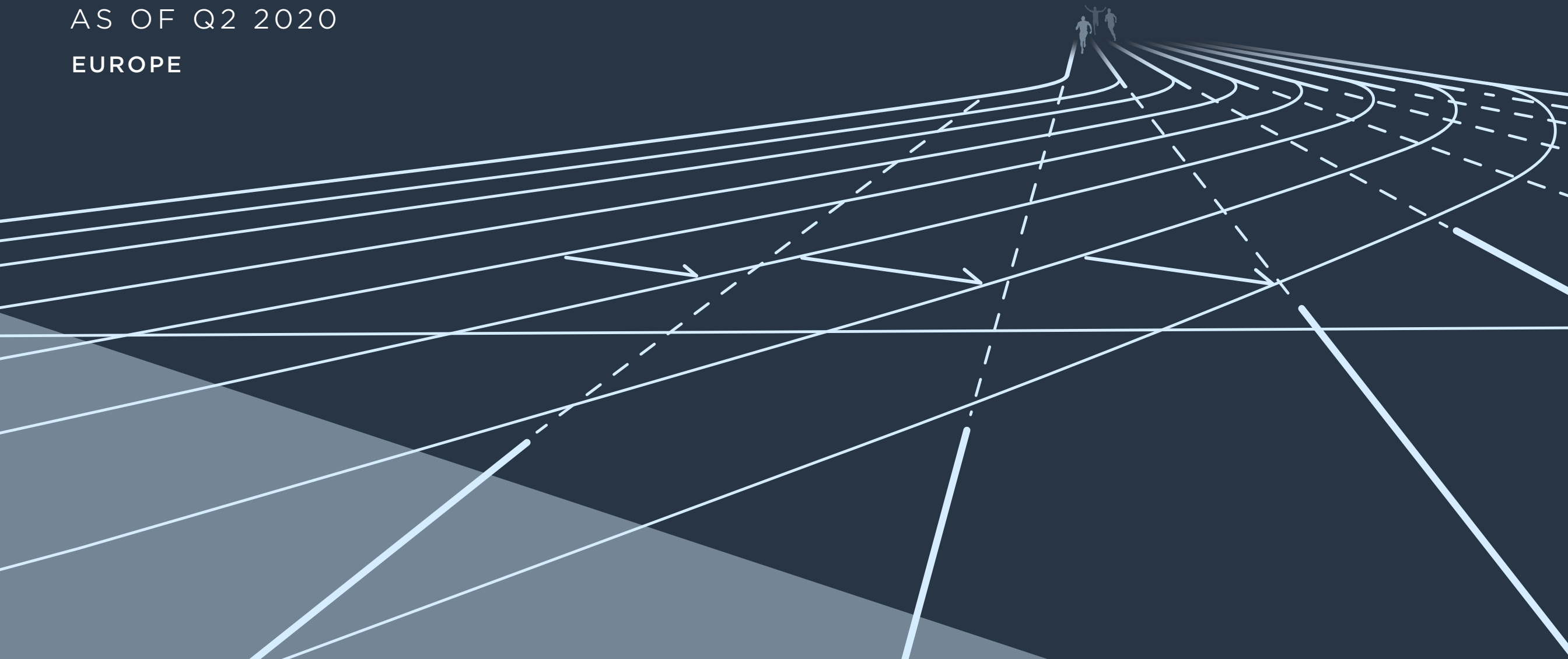




# PitchBook Benchmarks

AS OF Q2 2020

EUROPE





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# Introduction

PitchBook Benchmarks aim to help both LPs and GPs better understand fund performance relative to broader asset classes and other private market strategies. We present performance through several lenses—including internal rates of return (IRRs) and cash multiples—to provide a holistic view for assessing performance within and between strategies, as well as across vintage years. Furthermore, the returns of private market funds are measured relative to easily accessible public market substitutes using a public market equivalent (PME) metric.

We are expanding PitchBook Benchmarks to include additional slices based on fund strategy and geography, enabling performance comparisons with more representative peer groups. This quarter we are introducing dedicated PitchBook Benchmarks for North America, Europe, Private Equity, and Venture Capital, with more to be released in the future. To easily access the supporting data in this PDF, be sure to download the four accompanying Excel data packs. Links for those packs and the other Benchmark reports are below:

Excel data packs:

- [Global](#)
- [Europe](#)
- [North America](#)
- [Private equity](#)
- [Venture capital](#)

PitchBook Benchmark PDFs:

- [Global](#)
- [Europe](#)
- [North America](#)
- [Private equity](#)
- [Venture capital](#)

As transparency is fundamental to our benchmarking efforts, subscribers to the PitchBook Platform can utilize the data packs to 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](mailto:benchmarks@pitchbook.com).

**Commitment pacing and cash flow models**, as well as custom benchmarking analysis, can be made available upon request for PitchBook clients.



# Methodology

## Fund classifications

### Private equity

Buyout  
Growth/expansion  
Mezzanine  
Restructuring/turnaround  
Diversified PE

### Venture capital

### Real estate

Real estate core  
Real estate core plus  
Real estate value added  
Real estate opportunistic  
Real estate distressed

### Real assets

Infrastructure core  
Infrastructure value added  
Infrastructure opportunistic  
Infrastructure greenfield  
Energy  
Timber  
Metals/mining  
Agriculture

### Private debt

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

### Funds of funds

### Secondaries

## Data composition

PitchBook's fund returns data is primarily sourced from 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, a figure that has been steadily declining.

Beginning with the PitchBook Benchmarks with data as of Q4 2019, we expanded our dataset to include funds with a reported IRR, even if the fund's cash flow data does not meet the pooled calculation criteria.

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

All returns data in this report is net of fees and carry.

## Definitions and calculation methodologies

**Fund count:** Represents how many funds are included in a given sample. Note that some funds in our dataset have a reported IRR but lack sufficient cash flow information to be included in pooled calculations.

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

**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.

**Standard deviation:** Calculates the dispersion of reported IRRs for a given peer group using the sample-based standard deviation methodology.



**Vintage year:** The vintage year is based on the year that a fund makes its first capital call. If the year of the initial call 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.

**Quarterly return:** The percentage change in aggregate NAV is calculated for each group of funds in a sample, considering contributions and distributions during the quarter. This makes the calculation tantamount to a quarterly compounded growth rate.

**Internal rate of return (IRR):** IRR represents the rate at which an historical series of cash flows are discounted so that the net present value of the cash flows equals zero. For pooled calculations, any remaining unrealized 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.

**Horizon IRR:** Horizon IRR is a capital-weighted pooled calculation that shows the IRR for a certain range in time. For example, the one-year horizon IRR figures in the report may show the IRR performance for the one-year period beginning in Q2 20x0 through the end of Q1 20x1 while the three-year horizon IRR is for the period beginning in Q2 20x0 through the end of Q1 20x3.

**Quarterly IRR:** Calculated as the aggregate percentage change in aggregate NAV for each group of funds in a sample, considering contributions and distributions during the quarter. Interpolated and extended data are not used in this calculation. Preliminary data is only available for global benchmarks and will be published when 60% or more of NAV is captured for all private capital funds. Note that individual fund strategies may vary from that 60% threshold.

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

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

**Pooled calculations:** Pooled calculations combine cashflow data from a group of funds to create a capital-weighted IRR value. All cash flows and NAVs for each fund in the sample group (e.g. all private capital funds, 2004 vintage VC funds, etc.) are aggregated in the calculation. For vintage-specific calculations, we begin the calculation in Q1 of the vintage year, regardless of which quarter a fund first called capital. 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:** Using the same methodology as the pooled calculations, the equal-weighted version expresses each fund's cash flows and ending NAV as a ratio of fund size. The result is that each fund in these calculations has an equal impact on the output, regardless of the fund size.

**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](https://pitchbook.com/resources/whitepapers/pme-benchmarks). [PitchBook News & Analysis](#) also contains several articles with PME benchmarks and analysis. All PME figures are calculated using the Kaplan-Schoar PME method:

$$\text{PME}_{\text{KS-TVPI}, T} = \frac{\frac{\text{NAV}_T}{I_T} + \sum_{t=0}^T \left( \frac{\text{distribution}_t}{I_t} \right)}{\sum_{t=0}^T \left( \frac{\text{contribution}_t}{I_t} \right)}$$

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

$$PME_{KS-TVPI} = \frac{NAV_T + \sum_{t=0}^T \left( \frac{\text{distribution}_t}{I_T} \right)}{\sum_{t=0}^T \left( \frac{\text{contribution}_t}{I_T} \right)}$$

# PitchBook introduces new commitment pacing and cash flow models

Greater transparency.  
More flexibility.  
Differentiated data.



