

UK Venture Capital Financial Returns 2020

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Foreword

A strong Venture Capital (VC) market, generating positive financial returns for its investors, is vitally important for the UK economy. It can enable ambitious smaller businesses with growth potential to access the equity finance they need, and help the country's recovery from the economic impact of Covid-19.



For VC markets to work efficiently, we need reliable and robust information on the financial performance of this asset class. Until relatively recently, there was a lack of transparency about the historic financial returns of the UK's VC industry. Because of this, institutional investors were reluctant to allocate capital to VC, contributing to a lack of such finance being available to high growth businesses.

As the largest UK-based investor in UK VC and with the mission of making finance markets work more effectively for UK smaller businesses, the British Business Bank seeks to address the information gap by improving information about how this part of the market performs.

Last year, we published a groundbreaking research report which found the performance of the UK VC industry to be competitive against its more developed counterpart in the US. This, our second such yearly report, draws on existing data sources including PitchBook and Preqin, data from the performance of our own equity programmes, and includes further information sourced directly from fund managers. By increasing our coverage of funds reporting financial returns data, we are providing an unprecedentedly detailed picture of the performance of this asset class.

We undertook our research at a time of high uncertainty resulting from Covid-19. While it is too soon to assess completely the impact of Covid-19 on VC fund valuations, this report provides an important benchmark of VC fund performance prior to the pandemic.

Amongst other findings, our analysis shows:

- Investing in early stage-focused VC funds has the potential to generate higher returns than other stages of the market, although these funds are subject to greater variation in returns.
- Funds based outside of the 'Golden Triangle' of London, Oxford and Cambridge offer the potential for high returns, showing fund managers can be based in all parts of the UK, outside of existing equity clusters, without negatively impacting on their performance.
- Fund managers are positive about deal flow quality in the current market, although there are mixed views on fundraising and exit conditions.

A vital part of the market

As the largest UK based LP investing in UK VC, the British Business Bank has committed a total of £1.9bn of investment into 78 funds through its Enterprise Capital Fund (ECF) and British Patient Capital programme. The overall performance of the funds in which the Bank has invested provides further evidence of the positive returns that can be generated.

We will continue to work with the wider VC industry to improve data coverage and accuracy still further. In doing so, we aim to help more high-growth innovative businesses in the UK get the finance they need to become the global success stories of tomorrow.

Catherine Lewis La Torre
CEO, British Business Bank



Executive summary

Venture Capital (VC) investors provide equity funding to early-stage companies with the potential for high growth. The UK VC industry has grown and matured substantially to become an established part of many institutional investors' portfolios with VC now recognised as a standalone asset class.

As identified in last year's report¹, a lack of robust information on the performance of UK VC has held back the asset class. Without evidence of a strong track record of generating financial returns in line with the level of risk taken, institutional investors are wary of committing or increasing their funding allocation to VC. Reliable data demonstrating high VC returns relative to other asset classes including public equities could help unlock greater institutional funding, increasing the amounts of equity finance available to smaller businesses with high growth potential.

This year, the Bank has collected fund level data on VC returns directly from fund managers and has combined this with other data to provide the most comprehensive assessment of the performance of UK VC funds. This report includes the fund performance data of 145 UK VC funds with a 2002-2018 vintage year, making it the largest source of information available on the performance of UK VC funds. We estimate this covers 36% of the total number of UK VC funds in the market.

Key findings

1. UK VC funds continued to deliver good performance prior to the pandemic but it is too early to assess the impact from Covid-19

The report examines financial performance using Distributions to Paid-In capital (DPI) and Total Value to Paid-In capital (TVPI) multiples.

Where possible fund data up to March 2020 was included, and so is unlikely to reflect the full impact of the economic disruption felt by the Covid-19 on fund valuations.

Overall fund returns for funds with 2002-2015 vintage years show pooled DPI multiple of 0.95 and pooled TVPI multiple of 1.78. Funds of this vintage also generated an IRR of 17%. For many of these funds, it is too early in their life to make a conclusive assessment, and so it is useful to assess the performance of older vintage funds.

For UK VC funds with a 2002-2007 vintage, these funds have generated a pooled DPI multiple of 1.61 and a pooled TVPI multiple of 1.99. Most of these funds will be late in their life stage, so their DPI multiple provides a reliable assessment of their performance.

For more recent vintage years, DPI multiples are less useful as most investments have not yet had the chance to exit. For funds with a 2008-2013 vintage, these funds generated a pooled TVPI multiple of 1.81. This therefore suggests fund performance for these more recent vintages is very promising, and likely to be similar to the earlier time period.

The survey of fund managers revealed that most fund managers felt the UK VC market currently has a good availability of quality investments, and that the current state of the market for investments is good. As of end of September 2020, most fund managers felt that the quality of investment opportunities had not worsened but was the same as those a year ago. However, fund managers had more mixed views on exit opportunities for their portfolio companies and for raising new VC funds, reflecting the greater uncertainty in the economy. The majority (86%) of fund managers reported that they had changed their investment process, showing that a large portion of the VC market is still open for business and has the capacity and resources to continue to make new investments.



2. Early stage VC funds have the potential to generate higher returns than other stages of the market

Early stage funds with a 2002-2015 vintage generated a pooled DPI multiple of 1.43 (1.99 TVPI), which is higher than later stage VC funds, which have a DPI multiple of 0.70 (1.28 TVPI). Early stage funds have a greater range of reported DPI multiples compared to later stage funds, showing wider variation in performance. However, investing in the right early stage fund can generate extremely large investment returns for their investors.

Econometric analysis confirms early stage funds generate higher TVPI multiples but the econometric analysis did not find a significant correlation for DPI multiples. This could be due to early stage deals taking longer to exit. It is also important to recognise that the UK VC market has substantially developed over the last two decades and latter stage VC funds only really existed in the later part of the time period (from 2008 onwards).

3. Funds based outside of the Golden Triangle offer the potential for high returns

The Golden Triangle comprises of established equity clusters of London, Oxford and Cambridge. Funds based outside of the Golden Triangle with a 2002-2015 vintage year generated a pooled DPI multiple of 1.65 (2.02 TVPI). This is higher than the pooled DPI multiple of 0.85 (1.74 TVPI) for funds based in the Golden Triangle.

Our data captured 16 VC funds with a head office based outside of the Golden Triangle, which is a relatively small number. The pooled DPI multiple is relatively high for funds based outside of the Golden Triangle due to several well performing outlier funds. 3 of the 16 funds generated a DPI multiple of above 2.

Further analysis of the portfolios of funds reveals they invested in at least 3 former unicorn companies, which contributed to their success. Last year's VC returns report confirmed the importance of outlier funds for generating market returns, and this appears to be the case here. Although these funds undertake most of their deals outside of the Golden Triangle, they do invest in all parts of the UK and internationally.

This finding is supported by the econometric analysis that showed funds in the Golden Triangle have lower DPI multiples once other factors are considered, albeit at the 10% significance level.

4. Life sciences funds generate returns similar to other sectors

Life sciences VC funds with a 2002-2015 vintage generated a pooled DPI multiple of 1.01, which is slightly higher than for non-life sciences funds (0.94). However, econometric analysis found this not to be statistically significant once other factors are considered.

However, life sciences funds were found to have lower pooled TVPI multiples than non-life sciences funds (1.52 compared to 1.84). This may be due to life sciences investors being more likely to value investments closer to cost until a meaningful value can be achieved nearer exit.

The econometric analysis also showed the TVPI finding not to be statistically significant. Together, the econometric results imply overall the life sciences sector generates financial returns in line with other sectors.

5. British Business Bank supported funds are performing inline with the wider UK VC market

Econometric analysis confirms the performance of VC funds the British Business Bank has invested in up to 2015 vintage are in line with the wider UK VC market, as performance is not statistically different to other funds.

For VC funds supported by the ECF programme with a 2006-2017 vintage year, the pooled DPI multiple is 0.40 overall, but 0.44 for other LPs due to the prioritised return structure. ECF DPI multiples are lower than the wider UK VC market DPI multiple of 0.65, which may reflect the earlier stage nature of these funds, leading to realised returns taking longer to achieve.

VC funds within the ECF programme have a pooled TVPI multiple of 1.33 (1.65 for other LPs), which shows the 'geared' returns structure for private sector LP investors is working as returns are now slightly higher than the wider UK VC market (1.61).

BPC is investing on a commercial basis into VC funds targeted at UK scale-up companies. For VC funds BPC has invested in between 2013-2017, the pooled DPI multiple generated to date is 0.18, which is slightly higher than the wider UK VC market (0.17).

BPC has generated a pooled TVPI multiple of 1.40, which is slightly lower than the UK market benchmark of 1.45 for funds of the same vintage, but the BPC median fund TVPI performance is higher than the equivalent UK median figure. It is still too early in the life of BPC to draw meaningful conclusions concerning future performance, but the outlook looks promising.



British Business Bank response

The Bank has continued to take the lead in improving the quality and availability of UK industry level returns data, building on our earlier commitments published in our 2019 'Future of defined contributions pensions' report².

The report shows the performance of UK VC continues to have the potential to be an attractive asset class for LPs. This year's report findings have several implications for the Bank:

- **Funds outside of the Golden Triangle have the potential to generate high returns and their performance is not held back by not being in traditional equity clusters.** This is a positive finding and shows fund managers can operate in all parts of the UK without negatively impacting on their performance. This finding does not necessarily imply funds based outside of the Golden Triangle have less competition for their deals, as they can invest in all parts of the country and overseas. This finding provides support for the Bank's regional programmes, which target high growth companies in areas outside of London and the South East who are currently underserved by equity investors. The Bank is open to investing in fund managers who are based in all parts of the UK, not just the Golden Triangle.

- **Investing in early stage VC can generate higher returns than other stages of the market.** Despite higher variation in performance as shown by greater distribution of fund returns, this analysis shows early stage funds can have good performance compared to later stage funds. The Bank will continue to focus on this end of the market through our ECF programme. This is especially important as early stage fundraising is most likely to be affected by Covid-19 and the early stage market was already showing signs in 2019 of softening. The 2020 Equity Tracker report identified the annual amount of investment going to seed stage companies declined for the first time in 2019, ending continuous year on year growth since 2011 and the number of first-time companies being funded has trended down every year since 2015. The health of the early stage equity ecosystem is important for the overall ecosystem as it provides the pipeline of companies for later stage investors to invest in.
- **The growth of evergreen investors in the market provides additional routes to increase the availability of patient capital.** British Patient Capital has already invested in evergreen vehicles through its £30m investment in Draper Esprit³ but BPC will continue to be open to invest in evergreen vehicles targeting the patient capital gap.

We welcome comments and suggestions for ways in which UK VC financial returns data can be improved. We would also encourage fund managers (GPs) and institutional investors (LPs) who wish to contribute data to next year's report to contact the Bank, in order to increase coverage even further, and make this data source even more robust. For example, this year we worked with the UK BioIndustry Association (BIA) to increase the coverage of life science funds and are pleased to be able to provide a separate life science industry focus in this year's report.



Introduction

This is the British Business Bank's second annual report examining the financial performance of UK VC funds.⁴ The aim of this report is to improve the availability of information on the UK VC returns by presenting anonymised market level data on the performance of UK VC funds.

Last year, the British Business Bank revealed reported figures on the financial performance of the UK VC funds varied significantly between different data sources. Last year's report also found that, whilst UK funds performed relatively well compared to the US, UK market level returns varied significantly between different data sources. In part, this was due to only around 22% of UK VC funds disclosing their performance data to commercial data providers.

As the largest UK based investor in UK VC and with the mission of making finance markets work more effectively for UK smaller businesses, the British Business Bank seeks to address this information gap by improving the information available on the performance of UK VC returns.

This year, the Bank has collected fund level data on VC financial returns directly from fund managers and has combined this with other data including data from PitchBook and Preqin to provide the most comprehensive data source on the performance of UK VC funds. We have worked with the BIA to increase the coverage of life sciences funds and are now able to present a separate returns figures for this sector.

This year's report also provides detailed analysis on the factors affecting VC fund financial returns and an in-depth assessment of evergreen investors, who are increasingly providing an alternative investment structure for investing in high growth potential companies.

Report structure

The report is broken down in to the following sections:

- **Section 1** provides an overview of UK VC financial returns across different data sources, including BVCA, PitchBook and Preqin.
- **Section 2** compares reported financial returns across different time periods and sources and investigates why these differences exist.
- **Section 3** provides an assessment of VC financial returns in the life science sector.
- **Section 4** assesses the performance of VC funds the British Business Bank and British Patient Capital (BPC) has invested in and benchmarks them against the wider VC market for funds of a similar vintage.
- **Section 5** examines which fund characteristics are correlated with VC financial returns using econometric analysis.
- **Section 6** assess the returns of evergreen investors who invest outside of an LP fund structure.
- **Section 7** provides an overview of the current VC market, in light of Covid-19, and examines opportunities for investment and exits using results from our survey of fund managers.

Appendix 1 contains the definitions of the key terms used throughout the report, whilst **Appendix 2** provides an overview of the different data sources used in the report. **Appendix 3** provides a description of the methodology used to create the combined dataset.



Section 1.

UK VC returns across different data sources

Last year's report identified a high degree of uncertainty on the actual performance of UK VC funds due to the large variation in reported VC return for the same vintage years across different data sources. A similar picture is shown in the latest data. Building on from last year's report the British Business Bank has undertaken new primary data collection over summer 2020 to increase the coverage of funds and further reduce this uncertainty.

Money multiples

Figures 1.1 and 1.2 show the pooled average, median average, and the upper/lower quartile DPI and TVPI multiples for UK VC funds within a 2002-2015 vintage cohort using data from BVCA, PitchBook and Preqin. This time period was selected to be consistent with the data reported in the latest 2019 full BVCA Measurement Report at the time of analysis.⁵ Reported pooled average DPI multiples for the 2002-2015 vintage cohort of UK-based VC funds varies between data sources from 0.41 to 1.40, whilst reported pooled TVPI multiples for the same cohort varies from 1.48 to 2.09. Alongside this data, the Bank has added returns from the funds it has invested in as an LP over the same period, and from a survey of fund managers the Bank undertook during summer 2020. The last data column shows the results from the British Business Bank combined dataset, which covers all four data sources (excluding BVCA) but deduplicates funds that appear in more than one data source. This combined dataset is explored in more detail in subsequent chapters of the report.

From looking at the reported returns figures, commercial datasets like PitchBook and Preqin tend to report higher fund financial returns for the UK when compared to figures published by the BVCA and performance data from the British Business Bank's programmes.

This could be a result of selection bias. Funds that have performed well will have a higher propensity to disclose their data to PitchBook and Preqin, where individual fund performance can be identified by subscribers to the commercial data providers. With a demonstrated track record, fund managers will have an easier job attracting new LPs to future funds. For the same reason, poorer performing funds may choose not to disclose their financial returns to avoid discouraging potential future LPs.

Survivorship bias may also have an impact. If a fund manager were to have a particularly poor first fund, they may not raise another fund. This would remove their motivation to publish their financial returns but leads to quoted market returns figures being higher than if all funds were included.

The BVCA data may also differ because its coverage reflects its membership. BVCA includes the names of the fund managers responding to the survey, which mainly comprises established fund managers, and therefore may not be fully representative of the wider market. The BVCA data is reported as of December 2019, whereas data from the other providers is generally reported up to the end of March 2020. It is notable that the BVCA pooled DPI of 0.85 is only slightly lower than the upper quartile value of 0.87. The BVCA pooled TVPI is 1.67 which is higher than the upper quartile value of 1.57. This could suggest the BVCA returns figures are influenced by a small number of highly successful larger funds. Individual fund level data of the performance of BVCA members is not publicly available and so cannot be included in the combined dataset.



Figure 1.1

UK VC (2002-2015 vintage years) DPI performance by data source

Source: British Business Bank analysis of BVCA, PitchBook, Preqin, BBB MI data and BBB survey data

