PitchBook

# PitchBook Benchmarks

PRIVATE MARKETS

DATA THROUGH 1Q 2018

# Contents

# Introduction

PitchBook Benchmarks aim to help both LPs and GPs better understand private market fund performance relative to broader asset classes and other PE and VC strategies. Performance is presented through several lenses—including IRRs and cash multiples—to provide a holistic view for assessing performance within and between strategies, as well as across vintage years. Furthermore, the alpha of private market funds is measured relative to easily accessible public market substitutes using a PME metric.

Each edition of our Benchmarks will include a section that highlights a specific aspect of fund performance. In this version, we examine the evolution of performance of private market funds alongside public equities using quarterly return data. To help visualize trends, we employ an indexing methodology starting at a base of 100, then apply the quarterly return on a rolling basis to create a "NAV index." In addition to assessing relative performance in different periods, viewing data through this lens allows investors to see the correlation between private market fund strategies.

We strive to maintain consistency in each edition of PitchBook Benchmarks, but fund classifications will change occasionally and new funds will be incorporated into the dataset as we gather additional information.

Below you'll find detailed benchmark statistics across PE, VC, debt, real assets, funds-of-funds and secondaries strategies. To easily access all of the data points found in this PDF, along with benchmark statistics for a host of other sub-strategies and geographies, be sure to download the accompanying Excel data packs (PE, VC, Debt & Real Assets and Alternative Access Strategies). Through these data packs, subscribers to the PitchBook Platform can also gain direct access to all the underlying funds and performance metrics used to calculate our Benchmarks.

Our goal is to provide the most transparent, comprehensive and useful fund performance data for private market professionals. We hope that our Benchmarks prove useful in your practice, and we welcome any and all feedback that may arise as you make your way through our various benchmark groupings. Should there be any additional benchmark categories or data points you would like to see included in the future, please contact us directly at benchmarks@pitchbook.com.

# Methodology

## Data composition

PitchBook's fund returns data is primarily composed of individual LP reports, serving as the baseline for our estimates of activity across an entire fund. For any given fund, return profiles will vary for LPs due to a range of factors, including fee discounts, timing of commitments and inclusion of co-investments. This granularity of LP-reported returns—all available on the PitchBook Platform—provides helpful insight to industry practitioners but results in discrepancies that must be addressed when calculating fund-level returns.

To be included in pooled calculations, a fund must have: (i) at least one LP report within two years of the fund's vintage, and (ii) LP reports in at least 45% of applicable reporting periods. To mitigate discrepancies among multiple LPs reporting, the PitchBook Benchmarks (iii) determine returns for each fund based on data from all LP reports in a given period. For periods that lack an LP report, (iv) a straight-line interpolation calculation is used to populate the missing data; interpolated data is used for approximately 10% of reporting periods. All returns data in this report is net of fees.

## Definitions

**Vintage year:**

The vintage year is based on the year of first investment. If year of first investment is unknown, the year of the final close is used as the vintage year. However, if a firm publicly declares via press release or a notice on their website a fund to be of a particular vintage different than either of the first conditions, the firm's classification takes precedence.

**Internal rate of return (IRR):**

IRR represents the rate at which a series of cash flows are discounted so that the net present value of cash flows equals zero. For fund-level IRRs, any remaining value in the fund is treated as a distribution in the most recent reporting period. This explains why some vintages show high IRRs but low DPI values.

**Distributions to paid-in (DPI):**

A measurement of the capital that has been distributed back to LPs as a proportion of the total paid-in, or contributed, capital. DPI is also known as the cash-on-cash multiple or the realization multiple.

**Remaining value to paid-in (RVPI):**
A measurement of the unrealized return of a fund as a proportion of the total paid-in, or contributed, capital.

**Total value to paid-in (TVPI):**
A measurement of both the realized and unrealized value of a fund as a proportion of the total paid-in, or contributed, capital. Also known as the investment multiple, TVPI can be found by adding together the DPI and RVPI of a fund.

**Fund count:**
Some funds in our dataset have cash flow data but no reported IRR figure. We do not calculate individual fund IRRs using quarterly cash flows, which means the sample sizes may differ for pooled calculations and median calculations.

## Methodology

**Median calculations:**
Shows the middle data point for a sample group.

**Pooled calculations:**
All cash flows and NAVs for the sample group are aggregated in the calculation. For vintage-specific calculations, we begin the calculation in 1Q of the vintage year. In cases where the sample has unrealized value, the ending NAV is treated as a cash outflow in the last reporting period.

**Equal-weighted pooled calculations:**
Each fund's cash flows and ending NAV are expressed as a ratio of fund size. Each fund's ratios are then used to compute pooled calculations for IRR and cash multiples using the methodology outlined above. Regardless of fund size, each fund in these calculations has an equal impact on the output.

**Horizon IRR:**
Horizon IRR is a capital-weighted pooled calculation that shows the IRR from a certain point in time. For example, the one-year horizon IRR figures in this report show the IRR performance for the one-year period beginning in 2Q 2017 through the end of 1Q 2018, while the three-year horizon IRR is for the period beginning in 2Q 2015 through the end of 1Q 2018.

**Quarterly NAV change:**

The percentage change in aggregate NAV is calculated for each group of funds in a sample, considering contributions and distributions during the quarter.

**Standard deviation:**

Calculated using the sample-based standard deviation methodology.

**Public market index returns:**

Instances where the return of a public market index is cited, we have calculated the annualized return for the given period. All public indices are total return and denominated in US dollars.

**Public market equivalent (PME) calculations:**

PME metrics benchmark the performance of a fund (or group of funds) against an index. A white paper detailing the calculations and methodology behind the PME benchmarks can be found at pitchbook.com. PitchBook News & Analysis also contains several articles with PME benchmarks and analysis. These can be read here. All PME figures are calculated using the Kaplan-Schoar PME method:

$$PME_{KS-TVPI,\,T} = \frac{\frac{NAV_T}{I_T} + \sum_{t=0}^{T}\left(\frac{distribution_t}{I_t}\right)}{\sum_{t=0}^{T}\left(\frac{contribution_t}{I_t}\right)}$$

When using a KS-PME, a value greater than 1.0 implies outperformance of the public index (net of all fees).

## Fund classifications

**Private equity**

- Buyout
- Growth/expansion
- Mezzanine
- Restructuring/turnaround
- Diversified PE

**Debt**

- Direct lending
- Bridge financing
- Distressed debt
- Credit special situations
- Infrastructure debt
- Venture debt
- Real estate debt

**Real assets**

- Real estate core
- Real estate core plus
- Real estate distressed
- Real estate opportunistic
- Real estate value added
- Energy
- Infrastructure
- Timber
- Mining

**Venture capital**

**Secondaries**

**Fund-of-funds**

# Spotlight: Taking stock of private market returns

### Key takeaways

- Using our quarterly NAV index methodology, we find that PE funds have posted the strongest returns among private market strategies since 2001, as well as over the last five years and 10 years.
- Certain private market strategies—particularly PE, VC and FoFs—exhibit high correlations with each other, but we find the strongest correlation between PE funds and public equities across multiple time horizons. The correlation between the PE NAV index and the S&P 500 TR has been 0.75 since 2001. It is even higher when rebased to 2008, but we have seen the correlation fall to 0.51 since 2013.
- VC funds have significantly underperformed private market peers when compounding returns since 2001 due to the carnage inflicted by the dot-com bubble; however, when rebasing the VC NAV index to more recent periods (i.e. 2008 and 2013), VC funds have posted strong returns on both an absolute and relative basis, outperforming most private market strategies.

### Overview

One of the benefits of private market strategies is that they insulate investors from the volatility of public markets. Some argue that this is naïve, and that the perceived lower volatility is really just illiquidity. But even if that is the case, the fact remains that the closed-end fund structure largely restricts investors (i.e. LPs) from panic selling during a downturn. "I think a lot of people go into [private equity] with very open eyes, knowing the inability to mark to market allows them to be better investors," said Cliff Asness, founder of quantitative investment firm AQR Capital Management, during a recent interview.[1]

But while the long-term perspective of private market funds is one of their purported benefits, investors nonetheless have a desire to evaluate fund performance on a regular basis. This is a difficult undertaking in private markets, however, with quarterly

$$\text{Quarterly percentage change} = \left[\frac{\left(\text{NAV at end of quarter} + \text{distributions during the quarter} - \text{contributions during the quarter}\right)}{\text{NAV at the beginning of the quarter}}\right] - 1$$

1: "Cliff Asness - The Past, The Present & Future of Quant," Invest Like the Best, Patrick O'Shaughnessy

intervals being the shortest feasible timeframe to measure aggregate performance. To assess quarterly performance, we calculate the aggregate percentage change in aggregate NAV for each group of funds in a sample, considering contributions and distributions during the quarter.

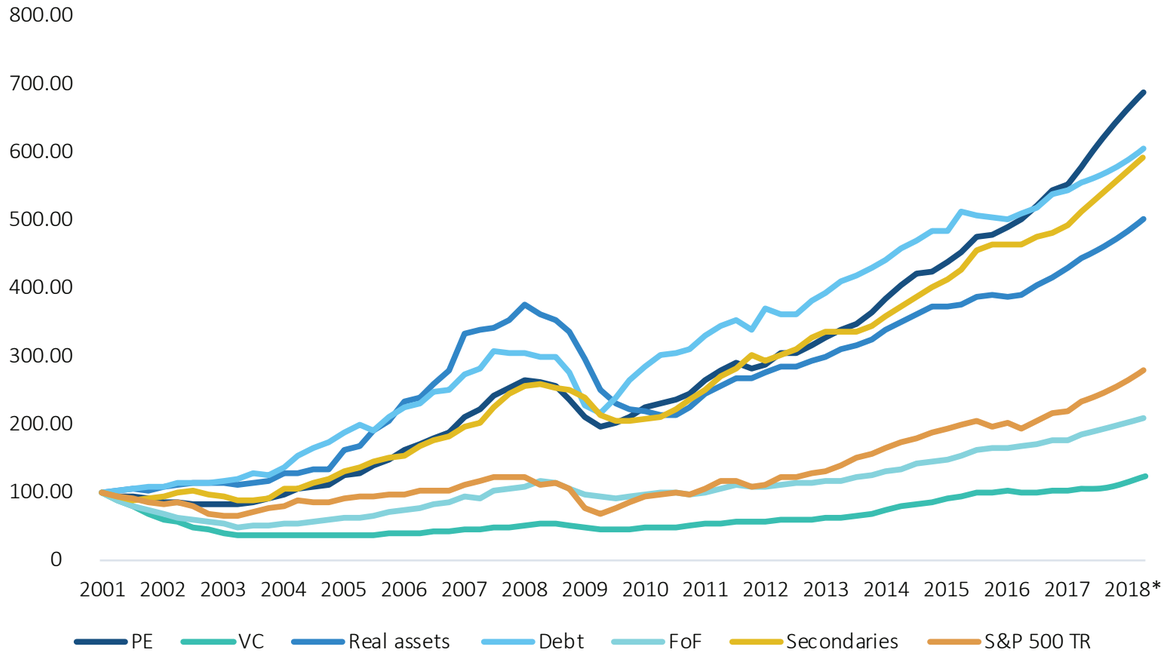
This calculation employs the same pooling methodology used for other aggregated metrics in PitchBook Benchmarks. Our default is to use capital-weighted calculations, but equal-weighted versions are also available. When public indices are shown, the quarterly change is based on the average value of the index during the period.

To help visualize this data, we utilize an indexing methodology starting at a base of 100, then apply the quarterly return on a rolling basis to create a "NAV index." Performance across different periods of the market cycle can be made by rebasing the calculation at a different start point. The NAV index can also be tailored to specific fund sizes or geographies, and multiple strategies can be combined to more accurately reflect specific portfolio exposure.

Another benefit of this methodology is that it provides an output with which investors are familiar and that can be easily juxtaposed against public market indices. While there are shortcomings to these comparisons—and we still recommend PME calculations for benchmarking against public market indices—the NAV index view can be instructive when assessing broad market trends.

**PE outperforms over the long term**

NAV index rebased to 100 in January 2001




Source: PitchBook
Data as of March 31, 2018

**PE comes out on top**

For this spotlight, we rebased our calculation to three different years to assess how performance has evolved over different periods. In terms of aggregate value accretion, PE finishes at the top of the pack among private market strategies across all three timeframes,

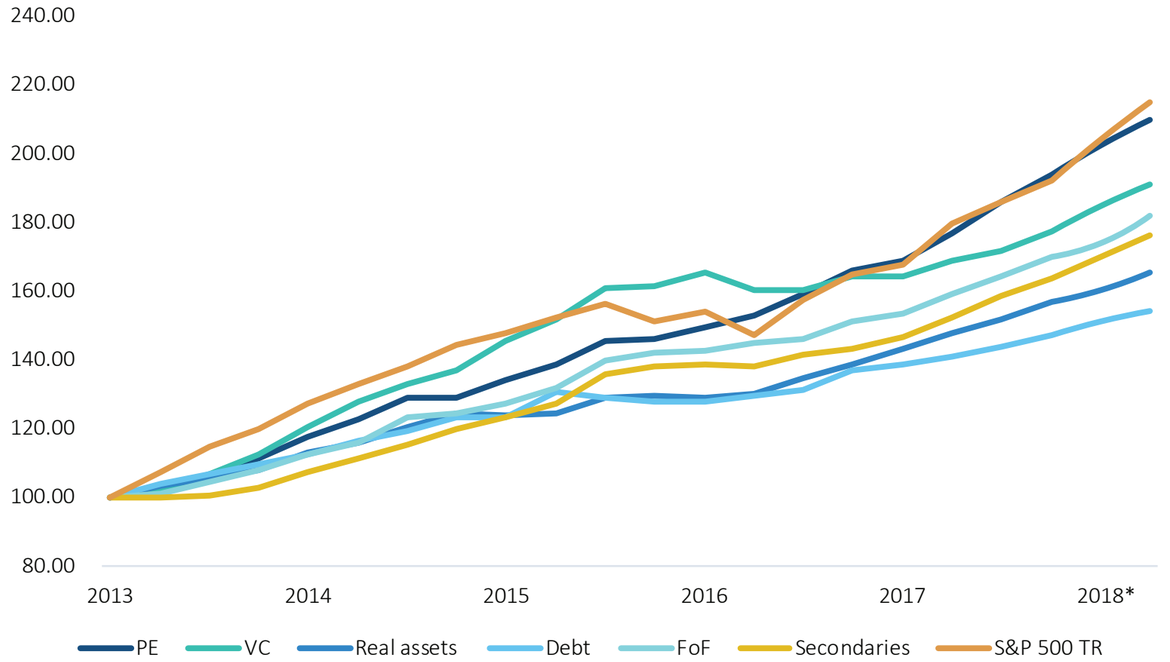
with some of the most significant outperformance occurring over the last three years. When starting the calculation in 2001, private debt funds had outperformed through 2015, largely due to superior relative performance through the GFC, before ceding the top position to PE in the recent rally.