PitchBook has leveraged our massive private fund database to develop several models to help limited partners (LPs) better navigate private markets. These new models offer foresight into planning for commitment pacing and preparing for capital calls, allowing the user to customize for their specific allocations and assumptions.

All the models introduced in this series are available to PitchBook clients. We welcome any questions, comments, or inquiries at [benchmarks@pitchbook.com](mailto:benchmarks@pitchbook.com).

Download the full Basics of Cash Flow Management series.



# Private capital

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## Private capital

## Horizon IRRs

Strategy	Q2 2020	1-year	3-year	5-year	10-year	15-year	20-year
Private capital	4.46%	4.33%	11.06%	11.37%	10.96%	9.29%	10.17%
Private equity	8.16%	6.17%	13.78%	13.70%	12.88%	10.74%	11.98%
Venture capital	13.34%	5.62%	10.79%	10.66%	14.18%	10.82%	7.87%
Real estate	3.54%	3.59%	14.44%	13.37%	9.56%	5.03%	5.44%
Real assets	2.57%	5.51%	9.42%	9.86%	8.30%	5.51%	11.46%
Private debt	2.69%	8.19%	5.52%	6.19%	5.70%	6.46%	5.50%
Funds of funds	2.60%	5.87%	8.92%	9.09%	5.37%	5.82%	5.66%
Secondaries	-10.85%	-14.16%	3.40%	5.32%	10.50%	9.33%	9.83%
S&P 500	20.54%	7.51%	10.79%	10.79%	13.87%	8.78%	5.96%
Morningstar Europe	16.47%	-6.24%	0.53%	2.11%	6.50%	5.01%	4.42%
MSCI Europe Small Cap Growth	26.49%	3.51%	4.33%	6.24%	11.44%	8.73%	5.95%
Morningstar Developed Market Europe Real Estate	9.12%	-6.60%	0.21%	1.79%	8.40%	3.75%	7.41%
Morningstar US Real Asset	6.52%	-2.59%	1.99%	1.41%	3.20%	4.37%	6.70%
Bloomberg Barclays Pan-Europe High Yield	13.49%	-3.25%	0.82%	2.88%	5.64%	6.50%	7.08%

Source: PitchBook. Geography: Europe . Data as of June 30, 2020

Note: all public index values are total return CAGRs





## Private capital

## Equal-weighted horizon IRRs

Strategy	Q2 2020	1-year	3-year	5-year	10-year	15-year	20-year
Private capital	3.27%	4.06%	8.90%	9.53%	9.71%	8.91%	9.40%
Private equity	5.60%	6.02%	11.96%	11.80%	11.55%	10.68%	11.81%
Venture capital	7.37%	4.58%	6.32%	7.96%	9.71%	8.69%	7.09%
Real estate	0.96%	3.44%	9.17%	9.64%	8.27%	6.33%	6.95%
Real assets	2.16%	3.27%	7.66%	8.44%	7.55%	3.27%	9.04%
Private debt	1.54%	5.24%	5.41%	5.89%	5.68%	3.90%	5.56%
Funds of funds	2.30%	5.44%	9.50%	8.94%	8.96%	8.18%	7.74%
Secondaries	-1.46%	-7.39%	4.30%	8.60%	11.48%	9.63%	10.08%
S&P 500	20.54%	7.51%	10.79%	10.79%	13.87%	8.78%	5.96%
Morningstar Europe	16.47%	-6.24%	0.53%	2.11%	6.50%	5.01%	4.42%
MSCI Europe Small Cap Growth	26.49%	3.51%	4.33%	6.24%	11.44%	8.73%	5.95%
Morningstar Developed Market Europe Real Estate	9.12%	-6.60%	0.21%	1.79%	8.40%	3.75%	7.41%
Morningstar US Real Asset	6.52%	-2.59%	1.99%	1.41%	3.20%	4.37%	6.70%
Bloomberg Barclays Pan-Europe High Yield	13.49%	-3.25%	0.82%	2.88%	5.64%	6.50%	7.08%

Source: PitchBook. Geography: Europe . Data as of June 30, 2020

Note: all public index values are total return CAGRs

# Private equity

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## Private equity

## IRR by vintage

## Pooled IRRs

## IRR hurdle rates

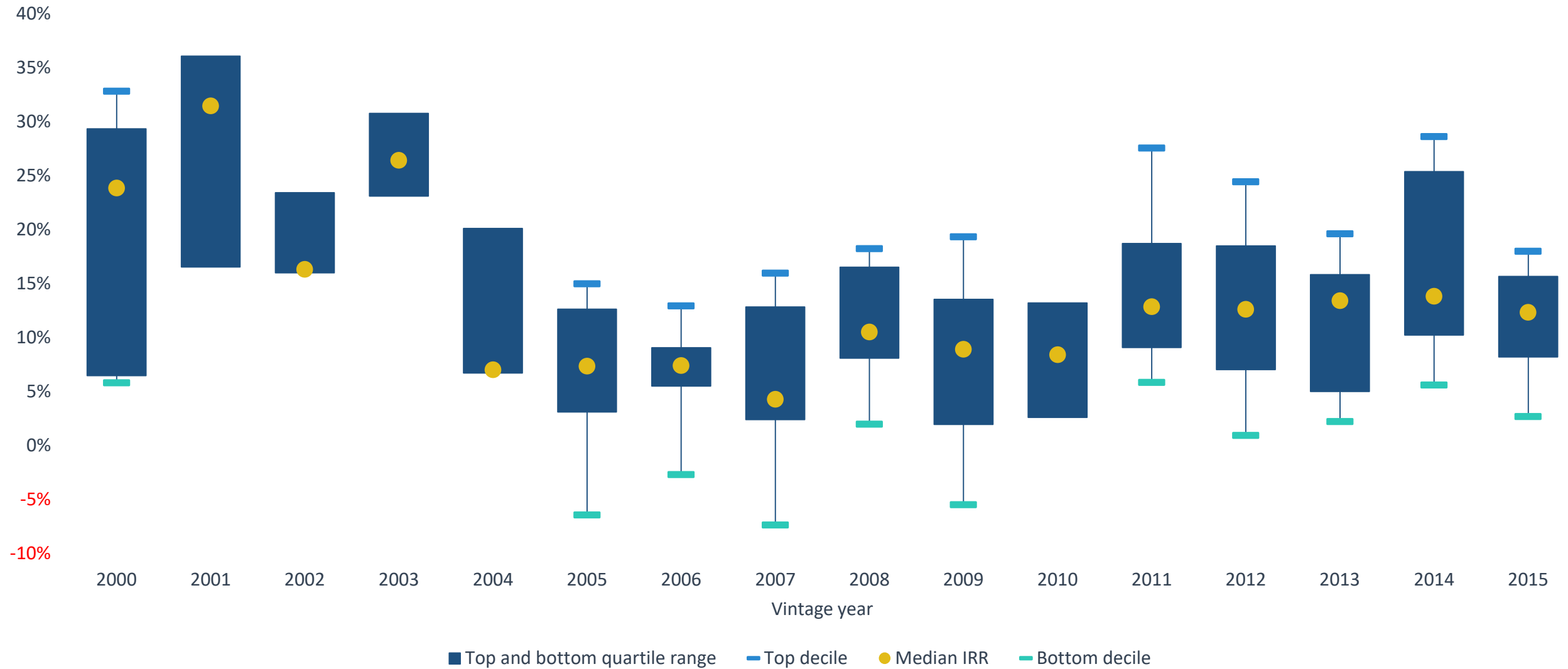
Vintage year	Pooled IRR	Equal-weighted pooled IRR	Number of funds	Top decile	Top quartile	Median IRR	Bottom quartile	Bottom decile	Standard deviation	Number of funds
Pre-1996	88.01%	88.01%	1			48.83%				1
1996	11.19%	17.70%	2			17.18%			10.26%	3
1997	20.03%	23.73%	5		30.30%	18.80%	13.54%		10.11%	5
1998	15.89%	14.62%	3		23.75%	18.65%	11.00%		7.51%	9
1999	11.42%	10.34%	4		19.29%	17.11%	11.13%		5.71%	5
2000	20.14%	17.94%	8	32.79%	29.33%	23.84%	6.47%	5.79%	12.67%	12
2001	34.58%	28.98%	8		36.05%	31.44%	16.53%		16.73%	9
2002	22.61%	23.05%	5		23.40%	16.30%	15.98%		8.83%	9
2003	21.14%	19.62%	5		30.75%	26.40%	23.09%		5.56%	8
2004	13.78%	16.27%	7		20.11%	7.00%	6.70%		13.19%	7
2005	6.37%	4.15%	16	14.97%	12.62%	7.34%	3.09%	-6.43%	17.00%	17
2006	5.76%	5.21%	19	12.92%	9.05%	7.39%	5.50%	-2.70%	7.07%	31
2007	6.01%	3.99%	22	15.94%	12.83%	4.27%	2.39%	-7.38%	8.12%	23
2008	11.33%	8.96%	26	18.22%	16.50%	10.50%	8.09%	1.97%	8.45%	29
2009	2.34%	3.11%	11	19.32%	13.54%	8.90%	1.95%	-5.50%	22.96%	15
2010	6.85%	8.33%	15		13.20%	8.40%	2.60%		8.47%	9
2011	12.72%	17.05%	16	27.53%	18.70%	12.85%	9.07%	5.83%	11.88%	19
2012	13.85%	9.81%	20	24.40%	18.48%	12.60%	7.03%	0.93%	11.28%	17
2013	12.14%	10.99%	17	19.60%	15.82%	13.40%	4.99%	2.20%	9.65%	12
2014	17.24%	13.10%	15	28.60%	25.35%	13.81%	10.23%	5.59%	11.28%	15
2015	13.52%	12.17%	23	17.99%	15.65%	12.32%	8.20%	2.68%	6.09%	16
2016	12.78%	14.15%	26	23.88%	22.08%	14.30%	8.54%	3.22%	10.49%	23
2017	11.27%	7.08%	27	44.00%	21.47%	14.65%	7.64%	-10.55%	41.77%	17
2018	3.13%	-1.21%	27	26.43%	18.65%	-3.70%	-34.50%	-50.93%	35.79%	19