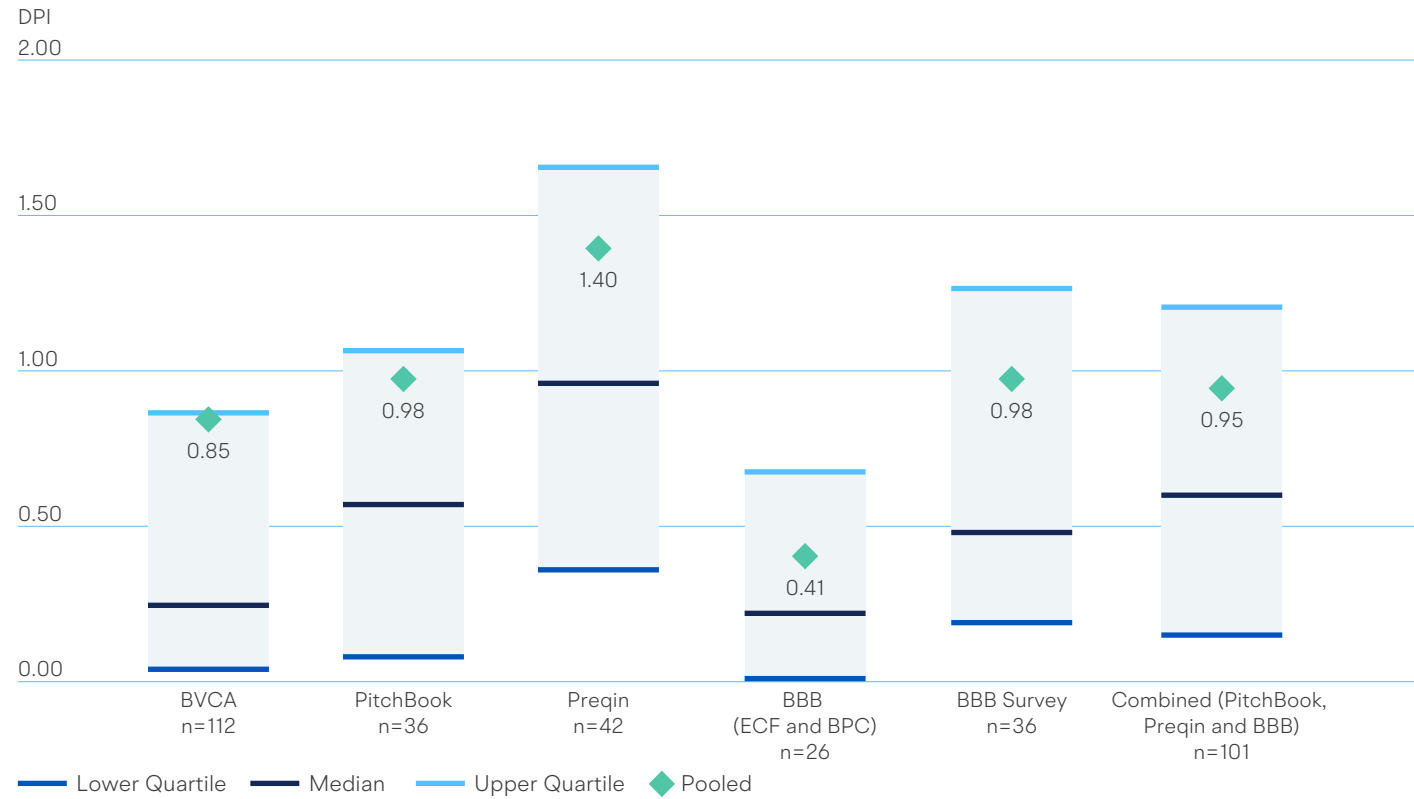
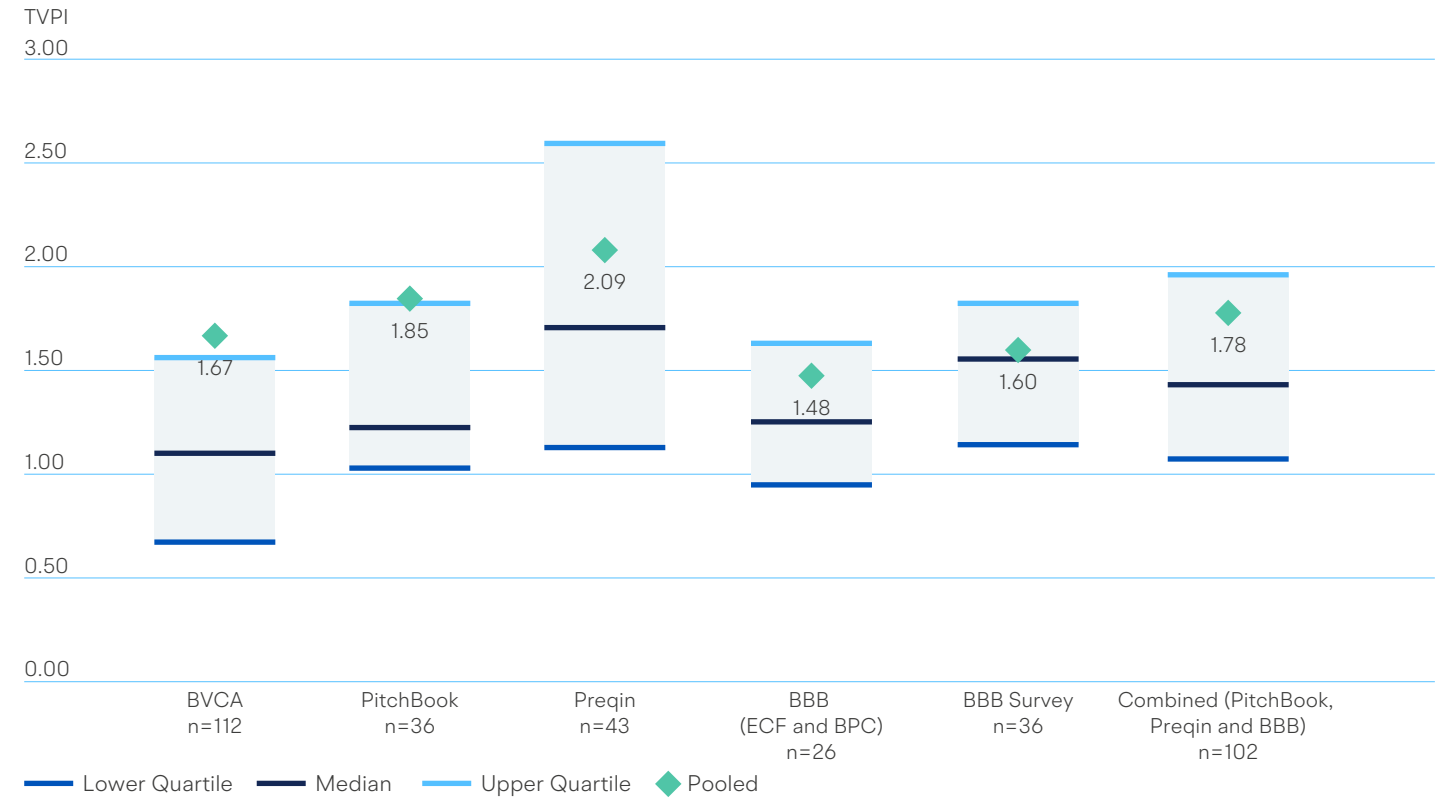


Figure 1.2

UK VC (2002-2015 vintage years) TVPI performance by data source

Source: British Business Bank analysis of BVCA, PitchBook, Preqin, BBB MI data and BBB survey data



Drawing comparisons in performance between the British Business Bank backed funds and the PitchBook and Preqin reported multiples may also not be a fair comparison. Most of the British Business Bank supported funds within the 2002-2015 vintage year cohort are part of the ECF programme, which is designed to target market failures affecting early stage companies, through investment in emerging fund managers. Because the ECF programme started in 2006 the British Business Bank portfolio within this sample is weighted to the later vintage years (2006-2015). Similarly, the VC Catalyst programme (now part of BPC) only started investing in funds in 2013. This could adversely affect reported performance as the fund managers in the British Business Bank sample will have had less time on average to exit their investments.

IRRs

For the first time, this report now includes a comparison of data sources using the IRR return measure. Although IRR measures can be volatile, especially in a fund's early life, the IRR measure shows a more consistent picture of performance between data sources with mean average returns between 16-19% in the British Business Bank survey of fund managers and the commercial data providers. BVCA reported fund returns are much lower at 9%.

It is notable that fewer funds provide this information to commercial data providers, which will limit the ability to provide detailed analysis using this measure. Furthermore, the underlying cashflow data on which the IRR calculation is based upon is not available under the commercial data providers, and so it is difficult to verify the IRR measure.

Fund coverage

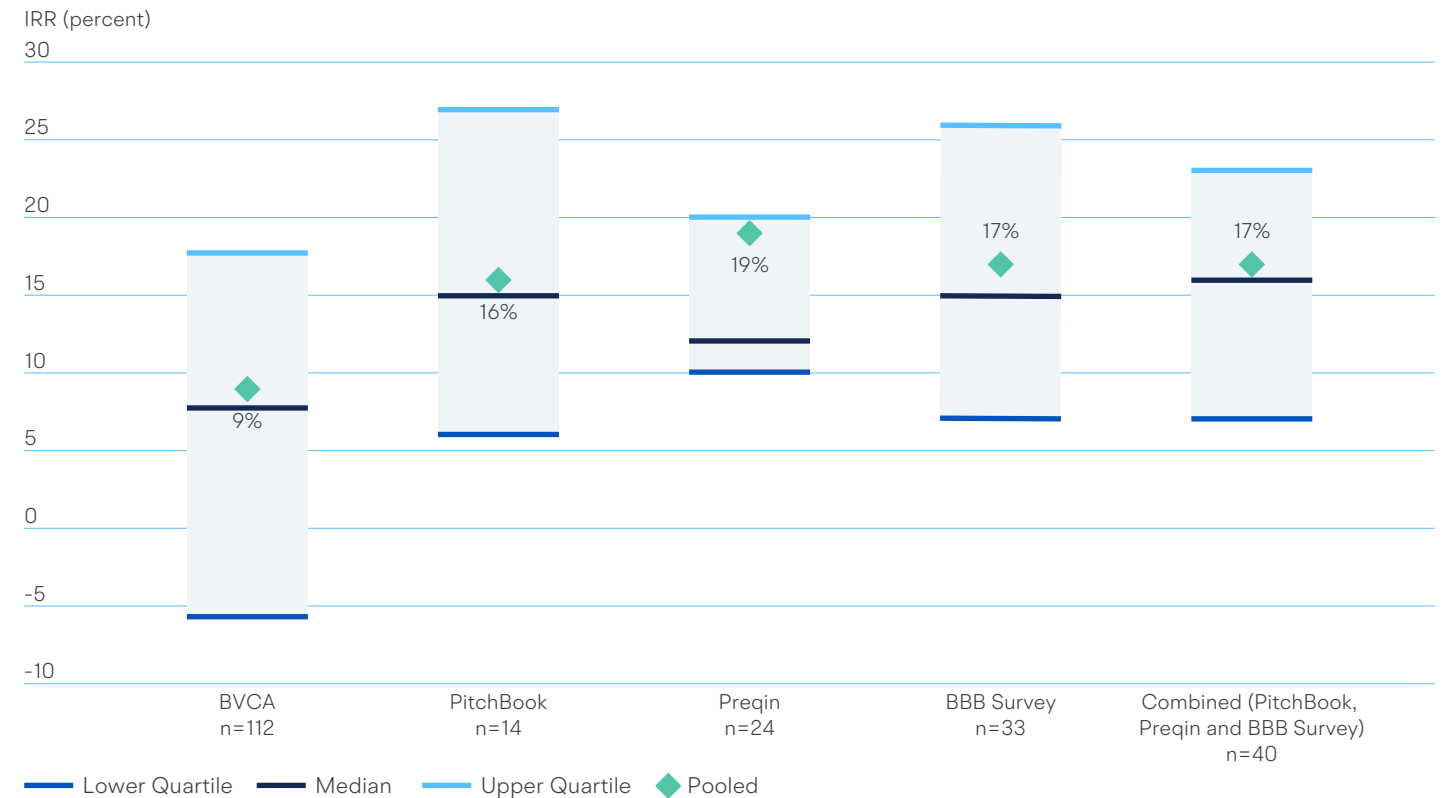
In the US, commercial VC data providers benefit from legislation requiring public pension LPs to disclose performance data, but the UK has no such explicit legal obligation for public pension LPs. Therefore, commercial data providers rely on self-reported data from fund managers and LPs in the UK. Whilst the UK has a general open disclosure culture that helps promote the market and assists funds to attract private institutional investors, commercial VC database coverage of the market is incomplete. For instance, British Business Bank analysis of Preqin identifies 251 VC funds with a vintage year between 2002 and 2018, with 54 reporting financial returns. Therefore, coverage works out to be 22%, which is the same as last year's reported UK figure. This is likely to also affect other commercial data providers.



Figure 1.3

UK VC (2002-2015 vintage years) IRR performance by data source

Source: British Business Bank analysis of BVCA, PitchBook, Preqin, BBB MI data and BBB survey data





The relatively low proportion of VC funds disclosing financial returns information provides strong justification for combining fund level data from different data sources to increase coverage, so that the sample of funds included is more representative of the wider population of VC funds. Fund level data on the performance of VC funds from Preqin and PitchBook was combined with MI data from the British Business Bank's LP investments and new primary data obtained through direct survey of fund managers to create a composite dataset. This enhances the coverage of the market, allowing for a more robust assessment of VC returns to be made across different time periods. This approach has allowed for analysis of 145 funds. Whilst we don't have perfect information on the total population of UK VC funds that have a 2002 to 2018 vintage year, our 145 funds form 36% of the total number of known UK VC funds (403) that we have identified from existing data sources.⁶ This suggests our dataset still only covers a minority of funds but coverage is relatively good compared to other data sources. This provides support that this combined dataset is the most comprehensive source of information available on the performance of UK VC funds.

Figure 1.4 shows the coverage of the combined dataset by vintage year using a 3-year moving average to smooth yearly volatility. The combined dataset coverage increases from 2006 due to the impact of British Business Bank investment activity through the ECF programme and remains above 35% from 2010 onwards.

Funds appearing more than once were removed from the combined dataset to avoid double counting. Appendix 3 provides more details of the methodology used to aggregate and clean the dataset.

Data quality

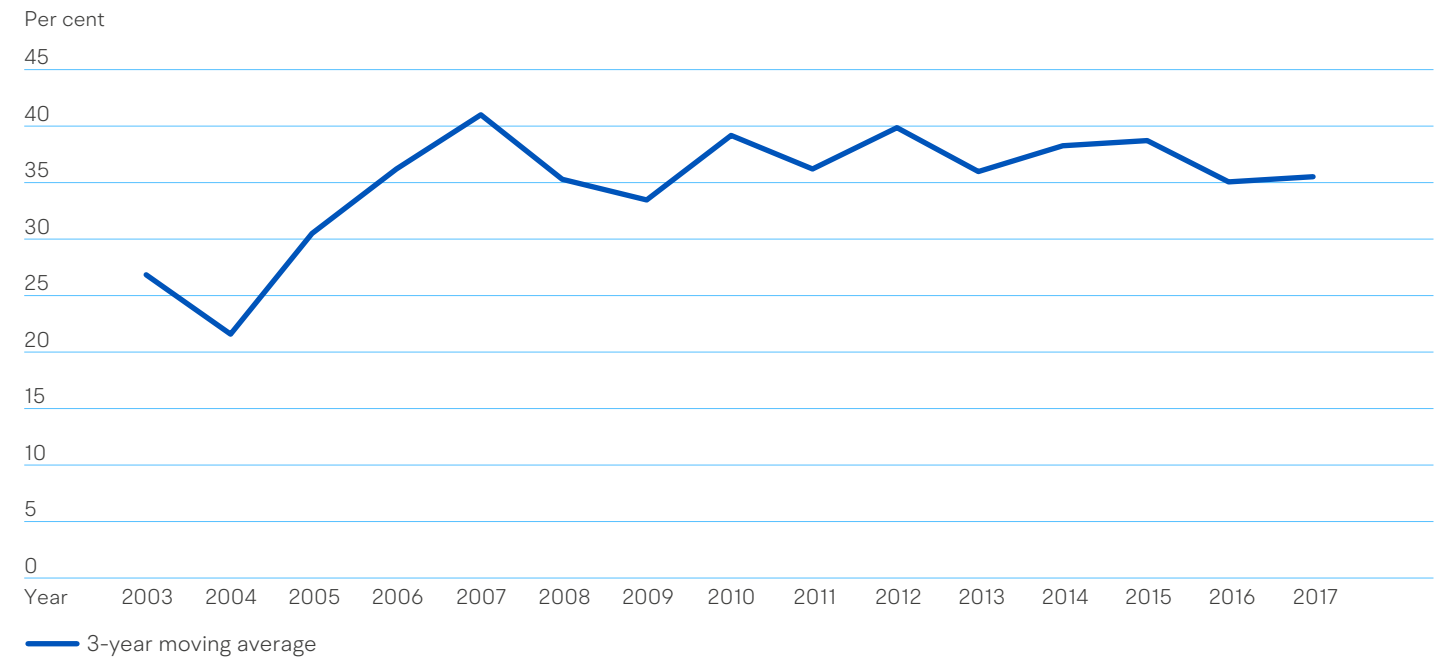
Only a small number of the funds the British Business Bank has invested in provide financial returns data to PitchBook or Preqin. The Bank has compared the performance of individual funds it has invested in, against the data these funds have reported to PitchBook or Preqin in order to assess the reliability of the self-reported data. In most cases, the reported figures are comparable to the ones recorded under the Bank's MI system with only small differences, suggesting these commercial data sources give a reliable indication of fund performance.

Reported DPI multiples in commercial data providers have a median 0.04 point difference to the figures reported in the Bank's MI data and the pooled TVPI has a median 0.07 point difference to the figures the Bank holds on fund performance. Differences may exist due to timing, LPs investing at first or second close and possible exchange rate effects but there is no evidence of these funds systematically reporting higher returns to commercial data providers. However, for a very small number of funds the reported figures are substantially different leading to higher mean differences (mean difference in reported DPI and TVPI multiples is 0.22 points and 0.27 points, respectively). The reasons for these differences cannot be explained by simply looking at the data. This analysis therefore suggests the underlying quality of reported returns from named fund databases is generally of sufficient quality to draw conclusions at the market level.

Figure 1.4

Proportion of VC funds reporting TVPI data by vintage year (3-year moving average)

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data





Section 2.

UK VC financial returns

This chapter provides an in-depth assessment of UK VC financial returns for the UK VC market using the combined dataset covering fund level data from PitchBook, Preqin, BBB MI funds and BBB survey of fund managers. It covers 145 UK-based VC funds with a 2002-2018 vintage year.

This section presents trends in VC covering different time periods up to 2018 by individual vintage year, by 2-year vintage years and by combined time periods to provide robust assessments of performance. For funds with a vintage year of between 2002 to 2015 (consistent with the previous fund analysis presented in section 1) detailed analysis of VC returns by different investment stages, by fund size and also by geographic location of fund manager are also made.

This section finishes with detailed analysis of the distribution of fund returns due to the large variation seen in fund performance between the best performing funds and the typical fund.

VC returns over time

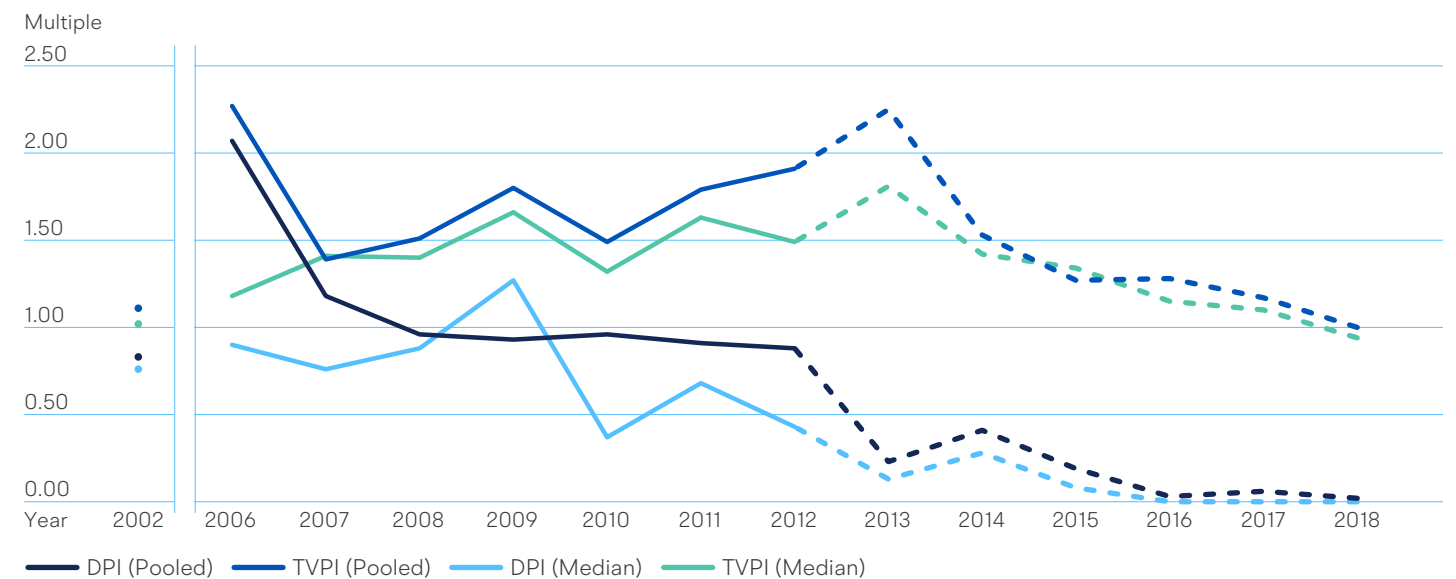
The performance of UK VC funds is undertaken for funds with a 2002 vintage onwards as this removes the impact of the dot-com bubble bursting and provides a more balanced benchmark of fund performance. Figure 2.1 shows the annual pooled and median DPI and TVPI multiple for UK VC funds with vintages 2002-2018. Vintage years with less than five funds are removed from the graph as shown by the gaps between 2003 to 2005. There is a large amount of annual variation in performance, but the VC market overall has performed strongly since 2002.