Over the longest horizon, VC funds have significantly underperformed due to the damage of the dot-com bubble. It took nearly 15 years for VC funds to fully recover, only managing to consistently crest the breakeven point since mid-2016. But the lasting effects of the dot-com bubble perhaps become most evident when rebasing VC returns to more recent periods. When observing performance from either 2008 or 2013, for example, VC funds have posted strong returns on both an absolute and relative basis, outperforming every private market strategy besides PE.

The performance picture looks relatively consistent across the two longest timeframes in our spotlight, but it changes drastically in the most recent period (i.e. when rebasing to 2013). Private debt funds—one of the best-performing strategies over the longest horizon—trail all other strategies in the most recent period. FoFs significantly underperform over the longest horizon, but performance more recently has been better than most private market strategies. One major factor that appears to be contributing to these changes is the powerful performance of equity markets, with the S&P 500 TR beating all private market strategies by a healthy margin since 2013, which has provided a strong rationale for equity-oriented private market strategies to raise their portfolio valuations.

**Private market strategies recently have failed to keep up with public equities**

NAV index rebased to 100 in January 2013




Source: PitchBook
Data as of March 31, 2018

**We're not so different after all**

In addition to assessing performance, quarterly returns data is useful in determining the correlation between different strategies. Diversification is often touted as a primary benefit of private market strategies, but many detractors have called that into question. PE, for instance,

is often accused of being a high-priced strategy that can be replicated in public markets by adding leverage and screening for factors such as size and indebtedness. Indeed, numerous academic studies have found correlations between public equity and PE markets.[2]

While our quarterly PE NAV index is not investable, it does corroborate these findings; the correlation between PE NAV index and the S&P 500 TR has been 0.75 since 2001. It is even higher when rebased to 2008 (0.84), but we have seen the correlation fall to 0.51 since 2013. We attribute this to the sizable quarterly moves in the public equities in the last five years, with correlations tending to be lowest in periods of high volatility and dramatic market movements, as well as the significantly fewer number of reporting periods that results in a relatively small sample size. Correlations may be high, and this methodology does not account for differences in variables such as leverage and illiquidity, but the PE NAV index has outperformed the S&P 500 TR by a wide margin across long time horizons.

Between private market strategies, the highest correlations occur between PE and FoFs, which is intuitive given that FoFs are highly allocated to PE funds. Correlations are also high between PE and VC funds, which may be surprising given the documented differences in their risk/return profiles; however, both strategies involve equity investments and, therefore, employ mark-to-market practices that often mirror public equity returns. Many other private market strategies also have higher correlations than may be expected, but the best diversifiers are real asset and secondaries funds.

## PE and public equities tend to be highly correlated

Correlation of quarterly returns

*Since 2001*

| | PE | VC | Real assets | Debt | FoF | Secondaries | S&P 500 TR |
|---|---|---|---|---|---|---|---|
| PE | 1 | | | | | | |
| VC | 0.68 | 1 | | | | | |
| Real assets | 0.71 | 0.33 | 1 | | | | |
| Debt | 0.62 | 0.26 | 0.38 | 1 | | | |
| FoF | 0.77 | 0.82 | 0.45 | 0.37 | 1 | | |
| Secondaries | 0.57 | 0.48 | 0.60 | 0.29 | 0.58 | 1 | |
| S&P 500 TR | 0.75 | 0.58 | 0.41 | 0.67 | 0.57 | 0.40 | 1 |

Source: PitchBook
Data as of March 31, 2018

*Since 2008*

| | PE | VC | Real assets | Debt | FoF | Secondaries | S&P 500 TR |
|---|---|---|---|---|---|---|---|
| PE | 1 | | | | | | |
| VC | 0.77 | 1 | | | | | |
| Real assets | 0.76 | 0.68 | 1 | | | | |
| Debt | 0.74 | 0.50 | 0.43 | 1 | | | |
| FoF | 0.70 | 0.71 | 0.55 | 0.56 | 1 | | |
| Secondaries | 0.61 | 0.60 | 0.80 | 0.21 | 0.52 | 1 | |
| S&P 500 TR | 0.85 | 0.65 | 0.59 | 0.76 | 0.46 | 0.08 | 1 |

Source: PitchBook
Data as of March 31, 2018


2: "Private Equity's Diversification Illusion: Economic Comovement and Fair Value Reporting," Kyle Welch, January 14, 2014

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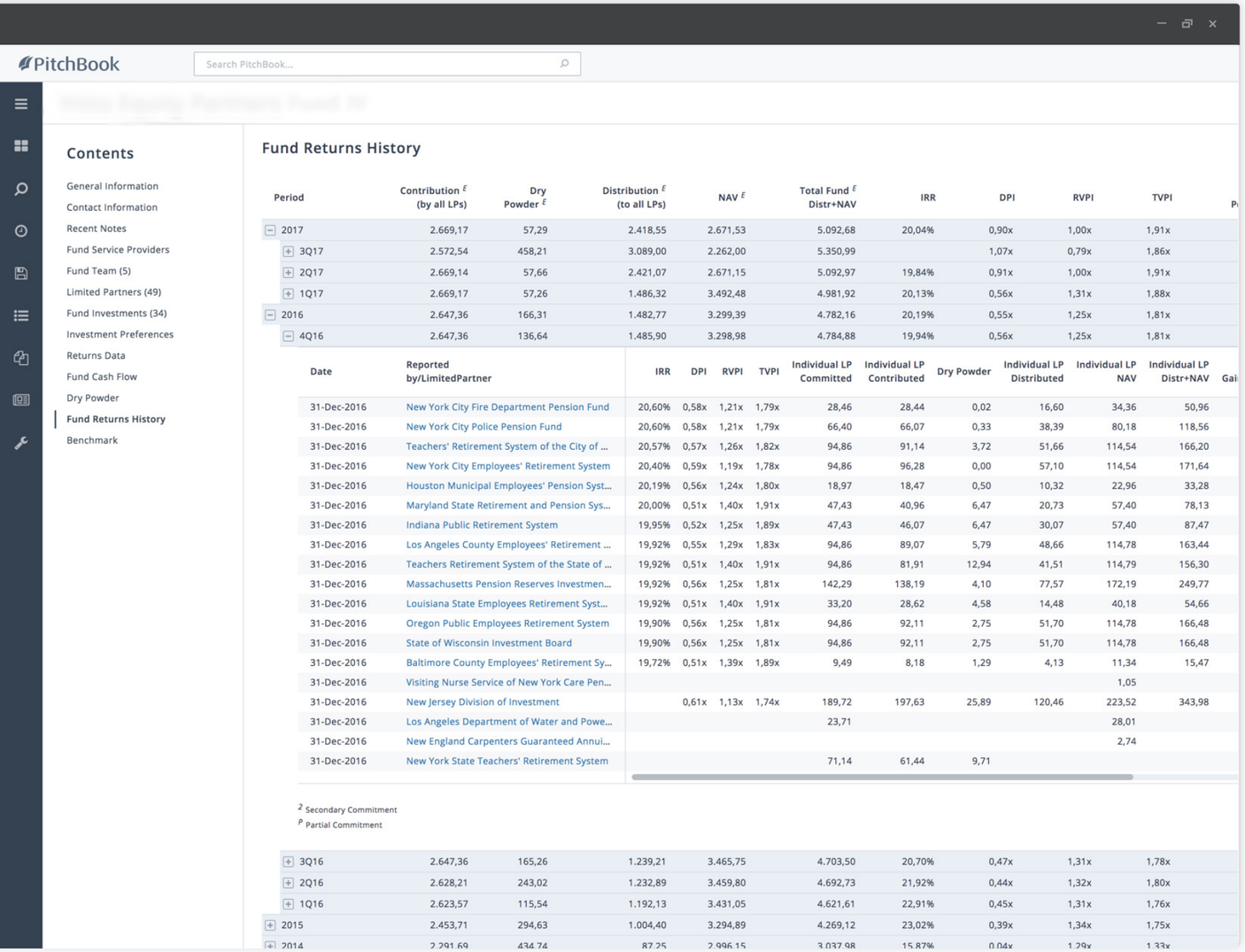


| Period | Contribution E (by all LPs) | Dry Powder E | Distribution E (to all LPs) | NAV E | Total Fund E Distr+NAV | IRR | DPI | RVPI | TVPI |
|---|---|---|---|---|---|---|---|---|---|
| 2017 | 2.669,17 | 57,29 | 2.418,55 | 2.671,53 | 5.092,68 | 20,04% | 0,90x | 1,00x | 1,91x |
| 3Q17 | 2.572,54 | 458,21 | 3.089,00 | 2.262,00 | 5.350,99 | | 1,07x | 0,79x | 1,86x |
| 2Q17 | 2.669,14 | 57,66 | 2.421,07 | 2.671,15 | 5.092,97 | 19,84% | 0,91x | 1,00x | 1,91x |
| 1Q17 | 2.669,17 | 57,26 | 1.486,32 | 3.492,48 | 4.981,92 | 20,13% | 0,56x | 1,31x | 1,88x |
| 2016 | 2.647,36 | 166,31 | 1.482,77 | 3.299,39 | 4.782,16 | 20,19% | 0,55x | 1,25x | 1,81x |
| 4Q16 | 2.647,36 | 136,64 | 1.485,90 | 3.298,98 | 4.784,88 | 19,94% | 0,56x | 1,25x | 1,81x |

| Date | Reported by/LimitedPartner | IRR | DPI | RVPI | TVPI | Individual LP Committed | Individual LP Contributed | Dry Powder | Individual LP Distributed | Individual LP NAV | Individual LP Distr+NAV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 31-Dec-2016 | New York City Fire Department Pension Fund | 20,60% | 0,58x | 1,21x | 1,79x | 28,46 | 28,44 | 0,02 | 16,60 | 34,36 | 50,96 |
| 31-Dec-2016 | New York City Police Pension Fund | 20,60% | 0,58x | 1,21x | 1,79x | 66,40 | 66,07 | 0,33 | 38,39 | 80,18 | 118,56 |
| 31-Dec-2016 | Teachers' Retirement System of the City of ... | 20,57% | 0,57x | 1,26x | 1,82x | 94,86 | 91,14 | 3,72 | 51,66 | 114,54 | 166,20 |
| 31-Dec-2016 | New York City Employees' Retirement System | 20,40% | 0,59x | 1,19x | 1,78x | 94,86 | 96,28 | 0,00 | 57,10 | 114,54 | 171,64 |
| 31-Dec-2016 | Houston Municipal Employees' Pension Syst... | 20,19% | 0,56x | 1,24x | 1,80x | 18,97 | 18,47 | 0,50 | 10,32 | 22,96 | 33,28 |
| 31-Dec-2016 | Maryland State Retirement and Pension Sys... | 20,00% | 0,51x | 1,40x | 1,91x | 47,43 | 40,96 | 6,47 | 20,73 | 57,40 | 78,13 |
| 31-Dec-2016 | Indiana Public Retirement System | 19,95% | 0,52x | 1,25x | 1,89x | 47,43 | 46,07 | 6,47 | 30,07 | 57,40 | 87,47 |
| 31-Dec-2016 | Los Angeles County Employees' Retirement ... | 19,92% | 0,55x | 1,29x | 1,83x | 94,86 | 89,07 | 5,79 | 48,66 | 114,78 | 163,44 |
| 31-Dec-2016 | Teachers Retirement System of the State of ... | 19,92% | 0,51x | 1,40x | 1,91x | 94,86 | 81,91 | 12,94 | 41,51 | 114,79 | 156,30 |
| 31-Dec-2016 | Massachusetts Pension Reserves Investmen... | 19,92% | 0,56x | 1,25x | 1,81x | 142,29 | 138,19 | 4,10 | 77,57 | 172,19 | 249,77 |
| 31-Dec-2016 | Louisiana State Employees Retirement Syst... | 19,92% | 0,51x | 1,40x | 1,91x | 33,20 | 28,62 | 4,58 | 14,48 | 40,18 | 54,66 |
| 31-Dec-2016 | Oregon Public Employees Retirement System | 19,90% | 0,56x | 1,25x | 1,81x | 94,86 | 92,11 | 2,75 | 51,70 | 114,78 | 166,48 |
| 31-Dec-2016 | State of Wisconsin Investment Board | 19,90% | 0,56x | 1,25x | 1,81x | 94,86 | 92,11 | 2,75 | 51,70 | 114,78 | 166,48 |
| 31-Dec-2016 | Baltimore County Employees' Retirement Sy... | 19,72% | 0,51x | 1,39x | 1,89x | 9,49 | 8,18 | 1,29 | 4,13 | 11,34 | 15,47 |
| 31-Dec-2016 | Visiting Nurse Service of New York Care Pen... | | | | | | | | | 1,05 | |
| 31-Dec-2016 | New Jersey Division of Investment | | 0,61x | 1,13x | 1,74x | 189,72 | 197,63 | 25,89 | 120,46 | 223,52 | 343,98 |
| 31-Dec-2016 | Los Angeles Department of Water and Powe... | | | | | 23,71 | | | | 28,01 | |
| 31-Dec-2016 | New England Carpenters Guaranteed Annui... | | | | | | | | | 2,74 | |
| 31-Dec-2016 | New York State Teachers' Retirement System | | | | | 71,14 | 61,44 | 9,71 | | | |

2 Secondary Commitment
P Partial Commitment

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3Q16 | 2.647,36 | 165,26 | 1.239,21 | 3.465,75 | 4.703,50 | 20,70% | 0,47x | 1,31x | 1,78x |
| 2Q16 | 2.628,21 | 243,02 | 1.232,89 | 3.459,80 | 4.692,73 | 21,92% | 0,44x | 1,32x | 1,80x |
| 1Q16 | 2.623,57 | 115,54 | 1.192,13 | 3.431,05 | 4.621,61 | 22,91% | 0,45x | 1,31x | 1,76x |
| 2015 | 2.453,71 | 294,63 | 1.004,40 | 3.294,89 | 4.269,12 | 23,02% | 0,39x | 1,34x | 1,75x |
| 2014 | 2.291,69 | 434,74 | 87,25 | 2.996,15 | 3.037,98 | 15,87% | 0,04x | 1,29x | 1,33x |

# PitchBook clients get greater insight into underlying fund data

Get aggregate fund-level performance at a glance.