Source: PitchBook. Geography: Europe. Data as of June 30, 2020



## Private equity

# IRRs by vintage





## Private equity

## PMEs by vintage

## S&amp;P 500 index

## Morningstar Europe Index

Vintage year	Pooled IRR	Index return	KS-PME	Pooled IRR	Index return	KS-PME	Number of funds
1996	11.19%	8.54%	1.37	11.19%			2
1997	20.03%	7.84%	1.84	20.03%			5
1998	15.89%	6.85%	1.85	15.89%			3
1999	11.42%	6.06%	1.48	11.42%	4.55%	1.17	4
2000	20.14%	5.68%	1.65	20.14%	3.85%	1.35	8
2001	34.58%	6.52%	1.83	34.58%	4.66%	1.51	8
2002	22.61%	7.50%	1.39	22.61%	6.01%	1.13	5
2003	21.14%	9.57%	1.56	21.14%	7.58%	1.46	5
2004	13.78%	8.23%	1.37	13.78%	5.25%	1.43	7
2005	6.37%	8.30%	1.01	6.37%	4.44%	1.17	16
2006	5.76%	8.21%	0.90	5.76%	3.45%	1.15	19
2007	6.01%	7.85%	0.81	6.01%	1.72%	1.05	22
2008	11.33%	8.82%	0.93	11.33%	1.64%	1.25	26
2009	2.34%	14.51%	0.66	2.34%	8.02%	0.85	11
2010	6.85%	12.10%	0.80	6.85%	4.23%	1.06	15
2011	12.72%	11.46%	1.01	12.72%	3.11%	1.32	16
2012	13.85%	12.17%	1.06	13.85%	4.55%	1.37	20
2013	12.14%	11.81%	1.05	12.14%	3.07%	1.37	17
2014	17.24%	10.01%	1.22	17.24%	0.47%	1.58	15
2015	13.52%	9.12%	1.08	13.52%	1.49%	1.33	23
2016	12.78%	12.30%	1.08	12.78%	4.24%	1.30	26
2017	11.27%	9.53%	1.07	11.27%	2.08%	1.24	27
2018	3.13%	5.24%	1.00	3.13%	-6.44%	1.11	27

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Private equity

## Multiples by vintage

## Pooled multiples

## Equal-weighted pooled multiples

Vintage year	TVPI	DPI	RVPI	TVPI	DPI	RVPI	Number of funds
Pre-1996	2.22x	2.22x	0.00x	2.22x	2.22x	0.00x	1
1996	1.52x	1.52x	0.00x	1.85x	1.85x	0.00x	2
1997	1.98x	1.98x	0.00x	1.97x	1.97x	0.00x	5
1998	1.89x	1.89x	0.00x	1.82x	1.82x	0.00x	3
1999	1.66x	1.66x	0.00x	1.68x	1.67x	0.01x	4
2000	1.96x	1.95x	0.00x	1.93x	1.92x	0.01x	8
2001	2.36x	2.33x	0.02x	2.14x	2.08x	0.06x	8
2002	1.89x	1.89x	0.00x	1.94x	1.93x	0.01x	5
2003	1.90x	1.90x	0.00x	2.05x	2.05x	0.01x	5
2004	1.67x	1.66x	0.00x	1.76x	1.76x	0.00x	7
2005	1.34x	1.31x	0.03x	1.22x	1.18x	0.04x	16
2006	1.35x	1.32x	0.03x	1.31x	1.27x	0.04x	19
2007	1.33x	1.29x	0.04x	1.20x	1.15x	0.05x	22
2008	1.62x	1.54x	0.08x	1.49x	1.38x	0.12x	26
2009	1.11x	0.98x	0.13x	1.14x	0.95x	0.19x	11
2010	1.29x	1.03x	0.26x	1.38x	1.02x	0.36x	15
2011	1.57x	1.21x	0.35x	1.76x	1.32x	0.44x	16
2012	1.57x	1.11x	0.46x	1.39x	0.93x	0.46x	20
2013	1.45x	0.77x	0.69x	1.41x	0.85x	0.56x	17
2014	1.67x	0.69x	0.98x	1.50x	0.44x	1.06x	15
2015	1.35x	0.45x	0.90x	1.32x	0.42x	0.91x	23
2016	1.26x	0.22x	1.04x	1.28x	0.25x	1.03x	26
2017	1.13x	0.09x	1.04x	1.10x	0.14x	0.96x	27
2018	1.02x	0.05x	0.98x	0.99x	0.08x	0.91x	27

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## 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-1996			2.22x					2.22x			1
1996			1.85x					1.85x			2
1997		2.06x	1.92x	1.87x			2.06x	1.92x	1.87x		5
1998			1.73x					1.73x			3
1999		1.91x	1.74x	1.53x			1.89x	1.72x	1.53x		4
2000		2.37x	1.85x	1.35x			2.36x	1.84x	1.33x		8
2001		2.56x	2.14x	1.93x			2.55x	2.10x	1.75x		8
2002		2.31x	1.94x	1.62x			2.31x	1.94x	1.62x		5
2003		2.79x	1.66x	1.55x			2.78x	1.66x	1.54x		5
2004		2.03x	1.83x	1.44x			2.02x	1.83x	1.44x		7
2005	1.55x	1.42x	1.27x	1.13x	0.71x	1.52x	1.34x	1.26x	1.00x	0.69x	16
2006	1.68x	1.52x	1.41x	1.10x	0.79x	1.64x	1.51x	1.40x	1.05x	0.73x	19
2007	1.87x	1.54x	1.18x	1.01x	0.60x	1.84x	1.53x	1.18x	0.79x	0.60x	22
2008	1.99x	1.80x	1.50x	1.27x	0.97x	1.91x	1.59x	1.44x	1.15x	0.82x	26
2009	1.56x	1.51x	1.30x	0.89x	0.67x	1.47x	1.33x	0.98x	0.63x	0.26x	11
2010	1.80x	1.60x	1.38x	1.07x	0.86x	1.62x	1.32x	1.05x	0.71x	0.46x	15
2011	2.87x	2.16x	1.53x	1.40x	1.21x	2.44x	1.42x	1.13x	0.99x	0.66x	16
2012	1.80x	1.67x	1.42x	1.21x	0.96x	1.43x	1.25x	0.93x	0.68x	0.48x	20
2013	2.11x	1.47x	1.28x	1.09x	0.99x	1.23x	1.09x	0.74x	0.64x	0.22x	17
2014	2.11x	1.48x	1.35x	1.18x	1.03x	0.76x	0.53x	0.26x	0.18x	0.10x	15
2015	1.60x	1.43x	1.36x	1.14x	1.01x	0.68x	0.55x	0.38x	0.30x	0.10x	23
2016	1.54x	1.43x	1.32x	1.12x	0.97x	0.46x	0.28x	0.14x	0.04x	0.01x	26
2017	1.33x	1.25x	1.12x	0.95x	0.75x	0.41x	0.15x	0.02x	0.00x	0.00x	27
2018	1.25x	1.10x	0.87x	0.72x	0.63x	0.20x	0.02x	0.00x	0.00x	0.00x	27