The pooled DPI multiple falls substantially after 2012 as there has been insufficient time for portfolio company exits to occur. It can take at least three years before VC funds start exiting their portfolio companies through IPOs, trade sales and secondary sales, but in practice the timescale to exit is often much longer. British Business Bank analysis of PitchBook suggests UK VC-backed companies take 5.3 years on average to exit via an IPO.⁷ The DPI return multiple is therefore not a useful measure of current or expected performance during the early part of a fund's life. This explains why fund DPI multiples are so low after 2012.

Figure 2.1

UK VC funds financial returns by vintage year

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data





The TVPI multiple is therefore more useful to measure performance during the early part of a fund's life as it incorporates unrealised value in the portfolio. However, because VC funds are affected by the 'J-curve' in the early stages of their life, reported returns in the first couple of years of a fund's life do not generally reflect the return investors can expect over the long term. Fund managers may keep the value of their unrealised investments close to cost until there is evidence of an increase in their value (e.g. progress against milestones or an additional funding round involving outside investors), whilst company failures may become more apparent early on. Pooled TVPI multiples start to decline below 1.50 for funds with a vintage of 2015 onwards but this reflects their relative immaturity rather than a decline in the underlying fund performance. Therefore, most organisations publishing VC returns do not publicly report financial returns figures for funds less than four or five years old, as the TVPI multiples do not provide a useful indication of future fund performance.

Figure 2.2 provides analysis of UK VC financial returns using two-year vintage year categories, which includes the omitted vintages between 2002-2005. Although the number of funds in each of the cohorts is still relatively small, just four funds form the 2004-2005 category, so caution is needed in interpreting the high returns figures seen in this cohort. On average there are 16 funds per two-year category. Tables A4 and A5 in Appendix 4 provides additional information on these vintage year categories, including the upper and lower quartile distribution of returns.

High performing outlier funds can cause annual returns multiples to be volatile. Grouping vintage years together can reduce some of the distortion arising from annual noise and small sample sizes. It also allows consideration of wider economic factors. For these reasons, vintage years are grouped into the following wider cohorts to analyse performance over time:

Time period categories

- 2002-2007: Positive economic growth post dot-com crisis
- 2008-2013: Recession and economic recovery
- 2014-2018: Latest time period

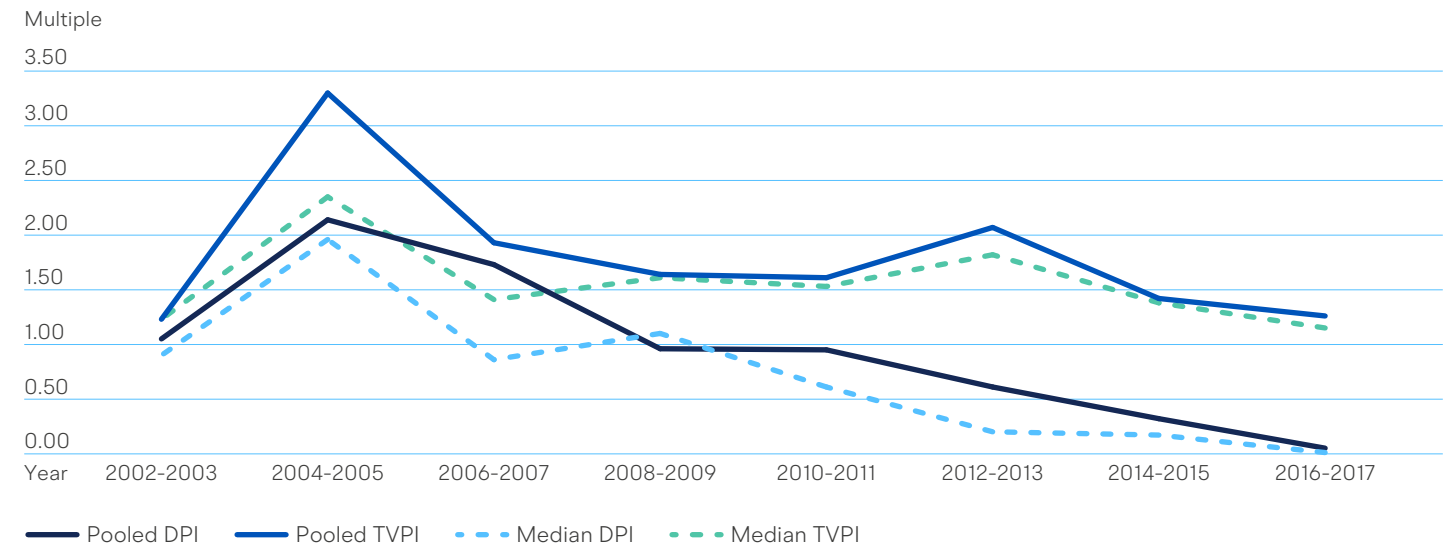
Greater importance should be attached to VC financial returns generated by funds in the 2002-2007 vintage year cohort, as these funds have had enough time to invest, develop and exit most of their investments. Funds with a vintage year between 2008-2013 have had more time to develop than the most recent cohort, so can provide an indication of likely performance going forward, but a substantial proportion of the returns are not yet realised.

Reported returns for the most recent 2014-2018 cohort are less likely to provide an accurate representation of actual underlying fund performance. These funds are still early in their life and will likely not have had enough time to develop companies to exit. Because of this, DPI is expected to be low. As described earlier, VC fund returns follow a 'J-curve'. Company valuations are likely to be conservative at this point in a fund's life with some portfolio companies likely to have failed. Thus, the reported TVPI multiple for this cohort may not reflect the actual return investors can expect.

Figure 2.2

UK VC funds financial returns by 2-year vintage category

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data





TVPI multiples are themselves based on portfolio company valuations, which can change rapidly depending on company specific and wider market factors. Covid-19 has also led to some famous companies raising funds at a lower valuation than previously, a so-called ‘down-round’. Airbnb are an example of this, raising \$1billion in April 2020 at a valuation of \$26bn down from \$31bn previously due to the negative impact of Covid-19 on the tourism industry.⁸

2002-2007 vintage year cohort

Figure 2.3 considers the pooled mean, median and upper/lower quartile fund performance for UK funds in the 2002-2007 vintage year cohort. The UK VC market performed strongly across all measures in this period. They generated a pooled DPI multiple of 1.61 and a pooled TVPI multiple of 1.99. Although the median TVPI of 1.25 is a good result, the pooled TVPI is higher than the upper quartile TVPI suggesting within this cohort there are a couple of larger funds performing well. The best performing fund for this cohort generated a TVPI of 5.71. Britain’s economy saw strong growth during the period, which helped VC funds and their portfolio companies to benefit from positive economic conditions.

Last year’s report identified UK VC funds with a 2002-2006 vintage generated a pooled DPI of 1.95 and a pooled TVPI of 2.17. Although covering a slightly different vintage period, the reported pooled DPI and TVPI multiples in this year’s report are lower.

This is explained by the inclusion of six additional funds through the British Business Bank survey of fund managers and should not be interpreted as a deterioration in VC fund performance. The comparable fund figures based on commercial data providers and British Business Bank invested funds only is actually higher this year.⁹ Therefore, this latest data is more representative of the performance of the UK VC industry for these vintage years than the figures presented in last year’s report. The latest figures do not change the conclusions made in last year’s report that the performance of UK VC performed well relative to the US in the early part of the 2000 decade.

2008-2013 vintage year cohort

Figure 2.4 assesses the performance of UK VC funds with a 2008-2013 vintage year. UK VC funds generated a pooled DPI multiple of 0.79 and a pooled TVPI multiple of 1.81. Funds in this cohort have had less time to develop and exit their investments than those in the previous cohort. It is therefore not surprising that the DPI multiple was lower than that of the 2002-2007 cohort, but there are encouraging signs that these funds will either produce equivalent or greater performance with a high pooled TVPI multiple of 1.81. The median TVPI multiple of 1.60 and the lower quartile multiple of 1.17 suggests that venture capital funds performed strongly across the board rather than just being driven by a couple of outlier funds. As these funds realise the value in their portfolio and distribute capital to investors, the pooled DPI multiple should improve.

Figure 2.3

UK VC (2002-2007 vintage years) performance multiples

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data

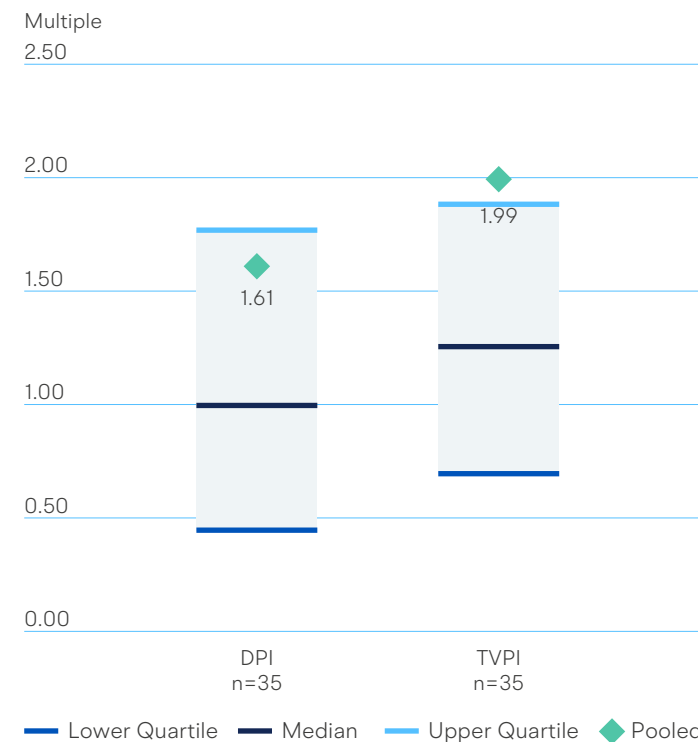
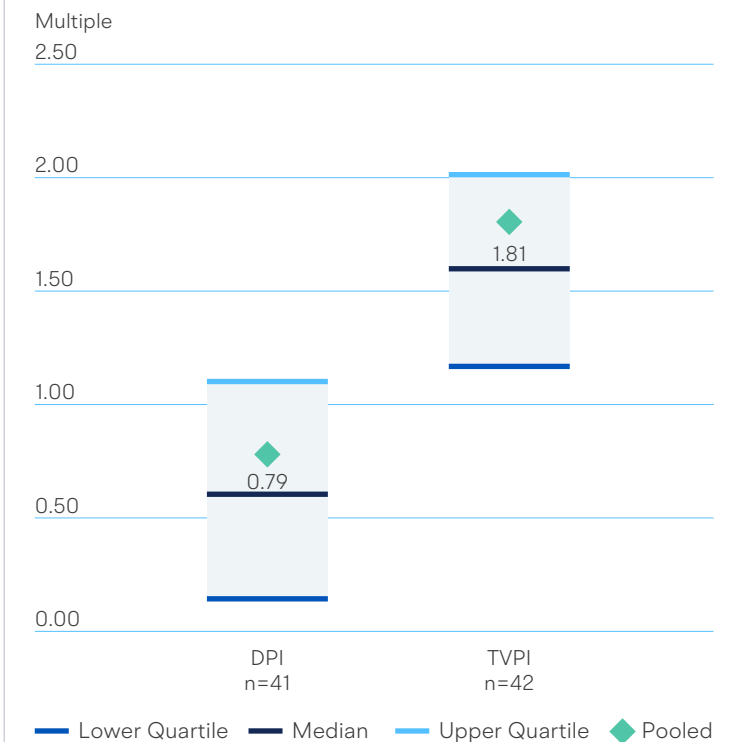


Figure 2.4

UK VC (2008-2013 vintage years) performance multiples

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data





This is especially encouraging as it shows the ability of VC to perform countercyclically. These funds were established in the immediate aftermath of the Financial Crisis and the subsequent recession. Despite this they have strong performance, suggesting that VC funds raised in the current economic environment post-Covid may have the ability to perform strongly for their investors. Many well-known VC-backed companies that generated strong returns for their investors were established in the wake of the Financial Crisis, such as Uber and Airbnb.

2014-2018 vintage year cohort

Figure 2.5 shows the financial return multiples for UK VC funds with a vintage year between 2014 and 2018. It is too soon to assess the DPI performance of funds in this latest cohort, as they are too early in their life to have had sufficient time to develop and exit many of their portfolio investments. The median DPI multiple for this cohort is 0, meaning most funds have not realised any value from their investments yet. This highlights the importance of patience with VC investment as it takes many years to develop a company before a successful trade sale or IPO exit can occur.

As discussed earlier, TVPI multiples are more informative for funds in the early part of their life. Both the pooled and median average are above 1, at 1.26 and 1.14 respectively, which is an encouraging sign of strong future performance. Most of these funds already reporting a positive return in the early stage of their life is a positive sign as funds will often have a TVPI multiple below 1 in their early life as their returns follow a J-curve.

VC returns by fund investment stage focus

VC invests in high growth companies, but it is possible to segment VC funds by their investment strategy depending on which types of companies they focus their investment in. The data has been segmented into the following fund categories:

- **Early stage VC** – Funds that focus specifically on earlier rounds (E.g. Seed and Series A)
- **Venture general** – Funds that invest in companies at both early and late stage with no specific stage focus
- **Later stage VC** – Funds that focus specifically on later rounds (E.g. Series B onwards)

This fund focus is based on the stage PitchBook and Preqin classifies funds, which is informed by the fund managers own description listed on their website. For funds the Bank has invested in, we have identified the relevant stage that most closely fits their investment stage. It should be noted that fund stage is not a clear category as funds may invest at all investment stages, even if they focus on one specific stage.

Early stage focussed funds are generally smaller and will be undertaking smaller deal sizes for companies at the earliest stages of their development (E.g Seed). This is a high risk, high reward strategy even amongst the high-risk VC asset class. Early stage companies have the potential to generate extremely large investment multipliers for investors, as valuations can see exponential growth. For instance, Scottish Equity Partners (SEP) is reported to have made a near 50x return on its £9m deal in Skyscanner.¹⁰ However, early stage companies also have a higher likelihood of business failure than more mature companies with tested products and markets.

Funds focused on later stage VC invest in more mature companies that have already received several rounds of equity finance. These companies will already have a proven business model, are likely to be generating revenue and will soon be profitable. As a result, these companies have a lower likelihood of failure, but will require larger deal sizes and are less likely to exhibit the extreme high valuation growth seen in the earlier stages.

The general venture category signifies funds that are stage agnostic, with fund managers having an investment strategy that includes both early stage and later stage companies. It is possible for late stage venture investors to have a small number of portfolio companies that are early stage within their investment portfolios and early stage venture funds to have a small number of late stage companies within their portfolios.