Get access to individual LP reports and the underlying fund performance data that is used to construct our benchmarks.

**Get an even more transparent and comprehensive look into benchmarks with the PitchBook Platform.**

Request a free trial

# Private capital

PRIVATE CAPITAL

# Horizon IRRs

| Strategy | 1-year | 3-year | 5-year | 10-year | 15-year | 18-year |
|---|---|---|---|---|---|---|
| Private capital | 15.70% | 12.10% | 13.20% | 9.03% | 11.58% | 9.90% |
| Private equity | 18.93% | 14.73% | 15.32% | 10.17% | 13.90% | 11.53% |
| Venture capital | 13.06% | 7.85% | 13.91% | 8.53% | 8.57% | 5.33% |
| Real assets | 11.82% | 9.99% | 9.97% | 6.28% | 7.39% | 7.36% |
| Debt | 8.88% | 5.64% | 8.06% | 8.53% | 9.37% | 9.32% |
| Fund-of-funds | 14.20% | 11.18% | 12.51% | 7.37% | 9.30% | 7.92% |
| Secondaries | 15.71% | 11.36% | 12.01% | 9.87% | 11.73% | 11.38% |
| S&P 500 | 15.67% | 11.27% | 13.40% | 9.42% | 9.58% | 5.61% |
| Russell 2000 Growth | 15.31% | 10.71% | 13.14% | 9.46% | 9.87% | 5.97% |
| Russell 3000 | 17.36% | 8.60% | 12.73% | 10.30% | 11.07% | 5.68% |
| Morningstar US Real Assets | 2.94% | 0.54% | 0.85% | 2.75% | 6.29% | 7.31% |
| Bloomberg Barclays US Corporate High Yield | 3.05% | 5.09% | 4.97% | 7.95% | 8.02% | 7.41% |

Source: PitchBook
Data as of March 31, 2018

PRIVATE CAPITAL

# Equal-weighted horizon IRRs

| Strategy | 1-year | 3-year | 5-year | 10-year | 15-year | 18-year |
|---|---|---|---|---|---|---|
| Private capital | 13.94% | 10.94% | 12.29% | 8.74% | 10.44% | 8.16% |
| Private equity | 17.55% | 13.50% | 13.31% | 9.80% | 13.36% | 10.40% |
| Venture capital | 12.60% | 7.27% | 12.64% | 7.90% | 7.44% | 4.12% |
| Real assets | 10.63% | 10.74% | 10.34% | 6.75% | 8.23% | 8.20% |
| Debt | 10.58% | 5.39% | 8.98% | 8.18% | 9.59% | 9.58% |
| Fund-of-funds | 14.47% | 11.52% | 12.90% | 9.43% | 10.17% | 8.90% |
| Secondaries | 13.24% | 10.02% | 11.08% | 9.09% | 11.43% | 10.66% |
| S&P 500 | 15.67% | 11.27% | 13.40% | 9.42% | 9.58% | 5.61% |
| Russell 2000 Growth | 15.31% | 10.71% | 13.14% | 9.46% | 9.87% | 5.97% |
| Russell 3000 | 17.36% | 8.60% | 12.73% | 10.30% | 11.07% | 5.68% |
| Morningstar US Real Assets | 2.94% | 0.54% | 0.85% | 2.75% | 6.29% | 7.31% |
| Bloomberg Barclays US Corporate High Yield | 3.05% | 5.09% | 4.97% | 7.95% | 8.02% | 7.41% |

Source: PitchBook
Data as of March 31, 2018

# Private equity

PRIVATE EQUITY

# IRRs by vintage

| | POOLED IRRS | | | IRR HURDLE RATES | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Vintage year | Pooled IRR | Equal-weighted pooled IRR | Number of funds | Top decile | Top quartile | Median IRR | Bottom quartile | Bottom decile | Standard deviation | Number of funds |
| Pre-2001 | 11.15% | 9.28% | 185 | 23.05% | 15.56% | 9.61% | 2.53% | -5.99% | 12.86% | 183 |
| 2001 | 23.87% | 19.57% | 31 | 38.36% | 26.88% | 16.78% | 11.06% | 8.17% | 19.37% | 31 |
| 2002 | 18.73% | 16.35% | 35 | 34.48% | 26.70% | 16.88% | 7.70% | 2.97% | 17.42% | 35 |
| 2003 | 23.35% | 16.39% | 22 | 37.84% | 24.90% | 13.96% | 8.76% | -2.21% | 27.33% | 22 |
| 2004 | 12.71% | 11.20% | 51 | 28.08% | 16.66% | 10.25% | 4.12% | -6.95% | 18.52% | 50 |
| 2005 | 9.90% | 10.00% | 77 | 19.98% | 13.07% | 8.46% | 3.77% | 0.10% | 10.37% | 75 |
| 2006 | 7.65% | 7.23% | 108 | 14.85% | 11.40% | 8.00% | 4.03% | -2.49% | 9.62% | 104 |
| 2007 | 9.76% | 9.71% | 110 | 19.55% | 14.65% | 9.80% | 4.93% | -0.88% | 9.62% | 106 |
| 2008 | 12.52% | 10.35% | 112 | 22.51% | 16.21% | 11.39% | 5.71% | -1.29% | 10.26% | 108 |
| 2009 | 14.02% | 14.25% | 49 | 26.26% | 21.28% | 11.83% | 7.25% | 1.34% | 16.23% | 47 |
| 2010 | 12.43% | 11.50% | 65 | 25.10% | 14.72% | 10.44% | 6.16% | -0.19% | 12.46% | 56 |
| 2011 | 15.59% | 14.15% | 76 | 28.78% | 19.65% | 13.39% | 9.93% | 2.76% | 20.00% | 68 |
| 2012 | 16.80% | 14.80% | 110 | 27.33% | 21.10% | 14.76% | 8.30% | 1.84% | 15.62% | 103 |
| 2013 | 16.79% | 14.83% | 93 | 30.10% | 19.99% | 14.87% | 8.75% | 4.20% | 11.30% | 81 |
| 2014 | 17.60% | 17.99% | 94 | 35.40% | 22.12% | 14.45% | 8.54% | -2.40% | 16.40% | 85 |
| 2015 | 19.99% | 15.10% | 130 | 30.08% | 21.59% | 12.57% | 5.03% | -4.75% | 17.59% | 106 |
| 2016 | 17.87% | 19.89% | 102 | 29.00% | 14.75% | 7.98% | -1.96% | -13.66% | 28.01% | 81 |

Source: PitchBook. Data as of March 31, 2018

PRIVATE EQUITY

# Multiples by vintage

| | POOLED MULTIPLES | | | EQUAL-WEIGHTED POOLED MULTIPLES | | | |
|---|---|---|---|---|---|---|---|
| Vintage year | TVPI | DPI | RVPI | TVPI | DPI | RVPI | Number of funds |
| Pre-2001 | 1.63x | 1.62x | 0.01x | 1.52x | 1.50x | 0.02x | 185 |
| 2001 | 2.16x | 2.13x | 0.03x | 1.98x | 1.97x | 0.02x | 31 |
| 2002 | 1.86x | 1.82x | 0.04x | 1.76x | 1.71x | 0.05x | 35 |
| 2003 | 2.06x | 1.95x | 0.11x | 1.83x | 1.76x | 0.07x | 22 |
| 2004 | 1.73x | 1.64x | 0.09x | 1.62x | 1.51x | 0.11x | 51 |
| 2005 | 1.61x | 1.50x | 0.11x | 1.61x | 1.47x | 0.14x | 77 |
| 2006 | 1.49x | 1.29x | 0.20x | 1.44x | 1.20x | 0.23x | 108 |
| 2007 | 1.56x | 1.25x | 0.30x | 1.54x | 1.22x | 0.32x | 110 |
| 2008 | 1.61x | 1.23x | 0.38x | 1.51x | 1.13x | 0.38x | 112 |
| 2009 | 1.66x | 1.26x | 0.40x | 1.67x | 1.24x | 0.43x | 49 |
| 2010 | 1.48x | 0.88x | 0.60x | 1.47x | 0.84x | 0.63x | 65 |
| 2011 | 1.61x | 0.73x | 0.87x | 1.55x | 0.68x | 0.88x | 76 |
| 2012 | 1.51x | 0.57x | 0.94x | 1.46x | 0.53x | 0.93x | 110 |
| 2013 | 1.38x | 0.38x | 1.00x | 1.37x | 0.36x | 1.01x | 93 |
| 2014 | 1.33x | 0.27x | 1.06x | 1.34x | 0.31x | 1.03x | 94 |
| 2015 | 1.26x | 0.15x | 1.10x | 1.22x | 0.15x | 1.06x | 130 |
| 2016 | 1.13x | 0.12x | 1.02x | 1.17x | 0.14x | 1.03x | 102 |

Source: PitchBook. Data as of March 31, 2018

PRIVATE EQUITY

# Multiples by vintage

| | TVPI | | | | | DPI | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vintage year | Top decile | Top quartile | Median TVPI | Bottom quartile | Bottom decile | Top decile | Top quartile | Median DPI | Bottom quartile | Bottom decile | Number of funds |
| Pre-2001 | 2.26x | 1.93x | 1.51x | 1.14x | 0.69x | 2.26x | 1.91x | 1.50x | 1.11x | 0.67x | 185 |
| 2001 | 2.93x | 2.53x | 1.88x | 1.56x | 1.30x | 2.90x | 2.50x | 1.88x | 1.53x | 1.23x | 31 |
| 2002 | 2.66x | 2.16x | 1.70x | 1.33x | 1.21x | 2.44x | 2.14x | 1.62x | 1.30x | 1.15x | 35 |
| 2003 | 2.97x | 1.94x | 1.70x | 1.49x | 0.86x | 2.84x | 1.94x | 1.67x | 1.49x | 0.80x | 22 |
| 2004 | 2.54x | 1.99x | 1.60x | 1.24x | 0.74x | 2.26x | 1.93x | 1.51x | 1.05x | 0.68x | 51 |
| 2005 | 2.36x | 1.89x | 1.52x | 1.19x | 1.00x | 2.26x | 1.73x | 1.37x | 1.09x | 0.75x | 77 |
| 2006 | 1.99x | 1.72x | 1.44x | 1.19x | 0.72x | 1.74x | 1.54x | 1.30x | 0.99x | 0.49x | 108 |
| 2007 | 2.18x | 1.85x | 1.51x | 1.21x | 0.94x | 1.95x | 1.60x | 1.20x | 0.87x | 0.59x | 110 |
| 2008 | 2.04x | 1.83x | 1.52x | 1.18x | 0.94x | 1.71x | 1.48x | 1.13x | 0.76x | 0.51x | 112 |
| 2009 | 2.48x | 2.09x | 1.54x | 1.29x | 0.96x | 2.04x | 1.58x | 1.18x | 0.88x | 0.59x | 49 |
| 2010 | 2.06x | 1.73x | 1.45x | 1.24x | 0.90x | 1.39x | 1.16x | 0.79x | 0.54x | 0.30x | 65 |
| 2011 | 2.17x | 1.75x | 1.46x | 1.24x | 1.02x | 1.30x | 0.98x | 0.57x | 0.32x | 0.17x | 76 |
| 2012 | 1.83x | 1.69x | 1.42x | 1.21x | 0.97x | 1.02x | 0.78x | 0.49x | 0.25x | 0.11x | 110 |
| 2013 | 1.83x | 1.50x | 1.32x | 1.19x | 1.07x | 0.82x | 0.50x | 0.28x | 0.09x | 0.00x | 93 |
| 2014 | 1.78x | 1.44x | 1.26x | 1.12x | 0.95x | 0.70x | 0.37x | 0.19x | 0.04x | 0.00x | 94 |
| 2015 | 1.49x | 1.33x | 1.18x | 1.05x | 0.92x | 0.34x | 0.20x | 0.07x | 0.00x | 0.00x | 130 |
| 2016 | 1.40x | 1.20x | 1.06x | 0.98x | 0.88x | 0.33x | 0.11x | 0.01x | 0.00x | 0.00x | 102 |