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Private equity

## Quarterly return

Quarter end	1-quarter return
Q1 2001	-1.51%
Q2 2001	-4.61%
Q3 2001	4.86%
Q4 2001	-3.35%
Q1 2002	2.00%
Q2 2002	12.71%
Q3 2002	1.41%
Q4 2002	-1.85%
Q1 2003	3.25%
Q2 2003	2.71%
Q3 2003	1.52%
Q4 2003	9.73%
Q1 2004	4.06%
Q2 2004	13.13%
Q3 2004	2.01%
Q4 2004	16.55%
Q1 2005	-2.26%
Q2 2005	10.50%
Q3 2005	5.34%
Q4 2005	11.07%
Q1 2006	1.57%
Q2 2006	13.01%
Q3 2006	3.99%
Q4 2006	19.49%

Quarter end	1-quarter return
Q1 2007	5.32%
Q2 2007	7.03%
Q3 2007	6.95%
Q4 2007	4.04%
Q1 2008	4.18%
Q2 2008	-2.24%
Q3 2008	-12.45%
Q4 2008	-13.28%
Q1 2009	-15.39%
Q2 2009	5.06%
Q3 2009	8.57%
Q4 2009	10.60%
Q1 2010	-5.30%
Q2 2010	-1.21%
Q3 2010	10.33%
Q4 2010	7.92%
Q1 2011	5.01%
Q2 2011	4.81%
Q3 2011	-4.87%
Q4 2011	1.09%
Q1 2012	5.73%
Q2 2012	-0.72%
Q3 2012	3.61%
Q4 2012	3.98%

Quarter end	1-quarter return
Q1 2013	0.24%
Q2 2013	1.60%
Q3 2013	4.57%
Q4 2013	6.95%
Q1 2014	4.55%
Q2 2014	5.43%
Q3 2014	-4.51%
Q4 2014	1.32%
Q1 2015	0.09%
Q2 2015	5.40%
Q3 2015	3.64%
Q4 2015	1.54%
Q1 2016	2.95%
Q2 2016	1.32%
Q3 2016	4.83%
Q4 2016	1.07%
Q1 2017	5.38%
Q2 2017	6.50%
Q3 2017	8.43%
Q4 2017	3.36%
Q1 2018	3.08%
Q2 2018	3.59%
Q3 2018	4.05%
Q4 2018	0.43%

Quarter end	1-quarter return
Q1 2019	3.44%
Q2 2019	5.95%
Q3 2019	2.17%
Q4 2019	7.19%
Q1 2020	-10.63%
Q2 2020	8.16%



# Venture capital

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## Venture capital

## IRR by vintage

## Pooled IRRs

## IRR hurdle rates

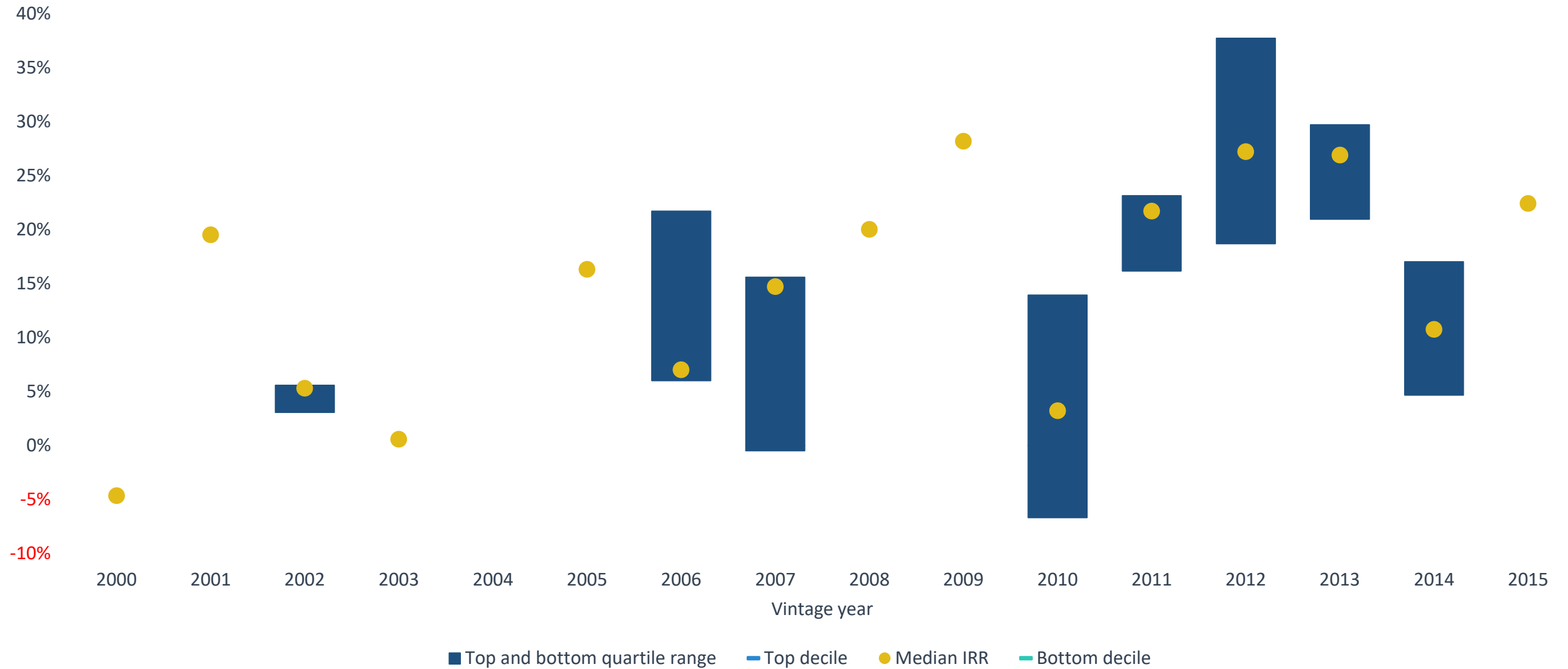
Vintage year	Pooled IRR	Equal-weighted pooled IRR	Number of funds	Top decile	Top quartile	Median IRR	Bottom quartile	Bottom decile	Standard deviation	Number of funds
Pre-1996						15.84%			10.76%	2
1996	10.25%	11.98%	2			8.82%			3.03%	2
1997	2.57%	2.57%	1			10.11%			10.64%	2
1998										
1999						0.90%			11.03%	2
2000	1.99%	1.99%	1			-4.66%			12.40%	3
2001	8.10%	10.61%	2			19.50%			13.55%	3
2002	6.36%	6.36%	1		5.58%	5.30%	3.06%		4.69%	4
2003	2.11%	2.11%	1			0.57%			3.63%	2
2004										
2005	16.24%	16.24%	1			16.30%				1
2006					21.70%	7.00%	6.00%		10.04%	5
2007	15.20%	13.73%	2		15.58%	14.70%	-0.50%		13.25%	6
2008	-9.27%	-5.81%	2			20.00%			1.31%	3
2009	-2.86%	-2.86%	1			28.16%			14.15%	3
2010	4.88%	7.77%	2		13.93%	3.21%	-6.69%		11.85%	6
2011					23.13%	21.70%	16.15%		7.13%	8
2012	16.30%	13.87%	4		37.70%	27.20%	18.69%		31.14%	9
2013	5.89%	6.59%	2		29.70%	26.88%	20.96%		10.37%	5
2014	0.22%	1.90%	4		17.00%	10.74%	4.67%		20.58%	7
2015	15.41%	12.80%	5			22.40%			11.43%	3
2016	2.80%	-1.10%	4		18.40%	12.59%	7.48%		8.49%	4
2017	25.05%	20.99%	5		26.42%	14.02%	8.09%		19.21%	4
2018	14.64%	5.24%	7		25.97%	14.50%	-6.67%		23.77%	6

