By “doubling down” on the portfolio winners of the top venture capital managers, it is possible to get more dollars to work in the future game-changing companies in technology and healthcare. This strategy allows for increased concentration within the top 20% of venture capital-backed winners, thereby maximising return potential.

13 The process by which it can take several years for a private equity fund to start to generate positive returns

## Conclusion

Venture capital is an attractive asset class due to the ability to get early access to potential market leaders of tomorrow, as well as generating strong returns for investors at comparatively low risk. It is possible to get exposure to both the best venture capital funds and top venture capital-backed companies, thus providing access to top quartile returns. Venture capital is also not as cyclical as most investors think, providing consistent strong returns through market cycles. Within the venture capital market, it is currently best to invest in the early stage part of the market.

Investors should concentrate on investing in established and typically highly access-restricted fund managers. Preference should be given to fund managers that invest in themes of the future and have access to high quality deal flow and top entrepreneurs. It is important to take a global approach to venture capital investing as more game changing companies are being built outside of Silicon Valley, such as in Asia and Europe. Finally, we believe a successful venture capital portfolio should consist of a mix of primary fund commitments, direct co-investments, and secondaries.

### A word about simulated results

Any simulated results mentioned must be considered as no more than an approximate representation of the portfolio's performance, not as indicative of how it would have performed in the past or will perform in the future. It is the result of statistical modeling, with the benefit of hindsight, based on a number of assumptions and there are a number of material limitations on the retrospective reconstruction of any performance results from performance records. For example, it may not take into account any dealing costs or liquidity issues which would have affected the strategy's performance. In addition, gross returns would be lower if applicable management fees and expenses were factored in to the calculation. There can be no assurance that this performance could actually have been achieved using tools and data available at the time. No representation is made that the particular combination of investments would have been selected at the commencement date, held for the period shown, or the performance achieved. This data is provided to you for information purposes only as of the dates of this material and should not be relied on to predict possible future performance.

**Important information:** Any security(s) mentioned above is for illustrative purpose only, not a recommendation to invest or divest. This document is intended to be for information purposes only and it is not intended as promotional material in any respect. The views and opinions contained herein are those of the author(s), and do not necessarily represent views expressed or reflected in other Schroders communications, strategies or funds. The material is not intended to provide, and should not be relied on for investment advice or recommendation. Opinions stated are matters of judgment, which may change. Information herein is believed to be reliable, but Schroder Investment Management (Hong Kong) Limited does not warrant its completeness or accuracy. Investment involves risks. Past performance and any forecasts are not necessarily a guide to future or likely performance. You should remember that the value of investments can go down as well as up and is not guaranteed. Exchange rate changes may cause the value of the overseas investments to rise or fall. For risks associated with investment in securities in emerging and less developed markets, please refer to the relevant offering document. The information contained in this document is provided for information purpose only and does not constitute any solicitation and offering of investment products. Potential investors should be aware that such investments involve market risk and should be regarded as long-term investments. Derivatives carry a high degree of risk and should only be considered by sophisticated investors. This material including the website has not been reviewed by the SFC. Issued by Schroder Investment Management (Hong Kong) Limited.