Figure 2.5

UK VC (2014-2018 vintage years) performance multiples

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data

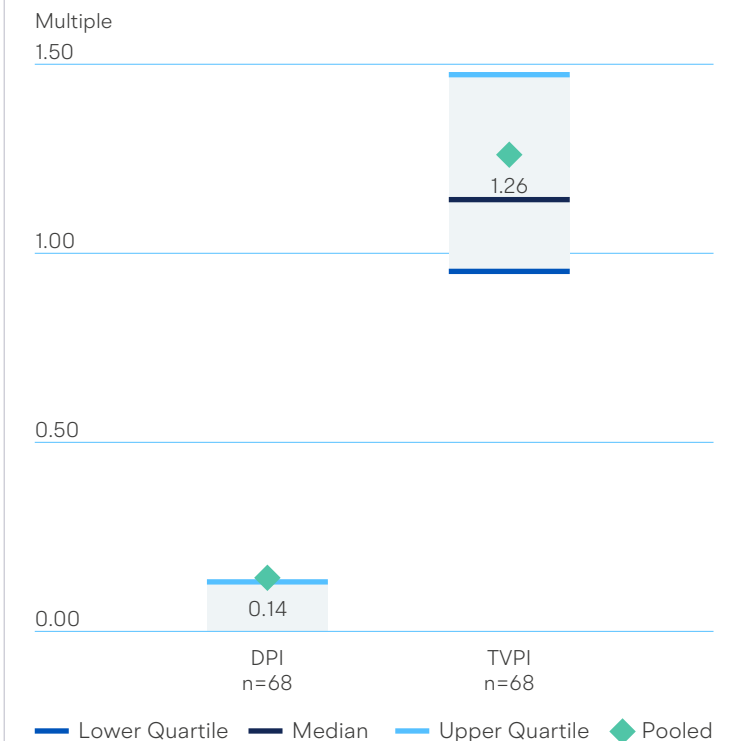
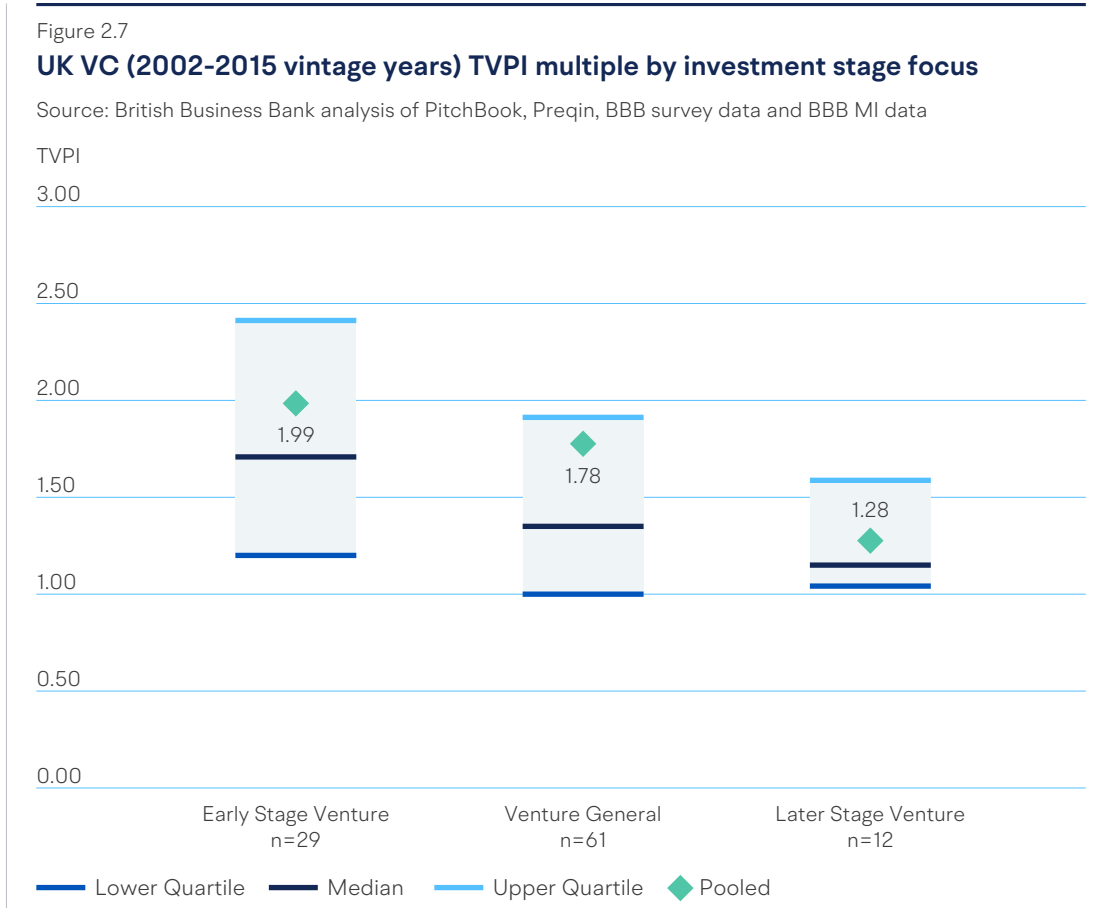
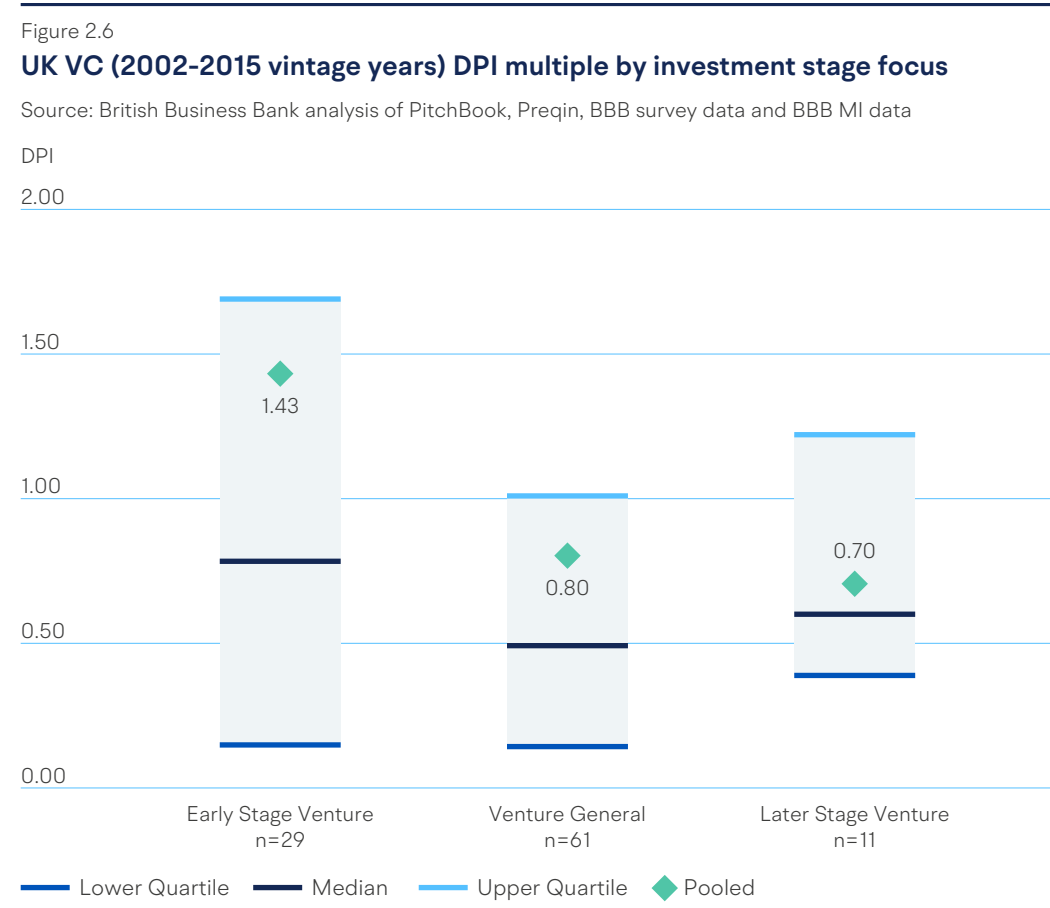




Figure 2.6 shows the pooled mean, median and upper/lower quartile fund performance for UK funds segmented by stage focus for vintage years 2002-2015. Early stage venture funds generated the highest pooled DPI and TVPI multiples of 1.43 and 1.99 respectively. Venture general funds generated pooled DPI and TVPI multiples of 0.80 and 1.78.

Later stage venture performed comparably worse with pooled DPI and TVPI multiples of 0.70 and 1.28, respectively. Care should be taken with this finding due to the relatively small number of UK later stage VC funds within the dataset (just 11 funds reported returns for the 2002-2015 period). The UK VC market has grown since its inception in the 1980's and it is only really in the last decade that it is developed enough to sustain significant numbers of later stage focused VC funds.

Therefore, one possible explanation for this performance is the later stage venture fund sample was weighted towards more recent years with an average vintage year of 2012. Venture general and early stage venture categories both had average vintage years of 2009 and so are much older. It is possible that the multiples for later stage venture funds will improve as these funds mature and move along the J-curve of fund returns (although J-curves should be significantly shorter at the later stage than for early stage funds).





The strong performance of early stage venture funds suggests that investing in early stage companies can be worth the higher risks. The largest TVPI multiple for early stage venture was 5.71, showing the potential for outsized rewards that early stage venture can yield. Interestingly, the median TVPI multiple for early stage venture funds was also strong at 1.71. This suggests that strong performance is not just limited to a small number of outlier funds, but the strategy has generally performed well for fund investors. Nevertheless, investing in early stage VC funds does have higher uncertainty for LP investors as shown by greater distribution in the DPI quartile range compared to later stage funds. The lower quartile early stage fund DPI multiple is 0.15 compared to 0.39 for later stage VC funds.

Whilst the early stage VC market has continued to grow over the last decade, there are several signs it is beginning to soften in 2019 and 2020. The British Business Bank 2020 Equity Tracker report identified the annual amount of investment going to seed stage companies declined for the first time in 2019, ending continuous year on year growth since 2011. The small decline in seed stage investment coincides with 2019 being the first year where the number of companies receiving follow on rounds exceeded the number of companies raising equity finance for the first time. The number of first-time companies being funded has trended down every year since 2015, suggesting this is likely to continue. This is before the impact of Covid-19 which is likely to disproportionately impact on early stage financing.

VC returns by fund size

The fund level data can also be segmented into fund size categories, although this is also likely to be correlated with fund investment stage focus, so that larger funds tend to focus on later stage VC investments. These issues will be explored further in the econometric analysis presented in section 5.

Larger funds can have some advantages over smaller funds that may enable them to produce good financial returns. Larger funds can undertake larger deal sizes, aren't limited to investing in earlier stage companies with higher write-offs and will have the ability to provide follow-on funding, preventing their stakes in well performing portfolio companies from being diluted. Larger funds can also benefit from economies of scale as they can spread their fixed costs of operating a fund management office over a larger investment amount. However, funds that are too large can suffer from a lack of investment opportunities and the size of returns needed from successful exits needs to be very large to offset the overall fund size.

Whilst there isn't a general consensus in the academic literature, there is some evidence suggesting that fund size has a concave positive relationship to performance.¹¹ Candasamy et al. (2015) suggest that when funds grow beyond a certain threshold, their performance suffers as there is a limited number of profitable deals. This is also confirmed by Kaplan et al. (2005)¹² who found that 'when funds become very large, performance declines'. This is attributed to the limited number of profitable deals available as well as potential supply side constraints from scarcity of human capital.

Funds with vintage years between 2002-2015 were chosen to be consistent with prior analysis and provide sufficient time for the funds to show performance. The following fund size categories were specified:

- <£50m
- £50m-£100m
- £100m-£200m
- £200m+

The analysis supports the case that larger funds tend to generate higher fund returns than smaller funds, albeit the number of very large funds is small at just 8 funds. Funds larger than £200m generated pooled DPI and TVPI multiples of 1.19 and 1.76 respectively, which compares favourably against the smallest fund size category. Funds under £50m in size generated a pooled DPI of 0.80 and a TVPI of 1.64.

These findings need careful consideration, as more successful fund managers are likely to raise larger funds. This is supported by the academic literature, which found that "current fund size is positively and significantly related to the performance of each of the two previous funds".¹³ Therefore, it is not necessarily larger funds generating higher returns but more experienced fund managers. This will be further examined in the econometric analysis in section 5.



Figure 2.8
UK VC (2002-2015 vintage funds) DPI multiple by fund size category

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data

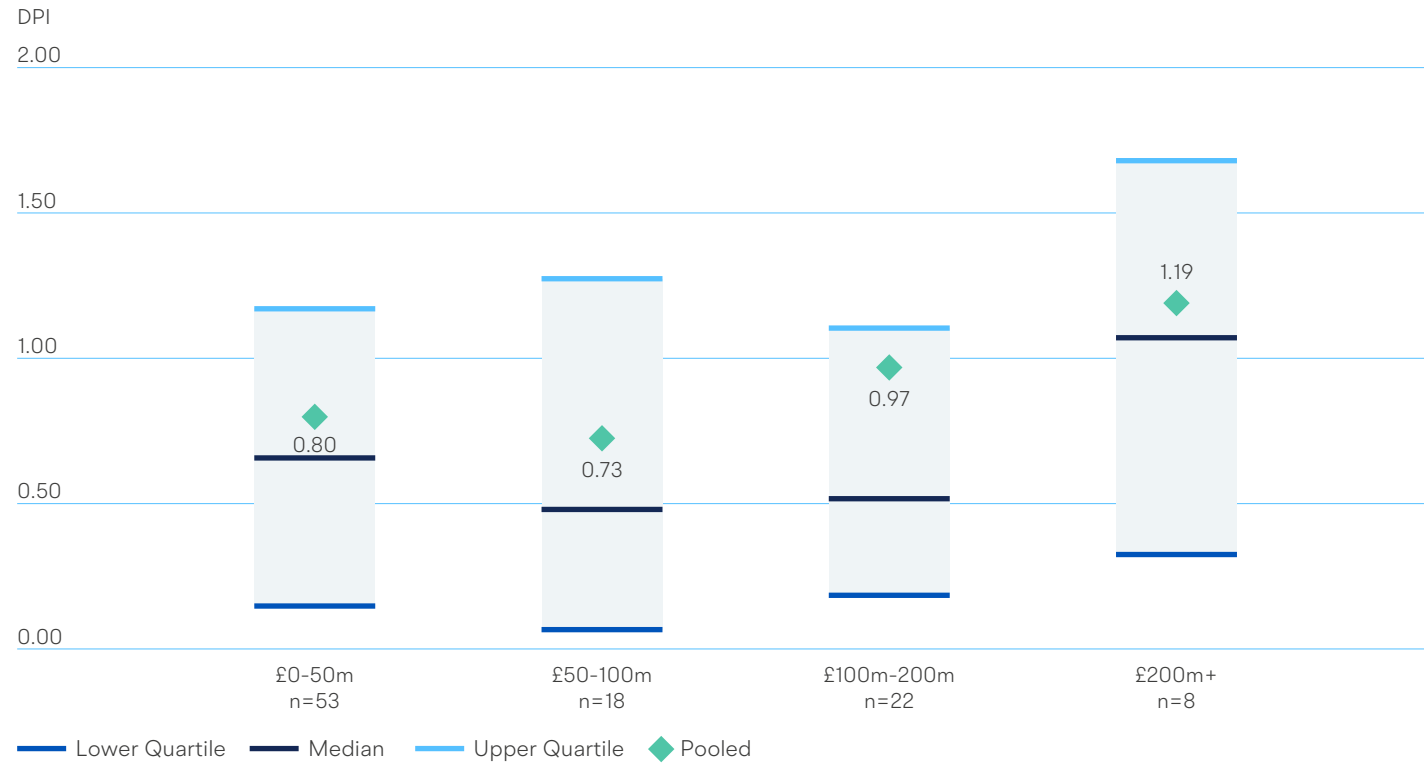
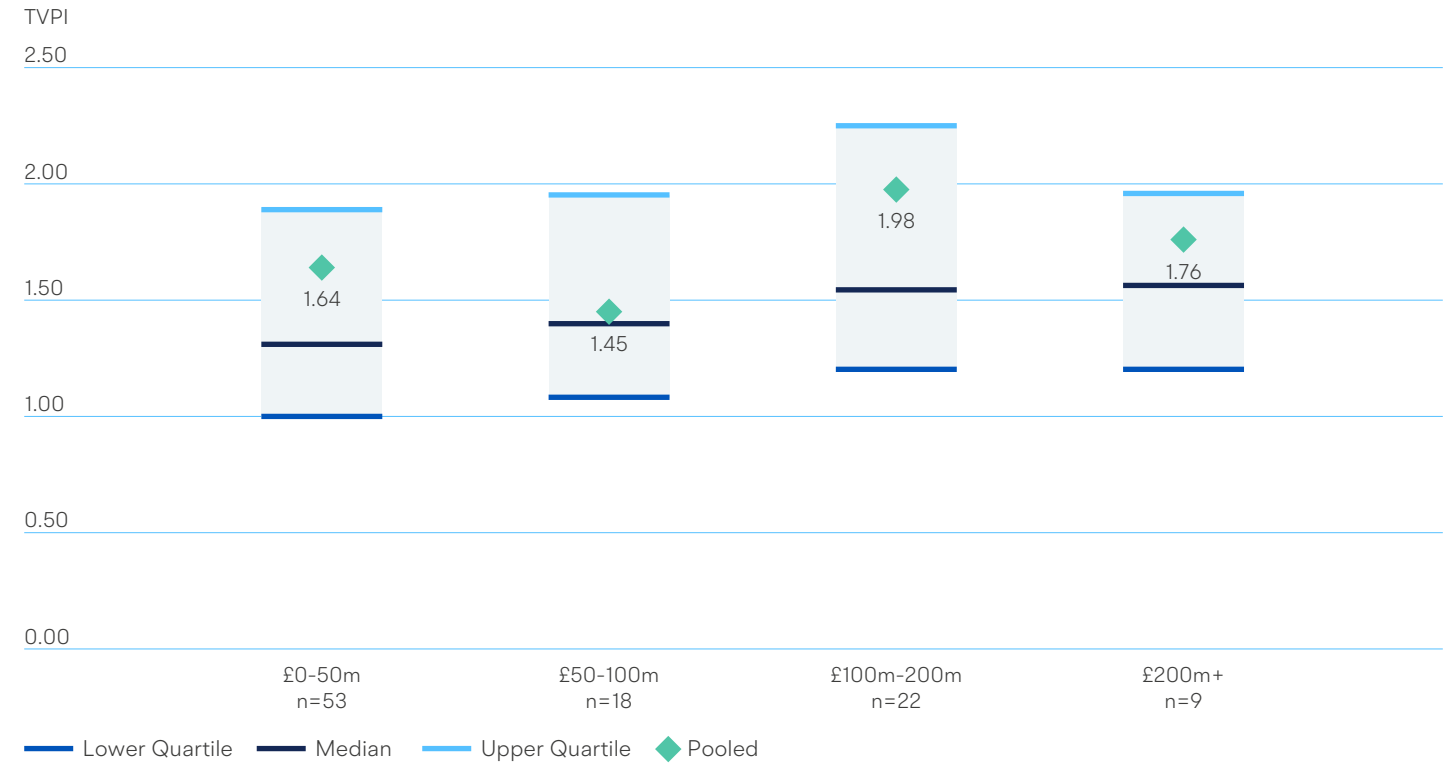


Figure 2.9
UK VC (2002-2015 vintage years) TVPI multiple by fund size category

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data





VC returns by fund manager location

The British Business Bank’s Equity Tracker report shows equity deal activity has consistently been concentrated in London and the university cities of Oxford and Cambridge. Jointly, these areas are known as the ‘Golden Triangle’.¹⁴ Equity deals in Oxford and Cambridge especially focus on leveraging research produced by the two cities’ world renowned universities, whilst London has a strong financial sector and an established start-up ecosystem. VC funds that are based in London can easily interact with and access institutional investors for fundraising.

The British Business Bank has classified the geographic location of funds based on their head office location. Some fund managers will have regional offices, but it has not been possible to take this into account. The location of funds is important as it is widely perceived that VC funds are more likely to invest in companies closer to their geographical proximity than companies further away, all other factors being equal. The British Business Bank’s most recent Equity Tracker shows that 55% of equity deals in 2019 took place in the Golden Triangle.¹⁵

Figure 2.10 shows the performance of funds based both inside and outside of the Golden Triangle based upon their reported head office location. VC funds based outside of the Golden Triangle produced pooled DPI and TVPI multiples of 1.65 and 2.02 respectively. This is higher than the pooled DPI and TVPI of funds in the Golden Triangle of 0.85 and 1.74 respectively.

The finding that funds based outside of the Golden Triangle outperform those based inside it should be treated with some caution as it is based on just 16 funds, forming 16% of the total sample.¹⁶

Last year’s VC returns report confirmed the importance of outlier funds for generating market returns, and this appears to be the case here. 3 of the 16 funds based outside of the Golden Triangle generated a DPI multiple above 2 (equivalent to 19% of the number of funds in this area). For funds based inside of the Golden Triangle, the figure is just 8% (7 out of 85 funds), showing a higher prevalence of high performing funds. Whilst one successful fund manager with multiple funds has contributed to the strong performance of funds outside of the Golden Triangle, removing their contribution does not change the conclusions relating to strong DPI multiples. Further analysis of the portfolios of successful funds outside of the Golden Triangle reveals these funds have invested in at least 3 former unicorn companies, which has contributed to their success.

Analysis of the TVPI multiples also suggests that funds based outside of the Golden Triangle performed consistently strongly – generating a median TVPI multiple of 1.51. This is slightly higher than the median TVPI multiples reported by funds based inside the Golden Triangle at 1.43. Four funds outside of the Golden Triangle generated a TVPI of above 2 showing strong performance.