Source: PitchBook. Geography: Europe. Data as of June 30, 2020



Venture capital

# IRRs by vintage





## Venture capital

## PMEs by vintage

## S&amp;P 500 index

## MSCI Europe Small Cap Growth Index

Vintage year	Pooled IRR	Index return	KS-PME	Pooled IRR	Index return	KS-PME	Number of funds
1996	10.25%	8.54%	1.08	10.25%	7.05%	1.24	2
1997	2.57%	7.84%	1.11	2.57%	6.55%	1.13	1
1998							
1999							
2000	1.99%	5.68%	0.80	1.99%	4.50%	0.59	1
2001	8.10%	6.52%	1.08	8.10%	7.29%	0.81	2
2002	6.36%	7.50%	1.02	6.36%	9.64%	0.76	1
2003	2.11%	9.57%	0.71	2.11%	11.76%	0.65	1
2004							
2005	16.24%	8.30%	1.50	16.24%	7.92%	1.53	1
2006							
2007	15.20%	7.85%	1.24	15.20%	4.71%	1.34	2
2008	-9.27%	8.82%	0.33	-9.27%	5.61%	0.39	2
2009	-2.86%	14.51%	0.38	-2.86%	13.41%	0.43	1
2010	4.88%	12.10%	0.71	4.88%	8.94%	0.80	2
2011							
2012	16.30%	12.17%	1.25	16.30%	9.13%	1.47	4
2013	5.89%	11.81%	0.90	5.89%	7.73%	1.01	2
2014	0.22%	10.01%	0.79	0.22%	4.14%	0.92	4
2015	15.41%	9.12%	1.14	15.41%	6.04%	1.32	5
2016	2.80%	12.30%	0.91	2.80%	6.50%	1.06	4
2017	25.05%	9.53%	1.35	25.05%	5.71%	1.53	5
2018	14.64%	5.24%	1.13	14.64%	-5.36%	1.27	7

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Venture capital

# Multiples by vintage

## Pooled multiples

## Equal-weighted pooled multiples

Vintage year	TVPI	DPI	RVPI	TVPI	DPI	RVPI	Number of funds
Pre-1996							
1996	1.35x	1.33x	0.02x	1.38x	1.36x	0.02x	2
1997	1.14x	1.14x	0.00x	1.14x	1.14x	0.00x	1
1998							
1999							
2000	1.20x	1.20x	0.00x	1.20x	1.20x	0.00x	1
2001	1.53x	1.48x	0.05x	1.60x	1.56x	0.04x	2
2002	1.46x	1.46x	0.00x	1.46x	1.46x	0.00x	1
2003	1.15x	1.12x	0.03x	1.15x	1.12x	0.03x	1
2004							
2005	2.74x	2.37x	0.36x	2.74x	2.37x	0.36x	1
2006							
2007	2.05x	1.65x	0.40x	2.03x	1.63x	0.40x	2
2008	0.59x	0.39x	0.20x	0.73x	0.47x	0.26x	2
2009	0.84x	0.30x	0.54x	0.84x	0.30x	0.54x	1
2010	1.25x	0.72x	0.53x	1.43x	0.86x	0.58x	2
2011							
2012	1.92x	0.41x	1.51x	1.73x	0.34x	1.39x	4
2013	1.18x	0.31x	0.87x	1.24x	0.28x	0.95x	2
2014	1.01x	0.06x	0.94x	1.05x	0.03x	1.02x	4
2015	1.44x	0.33x	1.11x	1.38x	0.32x	1.06x	5
2016	1.06x	0.06x	1.00x	0.98x	0.06x	0.92x	4
2017	1.54x	0.03x	1.52x	1.32x	0.05x	1.27x	5
2018	1.21x	0.12x	1.09x	1.07x	0.06x	1.02x	7

Source: PitchBook. Geography: Europe. Data as of June 30, 2020



## 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-1996											
1996			1.38x					1.36x			2
1997			1.14x					1.14x			1
1998											
1999											
2000			1.20x					1.20x			1
2001			1.60x					1.56x			2
2002			1.46x					1.46x			1
2003			1.15x					1.12x			1
2004											
2005			2.74x					2.37x			1
2006											
2007			2.03x					1.63x			2
2008			0.71x					0.46x			2
2009			0.84x					0.30x			1
2010			1.38x					0.82x			2
2011											
2012		2.10x	1.50x	0.91x			0.41x	0.27x	0.17x		4
2013			1.25x					0.27x			2
2014		1.10x	1.01x	0.93x			0.05x	0.02x	0.00x		4
2015		1.32x	1.21x	1.14x			0.53x	0.33x	0.03x		5
2016		1.11x	1.08x	0.98x			0.07x	0.04x	0.03x		4
2017		1.45x	1.10x	0.93x			0.09x	0.02x	0.00x		5
2018		1.10x	0.93x	0.84x			0.00x	0.00x	0.00x		7

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Venture capital

## Quarterly return

Quarter end	1-quarter return
Q1 2001	1.36%
Q2 2001	-2.36%
Q3 2001	3.03%
Q4 2001	-7.24%
Q1 2002	0.16%
Q2 2002	4.14%
Q3 2002	4.95%
Q4 2002	0.30%
Q1 2003	-4.09%
Q2 2003	1.43%
Q3 2003	-5.06%
Q4 2003	2.37%
Q1 2004	8.90%
Q2 2004	-3.12%
Q3 2004	1.51%
Q4 2004	2.27%
Q1 2005	1.93%
Q2 2005	-2.43%
Q3 2005	2.02%
Q4 2005	-0.62%
Q1 2006	7.46%
Q2 2006	5.14%
Q3 2006	3.94%
Q4 2006	6.32%

Quarter end	1-quarter return
Q1 2007	4.93%
Q2 2007	9.18%
Q3 2007	4.12%
Q4 2007	6.17%
Q1 2008	4.81%
Q2 2008	-1.36%
Q3 2008	-8.07%
Q4 2008	-10.86%
Q1 2009	-4.17%
Q2 2009	4.12%
Q3 2009	-2.28%
Q4 2009	1.31%
Q1 2010	-10.34%
Q2 2010	-5.93%
Q3 2010	4.67%
Q4 2010	13.55%
Q1 2011	6.20%
Q2 2011	6.52%
Q3 2011	2.12%
Q4 2011	3.13%
Q1 2012	3.18%
Q2 2012	5.76%
Q3 2012	-0.97%
Q4 2012	0.74%

Quarter end	1-quarter return
Q1 2013	3.64%
Q2 2013	6.17%
Q3 2013	3.24%
Q4 2013	7.86%
Q1 2014	11.32%
Q2 2014	0.28%
Q3 2014	-7.27%
Q4 2014	4.26%
Q1 2015	0.97%
Q2 2015	1.97%
Q3 2015	11.89%
Q4 2015	-4.68%
Q1 2016	0.88%
Q2 2016	-0.88%
Q3 2016	11.35%
Q4 2016	-3.36%
Q1 2017	4.81%
Q2 2017	1.81%
Q3 2017	3.24%
Q4 2017	2.02%
Q1 2018	11.86%
Q2 2018	9.86%
Q3 2018	-5.14%
Q4 2018	4.95%

Quarter end	1-quarter return
Q1 2019	-0.78%
Q2 2019	6.73%
Q3 2019	1.98%
Q4 2019	-0.98%
Q1 2020	-12.15%
Q2 2020	13.34%