Source: PitchBook. Data as of March 31, 2018



For RVPI data, please download the supplemental Excel pack

PRIVATE EQUITY

# PMEs by vintage

| | S&P 500 INDEX | | | RUSSELL 3000 INDEX | | | |
|---|---|---|---|---|---|---|---|
| Vintage year | PitchBook Benchmark return (%) | Index return (%) | KS-PME | PitchBook Benchmark return (%) | Index return (%) | KS-PME | Number of funds |
| 2001 | 23.87% | 6.69% | 1.68 | 23.87% | 7.05% | 1.64 | 31 |
| 2002 | 18.73% | 7.82% | 1.43 | 18.73% | 8.15% | 1.40 | 35 |
| 2003 | 23.35% | 10.24% | 1.59 | 23.35% | 10.56% | 1.57 | 22 |
| 2004 | 12.71% | 8.72% | 1.36 | 12.71% | 8.89% | 1.34 | 51 |
| 2005 | 9.90% | 8.84% | 1.20 | 9.90% | 8.99% | 1.19 | 77 |
| 2006 | 7.65% | 8.77% | 1.01 | 7.65% | 8.76% | 1.00 | 108 |
| 2007 | 9.76% | 8.39% | 0.97 | 9.76% | 8.39% | 0.96 | 110 |
| 2008 | 12.52% | 9.64% | 0.97 | 12.52% | 9.74% | 0.97 | 112 |
| 2009 | 14.02% | 16.95% | 0.97 | 14.02% | 17.10% | 0.97 | 49 |
| 2010 | 12.43% | 14.11% | 0.94 | 12.43% | 14.05% | 0.95 | 65 |
| 2011 | 15.59% | 13.54% | 1.03 | 15.59% | 13.25% | 1.04 | 76 |
| 2012 | 16.80% | 14.89% | 1.06 | 16.80% | 14.67% | 1.07 | 110 |
| 2013 | 16.79% | 14.91% | 1.06 | 16.79% | 14.59% | 1.06 | 93 |
| 2014 | 17.60% | 12.79% | 1.05 | 17.60% | 12.16% | 1.06 | 94 |
| 2015 | 19.99% | 12.13% | 1.03 | 19.99% | 11.66% | 1.03 | 130 |
| 2016 | 17.87% | 20.82% | 0.98 | 17.87% | 21.18% | 0.98 | 102 |

Source: PitchBook. Data as of March 31, 2018

PRIVATE EQUITY

# Quarterly return

| Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) |
|---|---|---|---|---|---|---|---|
| 1Q 2005 | 2.55% | 3Q 2008 | -7.73% | 1Q 2012 | 5.84% | 3Q 2015 | 0.43% |
| 2Q 2005 | 8.38% | 4Q 2008 | -10.99% | 2Q 2012 | 0.73% | 4Q 2015 | 2.59% |
| 3Q 2005 | 7.08% | 1Q 2009 | -7.20% | 3Q 2012 | 3.67% | 1Q 2016 | 2.00% |
| 4Q 2005 | 9.64% | 2Q 2009 | 3.22% | 4Q 2012 | 3.30% | 2Q 2016 | 4.19% |
| 1Q 2006 | 4.27% | 3Q 2009 | 3.65% | 1Q 2013 | 3.13% | 3Q 2016 | 4.42% |
| 2Q 2006 | 5.47% | 4Q 2009 | 6.88% | 2Q 2013 | 3.06% | 4Q 2016 | 1.59% |
| 3Q 2006 | 4.27% | 1Q 2010 | 3.04% | 3Q 2013 | 4.67% | 1Q 2017 | 4.63% |
| 4Q 2006 | 12.43% | 2Q 2010 | 1.68% | 4Q 2013 | 5.71% | 2Q 2017 | 5.24% |
| 1Q 2007 | 6.08% | 3Q 2010 | 4.57% | 1Q 2014 | 4.55% | 3Q 2017 | 4.33% |
| 2Q 2007 | 8.52% | 4Q 2010 | 7.72% | 2Q 2014 | 4.90% | 4Q 2017 | 4.54% |
| 3Q 2007 | 4.47% | 1Q 2011 | 5.03% | 3Q 2014 | 0.22% | 1Q 2018 | 3.57% |
| 4Q 2007 | 4.18% | 2Q 2011 | 4.71% | 4Q 2014 | 3.62% | | |
| 1Q 2008 | -0.67% | 3Q 2011 | -2.80% | 1Q 2015 | 3.41% | | |
| 2Q 2008 | -1.70% | 4Q 2011 | 1.32% | 2Q 2015 | 4.93% | | |

Source: PitchBook. Data as of March 31, 2018

# Venture capital

VENTURE CAPITAL

# IRRs by vintage

| | POOLED IRRS | | | IRR HURDLE RATES | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Vintage year | Pooled IRR | Equal-weighted pooled IRR | Number of funds | Top decile | Top quartile | Median IRR | Bottom quartile | Bottom decile | Standard deviation | Number of funds |
| **Pre-2001** | 1.75% | 6.20% | 143 | 21.11% | 7.00% | 0.00% | -8.38% | -15.14% | 31.25% | 141 |
| **2001** | 6.13% | 3.54% | 36 | 11.66% | 5.80% | 2.43% | -3.78% | -15.10% | 11.35% | 36 |
| **2002** | 3.22% | 2.87% | 17 | 10.95% | 9.12% | 3.50% | -6.78% | -11.21% | 10.18% | 16 |
| **2003** | 6.55% | 2.47% | 18 | 11.25% | 7.20% | 4.40% | -1.19% | -19.67% | 16.61% | 18 |
| **2004** | 0.89% | 0.16% | 21 | 6.65% | 5.02% | 1.52% | -9.53% | -14.45% | 9.77% | 20 |
| **2005** | 9.20% | 10.50% | 36 | 16.03% | 11.55% | 3.86% | -0.03% | -3.54% | 13.68% | 34 |
| **2006** | 4.54% | 2.83% | 38 | 11.54% | 7.78% | 1.80% | -7.16% | -13.52% | 12.69% | 38 |
| **2007** | 14.39% | 12.36% | 47 | 29.12% | 17.01% | 9.41% | -0.78% | -10.15% | 16.45% | 46 |
| **2008** | 10.31% | 9.77% | 55 | 25.90% | 17.00% | 7.98% | 0.26% | -15.44% | 18.42% | 51 |
| **2009** | 10.25% | 8.97% | 21 | 19.91% | 14.08% | 8.75% | 4.48% | -3.90% | 9.86% | 19 |
| **2010** | 18.32% | 18.27% | 25 | 42.15% | 27.20% | 12.28% | 3.93% | -1.37% | 20.31% | 24 |
| **2011** | 15.68% | 15.49% | 20 | 26.22% | 21.42% | 15.88% | 5.88% | -2.51% | 12.21% | 20 |
| **2012** | 18.39% | 17.49% | 19 | 32.45% | 21.24% | 16.99% | 11.59% | 5.58% | 13.54% | 16 |
| **2013** | 23.88% | 17.59% | 23 | 36.37% | 19.16% | 15.67% | 9.97% | 1.15% | 17.73% | 19 |
| **2014** | 17.01% | 16.83% | 37 | 32.48% | 16.30% | 11.61% | 5.97% | 3.73% | 73.26% | 34 |
| **2015** | 15.59% | 17.91% | 38 | 24.70% | 16.58% | 10.40% | 0.30% | -8.76% | 18.46% | 33 |
| **2016** | 15.49% | 24.69% | 41 | 30.83% | 22.57% | 0.68% | -10.22% | -20.07% | 23.84% | 28 |

Source: PitchBook. Data as of March 31, 2018

VENTURE CAPITAL

# Multiples by vintage

| | POOLED MULTIPLES | | | EQUAL-WEIGHTED POOLED MULTIPLES | | | |
|---|---|---|---|---|---|---|---|
| Vintage year | TVPI | DPI | RVPI | TVPI | DPI | RVPI | Number of funds |
| Pre-2001 | 1.10x | 1.02x | 0.08x | 1.24x | 1.18x | 0.05x | 143 |
| 2001 | 1.43x | 1.33x | 0.10x | 1.25x | 1.14x | 0.11x | 36 |
| 2002 | 1.19x | 1.15x | 0.05x | 1.18x | 1.08x | 0.10x | 17 |
| 2003 | 1.47x | 1.27x | 0.20x | 1.16x | 1.00x | 0.16x | 18 |
| 2004 | 1.07x | 0.79x | 0.28x | 1.01x | 0.68x | 0.33x | 21 |
| 2005 | 1.68x | 1.29x | 0.39x | 1.83x | 1.36x | 0.47x | 36 |
| 2006 | 1.31x | 0.84x | 0.46x | 1.19x | 0.72x | 0.47x | 38 |
| 2007 | 2.00x | 1.36x | 0.64x | 1.89x | 1.21x | 0.68x | 47 |
| 2008 | 1.56x | 0.95x | 0.61x | 1.58x | 0.86x | 0.73x | 55 |
| 2009 | 1.64x | 0.75x | 0.89x | 1.55x | 0.72x | 0.84x | 21 |
| 2010 | 2.00x | 0.98x | 1.02x | 2.03x | 1.08x | 0.95x | 25 |
| 2011 | 1.75x | 0.46x | 1.29x | 1.74x | 0.45x | 1.30x | 20 |
| 2012 | 1.83x | 0.38x | 1.45x | 1.75x | 0.34x | 1.42x | 19 |
| 2013 | 1.65x | 0.31x | 1.34x | 1.47x | 0.22x | 1.25x | 23 |
| 2014 | 1.36x | 0.16x | 1.21x | 1.32x | 0.18x | 1.14x | 37 |
| 2015 | 1.23x | 0.06x | 1.17x | 1.26x | 0.12x | 1.14x | 38 |
| 2016 | 1.11x | 0.02x | 1.09x | 1.21x | 0.04x | 1.17x | 41 |

Source: PitchBook. Data as of March 31, 2018

VENTURE CAPITAL

# Multiples by vintage

| | TVPI | | | | | DPI | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vintage year | Top decile | Top quartile | Median TVPI | Bottom quartile | Bottom decile | Top decile | Top quartile | Median DPI | Bottom quartile | Bottom decile | Number of funds |
| Pre-2001 | 1.82x | 1.39x | 1.01x | 0.63x | 0.29x | 1.79x | 1.33x | 0.92x | 0.54x | 0.24x | 143 |
| 2001 | 2.00x | 1.52x | 1.21x | 0.77x | 0.29x | 1.99x | 1.37x | 1.03x | 0.66x | 0.26x | 36 |
| 2002 | 1.78x | 1.74x | 1.18x | 0.68x | 0.49x | 1.78x | 1.61x | 1.09x | 0.57x | 0.33x | 17 |
| 2003 | 1.68x | 1.45x | 1.22x | 0.90x | 0.38x | 1.46x | 1.37x | 1.03x | 0.71x | 0.38x | 18 |
| 2004 | 1.68x | 1.46x | 1.08x | 0.60x | 0.38x | 1.46x | 1.00x | 0.63x | 0.29x | 0.09x | 21 |
| 2005 | 2.36x | 1.73x | 1.29x | 0.99x | 0.74x | 2.04x | 1.52x | 0.94x | 0.52x | 0.21x | 36 |
| 2006 | 2.12x | 1.61x | 1.13x | 0.63x | 0.41x | 1.34x | 1.08x | 0.53x | 0.28x | 0.10x | 38 |
| 2007 | 2.90x | 2.40x | 1.71x | 1.00x | 0.48x | 2.17x | 1.62x | 1.10x | 0.43x | 0.12x | 47 |
| 2008 | 2.83x | 1.95x | 1.51x | 0.97x | 0.39x | 1.72x | 1.25x | 0.65x | 0.30x | 0.09x | 55 |
| 2009 | 2.42x | 1.81x | 1.52x | 1.12x | 0.86x | 1.26x | 1.06x | 0.54x | 0.22x | 0.12x | 21 |
| 2010 | 3.63x | 2.53x | 1.69x | 1.15x | 0.78x | 2.19x | 1.50x | 0.72x | 0.41x | 0.21x | 25 |
| 2011 | 2.60x | 2.02x | 1.70x | 1.28x | 0.99x | 0.95x | 0.68x | 0.44x | 0.10x | 0.03x | 20 |
| 2012 | 2.78x | 1.86x | 1.64x | 1.20x | 0.97x | 0.79x | 0.48x | 0.16x | 0.02x | 0.00x | 19 |
| 2013 | 2.13x | 1.60x | 1.40x | 1.29x | 1.07x | 0.49x | 0.34x | 0.13x | 0.01x | 0.00x | 23 |
| 2014 | 1.69x | 1.41x | 1.25x | 1.10x | 1.04x | 0.32x | 0.15x | 0.03x | 0.00x | 0.00x | 37 |
| 2015 | 1.46x | 1.28x | 1.15x | 1.03x | 0.91x | 0.30x | 0.13x | 0.00x | 0.00x | 0.00x | 38 |
| 2016 | 1.36x | 1.25x | 1.00x | 0.93x | 0.90x | 0.07x | 0.00x | 0.00x | 0.00x | 0.00x | 41 |