High growth companies are found in all parts of the UK, and high quality research is coming out of universities, which are distributed throughout the UK. It is therefore possible that there is lower competition for deals between fund managers outside of the Golden Triangle, leading to lower initial company purchase valuations. Analysis of successful funds outside of the Golden Triangle (defined as funds having a TVPI of above 1.5) shows these funds undertake most (59%) of their deals within their vicinity (i.e. outside of the Golden Triangle), 22% of their deals are in companies

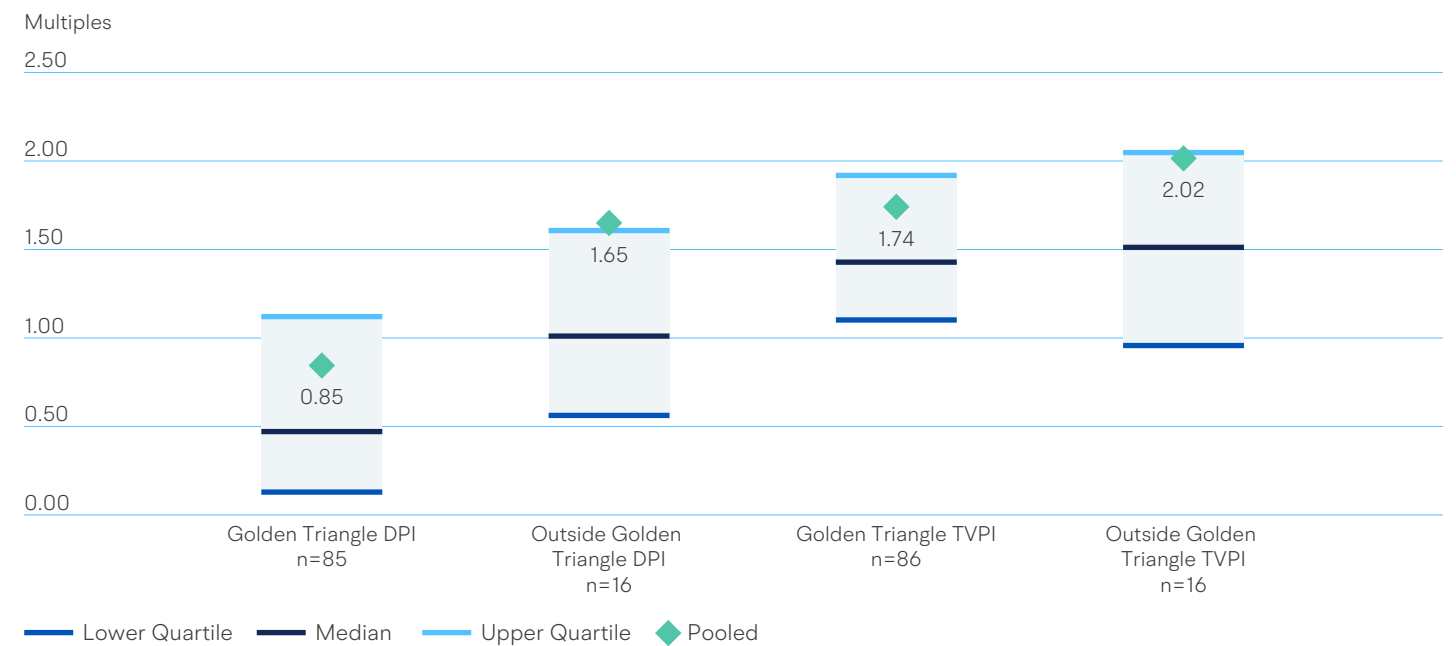
based overseas and 19% of deals occur in companies based in Golden Triangle. Therefore, it is not possible to imply funds based outside of the Golden Triangle have less competition for their deals as VC markets are broader.

Though based on a small number of funds, the results should encourage LPs to consider investing in VC funds based outside of the Golden Triangle as they are not at a disadvantage in terms of performance, and undertake investments over a broad geographic area.

Figure 2.10

UK VC (2002-2015 vintage years) performance multiples by fund manager location

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data





Distribution

Figure 2.11 shows the distribution of fund TVPI multiples for UK VC funds with a 2002-2018 vintage. This confirms the view that VC funds operate under a pareto principle, with a small number of outlier funds generating very strong returns, but most funds generate lower performance. Of the 145 funds reporting data, only a small proportion, 8 funds generate a TVPI multiple of above 3, a further 17 funds generate a TVPI multiple of between 2 and 3. Most funds (56%) generate a TVPI multiple of between 1 and 2. The remaining 39 funds (27%) generate a TVPI less than 1.

Figure 2.12 also shows the distribution of fund DPI returns for UK VC funds with a 2002-2012 vintage. This shows a similar picture to TVPI but using a shorter vintage year time period capturing the performance of 64 funds. Extending the period beyond 2012 vintages gives a longer tail of funds reporting DPI multiples of zero due to insufficient time to exit investments. The best performing fund within this cohort achieved a DPI multiple of 5.69, with the next highest performing funds achieving DPIs of 4.14 and 3.64. 6 funds (9% of the fund sample) generate DPIs of between 2 and 3, whilst 26 funds (41%) achieved DPI multiples of between 1 and 2. The majority of funds (55%) generate DPI multiple of less than 1, suggesting they make a loss for their LP investors. This confirms the strong variation seen in the performance of VC funds, where the top VC funds can make large returns for their investors, but most VC funds fail to return their investors capital.

Figure 2.11

Ranked TVPI multiple distribution of UK VC funds (2002-2018 vintage years)

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data

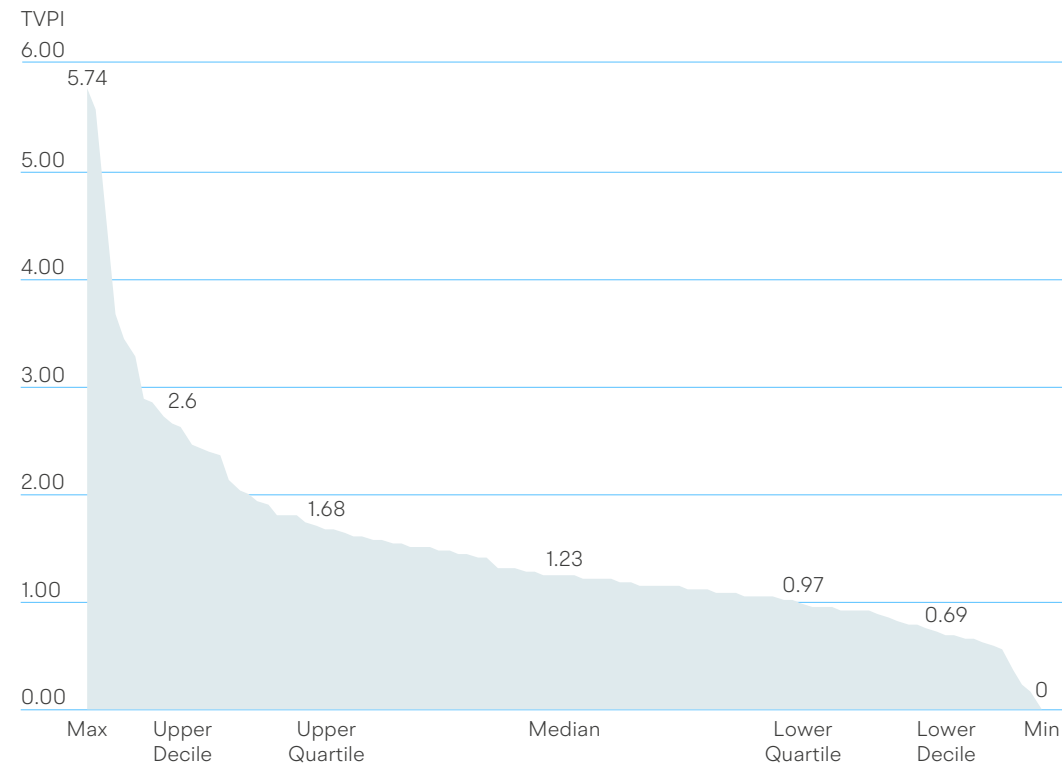
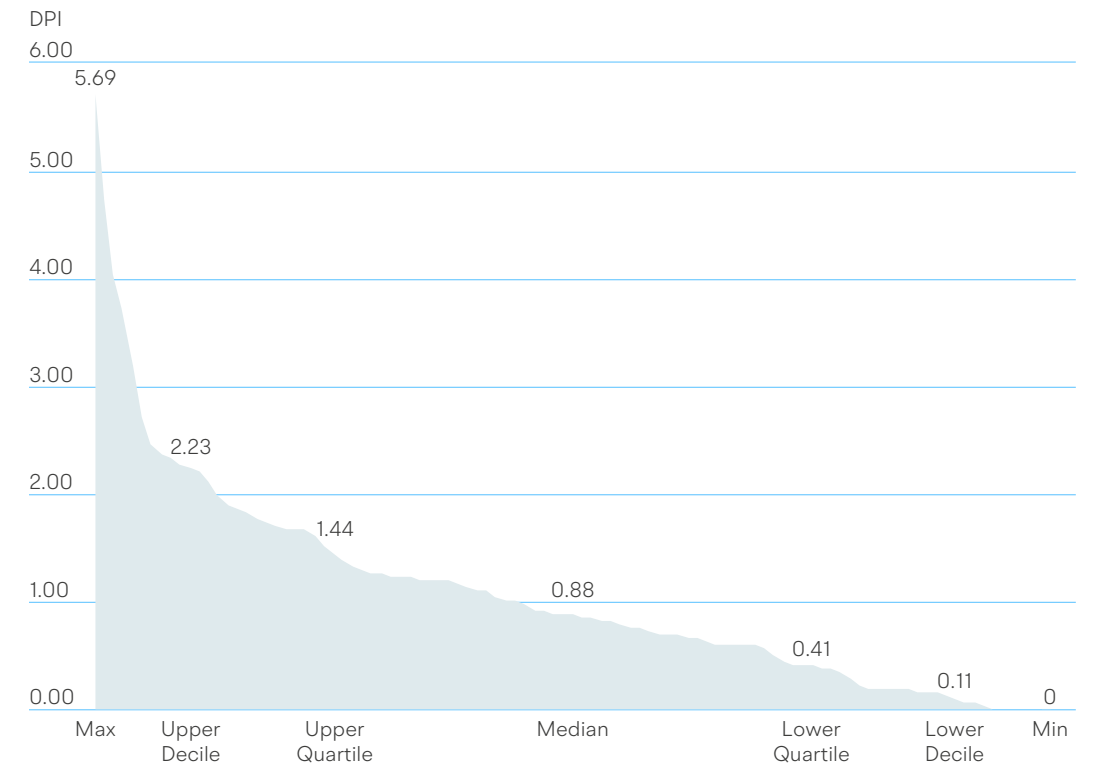


Figure 2.12

Ranked DPI multiple distribution of UK VC funds (2002-2012 vintage years)

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data





Section 3.

Life Sciences VC returns

This section provides an assessment of VC returns from UK funds targeted at the life sciences sector. For the purposes of this analysis, life sciences funds are defined as VC funds who solely focus on investing in life sciences companies as identified by their name or their quoted investment strategy. Funds that invest in the life sciences alongside other sectors (E.g. Clean technology) as part of a broad investment strategy are not included within this definition of life sciences funds. This is because it is not possible to identify the exact source of the investments generating the returns and some generalist funds state they invest in all sectors.

In order to make a more robust assessment of the financial returns from investing in life sciences companies it would be necessary to look at the exit multiples and write off rates from investing in individual life sciences companies, but robust deal level data on generated returns and write-offs is sparse. Nevertheless, this analysis provides an indication on the performance of life sciences funds compared to other VC funds in the market. An important point to note is that many life sciences investors (e.g. Syncona) are evergreen investors that invest outside of an LP fund structure due to the long-time horizons involved. Therefore, the findings presented here only relate to the performance of LP funds.

The UK life sciences industry, which includes biopharma and med tech sectors makes an important contribution to the UK economy. In 2019, the life sciences sector employed 256,100 people in 6,300 businesses and generated a turnover of £80.7bn.¹⁷ Biopharma involves companies undertaking research and development of new pharmaceutical products, as well as manufacturing of pharmaceutical products and supporting businesses that offer goods and services to biopharma businesses. This includes Contract Research and Manufacturing Organisations (CROs), and suppliers of consumables and reagents for R&D facilities. Med tech sectors involves companies developing and producing med tech products, ranging from single-use consumables to complex hospital equipment, including digital health products, development and marketing of therapeutics, and medical devices. A growing sub-category is digital health products and services that combine medicine and consumer technology.

The UK is home to one of the ‘strongest, most productive health and life sciences industries globally’.¹⁸ This 30-year old sector now includes mature, revenue-generating companies, as well as innovative start-ups building new technologies, and new business models.¹⁹ 82% of the businesses in the industry are SMEs and 42% of UK life sciences companies have been spun-out from academic institutions – ten times the rate across all sectors.²⁰ This shows many life sciences companies are currently small, but have the potential for high growth to become a global leader in their specialist fields. Therefore, equity finance and venture capital are important sources of funding for these companies. For example, Oxford Nanopore produces DNA-sequencing equipment and is currently being used to deliver Covid-19 diagnoses in a couple of hours. Despite generating revenue the company is still cash negative as it significantly invests in R&D and growth. To date it has raised £694m in VC funding.²¹

The life sciences sector has attracted record levels of equity investment over the last decade. PitchBook data shows in 2019, there were 159 VC deals in life sciences companies with an investment value of £1bn, down from 181 deals and £1.5bn investing in 2018. 2020 looks to be a strong year for life sciences with £1.1bn of investment already invested (as of 12th October 2020). Life sciences formed 8% of the total number of UK VC deals (10% by value) in 2019.



Characteristics of life sciences VC deals

Early stage life sciences companies, especially in biotechnology, focus on discovering and developing new medicines. This is a highly-capital intensive process to fund the long R&D and approval trials process. Life sciences companies therefore require successive venture capital rounds to fund each stage of development.

Investing in life sciences companies offer investors a high risk, high reward profile as there are typically significant R&D costs and they are initially loss-making. Most experimental treatments do not make it to market and those that do can face pricing and reimbursement hurdles. Yet those with promising research and therapy developments can generate high returns for investors, for instance via licensing fees, an IPO or an acquisition. Those rewards may materialise well before a product reaches the market (and may be realised even if the therapy ultimately fails).

Therefore, investing in life sciences companies is distinct from investing in other sectors like IT.²² Investments are more complex, requiring a strong medical and technology background and understanding of regulations. Investing in life sciences also requires a large amount of capital. In contrast, IT companies, especially software companies can start up with relatively low capital. Therefore, outlier software companies can generate 100x returns relatively easily, but it is difficult to get these same outlier return multiples on life sciences investments due to the large amount of capital that is required, and the longer time frames required which impact on IRR measures of performance.

The relatively constant demand for healthcare, which is often paid for by governments and insurance companies rather than consumers, also means that the sector is insulated from economic cycles affecting other sectors.

Performance of life sciences funds

Figures 3.1 compare the performance of UK life sciences funds with a 2002-2015 vintage year, to non-life sciences funds, a consistent time period to the analysis undertaken in section 2. Life sciences VC funds generated a pooled DPI multiple of 1.01 slightly ahead of non-life sciences funds of 0.94. This is confirmed by the median DPI figure where life sciences funds return 0.89 compared to 0.59 for non-life sciences funds. This suggests life sciences performs relatively well in terms of realised returns.

However, when looking at TVPIs, the pooled TVPI multiple of life sciences funds is 1.52, compared to pooled TVPI of 1.84 for non-life sciences funds. This is also seen on the median TVPI, where the median life sciences fund has a TVPI of 1.23 compared to 1.46 for non-life sciences funds. It is interesting to note that the maximum TVPI in funds of this vintage belongs to a life sciences fund.

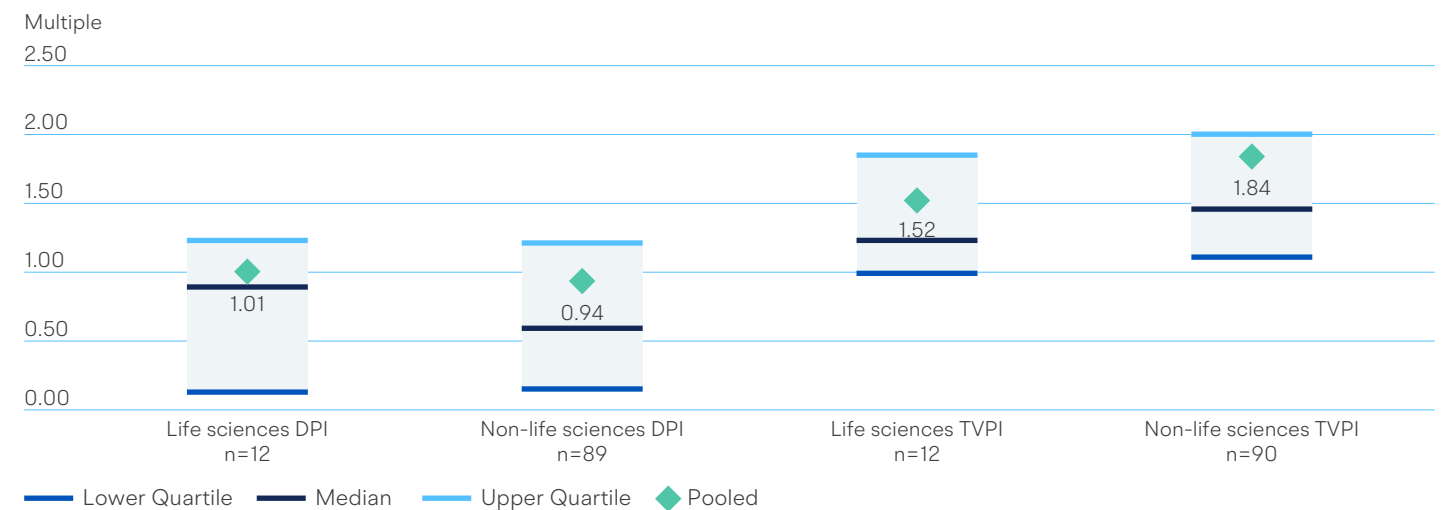
The finding that life sciences funds perform better than other sectors in terms of realised returns but perform worse on unrealised returns is confirmed by other empirical studies. For instance Booth et al. (2011) suggest “healthcare venture investments have produced better realised returns for LPs over the past decade than IT investments have”, but “the unrealized portfolio of active investments across all of healthcare

venture is basically being carried at no mark-up whatsoever vs. a nice mark-up for IT investments that are still unrealized”.²³ The paper’s authors suggest a number of reasons for this with capital efficiency being put forward. Life sciences companies require more capital than IT companies to reach each stage of development. “Interim milestones in healthcare companies just aren’t valued as much by outside firms as revenue or momentum growth is in tech and internet companies.” A specific example of this is Avila Therapeutics.²⁴ The company was held at roughly the same share price for 18 quarters (at approximate cost) and then in six months was written up by approximately 6x to its exit value. Booth states ‘It’s hard to argue value wasn’t being created during the preceding 4.5 years’.

To summarise, life sciences funds generate similar returns to the wider equity market. It is a myth that life sciences funds take longer to generate returns as DPI multiples are slightly ahead of other funds, but TVPI multiples are slower to be marked up compared to other funds. BPC will continue to invest in life sciences funds as evidenced by its existing investments in the Dementia Discovery Fund²⁵ and new additional funding to target this sector.²⁶ The British Business Bank’s ECF programme also provides support to life sciences sector through our £50m cornerstone investment in Epidarex Captial III, which is targeted at investing in new life sciences companies from emerging research hubs across the UK, and spinouts from leading universities.²⁷

Figure 3.1
UK VC (2002-2015 vintage years) performance multiples by life sciences and non-life sciences funds

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data





Section 4.