# Real estate

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## Real estate

## IRR by vintage

## Pooled IRRs

## IRR hurdle rates

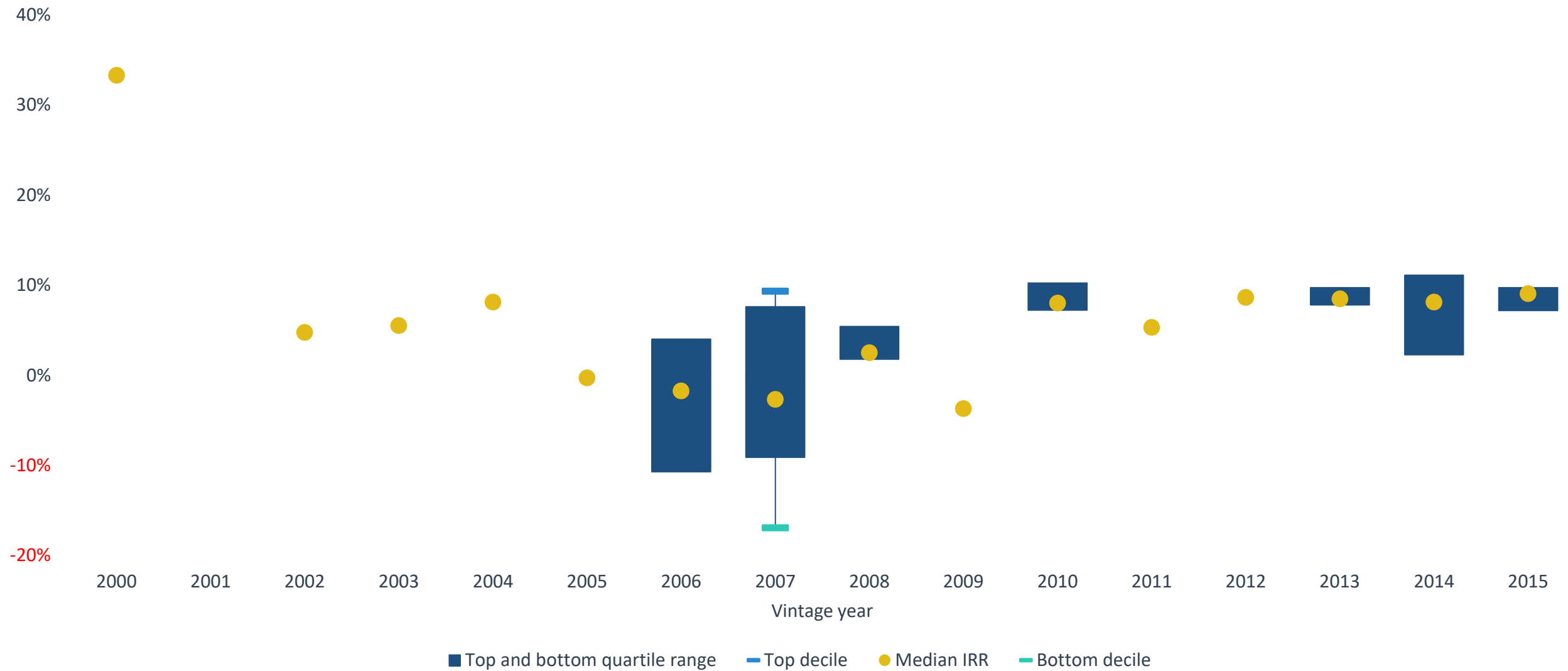
Vintage year	Pooled IRR	Equal-weighted pooled IRR	Number of funds	Top decile	Top quartile	Median IRR	Bottom quartile	Bottom decile	Standard deviation	Number of funds
Pre-1996						6.71%				1
1996	14.38%	14.38%	1			13.37%				1
1997										
1998										
1999										
2000	40.51%	40.51%	1			33.28%				1
2001	32.64%	32.64%	1							0
2002						4.73%				1
2003						5.50%				1
2004	8.10%	8.10%	1			8.10%				1
2005	-0.48%	-0.48%	1			-0.31%				1
2006	-12.88%	-11.52%	4		3.99%	-1.77%	-10.73%		35.52%	8
2007	-1.52%	-1.17%	7	9.30%	7.60%	-2.70%	-9.13%	-16.97%	12.54%	11
2008	7.19%	4.15%	5		5.40%	2.48%	1.76%		10.82%	8
2009						-3.73%				1
2010	6.43%	6.99%	5		10.22%	8.00%	7.20%		2.33%	6
2011	9.54%	9.08%	3			5.30%			3.11%	3
2012	7.66%	8.03%	2			8.61%			2.51%	3
2013	11.41%	9.17%	5		9.70%	8.45%	7.80%		6.30%	6
2014	6.39%	8.18%	13		11.09%	8.11%	2.27%		9.90%	8
2015	11.68%	11.31%	16		9.70%	9.05%	7.16%		3.62%	6
2016	11.41%	11.06%	10		24.04%	15.70%	8.10%		10.51%	6
2017	9.77%	11.12%	10		9.73%	7.44%	6.33%		22.50%	5
2018	1.63%	3.61%	14	13.95%	13.17%	5.19%	-6.10%	-59.79%	31.22%	13

Source: PitchBook. Geography: Europe. Data as of June 30, 2020



Real estate

# IRRs by vintage





## Real estate

## PMEs by vintage

## S&amp;P 500 index

## Morningstar Developed Market Europe Real Estate Index

Vintage year	Pooled IRR	Index return	KS-PME	Pooled IRR	Index return	KS-PME	Number of funds
1996	14.38%	8.54%	1.88	14.38%			1
1997							
1998							
1999							
2000	40.51%	5.68%	3.83	40.51%	7.45%	2.49	1
2001	32.64%	6.52%	1.64	32.64%	7.06%	1.15	1
2002							
2003							
2004	8.10%	8.23%	1.14	8.10%	5.32%	1.75	1
2005	-0.48%	8.30%	0.73	-0.48%	3.56%	0.80	1
2006	-12.88%	8.21%	0.19	-12.88%	2.34%	0.29	4
2007	-1.52%	7.85%	0.39	-1.52%	-0.68%	0.48	7
2008	7.19%	8.82%	0.76	7.19%	1.76%	0.87	5
2009							
2010	6.43%	12.10%	0.80	6.43%	6.24%	0.95	5
2011	9.54%	11.46%	0.89	9.54%	4.94%	1.14	3
2012	7.66%	12.17%	0.90	7.66%	6.75%	1.08	2
2013	11.41%	11.81%	1.01	11.41%	4.68%	1.25	5
2014	6.39%	10.01%	0.81	6.39%	2.16%	1.10	13
2015	11.68%	9.12%	1.04	11.68%	0.58%	1.30	16
2016	11.41%	12.30%	1.06	11.41%	1.95%	1.32	10
2017	9.77%	9.53%	1.03	9.77%	3.16%	1.20	10
2018	1.63%	5.24%	0.97	1.63%	-6.18%	1.13	14

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Real estate

# Multiples by vintage

## Pooled multiples

## Equal-weighted pooled multiples

Vintage year	TVPI	DPI	RVPI	TVPI	DPI	RVPI	Number of funds
Pre-1996							
1996	2.42x	2.42x	0.00x	2.42x	2.42x	0.00x	1
1997							
1998							
1999							
2000	4.01x	3.99x	0.02x	4.01x	3.99x	0.02x	1
2001	2.00x	1.99x	0.01x	2.00x	1.99x	0.01x	1
2002							
2003							
2004	2.03x	1.74x	0.29x	2.03x	1.74x	0.29x	1
2005	0.98x	0.98x	0.00x	0.98x	0.98x	0.00x	1
2006	0.32x	0.31x	0.01x	0.34x	0.31x	0.02x	4
2007	0.89x	0.87x	0.02x	0.93x	0.90x	0.03x	7
2008	1.31x	1.23x	0.07x	1.17x	1.12x	0.05x	5
2009							
2010	1.23x	1.05x	0.19x	1.27x	1.04x	0.23x	5
2011	1.50x	1.14x	0.35x	1.49x	1.13x	0.36x	3
2012	1.25x	0.99x	0.26x	1.28x	1.06x	0.22x	2
2013	1.39x	0.94x	0.45x	1.29x	0.74x	0.55x	5
2014	1.30x	0.72x	0.58x	1.32x	0.72x	0.60x	13
2015	1.30x	0.44x	0.86x	1.33x	0.55x	0.77x	16
2016	1.24x	0.21x	1.03x	1.30x	0.45x	0.85x	10
2017	1.12x	0.32x	0.80x	1.19x	0.25x	0.94x	10
2018	1.02x	0.22x	0.80x	1.04x	0.24x	0.80x	14

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Real estate

## Multiples by vintage

Vintage year	TVPI					DPI					Number of funds
	Top decile	Top quartile	Median TVPI	Bottom quartile	Bottom decile	Top decile	Top quartile	Median DPI	Bottom quartile	Bottom decile	
Pre-1996											
1996			2.42x					2.42x			1
1997											
1998											
1999											
2000			4.01x					3.99x			1
2001			2.00x					1.99x			1
2002											
2003											
2004			2.03x					1.74x			1
2005			0.98x					0.98x			1
2006		0.61x	0.32x	0.07x			0.59x	0.29x	0.03x		4
2007		1.15x	0.95x	0.65x			1.10x	0.94x	0.64x		7
2008		1.12x	1.11x	1.09x			1.11x	1.08x	1.03x		5
2009											
2010		1.34x	1.22x	1.22x			1.22x	1.08x	0.88x		5
2011			1.47x					1.07x			3
2012			1.26x					1.02x			2
2013		1.45x	1.44x	1.30x			1.05x	0.52x	0.48x		5
2014	1.59x	1.44x	1.35x	1.20x	1.04x	1.17x	0.93x	0.72x	0.40x	0.17x	13
2015	1.50x	1.41x	1.32x	1.15x	1.11x	1.19x	0.71x	0.35x	0.21x	0.08x	16
2016	1.52x	1.46x	1.24x	1.19x	1.14x	0.62x	0.41x	0.39x	0.32x	0.09x	10
2017	1.50x	1.28x	1.11x	1.01x	0.95x	0.64x	0.29x	0.16x	0.02x	0.00x	10
2018	1.17x	1.15x	1.03x	0.87x	0.74x	0.53x	0.19x	0.04x	0.00x	0.00x	14