Source: PitchBook. Data as of March 31, 2018



For RVPI data, please download the supplemental Excel pack

VENTURE CAPITAL

# PMEs by vintage

| | S&P 500 INDEX | | | RUSSELL 2000 GROWTH INDEX | | | |
|---|---|---|---|---|---|---|---|
| Vintage year | PitchBook Benchmark return (%) | Index return (%) | KS-PME | PitchBook Benchmark return (%) | Index return (%) | KS-PME | Number of funds |
| 2001 | 6.13% | 6.69% | 0.98 | 6.13% | 7.63% | 0.90 | 36 |
| 2002 | 3.22% | 7.82% | 0.87 | 3.22% | 8.85% | 0.81 | 17 |
| 2003 | 6.55% | 10.24% | 0.99 | 6.55% | 12.00% | 0.92 | 18 |
| 2004 | 0.89% | 8.72% | 0.65 | 0.89% | 9.17% | 0.60 | 21 |
| 2005 | 9.20% | 8.84% | 1.06 | 9.20% | 9.59% | 0.99 | 36 |
| 2006 | 4.54% | 8.77% | 0.74 | 4.54% | 8.87% | 0.70 | 38 |
| 2007 | 14.39% | 8.39% | 1.11 | 14.39% | 9.12% | 1.07 | 47 |
| 2008 | 10.31% | 9.64% | 0.87 | 10.31% | 10.76% | 0.86 | 55 |
| 2009 | 10.25% | 16.95% | 0.81 | 10.25% | 18.08% | 0.82 | 21 |
| 2010 | 18.32% | 14.11% | 1.14 | 18.32% | 14.42% | 1.18 | 25 |
| 2011 | 15.68% | 13.54% | 1.04 | 15.68% | 12.28% | 1.09 | 20 |
| 2012 | 18.39% | 14.89% | 1.15 | 18.39% | 13.87% | 1.20 | 19 |
| 2013 | 23.88% | 14.91% | 1.23 | 23.88% | 14.06% | 1.27 | 23 |
| 2014 | 17.01% | 12.79% | 1.04 | 17.01% | 9.65% | 1.05 | 37 |
| 2015 | 15.59% | 12.13% | 0.98 | 15.59% | 10.49% | 0.98 | 38 |
| 2016 | 15.49% | 20.82% | 0.96 | 15.49% | 25.09% | 0.95 | 41 |

Source: PitchBook. Data as of March 31, 2018

VENTURE CAPITAL

# Quarterly return

| Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) |
|---|---|---|---|---|---|---|---|
| 1Q 2005 | -1.67% | 3Q 2008 | -2.68% | 1Q 2012 | 3.64% | 3Q 2015 | 0.34% |
| 2Q 2005 | 0.50% | 4Q 2008 | -8.70% | 2Q 2012 | 0.45% | 4Q 2015 | 2.46% |
| 3Q 2005 | 4.90% | 1Q 2009 | -3.50% | 3Q 2012 | -0.38% | 1Q 2016 | -3.17% |
| 4Q 2005 | 2.87% | 2Q 2009 | -0.41% | 4Q 2012 | 2.32% | 2Q 2016 | 0.01% |
| 1Q 2006 | 3.00% | 3Q 2009 | 0.57% | 1Q 2013 | 2.33% | 3Q 2016 | 2.28% |
| 2Q 2006 | 1.14% | 4Q 2009 | 3.25% | 2Q 2013 | 4.55% | 4Q 2016 | 0.29% |
| 3Q 2006 | 1.95% | 1Q 2010 | 1.16% | 3Q 2013 | 5.22% | 1Q 2017 | 2.54% |
| 4Q 2006 | 6.07% | 2Q 2010 | 0.20% | 4Q 2013 | 7.27% | 2Q 2017 | 1.77% |
| 1Q 2007 | 2.04% | 3Q 2010 | 3.21% | 1Q 2014 | 6.10% | 3Q 2017 | 3.27% |
| 2Q 2007 | 4.93% | 4Q 2010 | 5.52% | 2Q 2014 | 3.99% | 4Q 2017 | 4.12% |
| 3Q 2007 | 2.54% | 1Q 2011 | 4.27% | 3Q 2014 | 2.73% | 1Q 2018 | 3.34% |
| 4Q 2007 | 3.63% | 2Q 2011 | 4.15% | 4Q 2014 | 6.39% | | |
| 1Q 2008 | 3.37% | 3Q 2011 | -0.17% | 1Q 2015 | 4.46% | | |
| 2Q 2008 | 1.50% | 4Q 2011 | 1.60% | 2Q 2015 | 5.99% | | |

Source: PitchBook. Data as of March 31, 2018

# Real assets

REAL ASSETS

# IRRs by vintage

| | POOLED IRRS | | | IRR HURDLE RATES | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Vintage year | Pooled IRR | Equal-weighted pooled IRR | Number of funds | Top decile | Top quartile | Median IRR | Bottom quartile | Bottom decile | Standard deviation | Number of funds |
| Pre-2001 | 11.84% | 11.42% | 31 | 20.70% | 17.00% | 9.27% | 5.72% | 2.00% | 8.09% | 31 |
| 2001 | 35.75% | 34.26% | 4 | | 34.98% | 30.45% | 26.68% | | 12.48% | 4 |
| 2002 | 24.00% | 25.93% | 5 | | 36.05% | 25.00% | 16.60% | | 21.10% | 5 |
| 2003 | 19.31% | 20.08% | 6 | | 30.02% | 22.01% | 10.80% | | 11.70% | 6 |
| 2004 | 9.62% | 8.84% | 9 | | 17.00% | 11.31% | 0.33% | | 27.00% | 9 |
| 2005 | 2.33% | 2.74% | 32 | 16.75% | 5.62% | 0.61% | -2.69% | -7.94% | 12.81% | 32 |
| 2006 | -0.75% | -1.01% | 38 | 8.83% | 3.37% | -3.28% | -9.30% | -14.24% | 10.83% | 35 |
| 2007 | 3.20% | 3.06% | 65 | 12.55% | 9.61% | 4.56% | -0.95% | -7.86% | 9.20% | 62 |
| 2008 | 4.07% | 4.65% | 61 | 15.79% | 11.18% | 4.52% | 0.05% | -6.25% | 8.80% | 57 |
| 2009 | 8.37% | 7.63% | 33 | 19.29% | 15.11% | 9.62% | 3.30% | -11.86% | 12.51% | 32 |
| 2010 | 11.04% | 9.82% | 36 | 19.41% | 13.20% | 10.77% | 6.85% | 2.40% | 9.25% | 31 |
| 2011 | 12.01% | 10.88% | 50 | 20.98% | 17.06% | 12.00% | 4.60% | -3.95% | 11.64% | 49 |
| 2012 | 12.36% | 12.34% | 73 | 22.70% | 17.06% | 12.30% | 9.74% | 5.38% | 17.51% | 69 |
| 2013 | 12.97% | 12.70% | 68 | 18.67% | 15.01% | 11.76% | 7.49% | 3.75% | 8.06% | 58 |
| 2014 | 14.53% | 15.66% | 81 | 28.53% | 17.79% | 12.77% | 10.27% | 5.54% | 11.55% | 73 |
| 2015 | 16.89% | 16.57% | 103 | 29.30% | 18.72% | 13.07% | 8.43% | 4.16% | 12.47% | 82 |
| 2016 | 16.89% | 24.27% | 75 | 33.24% | 17.68% | 10.90% | -1.58% | -17.97% | 76.26% | 63 |

Source: PitchBook. Data as of March 31, 2018

REAL ASSETS

# Multiples by vintage

| | POOLED MULTIPLES | | | EQUAL-WEIGHTED POOLED MULTIPLES | | | |
|---|---|---|---|---|---|---|---|
| Vintage year | TVPI | DPI | RVPI | TVPI | DPI | RVPI | Number of funds |
| Pre-2001 | 1.58x | 1.56x | 0.02x | 1.66x | 1.60x | 0.07x | 31 |
| 2001 | 2.22x | 2.17x | 0.05x | 2.28x | 2.17x | 0.11x | 4 |
| 2002 | 1.63x | 1.62x | 0.01x | 1.68x | 1.67x | 0.01x | 5 |
| 2003 | 1.66x | 1.63x | 0.03x | 1.84x | 1.74x | 0.10x | 6 |
| 2004 | 1.40x | 1.39x | 0.01x | 1.43x | 1.39x | 0.04x | 9 |
| 2005 | 1.14x | 1.02x | 0.12x | 1.17x | 1.03x | 0.14x | 32 |
| 2006 | 0.96x | 0.80x | 0.16x | 0.94x | 0.75x | 0.19x | 38 |
| 2007 | 1.17x | 1.05x | 0.12x | 1.16x | 1.01x | 0.15x | 65 |
| 2008 | 1.18x | 0.89x | 0.30x | 1.22x | 0.91x | 0.30x | 61 |
| 2009 | 1.35x | 1.01x | 0.33x | 1.34x | 1.00x | 0.35x | 33 |
| 2010 | 1.42x | 0.98x | 0.43x | 1.42x | 0.88x | 0.54x | 36 |
| 2011 | 1.43x | 0.81x | 0.62x | 1.41x | 0.86x | 0.55x | 50 |
| 2012 | 1.37x | 0.69x | 0.68x | 1.39x | 0.74x | 0.65x | 73 |
| 2013 | 1.34x | 0.50x | 0.84x | 1.33x | 0.45x | 0.88x | 68 |
| 2014 | 1.27x | 0.35x | 0.92x | 1.33x | 0.34x | 0.98x | 81 |
| 2015 | 1.23x | 0.29x | 0.94x | 1.26x | 0.27x | 1.00x | 103 |
| 2016 | 1.15x | 0.18x | 0.97x | 1.22x | 0.31x | 0.91x | 75 |

Source: PitchBook. Data as of March 31, 2018

REAL ASSETS

# Multiples by vintage

| | TVPI | | | | | DPI | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vintage year | Top decile | Top quartile | Median TVPI | Bottom quartile | Bottom decile | Top decile | Top quartile | Median DPI | Bottom quartile | Bottom decile | Number of funds |
| Pre-2001 | 2.47x | 2.06x | 1.49x | 1.28x | 1.08x | 2.42x | 1.92x | 1.46x | 1.28x | 1.07x | 31 |
| 2001 | | 2.86x | 2.42x | 1.87x | | | 2.48x | 2.17x | 1.86x | | 4 |
| 2002 | | 2.07x | 1.81x | 1.41x | | | 2.07x | 1.81x | 1.38x | | 5 |
| 2003 | | 2.00x | 1.67x | 1.36x | | | 1.99x | 1.66x | 1.36x | | 6 |
| 2004 | | 1.91x | 1.47x | 1.02x | | | 1.64x | 1.47x | 1.02x | | 9 |
| 2005 | 1.95x | 1.31x | 1.01x | 0.76x | 0.65x | 1.73x | 1.29x | 0.99x | 0.62x | 0.43x | 32 |
| 2006 | 1.68x | 1.15x | 0.95x | 0.56x | 0.40x | 1.28x | 0.98x | 0.67x | 0.46x | 0.18x | 38 |
| 2007 | 1.69x | 1.44x | 1.18x | 0.93x | 0.52x | 1.60x | 1.34x | 1.08x | 0.61x | 0.27x | 65 |
| 2008 | 1.71x | 1.53x | 1.22x | 1.02x | 0.66x | 1.53x | 1.25x | 0.96x | 0.63x | 0.29x | 61 |
| 2009 | 2.01x | 1.51x | 1.33x | 1.16x | 0.62x | 1.61x | 1.33x | 1.08x | 0.61x | 0.28x | 33 |
| 2010 | 1.78x | 1.65x | 1.50x | 1.21x | 1.01x | 1.48x | 1.27x | 0.86x | 0.60x | 0.23x | 36 |
| 2011 | 1.87x | 1.67x | 1.45x | 1.22x | 0.89x | 1.62x | 1.25x | 0.94x | 0.45x | 0.21x | 50 |
| 2012 | 1.78x | 1.50x | 1.39x | 1.26x | 1.10x | 1.40x | 0.97x | 0.67x | 0.41x | 0.11x | 73 |
| 2013 | 1.58x | 1.45x | 1.30x | 1.15x | 1.04x | 1.03x | 0.75x | 0.28x | 0.15x | 0.09x | 68 |
| 2014 | 1.53x | 1.37x | 1.24x | 1.15x | 1.07x | 0.78x | 0.47x | 0.22x | 0.09x | 0.02x | 81 |
| 2015 | 1.43x | 1.32x | 1.20x | 1.12x | 1.02x | 0.58x | 0.38x | 0.15x | 0.04x | 0.00x | 103 |
| 2016 | 1.50x | 1.25x | 1.09x | 0.97x | 0.87x | 0.60x | 0.22x | 0.08x | 0.02x | 0.00x | 75 |

Source: PitchBook. Data as of March 31, 2018



For RVPI data, please download the supplemental Excel pack

REAL ASSETS

# PMEs by vintage

| | S&P 500 INDEX | | | MORNINGSTAR US REAL ASSETS INDEX | | | |
|---|---|---|---|---|---|---|---|
| Vintage year | PitchBook Benchmark return (%) | Index return (%) | KS-PME | PitchBook Benchmark return (%) | Index return (%) | KS-PME | Number of funds |
| 2001 | 35.75% | 6.69% | 1.80 | 35.75% | 6.87% | 1.63 | 4 |
| 2002 | 24.00% | 7.82% | 1.27 | 24.00% | 6.83% | 1.24 | 5 |
| 2003 | 19.31% | 10.24% | 1.37 | 19.31% | 6.49% | 1.29 | 6 |
| 2004 | 9.62% | 8.72% | 1.16 | 9.62% | 5.65% | 1.08 | 9 |
| 2005 | 2.33% | 8.84% | 0.79 | 2.33% | 5.06% | 0.85 | 32 |
| 2006 | -0.75% | 8.77% | 0.65 | -0.75% | 4.63% | 0.73 | 38 |
| 2007 | 3.20% | 8.39% | 0.72 | 3.20% | 4.34% | 0.91 | 65 |
| 2008 | 4.07% | 9.64% | 0.69 | 4.07% | 3.35% | 1.00 | 61 |
| 2009 | 8.37% | 16.95% | 0.80 | 8.37% | 5.43% | 1.19 | 33 |
| 2010 | 11.04% | 14.11% | 0.90 | 11.04% | 3.65% | 1.30 | 36 |
| 2011 | 12.01% | 13.54% | 0.93 | 12.01% | 1.87% | 1.37 | 50 |
| 2012 | 12.36% | 14.89% | 0.96 | 12.36% | 1.05% | 1.34 | 73 |
| 2013 | 12.97% | 14.91% | 0.99 | 12.97% | 0.82% | 1.30 | 68 |
| 2014 | 14.53% | 12.79% | 1.00 | 14.53% | 1.27% | 1.24 | 81 |
| 2015 | 16.89% | 12.13% | 1.00 | 16.89% | 0.49% | 1.20 | 103 |
| 2016 | 16.89% | 20.82% | 0.97 | 16.89% | 3.95% | 1.13 | 75 |