Benchmarking BBB and BPC VC fund performance to the wider market

This section provides an overview of performance of VC funds the British Business Bank has invested in as an LP. These numbers may differ from the figures reported in the British Business Bank and BPC annual reports due to differences in coverage of funds.²⁸ For instance, the BPC Annual Report shows the BPC portfolio had a TVPI multiple of 1.15 overall as at end of March 2020 and a portfolio IRR of 10.7%. The ECF programme portfolio is reported to have generated a TVPI multiple of 1.62 (as at Q1 2020) for private investors under the geared structure.²⁹

Performance of BBB invested VC funds

The British Business Bank has analysed the performance of the Enterprise Capital Fund (ECF) programme, which was established in 2006 to increase the amount of equity finance available to high growth innovate SMEs affected by the equity gap. Since inception the ECF programme has invested in 31 funds with a total of £1.36bn capital committed (including third party capital), and the programme has invested in over 550 UK smaller businesses, making the programme an important part of the UK VC industry.³⁰ The ECF programme has helped 16 fund managers to raise their first institutional fund, and so far, 63% of these have already gone on to raise a further fund.³¹ It therefore has an important role in supporting new fund management teams.

The ECF programme is designed to address identified market failures leading to an equity gap by facilitating the establishment of VC funds targeting high growth potential companies seeking smaller amounts of equity finance.

A key feature of the ECF programme is the 'geared' return structure designed to increase returns for private investors so that they are competitive with other market investment opportunities. The British Business Bank receives a 3% prioritised return but, after repayment of capital, the Bank receives a lower share of the profit compared to the other private investors in the fund. In the event of good performance by the fund manager, private investors receive a greater share of the profits.

Figure 4.1 shows the overall pooled DPI multiple for VC funds invested in through the ECF programme between 2006 and 2017 is 0.40, equating to a pooled DPI of 0.44 for other LPs. This is lower than the wider UK VC market pooled DPI of 0.65 for funds of the same vintage. However, the lower realised returns may reflect the earlier stage nature of the funds relative to the overall market leading to portfolio company exits taking longer to materialise.

VC funds within the ECF programme have a pooled TVPI multiple of 1.33, equating to 1.65 for other LPs. Other LPs in the ECF programme therefore have the potential to make slightly higher returns than the wider market (1.61 for the same vintage years), showing that the British Business Bank prioritised return mechanism is working as intended. The same prioritised return mechanism means the median fund DPI for other LP investors is lower than the overall ECF fund return, as the British Business Bank receives priority returns.

This similar level of performance to the wider VC market could make the ECF programme an attractive asset class for LP investors wishing to invest in UK VC.



Performance of BPC VC invested funds

Figure 4.2 shows for the VC funds BPC has invested in between 2013-2017, the pooled DPI multiple generated to date is 0.18. This is slightly higher than the wider UK VC market pooled DPI for funds of the same vintage of 0.17, which suggests the programme is performing as expected in terms of making a commercial return in line with the wider market. This is also the same DPI figure for the BPC programme reported in last year's report, although the market figure has declined slightly. It should be noted that it is early stage in the life of the programme, and performance is based on 16 BPC supported funds overall but five of the 16 funds had a 2017 vintage year, suggesting a portfolio that is relatively immature. Therefore, these figures are likely to change as the portfolio matures. It is also important to acknowledge that there are large variations in the performance of individual funds within this overall figure.

Although the BPC pooled TVPI multiples of 1.40 is lower than the UK market benchmark (1.45) for funds of the same vintage, the BPC median fund TVPI performance is 1.25. This is comparable to the equivalent UK market multiple of 1.23, suggesting BPC is performing well compared to the wider VC market. The relative performance of BPC against the wider market is similar to the one reported in last year's report, but BPC now has a higher pooled TVPI figure of 1.40 compared to the figures presented in last year's report (1.29). This improvement in portfolio valuation is positive, although is also seen in overall VC market portfolio which increased from 1.40 to 1.45 in the same period.

It is too early in the life of BPC to draw strong conclusions about future performance as most BPC invested VC funds are too young to be included in the analysis and most of the portfolio is currently unrealised, but the outlook for future performance looks promising.

Figure 4.1

ECF VC fund performance multiples (2006-2017 vintage years)

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data

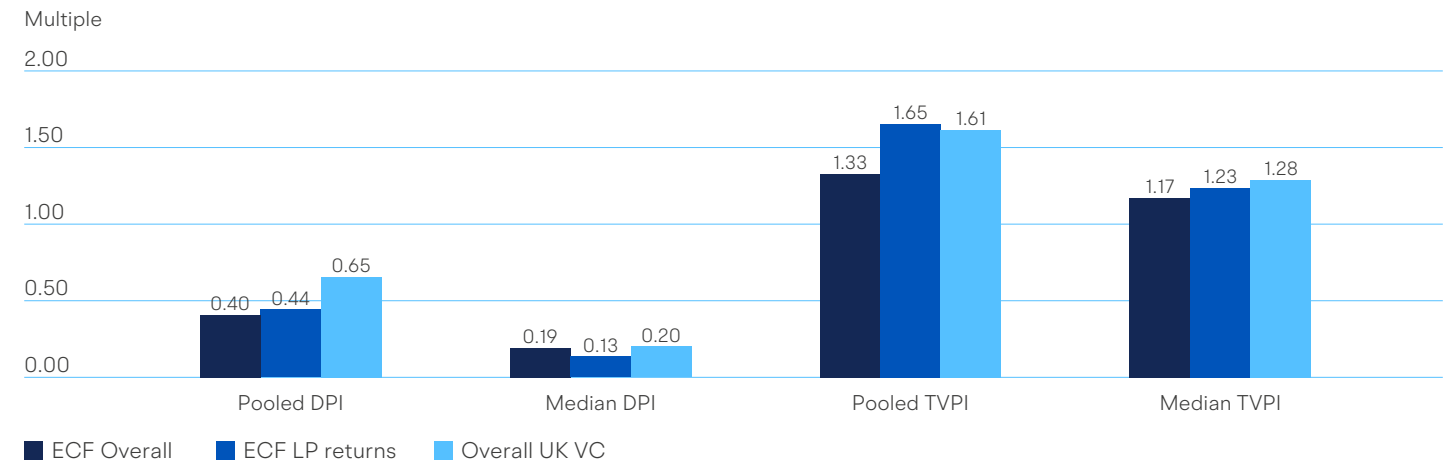
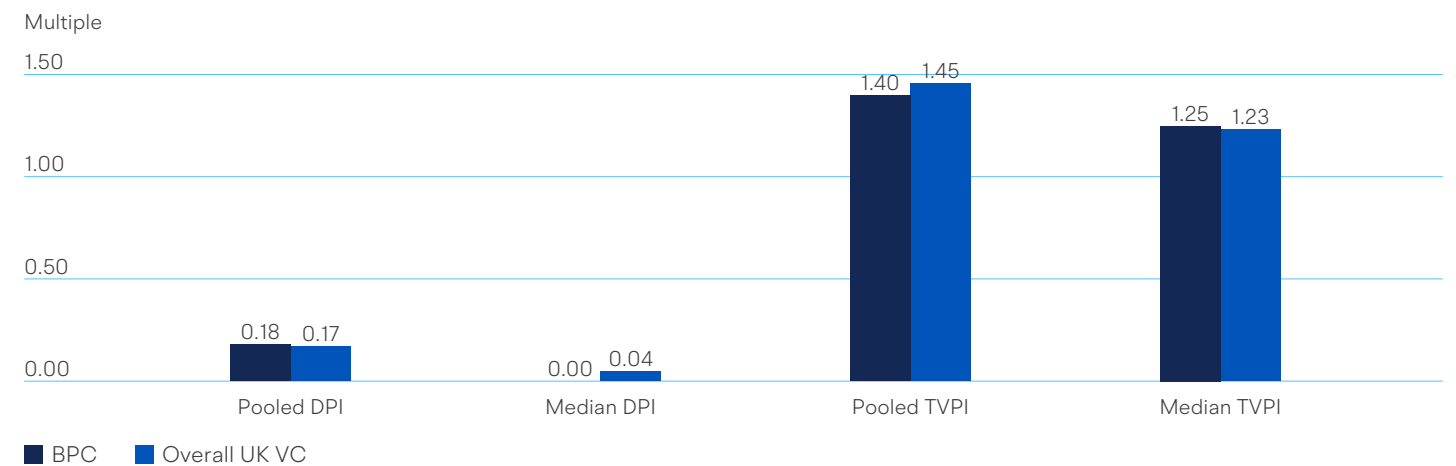


Figure 4.2

BPC VC fund performance multiples (2013-2017 vintage years)

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data





Section 5.

Fund characteristics associated with VC financial returns

This section examines which fund characteristics are correlated with VC financial returns using econometric analysis. The empirical methodology comprises Ordinary Least Squares (OLS) regressions with heteroscedasticity-robust standard errors. The advantage of this approach is that it shows which fund characteristics are statistically significantly correlated with fund return multiples whilst controlling for other observable fund characteristics.

Correlations between fund characteristics (e.g. larger funds might have a later stage investment focus) can make it difficult to isolate associations of individual characteristics and return multiples when looking at cross tabulations alone. This methodology requires all variables to be available for each fund for it to be included in the regression models, which is the case for 92 out of the 145 funds in the sample. Table 5.1 contains definitions for all variables used in the analysis.

The findings in this section should be interpreted as conditional correlations and not as causal effects. In other words, a statistically significant coefficient means that a particular fund characteristic is associated with a return multiple, controlling for all other included observable fund characteristics. However, this does not imply that this fund characteristic leads to changes in that return multiple. For example, there might be other unobservable factors that cause a spurious correlation between a particular fund characteristic and return multiple.

Table 5.1

Econometric model variable definitions

Variable	Definition
Fund Size	Logarithm of the fund's AUM in £ millions
Venture General	Binary variable that equals 1 if the fund type is "general", and 0 otherwise. The omitted category is "early stage".
Venture Later Stage	Binary variable that equals 1 if the fund type is "later stage", and 0 otherwise. The omitted category is "early stage".
Investment Firm Age	Logarithm of 1 + investment firm age. Investment firm age is the difference between the fund's vintage year and the VC firm's founding year.
Investor AUM	Logarithm of the VC firm's AUM in £ millions.
Fund Number	Logarithm of the fund's number in its sequence.
First Fund	Binary variable that equals 1 if the fund is the first fund in the sequence, and 0 otherwise.
Total Number Raised	Logarithm of the number of funds that a VC firm raised.
Golden Triangle	Binary variable that equals 1 if the VC firm's headquarters are in London, Cambridge, or Oxford, and 0 otherwise.
BBB	Binary variable that equals 1 if the fund is backed by the British Business Bank, and 0 otherwise.
Vintages 2008-13	Binary variable that equals 1 if the fund's vintage year is between 2008 and 2013, and 0 otherwise. The omitted category is vintages between 2002 and 2007.
Vintages 2014-15	Binary variable that equals 1 if the fund's vintage year is between 2014 and 2015, and 0 otherwise. The omitted category is vintages between 2002 and 2007.



The interpretations of the coefficients in Tables 5.2 and 5.3 depend on how the variables are measured. The variables can be classified into two categories: binary variables and continuous variables. All binary variables take either the value of 0 or 1, and their coefficients represent the percentage point (pp) changes in the return multiple. All continuous variables are logarithmic transformations, and an easy way to read their coefficients is to interpret them as the percentage point change in the return multiple for a doubling in the value of the fund characteristic. Table 5.1 contains information on the type of variable (binary or continuous).

Econometric analysis results

Table 5.2 shows the findings from the econometric analysis using the 92 funds for which all characteristics information was available. *, **, and *** next to coefficients denote statistical significance at the 10%, 5%, and 1% levels, respectively. The more stars there are next to a coefficient, the more statistically significant the correlation between the fund characteristic and return multiple, and the less likely the finding is down to chance.

The main findings are as follows.

- **Later stage funds are associated with lower RVPIs and TVPIs.** Compared to early stage funds, later stage funds have, on average, 64pp lower RVPIs and 76pp lower TVPIs.
- **Investor AUM is positively correlated with DPI and TVPI.** On average, for every doubling in investor AUM, DPI and TVPI are 36pp and 33pp higher, respectively.

- **There is a weak statistically significant association between first funds raised and TVPI.** Compared to subsequent funds raised, first funds have, on average, 52pp higher TVPI.
- **There is a weak negative correlation between VC firm headquarters in London, Cambridge, or Oxford and DPI.** Compared to funds whose VC firms have headquarters elsewhere, Golden Triangle funds have, on average, 70pp lower DPIs.
- **Later vintage cohorts are associated with lower DPIs and higher RVPIs.** Compared to funds with vintages between 2002 and 2007, funds with vintages between 2008 and 2013 (2014 and 2015) have, on average, 52pp (63pp) lower DPIs and 102pp (127pp) higher RVPIs. This is likely in part driven by the fact that funds from later vintage cohorts are younger and therefore have exited fewer portfolio companies.

Controlling for other observable fund characteristics there is no statistically significant association between funds the British Business Bank has invested in or life sciences funds and their return multiples.

Tables 5.3 shows the findings from the same regression models run separately for each of the three different vintage cohorts. These subsample analyses provide evidence for whether the correlations between fund characteristics and return multiples change over time. The regression findings should be interpreted with caution because of the small sample sizes. One drawback of small samples is that it is more difficult to assert the existence of an association.

Findings from the vintage cohort subsample analyses are as follows.

- **The correlations between the different VC stage investment focuses and the return multiples appear to vary over time.** For funds with vintages between 2002 and 2007, compared to early stage funds, general funds have, on average, 96pp lower TVPIs. There are no later stage funds in the 2002-2007 vintage cohort which is why this variable is missing in this cohort's regression output in Table 5.3. For funds with vintages between 2008 and 2013, compared to early stage funds, later stage funds have, on average, 58pp lower RVPIs and TVPIs. For funds with vintages between 2014 and 2015, compared to early stage funds, general funds have, on average, 74pp higher DPIs and 179pp higher TVPIs, respectively. Compared to early stage funds, later stage funds have, on average, 76pp higher DPIs.
- **The correlations between return multiples and investor company age, first funds, and VC firm headquarters seem to be stronger for funds in the 2014-15 vintage cohort.** For funds with vintages in 2014 and 2015, the fund's number is positively correlated with RVPI and TVPI. On average, for every doubling in the fund's number in its sequence, RVPI and TVPI are 87pp and 111pp higher, respectively.

The econometric analysis described here provides an additional and complementary insight into the results presented elsewhere in the report.

Table 5.2

Full sample regression output

2002-2015 vintage years

	(1) TVPI	(2) DPI	(3) RVPI
Fund Size	-2.038 (-0.13)	4.790 (0.52)	-6.828 (-0.68)
Venture General	-43.95 (-1.51)	-40.68 (-1.62)	-3.270 (-0.21)
Venture Later Stage	-75.62** (-2.47)	-11.31 (-0.36)	-64.31*** (-3.56)
Investment Firm Age	-23.72 (-1.61)	-9.974 (-0.82)	-13.75 (-1.35)
Investor AUM	33.07** (2.54)	36.05*** (3.06)	-2.981 (-0.32)
Fund Number	35.19 (1.24)	25.00 (0.97)	10.19 (0.66)
First Fund	51.62* (1.67)	31.35 (1.19)	20.27 (0.77)
Total Number Raised	-25.48 (-0.97)	-19.20 (-0.74)	-6.280 (-0.39)
Golden Triangle	-61.99 (-1.64)	-70.32* (-1.89)	8.326 (0.51)
Life Sciences	9.272 (0.18)	-15.99 (-0.54)	25.26 (0.76)
BBB	-22.22 (-0.96)	-8.784 (-0.53)	-13.44 (-0.71)
Vintages 2008-13	49.86 (1.51)	-51.84* (-1.68)	101.7*** (5.74)
Vintages 2014-15	64.05 (1.63)	-63.39* (-1.93)	127.4*** (5.81)
Constant	79.44 (0.78)	0.913 (0.01)	78.53 (0.98)
Observations	92	92	92
Adjusted R-squared	0.063	0.201	0.404

t statistics in parentheses
*p<0.1, **p<0.05, ***p<0.01



Table 5.3

Sub-sample regression output**2002-2007 vintage years**

	(1) TVPI	(2) DPI	(3) RVPI
Fund Size	22.20 (1.06)	19.18 (0.98)	3.020 (0.71)
Venture General	-95.51* (-1.92)	-87.42 (-1.71)	-8.092 (-0.67)
Venture Later Stage	- -	- -	- -
Investment Firm Age	-20.24 (-0.68)	-30.63 (-1.09)	10.39 (1.57)
Investor AUM	58.30** (2.34)	56.15** (2.31)	2.148 (0.28)
Fund Number	90.38 (1.15)	101.7 (1.26)	-11.36 (-0.71)
First Fund	105.7 (1.37)	87.98 (1.15)	17.70 (1.07)
Total Number Raised	-21.12 (-0.41)	-26.80 (-0.52)	5.687 (0.45)
Golden Triangle	-96.76 (-1.27)	-102.1 (-1.36)	5.378 (0.36)
Life Sciences	-71.76 (-0.57)	-49.72 (-0.39)	-22.04 (-1.09)
BBB	13.33 (0.21)	13.19 (0.23)	0.135 (0.01)
Constant	-178.1 (-1.12)	-147.7 (-0.95)	-30.40 (-0.84)
Observations	29	29	29
Adjusted R-squared	0.142	0.125	-0.148

t statistics in parentheses
*p<0.1, **p<0.05, ***p<0.01

2008-2013 vintage years

	(1) TVPI	(2) DPI	(3) RVPI
Fund Size	0.424 (0.03)	-3.505 (-0.21)	3.929 (0.33)
Venture General	-20.94 (-0.64)	-14.05 (-0.44)	-6.890 (-0.21)
Venture Later Stage	-58.20* (-1.92)	-0.0459 (-0.00)	-58.15** (-2.24)
Investment Firm Age	3.046 (0.20)	5.308 (0.33)	-2.262 (-0.10)
Investor AUM	20.37 (1.09)	17.27 (1.04)	3.101 (0.18)
Fund Number	-4.054 (-0.13)	3.268 (0.10)	-7.322 (-0.31)
First Fund	77.18 (1.30)	12.96 (0.23)	64.22 (0.76)
Total Number Raised	-19.34 (-0.80)	-20.97 (-0.69)	1.634 (0.05)
Golden Triangle	-4.012 (-0.14)	-15.96 (-0.43)	11.95 (0.36)
Life Sciences	-20.07 (-0.46)	8.477 (0.16)	-28.54 (-0.83)
BBB	-38.94 (-0.91)	-19.79 (-0.73)	-19.15 (-0.44)
Constant	97.98 (1.03)	27.09 (0.25)	70.89 (0.58)
Observations	40	40	40
Adjusted R-squared	0.091	-0.283	0.069

t statistics in parentheses
*p<0.1, **p<0.05, ***p<0.01

2014-2015 vintage years

	(1) TVPI	(2) DPI	(3) RVPI
Fund Size	-38.28* (-1.83)	-7.972 (-1.54)	-30.31 (-1.72)
Venture General	178.9* (2.10)	73.86** (2.94)	105.0 (1.44)
Venture Later Stage	122.6 (1.49)	76.10*** (3.58)	46.48 (0.61)
Investment Firm Age	-117.0** (-2.55)	-26.97 (-1.77)	-90.01** (-2.54)
Investor AUM	45.84 (1.22)	6.293 (0.41)	39.55 (1.23)
Fund Number	111.3** (2.70)	24.01 (1.75)	87.32** (2.48)
First Fund	133.5** (2.36)	36.81* (1.93)	96.74* (2.13)
Total Number Raised	-16.69 (-0.20)	22.09 (0.63)	-38.77 (-0.55)
Golden Triangle	-201.8** (-2.74)	-231.4*** (-8.39)	29.55 (0.46)
Life Sciences	-7.609 (-0.11)	-15.03 (-0.72)	7.422 (0.13)
BBB	-10.53 (-0.28)	-26.19 (-1.40)	15.66 (0.45)
Constant	284.7* (1.93)	209.0*** (3.58)	75.66 (0.61)
Observations	23	23	23
Adjusted R-squared	0.550	0.766	0.602

t statistics in parentheses
*p<0.1, **p<0.05, ***p<0.01



Section 6.