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Real estate

## Quarterly return

Quarter end	1-quarter return
Q1 2001	-2.50%
Q2 2001	-3.21%
Q3 2001	-0.72%
Q4 2001	-0.33%
Q1 2002	1.27%
Q2 2002	8.17%
Q3 2002	1.88%
Q4 2002	-1.38%
Q1 2003	1.84%
Q2 2003	5.60%
Q3 2003	13.50%
Q4 2003	15.04%
Q1 2004	2.74%
Q2 2004	4.85%
Q3 2004	4.40%
Q4 2004	18.50%
Q1 2005	1.68%
Q2 2005	0.03%
Q3 2005	11.14%
Q4 2005	14.52%
Q1 2006	1.18%
Q2 2006	4.90%
Q3 2006	22.56%
Q4 2006	14.31%

Quarter end	1-quarter return
Q1 2007	28.53%
Q2 2007	4.46%
Q3 2007	-5.46%
Q4 2007	-0.02%
Q1 2008	-4.83%
Q2 2008	-17.03%
Q3 2008	-7.71%
Q4 2008	-50.49%
Q1 2009	-65.67%
Q2 2009	-33.26%
Q3 2009	6.46%
Q4 2009	-3.13%
Q1 2010	-0.92%
Q2 2010	-0.66%
Q3 2010	0.58%
Q4 2010	8.82%
Q1 2011	6.14%
Q2 2011	-0.81%
Q3 2011	-3.04%
Q4 2011	0.07%
Q1 2012	3.72%
Q2 2012	-0.39%
Q3 2012	2.75%
Q4 2012	2.40%

Quarter end	1-quarter return
Q1 2013	-1.50%
Q2 2013	1.50%
Q3 2013	0.69%
Q4 2013	9.44%
Q1 2014	-0.20%
Q2 2014	7.10%
Q3 2014	-2.43%
Q4 2014	4.14%
Q1 2015	-6.59%
Q2 2015	8.73%
Q3 2015	4.38%
Q4 2015	-0.80%
Q1 2016	4.98%
Q2 2016	-0.56%
Q3 2016	3.77%
Q4 2016	-1.74%
Q1 2017	5.61%
Q2 2017	8.30%
Q3 2017	7.83%
Q4 2017	3.50%
Q1 2018	0.60%
Q2 2018	3.65%
Q3 2018	2.59%
Q4 2018	-0.36%

Quarter end	1-quarter return
Q1 2019	18.73%
Q2 2019	0.52%
Q3 2019	1.91%
Q4 2019	5.38%
Q1 2020	-7.45%
Q2 2020	3.54%

# Real assets

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## Real assets

## IRR 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-1996										
1996										
1997						-13.13%				1
1998										
1999										
2000										
2001										
2002										
2003						24.70%				1
2004										
2005						10.88%			0.00%	2
2006	-6.32%	-5.01%	2							0
2007	8.45%	8.45%	1		10.55%	7.20%	7.20%		12.24%	5
2008	10.07%	9.96%	2		15.23%	14.30%	12.64%		2.32%	4
2009	10.16%	11.21%	2			10.23%			2.51%	2
2010	7.24%	8.82%	5		13.00%	8.77%	8.25%		7.79%	5
2011	5.30%	4.65%	5			-2.92%			3.02%	2
2012	8.26%	10.93%	5			9.40%			1.31%	3
2013	12.40%	9.05%	10		14.16%	10.90%	4.62%		6.71%	7
2014	8.78%	6.35%	8		16.57%	11.01%	10.23%		8.07%	7
2015	9.97%	9.73%	9		9.75%	3.30%	2.18%		43.60%	6
2016	8.90%	6.50%	12			8.80%			2.46%	3
2017	3.19%	4.62%	15		10.10%	5.39%	-0.75%		12.15%	7
2018	1.57%	0.09%	15			-22.31%			18.59%	3

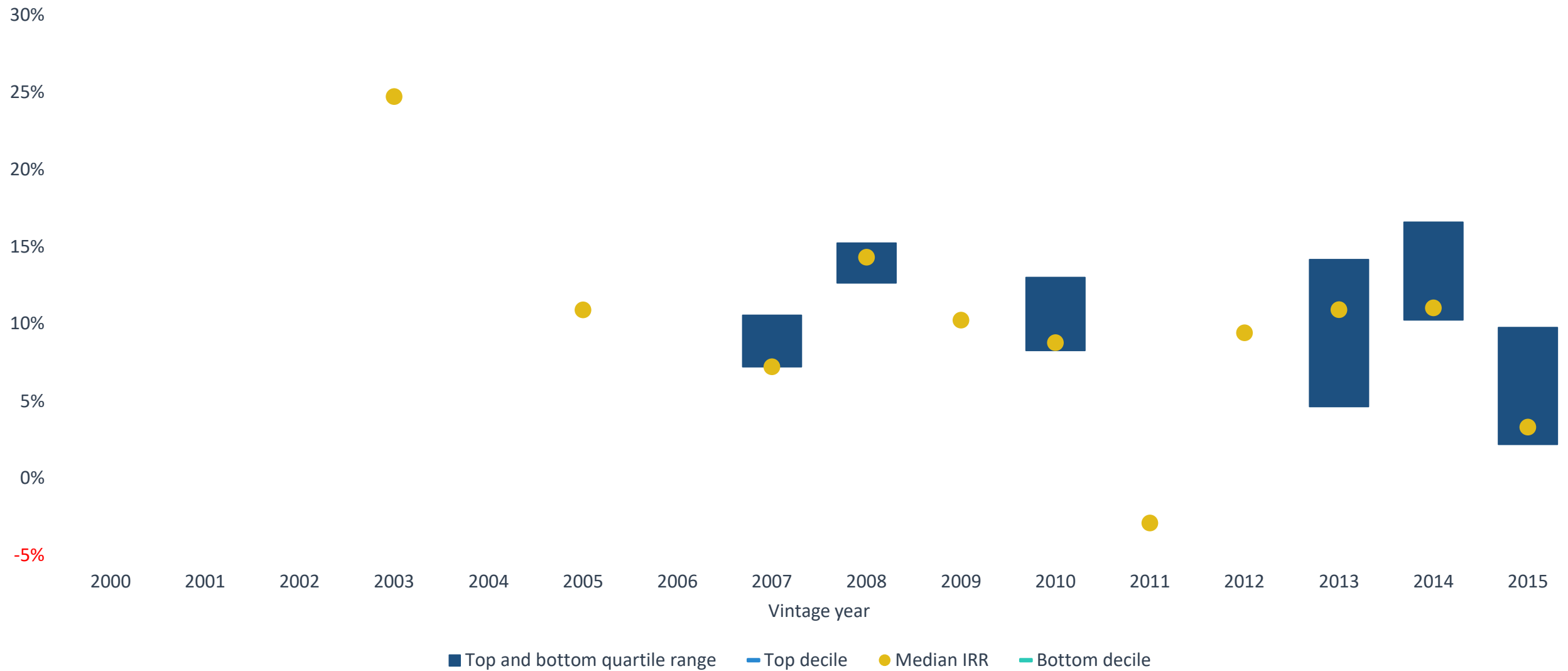
Source: PitchBook. Geography: Europe. Data as of June 30, 2020





Real assets

# IRRs by vintage





## Real assets

## PMEs by vintage

## S&amp;P 500 index

## Morningstar US Real Asset Index

Vintage year	Pooled IRR	Index return	KS-PME	Pooled IRR	Index return	KS-PME	Number of funds
1996							
1997							
1998							
1999							
2000							
2001							
2002							
2003							
2004							
2005							
2006	-6.32%	8.21%	0.39	-6.32%	4.05%	0.49	2
2007	8.45%	7.85%	1.03	8.45%	3.77%	1.44	1
2008	10.07%	8.82%	0.75	10.07%	2.92%	1.50	2
2009	10.16%	14.51%	0.88	10.16%	4.52%	1.43	2
2010	7.24%	12.10%	0.81	7.24%	3.06%	1.32	5
2011	5.30%	11.46%	0.75	5.30%	1.66%	1.24	5
2012	8.26%	12.17%	0.80	8.26%	1.04%	1.41	5
2013	12.40%	11.81%	1.05	12.40%	0.87%	1.50	10
2014	8.78%	10.01%	0.94	8.78%	1.18%	1.35	8
2015	9.97%	9.12%	1.00	9.97%	0.70%	1.27	9
2016	8.90%	12.30%	1.01	8.90%	2.30%	1.18	12
2017	3.19%	9.53%	0.95	3.19%	1.20%	1.05	15
2018	1.57%	5.24%	0.96	1.57%	0.62%	1.03	15