Source: PitchBook. Data as of March 31, 2018

REAL ASSETS

# Quarterly return

| Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) |
|---|---|---|---|---|---|---|---|
| 1Q 2005 | 1.93% | 3Q 2008 | -4.92% | 1Q 2012 | 3.40% | 3Q 2015 | 0.23% |
| 2Q 2005 | 14.70% | 4Q 2008 | -12.50% | 2Q 2012 | -0.01% | 4Q 2015 | -0.54% |
| 3Q 2005 | 7.85% | 1Q 2009 | -14.71% | 3Q 2012 | 3.26% | 1Q 2016 | 0.99% |
| 4Q 2005 | 12.71% | 2Q 2009 | -7.86% | 4Q 2012 | 1.99% | 2Q 2016 | 3.43% |
| 1Q 2006 | 3.20% | 3Q 2009 | -3.80% | 1Q 2013 | 3.18% | 3Q 2016 | 2.90% |
| 2Q 2006 | 7.65% | 4Q 2009 | -1.93% | 2Q 2013 | 2.35% | 4Q 2016 | 3.24% |
| 3Q 2006 | 7.78% | 1Q 2010 | -2.81% | 3Q 2013 | 2.35% | 1Q 2017 | 3.50% |
| 4Q 2006 | 19.79% | 2Q 2010 | 0.86% | 4Q 2013 | 4.72% | 2Q 2017 | 2.58% |
| 1Q 2007 | 1.24% | 3Q 2010 | 4.56% | 1Q 2014 | 2.63% | 3Q 2017 | 3.27% |
| 2Q 2007 | 1.46% | 4Q 2010 | 9.61% | 2Q 2014 | 3.83% | 4Q 2017 | 2.39% |
| 3Q 2007 | 3.11% | 1Q 2011 | 4.65% | 3Q 2014 | 3.05% | 1Q 2018 | 3.10% |
| 4Q 2007 | 6.53% | 2Q 2011 | 4.04% | 4Q 2014 | -0.06% | | |
| 1Q 2008 | -3.99% | 3Q 2011 | 0.61% | 1Q 2015 | 0.37% | | |
| 2Q 2008 | -2.02% | 4Q 2011 | 2.53% | 2Q 2015 | 3.71% | | |

Source: PitchBook. Data as of March 31, 2018

# Debt

DEBT

# IRRs by vintage

| | POOLED IRRS | | | IRR HURDLE RATES | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Vintage year | Pooled IRR | Equal-weighted pooled IRR | Number of funds | Top decile | Top quartile | Median IRR | Bottom quartile | Bottom decile | Standard deviation | Number of funds |
| Pre-2001 | 10.23% | 10.70% | 10 | | 11.96% | 8.45% | 5.10% | | 10.81% | 9 |
| 2001 | 27.04% | 27.58% | 2 | | | 27.55% | | | 1.20% | 2 |
| 2002 | 23.03% | 27.65% | 3 | | | 17.40% | | | 35.98% | 3 |
| 2003 | 12.09% | 10.47% | 4 | | 16.73% | 11.12% | 7.66% | | 11.18% | 4 |
| 2004 | 14.61% | 13.79% | 3 | | | 14.03% | | | 2.63% | 3 |
| 2005 | 6.13% | 5.91% | 7 | | 8.53% | 5.00% | 4.35% | | 6.65% | 7 |
| 2006 | 5.65% | 3.60% | 14 | 8.71% | 6.84% | 3.94% | 1.65% | -2.02% | 5.55% | 14 |
| 2007 | 6.97% | 5.95% | 20 | 13.16% | 9.78% | 7.09% | 3.47% | -1.73% | 8.93% | 20 |
| 2008 | 13.37% | 13.85% | 14 | 16.54% | 14.92% | 13.18% | 9.15% | 7.60% | 3.76% | 14 |
| 2009 | 9.95% | 9.43% | 11 | 12.61% | 12.17% | 8.40% | 4.94% | 2.84% | 4.50% | 11 |
| 2010 | 11.41% | 11.58% | 16 | 17.95% | 13.67% | 11.26% | 8.94% | 6.55% | 4.42% | 16 |
| 2011 | 10.53% | 11.28% | 18 | 16.14% | 12.00% | 10.43% | 8.77% | 5.30% | 4.92% | 18 |
| 2012 | 6.58% | 8.28% | 26 | 15.84% | 13.02% | 9.13% | 4.41% | 2.53% | 6.25% | 25 |
| 2013 | 6.71% | 8.16% | 34 | 13.27% | 11.06% | 9.48% | 6.96% | 6.10% | 3.62% | 30 |
| 2014 | 8.65% | 6.72% | 41 | 12.78% | 10.94% | 8.60% | 6.89% | -3.52% | 11.39% | 34 |
| 2015 | 12.15% | 11.48% | 47 | 17.07% | 14.39% | 11.43% | 8.37% | 6.63% | 5.55% | 43 |
| 2016 | 2.16% | 2.73% | 22 | 17.09% | 13.77% | 11.60% | 8.43% | 5.49% | 10.31% | 13 |

Source: PitchBook. Data as of March 31, 2018

DEBT

# Multiples by vintage

| | POOLED MULTIPLES | | | EQUAL-WEIGHTED POOLED MULTIPLES | | | |
|---|---|---|---|---|---|---|---|
| Vintage year | TVPI | DPI | RVPI | TVPI | DPI | RVPI | Number of funds |
| Pre-2001 | 1.56x | 1.50x | 0.06x | 1.63x | 1.48x | 0.15x | 10 |
| 2001 | 2.10x | 2.10x | 0.00x | 2.29x | 2.29x | 0.00x | 2 |
| 2002 | 1.71x | 1.71x | 0.00x | 1.83x | 1.83x | 0.00x | 3 |
| 2003 | 1.69x | 1.67x | 0.02x | 1.56x | 1.55x | 0.01x | 4 |
| 2004 | 1.75x | 1.72x | 0.03x | 1.73x | 1.70x | 0.03x | 3 |
| 2005 | 1.36x | 1.33x | 0.02x | 1.30x | 1.26x | 0.04x | 7 |
| 2006 | 1.38x | 1.20x | 0.18x | 1.21x | 1.12x | 0.10x | 14 |
| 2007 | 1.36x | 1.23x | 0.13x | 1.29x | 1.20x | 0.09x | 20 |
| 2008 | 1.61x | 1.54x | 0.07x | 1.61x | 1.57x | 0.05x | 14 |
| 2009 | 1.43x | 1.24x | 0.19x | 1.38x | 1.15x | 0.23x | 11 |
| 2010 | 1.49x | 1.26x | 0.23x | 1.42x | 1.20x | 0.22x | 16 |
| 2011 | 1.44x | 0.95x | 0.50x | 1.43x | 1.05x | 0.38x | 18 |
| 2012 | 1.22x | 0.74x | 0.48x | 1.28x | 0.79x | 0.49x | 26 |
| 2013 | 1.18x | 0.52x | 0.66x | 1.23x | 0.56x | 0.66x | 34 |
| 2014 | 1.18x | 0.31x | 0.87x | 1.13x | 0.35x | 0.78x | 41 |
| 2015 | 1.17x | 0.24x | 0.93x | 1.17x | 0.28x | 0.89x | 47 |
| 2016 | 1.02x | 0.17x | 0.84x | 1.03x | 0.20x | 0.83x | 22 |

Source: PitchBook. Data as of March 31, 2018

DEBT

# Multiples by vintage

| | TVPI | | | | | DPI | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vintage year | Top decile | Top quartile | Median TVPI | Bottom quartile | Bottom decile | Top decile | Top quartile | Median DPI | Bottom quartile | Bottom decile | Number of funds |
| Pre-2001 | 2.41x | 1.53x | 1.48x | 1.09x | 0.88x | 1.75x | 1.49x | 1.43x | 1.07x | 0.88x | 10 |
| 2001 | | | 2.37x | | | | | 2.37x | | | 2 |
| 2002 | | | 1.69x | | | | | 1.69x | | | 3 |
| 2003 | | 1.73x | 1.53x | 1.39x | | | 1.72x | 1.53x | 1.39x | | 4 |
| 2004 | | | 1.65x | | | | | 1.63x | | | 3 |
| 2005 | | 1.50x | 1.34x | 1.26x | | | 1.47x | 1.33x | 1.14x | | 7 |
| 2006 | 1.60x | 1.36x | 1.19x | 1.07x | 0.96x | 1.41x | 1.22x | 1.10x | 1.04x | 0.89x | 14 |
| 2007 | 1.71x | 1.52x | 1.34x | 1.19x | 0.93x | 1.68x | 1.47x | 1.24x | 1.04x | 0.81x | 20 |
| 2008 | 2.08x | 1.72x | 1.45x | 1.35x | 1.23x | 1.98x | 1.67x | 1.43x | 1.28x | 1.20x | 14 |
| 2009 | 1.62x | 1.49x | 1.31x | 1.16x | 1.13x | 1.53x | 1.38x | 1.13x | 1.07x | 0.96x | 11 |
| 2010 | 1.73x | 1.53x | 1.38x | 1.21x | 1.18x | 1.61x | 1.41x | 1.25x | 1.10x | 0.67x | 16 |
| 2011 | 1.79x | 1.61x | 1.36x | 1.22x | 1.12x | 1.41x | 1.27x | 1.07x | 0.76x | 0.58x | 18 |
| 2012 | 1.56x | 1.43x | 1.25x | 1.12x | 1.05x | 1.20x | 1.12x | 0.85x | 0.61x | 0.36x | 26 |
| 2013 | 1.40x | 1.31x | 1.17x | 1.11x | 0.95x | 0.90x | 0.77x | 0.53x | 0.31x | 0.23x | 34 |
| 2014 | 1.31x | 1.22x | 1.15x | 1.09x | 0.84x | 0.60x | 0.49x | 0.30x | 0.12x | 0.03x | 41 |
| 2015 | 1.32x | 1.26x | 1.18x | 1.10x | 1.02x | 0.58x | 0.37x | 0.22x | 0.13x | 0.05x | 47 |
| 2016 | 1.18x | 1.10x | 1.07x | 0.94x | 0.86x | 0.36x | 0.28x | 0.15x | 0.05x | 0.01x | 22 |

Source: PitchBook. Data as of March 31, 2018



For RVPI data, please download the supplemental Excel pack

DEBT

# PMEs by vintage

| | S&P 500 INDEX | | | BLOOMBERG BARCLAYS US CORPORATE HIGH YIELD INDEX | | | |
|---|---|---|---|---|---|---|---|
| Vintage year | PitchBook Benchmark return (%) | Index return (%) | KS-PME | PitchBook Benchmark return (%) | Index return (%) | KS-PME | Number of funds |
| 2001 | 27.04% | 6.69% | 1.60 | 27.04% | 7.70% | 1.41 | 2 |
| 2002 | 23.03% | 7.82% | 1.26 | 23.03% | 8.25% | 1.26 | 3 |
| 2003 | 12.09% | 10.24% | 1.26 | 12.09% | 8.69% | 1.17 | 4 |
| 2004 | 14.61% | 8.72% | 1.49 | 14.61% | 7.51% | 1.33 | 3 |
| 2005 | 6.13% | 8.84% | 1.17 | 6.13% | 7.37% | 0.92 | 7 |
| 2006 | 5.65% | 8.77% | 0.88 | 5.65% | 7.64% | 0.80 | 14 |
| 2007 | 6.97% | 8.39% | 1.00 | 6.97% | 7.26% | 0.86 | 20 |
| 2008 | 13.37% | 9.64% | 1.03 | 13.37% | 8.28% | 0.94 | 14 |
| 2009 | 9.95% | 16.95% | 0.85 | 9.95% | 12.13% | 0.99 | 11 |
| 2010 | 11.41% | 14.11% | 0.89 | 11.41% | 7.72% | 1.14 | 16 |
| 2011 | 10.53% | 13.54% | 0.88 | 10.53% | 6.60% | 1.14 | 18 |
| 2012 | 6.58% | 14.89% | 0.81 | 6.58% | 6.69% | 1.02 | 26 |
| 2013 | 6.71% | 14.91% | 0.86 | 6.71% | 5.38% | 1.02 | 34 |
| 2014 | 8.65% | 12.79% | 0.91 | 8.65% | 4.89% | 1.04 | 41 |
| 2015 | 12.15% | 12.13% | 0.95 | 12.15% | 5.77% | 1.06 | 47 |
| 2016 | 2.16% | 20.82% | 0.87 | 2.16% | 12.49% | 0.95 | 22 |