Evergreen investors

Whilst the majority of VC is invested through Limited Partnership (LP) fund structures, an increasing number of ‘evergreen’ venture capital investors have become active in the UK in recent years. These investors are either listed or invest off their own balance sheet from funds derived from other sources (for example from a parent company). Many of these evergreen investors have either a general in technology focus or a specific focus on investing in life sciences.³²

Listed investment vehicles raise initial capital through an IPO, and can then invest in a combination of private and public companies, as well as raise additional capital through further share issues. Most are structured as an investment company or investment trust. Upon realising gains in their portfolios, evergreen vehicles can either re-invest the resultant cash or distribute returns to their shareholders through dividends. Investors are also able to realise gains through increases in share price reflecting the value of the underlying assets these investment companies hold. However, due to evergreen vehicles having thin trading volumes, share price volatility can be high and the share price does not always reflect the value of the underlying assets. This is further accentuated by difficulties in valuing the underlying portfolios. This can cause evergreen vehicles to trade at either a discount or premium relative to their Net Asset Value (NAV). If a vehicle is trading at a significant discount to NAV, issuing additional share capital may lead to dilution for existing shareholders.

Evergreen investment vehicles offer a number of features that are beneficial for making patient capital investments in growing companies. Firstly, traditional venture capital funds will have a lifespan dictated by the LP agreement, which is usually ten years plus the option to extend.³³ This means that the funds will have distinct stages in their lives – an investment phase, a management phase and an exit phase. Evergreens face no such constraints and are theoretically able to pursue opportunities as and when they arise.

Investing in early stage companies, especially those in certain sectors like life sciences or those with long development times like university research may fall outside of the time period fixed life funds can consider.³⁴ Traditional VC funds may also be forced to exit an opportunity when significant upside potential remains upon reaching the end of the fund's life.

Evergreen investors can also tap into a wider pool of investors than a traditional LP structured fund. A previous British Business Bank report³⁵ identified the difficulties that some institutional investors can face when allocating capital to venture capital funds.



Performance of listed evergreen investors

This section considers the performance of ten UK evergreen investment vehicles focused on making VC investments into high growth potential companies. These vehicles are listed on UK stock exchanges. As publicly traded investment vehicles, they must release interim and annual financial reports. All performance data has been obtained from the most recent report (As of October 2020). Where possible, performance is considered from 2015. A significant number of these vehicles publicly listed after 2015, meaning their performance can only be assessed since inception. Appendix 1 provides a definition of the performance measures used in Table 1.

It is not possible to directly compare the performance of LP structured VC funds against the performance of listed investment vehicles as the measures used are not directly comparable. In addition, many of the evergreen investors are relatively new to the market and have not yet developed a track record of achieving realised returns for their investors.

Table 6.1

Summary of named evergreen investors

Name	Investment focus	Year of IPO	Market cap	NAV	NAV per share	NAV per share growth in period since inception or 31/12/2015	Share price movements in last 12 months (as of 14/10/20)	Share price premium to NAV
Arix Bioscience	Biotech	2017	£147m	£251m	185p	22%	0%	-42%
Augmentum Fintech	Fintech	2018	£146m	£136m	116.1p	17%	14%	8%
Draper Esprit	Technology	2016	£706m	£660m	555p	58%	25%	7%
Frontier IP	Technology	2011	£36m	£24m	46.6p	123%	17%	52%
IP Group	Commercialising IP	2006 (Listing on LSE)	£872m	£1156m	108.8p	-14%	26%	-25%
Mercia Asset Management	Regional high growth companies	2014	£95m	£142m	23.8p	-16%	-21%	-33%
Merian Chrysalis	Fast growing tech enabled companies	2018	£591m	£462m	137.3p	39%	22%	28%
Schiehallion Fund	High-growth private companies with potential to become publicly traded	2019	\$628m	\$515m	107.81¢	8%	12%	22%
Schroder UK Public Private Trust (formerly Woodford Patient Capital Trust)	High growth private companies and public companies with innovative business models	2015	£268m	£413m	45.4p	-53%	-12%	-35%
Syncona	Life sciences	2012	£1711m	£1247m	185.6p	48%	6%	37%

Source: British Business Bank analysis of individual evergreen investor annual reports (Data correct as of 14/10/2020)



Overall, the mean growth in NAV per share is 23% and the median growth is 20% for the named group of evergreen investors, showing value is being created from the underlying investments. On an annualised basis, the mean CAGR NAV per share was 6% and the median CAGR was 8%, showing the potential for good future returns for investors.

The Woodford Patient Capital Trust is a well-known evergreen investor but has performed poorly with a 53% fall in NAV per share over the period considered. This has a large effect on the overall reported mean performance of evergreen investors. If Woodford Patient Capital Trust is removed from this list, overall NAV per share performance increases to 32% for the remaining evergreen investors.

Two of the analysed evergreen investors have a specific focus on investing in life sciences; Arix Bioscience and Syncona. Their performance was relatively good compared to general technology evergreen investors, generating NAV per share growth of 22% and 48% respectively. This compares to NAV per share growth of 23% for the wider pool of evergreen investors.

Arix Bioscience was launched in 2017 and has grown its NAV per share from 152p per share at the end of 2017, to 185p per share as of June 2020. In recent months, Arix's underlying portfolio of biotech companies has shown increased valuations showing the potential life sciences companies have for creating value.

However, for the last two years Arix has been trading at a discount to its NAV with its market capitalisation lower than the value of its assets. This is in part due to uncertainty round change in ownership resulting from its largest shareholder (Woodford Equity Income Fund). Arix's Annual Report³⁶ states the need for 'an orderly transition of this holding to long-term supportive investors, and remove the distraction and consequent uncertainty'. This uncertainty has negatively impacted on Arix's share price.

In contrast, Syncona was launched in 2012 and can serve as an example of a more established evergreen investor. Syncona's NAV per share growth is strong at 48%. It is also the only evergreen investor to report a Total Shareholder Return (TSR) for the period as it paid out dividends to its investors. During the period up to September 2019, Syncona declared and paid a dividend of 2.3p per share, which amounted to £15m return to investors. The total shareholder return for this period was 83%. Syncona's strong performance has been in part due to successful exits. In 2019, Syncona exited two biotech companies, Nightstar and Blue Earth via trade sales. Collectively, these two exits generated a 6.6x return multiple. These realised exits and resulting strong balance sheet, helps explain why Syncona shares trade at a premium compared to its NAV.

Taken together, these results suggest evergreen venture capital investors have the potential to generate good financial returns – though many of these funds are currently too early in their life to have generated exits from the investments they have made.

This section has also demonstrated their growth in the market and recognises their role in increasing the availability of patient capital to UK businesses scaling up. British Patient Capital has already invested in evergreen vehicles, through its £30m investment in Draper Esprit³⁷ but BPC will continue to be open to invest in evergreen vehicles targeting the patient capital gap.

Table 6.2

UK VC evergreen investors performance

	Mean NAV per share growth	Median NAV per share growth
Since 31/12/15 (or inception)	23%	20%
Annualised basis (CAGR)	6%	8%

Source: British Business Bank analysis of individual evergreen investor annual reports



Section 7.

Fund manager survey on VC market conditions

This year's report includes the results of new survey the British Business Bank has undertaken of UK VC fund managers as part of our data collection on VC fund performance. Fund managers shared their views on the market conditions on quality of deal flow, exit opportunities for portfolio companies and the fundraising environment. Whilst this survey cannot be considered fully representative of the wider UK VC industry with just 22 fund managers (covering 36 funds) completing the survey, it provides useful insight alongside the existing empirical evidence of VC market conditions.

Fieldwork for the survey was undertaken in August and September 2020, just as restrictions were easing and before the number of recorded Covid-19 cases started to sharply increase in autumn 2020. Therefore, the findings are valid for this period only, and fund managers views may have changed since the fieldwork was undertaken.

Survey findings

Quality of deal flow

Fund managers report that the overall level of investment activity in the UK remains strong. From the survey data compiled directly from VC fund managers, 64% of fund managers considered the current state of market for deal quality to be 'good', and 36% judged the state of market to be 'very good'. No fund managers reported that they felt the market was poor for investment opportunities.

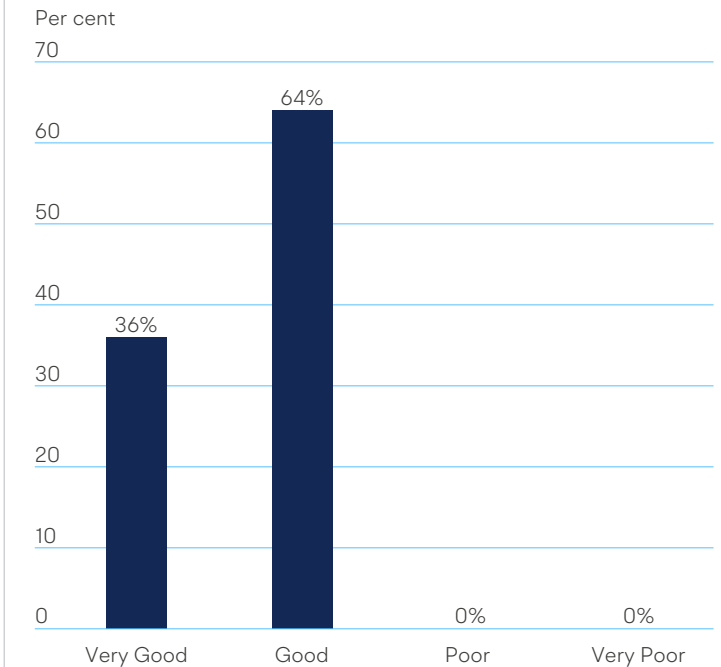
One fund manager commented that even though the market for larger Series A rounds for existing portfolio companies was still weak, the quality of early stage deals was picking up in Q3/Q4 in 2020 and this is reflected in the broader market commentary.

Beauhurst confirms that H1 2020 was the best half on record for investments over £50m.³⁸ Of these, the largest was a £383m round secured by challenger bank, Revolut, which valued the company at £3.52b pre-money. This shows that there is still fund manager appetite to invest, particularly in later stage VC.

Figure 7.1

Fund managers views of equity deal flow quality in the current market

Source: British Business Bank survey of fund managers (n=22)





In comparison to last year, fund managers generally felt that the quality of investment opportunities were still good, with 91% the quality of opportunities were the same as a year ago. 9% felt that quality of opportunities had improved compared to a year ago. No fund managers reported that investment opportunities had decreased in any way. This is consistent with the market commentary, with PitchBook data showing VC deal flow has held up in 2020 so far, despite the increased market uncertainty. There was a total of 911 VC deals announced during H1 2020, a 3% decrease from the previous half and only a 9% decrease from the same time last year.³⁹

Exit conditions

Of the fund managers that took part in the Bank's survey, the majority felt that the current state of VC market for successful exits was good on the whole: 55% funds felt that the market was good, with a further 5% stating that the market was 'very good'. In contrast, 36% felt the market for exits was poor.

However, in comparing opportunities for exits compared to last year, 77% of fund managers felt that the availability of exit opportunities for portfolio companies was worse now, with none expressing that the market was better.

This is not surprising as the IPO market in the UK and Europe have been relatively slow this year, with European markets only raising €5.4bn in H1 2020 compared to €12.2bn in H1 2019.⁴⁰ This can be attributed to high market volatility, as well as the practical aspects of conducting an IPO during lockdown. The London IPO market has been particularly slow this year. This is not only due to Covid-19 but also uncertainty around the UK's future trading arrangements with the EU, and the impact it might have on the UK's financial services industry.⁴¹ In the year to July, just 13 companies listed on the London market, compared to 58 in the same period in 2018.⁴²

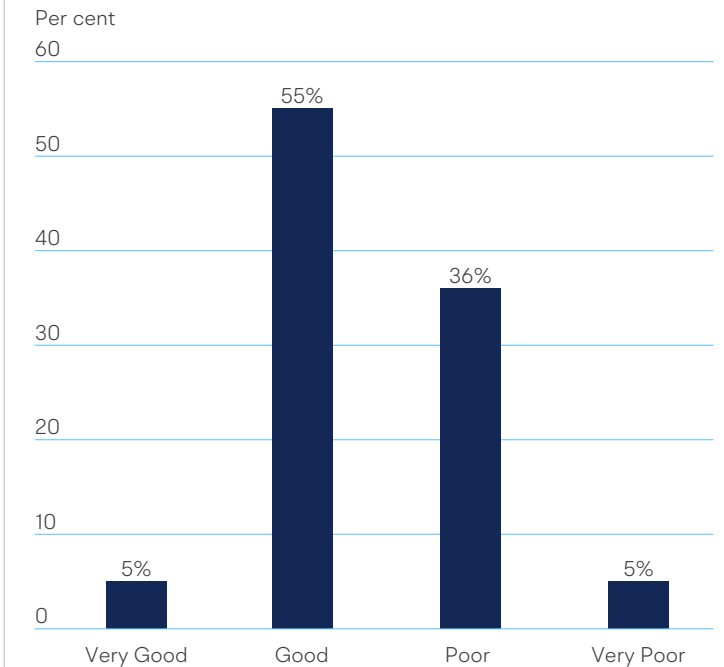
PitchBook suggests it is unlikely that many start-ups will be rushing to exit in the next few months.⁴³ Due to the current availability of late-stage capital and capital from non-traditional sources, there is reduced pressure for companies to exit. However, the number of exits could increase in the second half of the year as investor appetite increases once again following suppressed investor demand and scarcity of exit events earlier in the year.

With the HUT Group's successful IPO in September of this year, raising £920m for the company, and £961m for existing shareholders, there are signs that other successful listings are still possible in the UK's slow IPO market, especially in the technology sector.⁴⁴ For example, whilst the majority of live sporting events were put on hold in early to mid-2020, virtual 'esports' have grown in popularity. Guild Esports, an esports company completed its IPO listing in October 2020. The London listing raised £20m for the company, allowing Guild Esports becomes the first esports organisation to join the London Stock Exchange.⁴⁵ This shows many technology companies have been insulated or have even benefited from the Covid-19 and the subsequent lockdowns, which has led to more online activity.

Figure 7.2

Fund managers views on current state of market for successful exits

Source: British Business Bank survey of fund managers (n=22)





Fundraising conditions

Fund managers were equally split in their view on the current state of new VC fundraising. 41% felt that market conditions were good and 41% felt market conditions were poor for raising a new VC fund. A relatively high 18% were unsure and could not answer the question, showing the high degree of uncertainty currently affecting VC markets. Furthermore, 59% of funds surveyed felt that fundraising conditions were worse this year and 23% felt they were about the same. No fund managers felt that fundraising conditions had improved compared to 12 months ago. Fund managers also expressed concern around the perceived worsening of the fundraising environment, which may impact funds available for VCs in 2021/22 onwards.

Recent data from PitchBook confirms Covid-19 does not yet appear to have adversely affected the fundraising environment in Europe, although many of the funds closed in the first half of 2020 would have already been in progress well before Covid-19 emerged. VC fundraising in Europe equalled €7.6 billion by end of H12020, setting the year on pace for a record annual total if trends continue.⁴⁶

Fund managers response to Covid-19

The impact of Covid-19 has changed society and the economy dramatically in 2020. VC markets are heavily based on face-to-face meetings and networking, but there has been a widespread societal shift towards remote working and virtual meetings.

Fund managers were asked whether they had changed their investment processes in response to Covid-19. Most of the fund managers surveyed reported they had adapted 86% stated they had changed their investment process. For instance, by holding online pitches or having video conferences instead of face to face meetings. Of the few who declared that their investment processes were unchanged, there is a possibility that they were already using online pitches or operating virtually.

As these conditions continue, investors will adapt to them accordingly, and will become more confident to make investment decisions in remote settings.

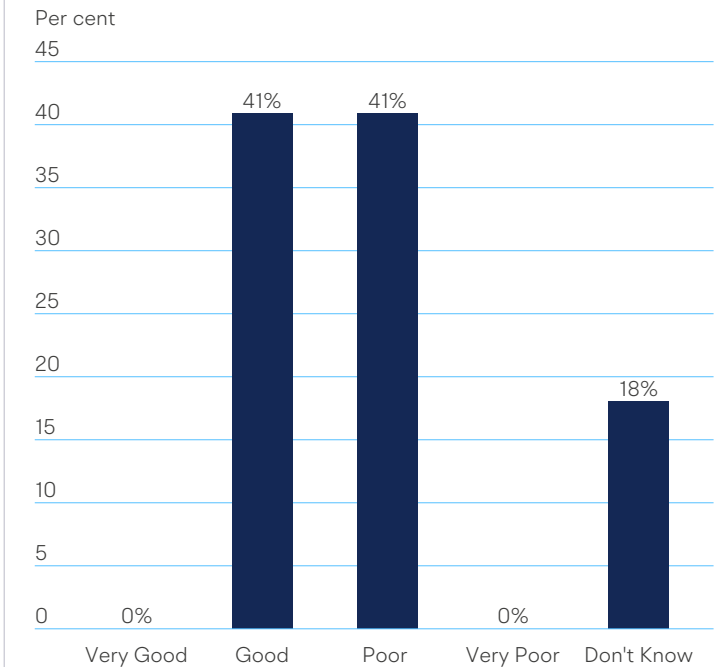
To summarise, most fund managers surveyed stated that overall, the UK VC market currently has a good quality of investment opportunities available, and the majority of fund managers felt that the quality of investment opportunities had not worsened but was the same as those a year ago. However, fund managers had more mixed views on the market for exits for their portfolio companies and for raising new funds, reflecting the greater uncertainty in the economy. In response to Covid-19, 86% of respondents stated that they had changed their investment process, showing that a large portion of the VC market has the capacity and resources to continue to invest in growing businesses.