Source: PitchBook. Data as of March 31, 2018

DEBT

# Quarterly return

| Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) |
|---|---|---|---|---|---|---|---|
| 1Q 2005 | 6.59% | 3Q 2008 | -7.79% | 1Q 2012 | -2.38% | 3Q 2015 | -0.82% |
| 2Q 2005 | -3.90% | 4Q 2008 | -17.38% | 2Q 2012 | 0.60% | 4Q 2015 | -0.24% |
| 3Q 2005 | 10.16% | 1Q 2009 | -4.87% | 3Q 2012 | 5.04% | 1Q 2016 | 1.56% |
| 4Q 2005 | 5.72% | 2Q 2009 | 10.39% | 4Q 2012 | 3.07% | 2Q 2016 | 1.50% |
| 1Q 2006 | 2.89% | 3Q 2009 | 11.53% | 1Q 2013 | 4.12% | 3Q 2016 | 4.06% |
| 2Q 2006 | 8.09% | 4Q 2009 | 7.40% | 2Q 2013 | 2.57% | 4Q 2016 | 1.22% |
| 3Q 2006 | 0.74% | 1Q 2010 | 5.53% | 3Q 2013 | 2.50% | 1Q 2017 | 1.81% |
| 4Q 2006 | 8.87% | 2Q 2010 | 0.94% | 4Q 2013 | 2.87% | 2Q 2017 | 1.81% |
| 1Q 2007 | 3.80% | 3Q 2010 | 1.82% | 1Q 2014 | 3.34% | 3Q 2017 | 2.61% |
| 2Q 2007 | 8.15% | 4Q 2010 | 7.02% | 2Q 2014 | 2.82% | 4Q 2017 | 2.77% |
| 3Q 2007 | -0.76% | 1Q 2011 | 3.54% | 3Q 2014 | 3.06% | 1Q 2018 | 1.40% |
| 4Q 2007 | 0.29% | 2Q 2011 | 2.57% | 4Q 2014 | 0.14% | | |
| 1Q 2008 | -1.42% | 3Q 2011 | -4.12% | 1Q 2015 | 5.96% | | |
| 2Q 2008 | -0.79% | 4Q 2011 | 9.42% | 2Q 2015 | -1.38% | | |

Source: PitchBook. Data as of March 31, 2018

# Fund-of-funds

FUND-OF-FUNDS

# IRRs by vintage

| | POOLED IRRS | | | IRR HURDLE RATES | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Vintage year | Pooled IRR | Equal-weighted pooled IRR | Number of funds | Top decile | Top quartile | Median IRR | Bottom quartile | Bottom decile | Standard deviation | Number of funds |
| Pre-2001 | 5.31% | 3.78% | 21 | 11.70% | 9.35% | 3.97% | 1.90% | -5.12% | 7.78% | 20 |
| 2001 | 13.88% | 8.58% | 7 | | 12.53% | 9.86% | 6.47% | | 3.69% | 6 |
| 2002 | 8.32% | 6.65% | 4 | | 8.66% | 7.57% | 5.79% | | 2.55% | 4 |
| 2003 | 7.68% | 5.93% | 6 | | 8.41% | 6.75% | 4.27% | | 3.87% | 6 |
| 2004 | 7.73% | 7.55% | 11 | 10.99% | 9.29% | 7.10% | 6.62% | 6.20% | 2.02% | 11 |
| 2005 | 7.10% | 7.36% | 19 | 10.41% | 8.57% | 6.94% | 5.14% | 4.31% | 3.27% | 18 |
| 2006 | 8.26% | 7.71% | 28 | 12.22% | 10.45% | 8.30% | 6.37% | 3.84% | 4.21% | 27 |
| 2007 | 9.58% | 8.62% | 31 | 14.54% | 12.23% | 10.43% | 7.70% | 4.98% | 4.08% | 27 |
| 2008 | 2.96% | 11.36% | 35 | 15.31% | 14.27% | 11.93% | 7.79% | 4.73% | 4.43% | 31 |
| 2009 | 13.62% | 13.32% | 20 | 17.69% | 15.00% | 13.38% | 10.99% | 10.17% | 3.04% | 20 |
| 2010 | 12.20% | 11.99% | 33 | 14.60% | 13.82% | 12.90% | 9.64% | 8.17% | 3.99% | 30 |
| 2011 | 12.84% | 13.26% | 38 | 18.99% | 16.33% | 13.11% | 10.69% | 7.70% | 5.90% | 37 |
| 2012 | 13.10% | 14.33% | 32 | 20.22% | 15.60% | 12.43% | 8.59% | 4.60% | 5.87% | 30 |
| 2013 | 12.41% | 12.30% | 47 | 17.95% | 15.45% | 12.14% | 9.42% | 7.81% | 5.48% | 40 |
| 2014 | 15.02% | 13.03% | 36 | 18.35% | 16.40% | 11.89% | 8.80% | 6.13% | 5.27% | 30 |
| 2015 | 17.33% | 15.81% | 36 | 32.03% | 26.50% | 12.57% | 7.26% | 1.04% | 13.28% | 29 |
| 2016 | 2.79% | 0.61% | 21 | 19.26% | 14.56% | 8.88% | 1.00% | -5.97% | 11.50% | 17 |

Source: PitchBook. Data as of March 31, 2018

FUND-OF-FUNDS

# Multiples by vintage

| | POOLED MULTIPLES | | | EQUAL-WEIGHTED POOLED MULTIPLES | | | |
|---|---|---|---|---|---|---|---|
| Vintage year | TVPI | DPI | RVPI | TVPI | DPI | RVPI | Number of funds |
| Pre-2001 | 1.32x | 1.28x | 0.04x | 1.24x | 1.20x | 0.04x | 21 |
| 2001 | 1.69x | 1.63x | 0.06x | 1.52x | 1.39x | 0.13x | 7 |
| 2002 | 1.49x | 1.37x | 0.12x | 1.37x | 1.25x | 0.12x | 4 |
| 2003 | 1.59x | 1.40x | 0.19x | 1.42x | 1.25x | 0.17x | 6 |
| 2004 | 1.49x | 1.27x | 0.22x | 1.53x | 1.24x | 0.29x | 11 |
| 2005 | 1.48x | 1.21x | 0.27x | 1.49x | 1.18x | 0.30x | 19 |
| 2006 | 1.57x | 1.10x | 0.47x | 1.55x | 1.08x | 0.47x | 28 |
| 2007 | 1.62x | 1.08x | 0.54x | 1.54x | 1.05x | 0.49x | 31 |
| 2008 | 1.15x | 0.62x | 0.53x | 1.61x | 0.77x | 0.85x | 35 |
| 2009 | 1.67x | 0.77x | 0.90x | 1.65x | 0.81x | 0.83x | 20 |
| 2010 | 1.56x | 0.68x | 0.88x | 1.55x | 0.59x | 0.96x | 33 |
| 2011 | 1.46x | 0.47x | 0.99x | 1.50x | 0.46x | 1.04x | 38 |
| 2012 | 1.42x | 0.27x | 1.15x | 1.47x | 0.30x | 1.17x | 32 |
| 2013 | 1.27x | 0.20x | 1.07x | 1.28x | 0.16x | 1.12x | 47 |
| 2014 | 1.27x | 0.23x | 1.05x | 1.25x | 0.21x | 1.04x | 36 |
| 2015 | 1.21x | 0.09x | 1.12x | 1.22x | 0.12x | 1.10x | 36 |
| 2016 | 1.03x | 0.07x | 0.96x | 1.01x | 0.08x | 0.92x | 21 |

Source: PitchBook. Data as of March 31, 2018

FUND-OF-FUNDS

# Multiples by vintage

| | TVPI | | | | | DPI | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vintage year | Top decile | Top quartile | Median TVPI | Bottom quartile | Bottom decile | Top decile | Top quartile | Median DPI | Bottom quartile | Bottom decile | Number of funds |
| Pre-2001 | 1.72x | 1.56x | 1.24x | 1.07x | 0.74x | 1.68x | 1.56x | 1.22x | 0.95x | 0.73x | 21 |
| 2001 | | 1.73x | 1.63x | 1.44x | | | 1.65x | 1.53x | 1.29x | | 7 |
| 2002 | | 1.51x | 1.43x | 1.29x | | | 1.39x | 1.36x | 1.22x | | 4 |
| 2003 | | 1.59x | 1.52x | 1.34x | | | 1.41x | 1.35x | 1.17x | | 6 |
| 2004 | 1.65x | 1.55x | 1.50x | 1.43x | 1.39x | 1.48x | 1.36x | 1.25x | 1.15x | 0.94x | 11 |
| 2005 | 1.72x | 1.59x | 1.49x | 1.36x | 1.28x | 1.43x | 1.31x | 1.16x | 1.07x | 0.97x | 19 |
| 2006 | 1.86x | 1.75x | 1.55x | 1.45x | 1.18x | 1.24x | 1.20x | 1.09x | 1.04x | 0.88x | 28 |
| 2007 | 1.95x | 1.76x | 1.53x | 1.38x | 1.11x | 1.35x | 1.17x | 1.05x | 0.93x | 0.61x | 31 |
| 2008 | 2.11x | 1.79x | 1.58x | 1.38x | 1.17x | 1.10x | 0.92x | 0.83x | 0.54x | 0.43x | 35 |
| 2009 | 1.94x | 1.74x | 1.60x | 1.52x | 1.45x | 1.13x | 1.00x | 0.74x | 0.67x | 0.61x | 20 |
| 2010 | 1.78x | 1.67x | 1.54x | 1.44x | 1.27x | 0.92x | 0.77x | 0.58x | 0.41x | 0.29x | 33 |
| 2011 | 1.90x | 1.62x | 1.45x | 1.37x | 1.16x | 0.75x | 0.54x | 0.44x | 0.31x | 0.16x | 38 |
| 2012 | 1.86x | 1.55x | 1.39x | 1.25x | 1.08x | 0.67x | 0.36x | 0.21x | 0.13x | 0.04x | 32 |
| 2013 | 1.44x | 1.38x | 1.24x | 1.17x | 1.08x | 0.38x | 0.23x | 0.12x | 0.04x | 0.01x | 47 |
| 2014 | 1.45x | 1.32x | 1.25x | 1.12x | 1.04x | 0.42x | 0.23x | 0.12x | 0.03x | 0.00x | 36 |
| 2015 | 1.39x | 1.28x | 1.16x | 1.06x | 0.98x | 0.24x | 0.18x | 0.07x | 0.01x | 0.00x | 36 |
| 2016 | 1.18x | 1.11x | 1.07x | 0.96x | 0.78x | 0.17x | 0.09x | 0.01x | 0.00x | 0.00x | 21 |

Source: PitchBook. Data as of March 31, 2018



For RVPI data, please download the supplemental Excel pack

FUND-OF-FUNDS

# PMEs by vintage

| | S&P 500 INDEX | | | RUSSELL 3000 INDEX | | | |
|---|---|---|---|---|---|---|---|
| Vintage year | PitchBook Benchmark return (%) | Index return (%) | KS-PME | PitchBook Benchmark return (%) | Index return (%) | KS-PME | Number of funds |
| 2001 | 13.88% | 6.69% | 1.20 | 13.88% | 7.05% | 1.18 | 7 |
| 2002 | 8.32% | 7.82% | 1.07 | 8.32% | 8.15% | 1.05 | 4 |
| 2003 | 7.68% | 10.24% | 1.04 | 7.68% | 10.56% | 1.03 | 6 |
| 2004 | 7.73% | 8.72% | 1.00 | 7.73% | 8.89% | 0.99 | 11 |
| 2005 | 7.10% | 8.84% | 0.93 | 7.10% | 8.99% | 0.92 | 19 |
| 2006 | 8.26% | 8.77% | 0.88 | 8.26% | 8.76% | 0.87 | 28 |
| 2007 | 9.58% | 8.39% | 0.88 | 9.58% | 8.39% | 0.88 | 31 |
| 2008 | 2.96% | 9.64% | 0.60 | 2.96% | 9.74% | 0.60 | 35 |
| 2009 | 13.62% | 16.95% | 0.95 | 13.62% | 17.10% | 0.96 | 20 |
| 2010 | 12.20% | 14.11% | 0.93 | 12.20% | 14.05% | 0.93 | 33 |
| 2011 | 12.84% | 13.54% | 0.95 | 12.84% | 13.25% | 0.95 | 38 |
| 2012 | 13.10% | 14.89% | 0.98 | 13.10% | 14.67% | 0.99 | 32 |
| 2013 | 12.41% | 14.91% | 0.96 | 12.41% | 14.59% | 0.97 | 47 |
| 2014 | 15.02% | 12.79% | 1.01 | 15.02% | 12.16% | 1.01 | 36 |
| 2015 | 17.33% | 12.13% | 1.00 | 17.33% | 11.66% | 1.00 | 36 |
| 2016 | 2.79% | 20.82% | 0.85 | 2.79% | 21.18% | 0.85 | 21 |