The survey was undertaken in late summer 2020, and so it is possible that conditions are beginning to change. The Small Business Finance Markets 2021 report, that the Bank will publish in early 2021 will explore these market trends in more detail.

Figure 7.3

Fund managers views on current state of VC fundraising

Source: British Business Bank survey of fund managers (n=22)





Appendix 1.

Definitions

Venture Capital

Venture Capital (VC) is a type of Private Equity (PE) finance provided by investors into small early-stage companies with the potential for very high growth. Finance is provided in return for an equity stake in the business and investors generate a financial return (or profit) on their investment when they sell their stake through an Initial Public Offering (IPO), trade sale or secondary sale. Many early stage VC-backed companies are unlikely to have positive cash flows, or even be generating sales at the time of VC investment. It may therefore take many years until a company has developed its technology and market position to allow a VC investor to exit with a positive return. VC-backed companies therefore differ to PE-backed companies which are more established.

This report focuses on the returns made by funds focused on making VC investments only. It does not compare the performance of returns generated from wider PE or other asset classes like investing in public markets.

Financial performance metrics

There are several ways to measure VC financial returns. Deciding which measure to use is often context specific and dependent on the data available. The following measures are used to assess fund performance in this report:

- Internal Rate of Return (IRR)
- Money multiples:
 - Distributions to Paid-In capital (DPI)
 - Residual Value to Paid-In capital (RVPI)
 - Total Value to Paid-In capital (TVPI)

Internal Rate of Return (IRR)

IRRs are widely used by the PE industry to measure returns because they offer a way of comparing two investments with irregular cash flow timings and sizes. The IRR represents the discount rate at which the Net Present Value (NPV) of an investment's future cashflow is equal to zero. The IRR measure incorporates the time value of money, so that £100 of returns generated sooner is valued more than £100 realised in the future.

Money multiples

Multiples provide a relatively simple measure of an investor's return on their invested capital, providing a cash-on-cash measure of how much investors are receiving back from the capital they have committed. Multiples are useful in that they show the scale of the returns but a key limitation is that the time value for money is completely ignored.⁴⁷ A fund returning twice the invested amount will have the same multiple regardless of whether the return took two or ten years to materialise.

Two multiples that are typically reported by funds are Distribution to Paid-In capital (DPI) and Total Value to Paid-In capital (TVPI), but it is also useful to know the Residual Value to Paid-In Capital (RVPI) which is the difference between the two multiples: $TVPI = DPI + RVPI$

- **Distributions to Paid-In capital (DPI):** The ratio of cumulative distributions to LPs divided by the amount of capital contributed by the LPs. At the start of a fund's life, this ratio will be zero due to there being no exits to date but will begin to increase as distributions (portfolio company exits) occur. When the DPI is equal to one the fund has broken even, as the money paid in is equal to money distributed. Any number above one indicates that the fund has paid out more than has been paid in, so that LP investors get more than their initial capital back. This measure is therefore useful at the later stages of a funds life as it is an actual measure of fund performance directly measuring cash received from exits.



- **Residual Value to Paid-In capital (RVPI):** The sum of cumulative net asset value of the investment, divided by the capital contributed by the LPs. It calculates the multiple of the investment would be returned to investors if the unrealised assets were sold at current valuations. Valuation of early stage companies can be very difficult because of the inherent uncertainty surrounding the prospects of the company. However, the concept of ‘fair value’ is used to value the unrealised assets at each measurement date, with a number of recognised valuation techniques used.⁴⁸ The ‘Book value’ of unrealised investments is useful for assessing performance during the early part of a fund’s life, but offers no guarantee on future performance as valuations can change over time due to changes in wider economic and market conditions. For instance, a high RVPI may be indicative of an inflated market versus an accurate representation of how much the portfolio can actually be sold for eventually.⁴⁹ Globally, there are a number of well-known later stage unicorn businesses that have received funding at a lower valuation to their previous funding round (known as a down-round). This will effectively lead to disappointed LP investors as the DPI does not match up to the projected RVPI.⁵⁰

- **Total Value to Paid-In capital (TVPI):** The sum of cumulative distributions to LPs and the net asset value of the investments, divided by the capital contributed by the LPs. It calculates what multiple of the investment would be returned to LP investors if the unrealised assets were sold at current valuations and added to distributions that have already been received. This is useful for assessing performance during the early part of a fund’s life, like the RVPI measure. While this can provide a more complete picture on the returns from the fund, it is significantly impacted by the valuation that is placed on the unrealised investments remaining in the fund, although the impact should reduce as the fund matures and investments are realised.

Given this difference, many LPs rely on the TVPI measure earlier in the life of a fund and DPI measure towards the end of a fund’s life. Multiples tend to be a more conservative measure than IRR as a zero-rate reinvestment of cash flows is assumed.⁵¹

Distribution of returns

There are large variations in performance between the top performing funds and the remaining funds. It is therefore useful to look at both the pooled mean and median fund return figures, alongside the upper and lower quartiles. The VC industry has a focus on benchmarking upper quartile funds but there is no universal method for choosing the reference period or specific reporting metric, which will fluctuate from year to year depending on the composition of the funds included.⁵²

- **Pooled Mean:** The return for the total group of funds being analysed. This is calculated by aggregating the realised and unrealised values across all funds, which accounts for different fund sizes. This is the best measure for estimating total market returns as it includes the performance of all outlier funds.
- **Median:** The fiftieth percentile. The return of a fund in the middle of the ranking. This represents the return of a ‘typical fund’.
- **Upper quartile:** The return of the fund in the top 25th ranking. When all VC funds are considered, upper quartile fund performance is higher than the remaining three quarters of other funds.

Fees

The financial return metrics presented for LP funds and evergreen investors in this report are net of fees (i.e. fees are deducted). Management fees allow VC funds to meet their own operating costs, whilst carried interest fees relates to performance related share of fund profits from realised investments.

Listed vehicles performance measures

- **Net Asset Value (NAV):** This is calculated as the sum of the portfolio value, cash position and other assets minus any liabilities. This represents the value of the underlying portfolio which is based upon fair valuation principles of private companies and market valuations of public companies as well as the balance sheet of the investment vehicle.
- **NAV per share:** This is calculated by dividing the NAV by the number of issued shares adjusted for dilution. This is a useful metric for measuring performance as it adjusts for the effect of capital raising. Because of this, movements in NAV per share are caused by movements in the valuations of the underlying portfolio. Therefore, this makes NAV per share a more useful measure of value creation than absolute changes in NAV.
- **Total Shareholder Return (TSR):** This is calculated from movements in share price plus dividends. This is a useful measure of capital return to shareholders as it accounts for dividends which the other measures do not. Paying a large dividend may lead to a significant fall in NAV per share but would constitute positive return to shareholders and may be indicative of successful portfolio company exits. This metric is only available for one evergreen investor (Syncona) due to the relatively young age of evergreen investors.



Appendix 2.

Overview of data sources used in report

BVCA

The British Venture Capital Association (BVCA) represents the interests of the UK VC and PE Industry and reports on the financial performance of its members.⁵³

BVCA's membership comprises of over 260 PE and VC fund managers. The BVCA, in conjunction with PwC and Capital Dynamics, undertakes an annual survey of its eligible members asking about the performance of the funds that they manage. To be eligible for inclusion the PE firm must be a full BVCA member, raise money from third-party investors and manage that money from the UK (although it may be invested elsewhere). BVCA members investing from their own balance sheet, quoted vehicles such as VCTs and listed PE are excluded from the fund returns.

The BVCA annually publishes financial returns information through its Performance Measurement Survey.⁵⁴ The report examines the performance of PE and VC funds and then benchmarks them against other asset classes. Overall, 117 fund managers (with a total of 813 funds under management) responded to the latest BVCA survey. Fund data is presented anonymously in pre-defined categories relating to vintage year.

Commercial data providers

Commercial data providers like Preqin and PitchBook primarily source information on the performance of funds from public filings by pension funds, Freedom of Information (FOI) requests and voluntary disclosures by fund managers (GPs) or LPs.

Preqin

Preqin is a provider of data and intelligence to the alternative assets industry including PE, real estate, hedge funds, infrastructure, private debt and natural resources. It collects a range of information including funds and fundraising, performance, fund managers, institutional investors, deals and fund terms.

PitchBook

PitchBook is a financial technology company that provides data on capital markets. PitchBook collects and analyses detailed data on the entire private equity, venture capital and M&A landscape - including public and private companies, investors, funds, investments and exits.

Other sources of information on VC financial returns

The British Business Bank is the largest UK based LP investor in UK VC.⁵⁵ The Bank monitors the performance of the funds it has invested in by collecting information directly from fund managers. LP status ensures this information is fully verified and has full coverage of funds it has invested in. In line with the Bank's role in

addressing market failures in finance markets, the characteristics of funds invested in through the Enterprise Capital Fund (ECF) programme may differ to the wider UK VC market due to their focus on early stage market, smaller deals sizes affected by the equity gap and emerging fund managers.

Since 2013, BPC through the Bank's previous VC Catalyst programme has invested on commercial terms in VC funds targeting UK scale up companies.⁵⁶ The VC Catalyst programme was targeted at helping VC funds to reach a first close, which differs to the objective BPC has for increasing the amount of patient capital to UK scale up businesses. It is early days in the life of these funds, but a summary of performance to date compared to the wider VC market is included in Section 4 of the report.

This year's report also includes the results of new data the British Business Bank has directly collected from UK VC fund managers. The Bank collected fund level financial returns information from 22 fund managers (covering 36 funds), and also captured the views of these fund managers on current market conditions on quality of deal flow, exit opportunities for portfolio companies and the fund-raising environment. These fund managers were UK based, active in the VC market managing close end funds, with a vintage year of between 2002 to 2018 vintage or an evergreen investor making VC investments in the UK.



Appendix 3.

Methodology for compiling the combined dataset

- Data on individual UK VC funds with a 2002 to 2018 vintage year was downloaded from PitchBook and Preqin in September 2020. 2002 was chosen as the first vintage year to avoid picking up effects from the dot-com bubble and also to be consistent with BVCA reporting.
- Data from British Business Bank MI systems was also extracted for funds under the ECF, UKIIF and British Patient Capital (including VC Catalyst) programmes as these programmes are delivered by private sector fund managers that have raised funding from private sector sources.
- Funds with missing data relating to fund size, PIC, TVPI and DPI was removed from the underlying databases as it was not possible to calculate market return figures. For instance, the reported PIC, TVPI and DPI multiples were used to calculate the commitment drawn, realised value and unrealised value in relation to the reported fund size for the pooled financial return metrics. The individual reported fund TVPI and DPI multiples were used to calculate the median, quartile and decile returns figures.
- The PitchBook and Preqin data was then cleaned to remove 'old' fund data, which might relate to funds strategically reporting returns, for instance taking advantage of initial early returns. For funds with a vintage year between 2002-2011, funds with the latest reporting date less than seven years was excluded. For funds with a vintage year of 2012 onwards, a reporting date of at least 2018 was required.
- The data was then visually checked for errors with a focus on the largest reported TVPI and DPI multiples, but it was not possible or feasible to check the accuracy of information for every fund.
- Funds were assessed to ensure only VC funds were captured. This sometimes involves reclassifying funds from their PitchBook and Preqin fund classification. All PE growth capital and buyout funds were removed from the dataset. In addition, VC funds which entirely invested in geographic areas and developing countries outside of their listed location was also removed from the dataset.
- This gave a total dataset of 220 VC funds (Table A2). Financial returns figures may therefore differ to the numbers published by PitchBook and Preqin themselves which include all VC funds in their relevant fund populations.
- To increase coverage of funds, the individual funds from PitchBook, Preqin and BBB were all merged into one single data file. To avoid the same fund appearing more than once, funds were de-duplicated⁵⁷ using the following sequential preference logic:
 1. **British Business Bank supported fund.**
This information has been verified/ audited.
 2. **British Business Bank survey data.**
This information has been supplied directly by fund managers
 3. **Most up to date reporting date.** This to ensure the latest information is captured.
- **4. Lowest TVPI multiple.** This is to ensure most conservative data source is chosen.
- **5. Largest fund.** This is to ensure subsequent fund-raising closures are captured
- **6. Oldest vintage**

- This gave a total combined dataset of 145 unique VC funds (Table A3).

Table A1

Number of VC funds 2002 – 2018 by data source (Raw downloaded numbers)

	BBB	BBB Survey	PitchBook	Preqin	Total
UK	65	61	59	57	242

Table A2

Number of VC funds 2002 – 2018 and data source (Cleaned)

	BBB	BBB Survey	PitchBook	Preqin	Total
UK	65	55	45	55	220

Table A3

Number of VC funds 2002 – 2018 and data source (Cleaned and de-duplicated)

	BBB	BBB Survey	PitchBook	Preqin	Total
UK	62	39	20	24	145



Appendix 4.

Detailed performance by 2-year vintages

Table A4

DPI performance multiple by two-year vintage category

Years	Pooled Average	UQ	Median	LQ	Number of funds
2002-2003	1.04	1.22	0.89	0.58	12
2004-2005	2.13	2.11	1.95	1.72	4
2006-2007	1.72	1.95	0.85	0.20	19
2008-2009	0.95	1.32	1.09	0.78	13
2010-2011	0.94	1.02	0.60	0.26	11
2012-2013	0.60	0.82	0.19	0.02	17
2014-2015	0.31	0.45	0.16	0	25
2016-2017	0.04	0.07	0	0	28
2018	0.02	0	0	0	15

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data.

Table A5

TVPI performance multiple by two-year vintage category

Years	Pooled Average	UQ	Median	LQ	Number of funds
2002-2003	1.22	1.32	1.12	0.74	12
2004-2005	3.29	3.39	2.34	1.79	4
2006-2007	1.92	2.11	1.40	0.45	19
2008-2009	1.63	1.80	1.60	1.25	13
2010-2011	1.60	2.06	1.52	1.01	12
2012-2013	2.06	2.37	1.81	1.22	17
2014-2015	1.41	1.76	1.37	1.12	25
2016-2017	1.25	1.28	1.14	1.02	28
2018	1	1.07	0.94	0.85	15

Source: British Business Bank analysis of PitchBook, Preqin, BBB survey data and BBB MI data.



Endnotes

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³ British Patient Capital (2019) 'Annual Report and Accounts' <https://annualreport2019.britishpatientcapital.co.uk/our-investment-strategy#:~:text=British%20Patient%20Capital%20has%20a%20%C2%A330m%20evergreen%20investment,to%20scale%20their%20businesses%20to%20an%20international%20level>

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⁵ BVCA (2020) 'Private Equity and Venture Capital Performance Measurement Survey 2019' <https://www.bvca.co.uk/Portals/0/Documents/Research/Industry%20Performance/BVCA-Performance-Measurement-Survey-2019.pdf>

⁶ We have combined PitchBook and Preqin data with our own survey and MI data to estimate the total number of VC funds in the market with a 2002-2018 vintage year. As per the VC returns analysis, we have removed funds that are duplicate across more than one data source, EIS/ SEIS funds and funds that do not have financial returns objectives for their investors.

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⁹ Pooled DPI multiples of 2.07 and pooled TVPI 2.58 for funds of 2002-2006 vintage (excluding funds included as part of the BBB survey).

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¹⁴ <https://www.bidwells.co.uk/faqs/what-is-the-golden-triangle-in-the-uk/>

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¹⁷ Office of Life Sciences (2020) 'Bioscience and health technology sector statistics 2019' https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/910590/Bioscience_and_Health_Technology_Statistics_2019.pdf

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²¹ British Business Bank analysis of PitchBook

²² <https://thebij.com/2011/07/11/life-sciences-the-rodney-dangerfield-of-venture-capital/>

²³ <https://thebij.com/2012/01/06/healthcare-ventures-unrealized-problem/>

²⁴ <https://lifescivc.com/2013/05/debunking-myths-about-biotech-venture-capital/>

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²⁶ <https://www.british-business-bank.co.uk/british-business-bank-to-enable-up-to-600m-of-new-funding-for-the-uks-world-leading-health-technologies-and-life-sciences-sector/>

²⁷ <https://www.british-business-bank.co.uk/epidarex-capital-closes-new-102-million-uk-venture-fund-to-build-successful-life-science-companies/>

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²⁹ <https://www.british-business-bank.co.uk/wp-content/uploads/2020/09/Final-ECF-Brochure-02-09-20-1.pdf>

³⁰ <https://www.british-business-bank.co.uk/ourpartners/enterprise-capital-funds/>

³¹ <https://www.british-business-bank.co.uk/wp-content/uploads/2020/09/Final-ECF-Brochure-02-09-20-1.pdf>

³² VCTs are a specific type of listed investment vehicle which attract upfront income tax relief, however VCT returns are outside of the scope of this report.



³³ However, in practice many VC funds have extended their life beyond the initial agreed terms. For instance, Palico (2015) shows the median life of PE funds dissolved in 2014 was 13.2 years, but 26% of dissolved funds were older than 15 years.

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⁴⁵ <https://esportsinsider.com/2020/10/guild-esports-ipo/>

⁴⁶ PitchBook (2020), 'Q2 2020 European VC Valuations Report'

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⁴⁸ Fair Value is defined by US and International accounting standards as 'the price that would be received to sell an asset or paid to transfer a liability in an Orderly Transaction between Market Participants at the Measurement Date.' As quoted page 7 of International Private Equity and Venture Capital Valuation (2015) http://www.privateequityvaluation.com/download/i/mark_dl/u/4012990401/4632604968/IPEV%20Valuation%20Guidelines%20December%202015%20-%20updated%20for%20terms.pdf

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⁵⁵ Based on British Business Bank analysis of PitchBook

⁵⁶ <https://www.britishpatientcapital.co.uk/portfolio/>

⁵⁷ This was undertaken by specific fund name and also visually to take into account variations of the same fund name. E.g. use of Roman numerals and numbers, differences in plural e.g. partner and partners. In some instances, abbreviations are used, e.g. SEP instead of Scottish Equity Partners and where possible these are taken into account.



Acknowledgements

This report and the analysis contained in it was produced by Dan van der Schans, George Anderson and Mya Zaver in the British Business Bank's Strategy and Economics team. Section 5 of the report was analysed and written by Alexander Montag of Saïd Business School, University of Oxford.

We would like to thank the following organisations and people:

- PitchBook and Preqin for the use of their data within this report.
- Martin Turner at the UK BioIndustry Association (BIA) for promoting the survey to BIA members.
- All the fund managers that contributed data to the survey and provided us with feedback on market conditions.

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Publication date: 12th November 2020

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