Source: PitchBook. Data as of March 31, 2018

FUND-OF-FUNDS

# Quarterly return

| Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) |
|---|---|---|---|---|---|---|---|
| 1Q 2005 | 1.31% | 3Q 2008 | -6.71% | 1Q 2012 | 4.75% | 3Q 2015 | 1.59% |
| 2Q 2005 | 6.00% | 4Q 2008 | -9.03% | 2Q 2012 | 1.27% | 4Q 2015 | 0.44% |
| 3Q 2005 | 4.87% | 1Q 2009 | -2.71% | 3Q 2012 | 0.53% | 1Q 2016 | 1.43% |
| 4Q 2005 | 6.33% | 2Q 2009 | -4.40% | 4Q 2012 | 1.67% | 2Q 2016 | 0.79% |
| 1Q 2006 | 4.13% | 3Q 2009 | 4.37% | 1Q 2013 | 1.25% | 3Q 2016 | 3.51% |
| 2Q 2006 | 5.87% | 4Q 2009 | 2.22% | 2Q 2013 | 3.52% | 4Q 2016 | 1.35% |
| 3Q 2006 | 3.95% | 1Q 2010 | 4.47% | 3Q 2013 | 3.26% | 1Q 2017 | 3.76% |
| 4Q 2006 | 8.62% | 2Q 2010 | 0.39% | 4Q 2013 | 3.82% | 2Q 2017 | 3.43% |
| 1Q 2007 | -0.50% | 3Q 2010 | -4.41% | 1Q 2014 | 3.07% | 3Q 2017 | 3.25% |
| 2Q 2007 | 10.34% | 4Q 2010 | 4.33% | 2Q 2014 | 6.30% | 4Q 2017 | 2.32% |
| 3Q 2007 | 2.88% | 1Q 2011 | 3.82% | 3Q 2014 | 1.13% | 1Q 2018 | 4.57% |
| 4Q 2007 | 3.07% | 2Q 2011 | 5.48% | 4Q 2014 | 2.46% | | |
| 1Q 2008 | 8.79% | 3Q 2011 | -2.22% | 1Q 2015 | 3.44% | | |
| 2Q 2008 | -3.01% | 4Q 2011 | -0.37% | 2Q 2015 | 6.15% | | |

Source: PitchBook. Data as of March 31, 2018

# Secondaries

SECONDARIES

# IRRs by vintage

| | POOLED IRRS | | | IRR HURDLE RATES | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Vintage year | Pooled IRR | Equal-weighted pooled IRR | Number of funds | Top decile | Top quartile | Median IRR | Bottom quartile | Bottom decile | Standard deviation | Number of funds |
| Pre-2001 | 12.01% | 12.20% | 11 | 25.00% | 17.76% | 13.16% | 6.45% | 4.10% | 20.40% | 11 |
| 2001 | 14.19% | 14.80% | 2 | | | 15.85% | | | 5.20% | 2 |
| 2002 | 15.42% | 17.20% | 3 | | | 18.88% | | | 4.54% | 3 |
| 2003 | 37.91% | 37.91% | 1 | | | 35.07% | | | | 1 |
| 2004 | 14.22% | 13.91% | 5 | | 23.70% | 17.52% | 10.26% | | 9.19% | 4 |
| 2005 | 5.99% | 4.98% | 8 | | 6.71% | 6.48% | 4.82% | | 5.14% | 8 |
| 2006 | 5.94% | 6.77% | 9 | | 5.56% | 5.16% | 4.32% | | 1.99% | 6 |
| 2007 | 6.39% | 6.75% | 9 | | 9.13% | 8.35% | 6.37% | | 4.47% | 8 |
| 2008 | 11.59% | 11.37% | 13 | 14.70% | 12.84% | 11.68% | 8.45% | 5.83% | 7.59% | 12 |
| 2009 | 13.27% | 13.90% | 9 | | 15.34% | 14.46% | 11.14% | | 7.39% | 9 |
| 2010 | 13.56% | 12.92% | 7 | | 17.36% | 14.40% | 9.30% | | 6.08% | 7 |
| 2011 | 16.28% | 14.10% | 10 | 19.69% | 18.08% | 15.81% | 9.99% | 8.14% | 4.82% | 10 |
| 2012 | 13.33% | 15.08% | 10 | 22.25% | 20.38% | 18.62% | 15.46% | 12.43% | 5.53% | 10 |
| 2013 | 11.05% | 12.50% | 13 | 23.09% | 19.50% | 14.95% | 10.68% | 8.81% | 15.70% | 12 |
| 2014 | 22.49% | 18.06% | 13 | 32.65% | 27.02% | 22.01% | 19.75% | 18.84% | 6.18% | 12 |
| 2015 | 29.34% | 29.51% | 10 | 51.18% | 42.28% | 27.29% | 18.26% | 14.44% | 17.65% | 10 |
| 2016 | 38.76% | 23.20% | 13 | 41.09% | 30.26% | 23.70% | 14.73% | 1.69% | 23.12% | 12 |

Source: PitchBook. Data as of March 31, 2018

SECONDARIES

# Multiples by vintage

| | POOLED MULTIPLES | | | EQUAL-WEIGHTED POOLED MULTIPLES | | | |
|---|---|---|---|---|---|---|---|
| Vintage year | TVPI | DPI | RVPI | TVPI | DPI | RVPI | Number of funds |
| Pre-2001 | 1.47x | 1.47x | 0.00x | 1.43x | 1.43x | 0.00x | 11 |
| 2001 | 1.52x | 1.49x | 0.03x | 1.51x | 1.48x | 0.03x | 2 |
| 2002 | 1.49x | 1.47x | 0.02x | 1.52x | 1.48x | 0.03x | 3 |
| 2003 | 1.85x | 1.85x | 0.00x | 1.85x | 1.85x | 0.00x | 1 |
| 2004 | 1.53x | 1.43x | 0.10x | 1.52x | 1.42x | 0.10x | 5 |
| 2005 | 1.32x | 1.20x | 0.12x | 1.25x | 1.12x | 0.13x | 8 |
| 2006 | 1.33x | 1.16x | 0.17x | 1.40x | 1.21x | 0.19x | 9 |
| 2007 | 1.30x | 1.12x | 0.17x | 1.34x | 1.14x | 0.20x | 9 |
| 2008 | 1.55x | 1.25x | 0.31x | 1.57x | 1.20x | 0.37x | 13 |
| 2009 | 1.55x | 1.21x | 0.34x | 1.59x | 1.21x | 0.38x | 9 |
| 2010 | 1.52x | 1.23x | 0.29x | 1.48x | 1.08x | 0.40x | 7 |
| 2011 | 1.56x | 1.09x | 0.47x | 1.50x | 0.79x | 0.71x | 10 |
| 2012 | 1.45x | 0.84x | 0.61x | 1.41x | 0.77x | 0.65x | 10 |
| 2013 | 1.30x | 0.39x | 0.91x | 1.32x | 0.46x | 0.86x | 13 |
| 2014 | 1.36x | 0.46x | 0.89x | 1.35x | 0.31x | 1.04x | 13 |
| 2015 | 1.31x | 0.29x | 1.02x | 1.36x | 0.49x | 0.87x | 10 |
| 2016 | 1.24x | 0.09x | 1.15x | 1.21x | 0.17x | 1.04x | 13 |

Source: PitchBook. Data as of March 31, 2018

SECONDARIES

# Multiples by vintage

| | TVPI | | | | | DPI | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vintage year | Top decile | Top quartile | Median TVPI | Bottom quartile | Bottom decile | Top decile | Top quartile | Median DPI | Bottom quartile | Bottom decile | Number of funds |
| Pre-2001 | 1.74x | 1.50x | 1.41x | 1.27x | 1.20x | 1.74x | 1.50x | 1.40x | 1.26x | 1.20x | 11 |
| 2001 | | | 1.51x | | | | | 1.48x | | | 2 |
| 2002 | | | 1.53x | | | | | 1.47x | | | 3 |
| 2003 | | | 1.85x | | | | | 1.85x | | | 1 |
| 2004 | | 1.59x | 1.57x | 1.44x | | | 1.45x | 1.44x | 1.41x | | 5 |
| 2005 | | 1.35x | 1.32x | 1.25x | | | 1.28x | 1.17x | 1.12x | | 8 |
| 2006 | | 1.41x | 1.28x | 1.24x | | | 1.28x | 1.11x | 1.08x | | 9 |
| 2007 | | 1.46x | 1.38x | 1.18x | | | 1.26x | 1.22x | 0.99x | | 9 |
| 2008 | 1.71x | 1.64x | 1.50x | 1.39x | 1.22x | 1.52x | 1.40x | 1.31x | 0.87x | 0.83x | 13 |
| 2009 | | 1.76x | 1.60x | 1.39x | | | 1.30x | 1.23x | 1.13x | | 9 |
| 2010 | | 1.63x | 1.55x | 1.38x | | | 1.32x | 1.16x | 0.91x | | 7 |
| 2011 | 1.71x | 1.65x | 1.54x | 1.33x | 1.26x | 1.18x | 1.09x | 0.77x | 0.62x | 0.31x | 10 |
| 2012 | 1.59x | 1.51x | 1.45x | 1.30x | 1.25x | 0.98x | 0.95x | 0.76x | 0.70x | 0.62x | 10 |
| 2013 | 1.61x | 1.47x | 1.37x | 1.18x | 1.08x | 0.68x | 0.55x | 0.43x | 0.36x | 0.32x | 13 |
| 2014 | 1.53x | 1.47x | 1.38x | 1.30x | 1.25x | 0.60x | 0.41x | 0.28x | 0.22x | 0.07x | 13 |
| 2015 | 1.49x | 1.43x | 1.35x | 1.25x | 1.21x | 0.63x | 0.44x | 0.29x | 0.12x | 0.04x | 10 |
| 2016 | 1.28x | 1.26x | 1.24x | 1.20x | 1.06x | 0.34x | 0.27x | 0.08x | 0.01x | 0.00x | 13 |

Source: PitchBook. Data as of March 31, 2018



For RVPI data, please download the supplemental Excel pack

SECONDARIES

# PMEs by vintage

| | S&P 500 INDEX | | | RUSSELL 3000 INDEX | | | |
|---|---|---|---|---|---|---|---|
| Vintage year | PitchBook Benchmark return (%) | Index return (%) | KS-PME | PitchBook Benchmark return (%) | Index return (%) | KS-PME | Number of funds |
| 2001 | 14.19% | 6.69% | 1.18 | 14.19% | 7.05% | 1.16 | 2 |
| 2002 | 15.42% | 7.82% | 1.22 | 15.42% | 8.15% | 1.20 | 3 |
| 2003 | 37.91% | 10.24% | 1.57 | 37.91% | 10.56% | 1.55 | 1 |
| 2004 | 14.22% | 8.72% | 1.21 | 14.22% | 8.89% | 1.20 | 5 |
| 2005 | 5.99% | 8.84% | 0.93 | 5.99% | 8.99% | 0.92 | 8 |
| 2006 | 5.94% | 8.77% | 0.90 | 5.94% | 8.76% | 0.89 | 9 |
| 2007 | 6.39% | 8.39% | 0.83 | 6.39% | 8.39% | 0.82 | 9 |
| 2008 | 11.59% | 9.64% | 0.90 | 11.59% | 9.74% | 0.90 | 13 |
| 2009 | 13.27% | 16.95% | 0.95 | 13.27% | 17.10% | 0.95 | 9 |
| 2010 | 13.56% | 14.11% | 0.98 | 13.56% | 14.05% | 0.99 | 7 |
| 2011 | 16.28% | 13.54% | 1.05 | 16.28% | 13.25% | 1.06 | 10 |
| 2012 | 13.33% | 14.89% | 0.96 | 13.33% | 14.67% | 0.97 | 10 |
| 2013 | 11.05% | 14.91% | 0.95 | 11.05% | 14.59% | 0.96 | 13 |
| 2014 | 22.49% | 12.79% | 1.11 | 22.49% | 12.16% | 1.12 | 13 |
| 2015 | 29.34% | 12.13% | 1.12 | 29.34% | 11.66% | 1.12 | 10 |
| 2016 | 38.76% | 20.82% | 1.10 | 38.76% | 21.18% | 1.10 | 13 |

Source: PitchBook. Data as of March 31, 2018

SECONDARIES

# Quarterly return

| Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) | Quarter end | 1-quarter benchmark return (%) |
|---|---|---|---|---|---|---|---|
| 1Q 2005 | 6.27% | 3Q 2008 | -0.86% | 1Q 2012 | 3.30% | 3Q 2015 | 1.64% |
| 2Q 2005 | 4.48% | 4Q 2008 | -5.17% | 2Q 2012 | 3.03% | 4Q 2015 | 0.06% |
| 3Q 2005 | 4.44% | 1Q 2009 | -10.10% | 3Q 2012 | 5.20% | 1Q 2016 | -0.21% |
| 4Q 2005 | 1.90% | 2Q 2009 | -3.91% | 4Q 2012 | 2.50% | 2Q 2016 | 2.61% |
| 1Q 2006 | 9.25% | 3Q 2009 | -0.02% | 1Q 2013 | -0.18% | 3Q 2016 | 1.03% |
| 2Q 2006 | 4.58% | 4Q 2009 | 0.68% | 2Q 2013 | 0.78% | 4Q 2016 | 2.53% |
| 3Q 2006 | 4.11% | 1Q 2010 | 1.24% | 3Q 2013 | 2.39% | 1Q 2017 | 3.82% |
| 4Q 2006 | 6.96% | 2Q 2010 | 6.14% | 4Q 2013 | 4.29% | 2Q 2017 | 4.08% |
| 1Q 2007 | 3.46% | 3Q 2010 | 5.86% | 1Q 2014 | 3.83% | 3Q 2017 | 3.05% |
| 2Q 2007 | 10.95% | 4Q 2010 | 5.95% | 2Q 2014 | 3.69% | 4Q 2017 | 4.06% |
| 3Q 2007 | 8.89% | 1Q 2011 | 8.43% | 3Q 2014 | 3.82% | 1Q 2018 | 3.65% |
| 4Q 2007 | 4.53% | 2Q 2011 | 4.28% | 4Q 2014 | 2.80% | | |
| 1Q 2008 | 2.01% | 3Q 2011 | 6.41% | 1Q 2015 | 3.09% | | |
| 2Q 2008 | -2.56% | 4Q 2011 | -2.81% | 2Q 2015 | 7.00% | | |

Source: PitchBook. Data as of March 31, 2018