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Real assets

## Multiples by vintage

## Pooled multiples

## Equal-weighted pooled multiples

Vintage year	TVPI	DPI	RVPI	TVPI	DPI	RVPI	Number of funds
Pre-1996							
1996							
1997							
1998							
1999							
2000							
2001							
2002							
2003							
2004							
2005							
2006	0.65x	0.63x	0.03x	0.76x	0.73x	0.03x	2
2007	1.91x	1.91x	0.00x	1.91x	1.91x	0.00x	1
2008	2.23x	2.19x	0.05x	1.77x	1.75x	0.02x	2
2009	1.55x	1.14x	0.40x	1.55x	1.15x	0.39x	2
2010	1.45x	0.50x	0.95x	1.64x	0.60x	1.04x	5
2011	1.31x	0.33x	0.97x	1.28x	0.41x	0.87x	5
2012	1.53x	0.74x	0.79x	1.60x	0.86x	0.75x	5
2013	1.57x	0.63x	0.94x	1.39x	0.49x	0.90x	10
2014	1.41x	0.48x	0.93x	1.30x	0.46x	0.84x	8
2015	1.31x	0.36x	0.95x	1.29x	0.33x	0.96x	9
2016	1.19x	0.15x	1.05x	1.16x	0.16x	1.00x	12
2017	1.05x	0.07x	0.98x	1.08x	0.08x	1.00x	15
2018	1.02x	0.06x	0.95x	1.00x	0.09x	0.91x	15

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## 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-1996											
1996											
1997											
1998											
1999											
2000											
2001											
2002											
2003											
2004											
2005											
2006			0.77x					0.74x			2
2007			1.91x					1.91x			1
2008			1.78x					1.75x			2
2009			1.55x					1.15x			2
2010		1.54x	1.52x	1.23x			0.79x	0.43x	0.35x		5
2011		1.39x	1.32x	0.90x			0.44x	0.32x	0.13x		5
2012		1.58x	1.52x	1.45x			0.91x	0.70x	0.38x		5
2013	1.82x	1.59x	1.38x	1.07x	0.99x	0.80x	0.72x	0.46x	0.21x	0.04x	10
2014		1.43x	1.36x	1.26x			0.61x	0.46x	0.33x		8
2015		1.34x	1.29x	1.23x			0.46x	0.34x	0.24x		9
2016	1.29x	1.25x	1.20x	1.06x	0.99x	0.28x	0.21x	0.16x	0.11x	0.10x	12
2017	1.36x	1.22x	1.06x	0.94x	0.76x	0.16x	0.12x	0.06x	0.01x	0.01x	15
2018	1.26x	1.12x	1.01x	0.94x	0.75x	0.18x	0.10x	0.05x	0.03x	0.00x	15

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Real assets

## Quarterly return

Quarter end	1-quarter return
Q1 2001	
Q2 2001	
Q3 2001	
Q4 2001	
Q1 2002	
Q2 2002	
Q3 2002	
Q4 2002	
Q1 2003	
Q2 2003	
Q3 2003	
Q4 2003	
Q1 2004	
Q2 2004	
Q3 2004	
Q4 2004	
Q1 2005	
Q2 2005	
Q3 2005	
Q4 2005	
Q1 2006	
Q2 2006	
Q3 2006	
Q4 2006	

Quarter end	1-quarter return
Q1 2007	
Q2 2007	
Q3 2007	
Q4 2007	
Q1 2008	
Q2 2008	
Q3 2008	
Q4 2008	
Q1 2009	-0.32%
Q2 2009	-6.08%
Q3 2009	5.61%
Q4 2009	0.35%
Q1 2010	-7.27%
Q2 2010	-5.05%
Q3 2010	-0.05%
Q4 2010	5.31%
Q1 2011	13.26%
Q2 2011	1.38%
Q3 2011	-7.10%
Q4 2011	4.57%
Q1 2012	1.12%
Q2 2012	-0.60%
Q3 2012	-6.75%
Q4 2012	-17.14%

Quarter end	1-quarter return
Q1 2013	8.93%
Q2 2013	-12.20%
Q3 2013	5.12%
Q4 2013	-0.41%
Q1 2014	3.43%
Q2 2014	0.01%
Q3 2014	17.24%
Q4 2014	3.44%
Q1 2015	2.46%
Q2 2015	5.51%
Q3 2015	0.81%
Q4 2015	4.34%
Q1 2016	4.50%
Q2 2016	2.64%
Q3 2016	-4.36%
Q4 2016	5.12%
Q1 2017	3.03%
Q2 2017	4.01%
Q3 2017	3.44%
Q4 2017	-1.98%
Q1 2018	6.23%
Q2 2018	4.60%
Q3 2018	0.55%
Q4 2018	5.37%

Quarter end	1-quarter return
Q1 2019	4.81%
Q2 2019	0.65%
Q3 2019	2.31%
Q4 2019	2.13%
Q1 2020	-1.87%
Q2 2020	2.57%

# Private debt

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## Private debt

## IRR by vintage

## Pooled IRRs

## IRR hurdle rates

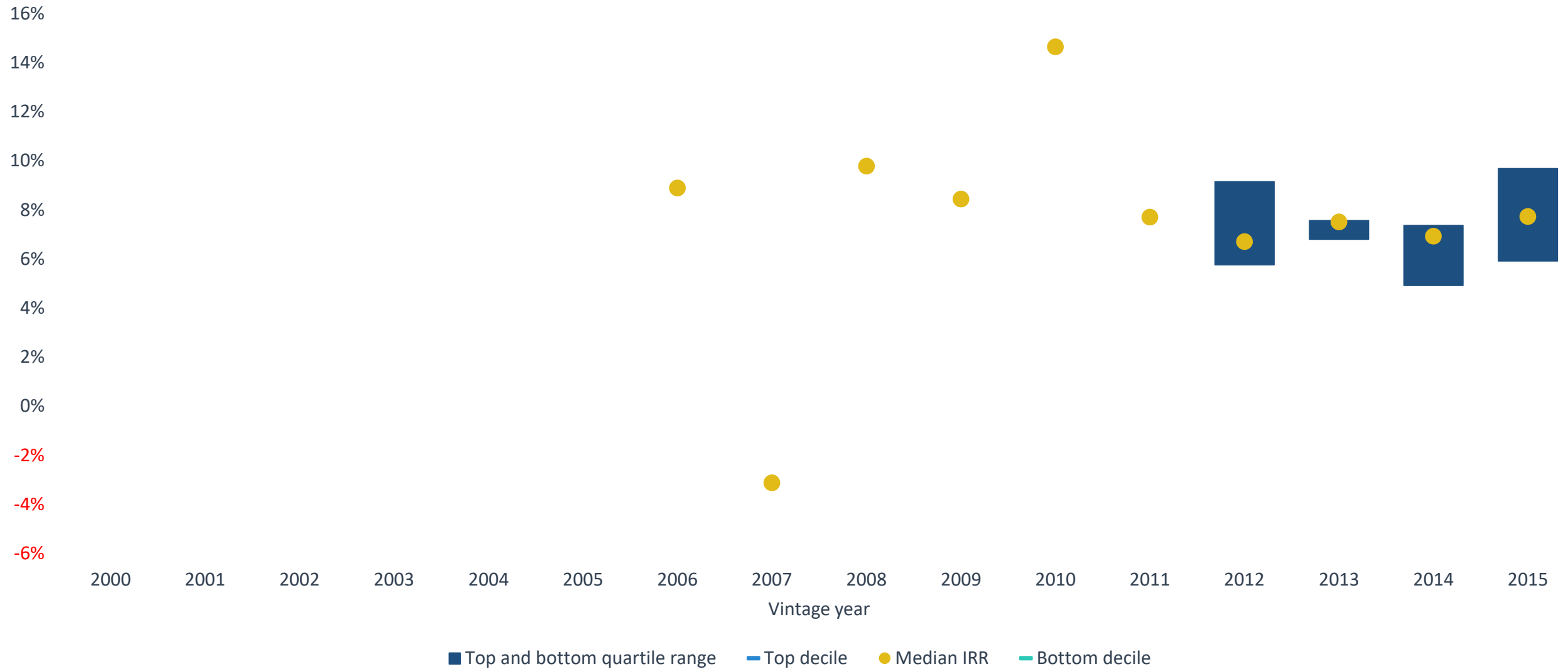
Vintage year	Pooled IRR	Equal-weighted pooled IRR	Number of funds	Top decile	Top quartile	Median IRR	Bottom quartile	Bottom decile	Standard deviation	Number of funds
Pre-1996										
1996										
1997										
1998										
1999										
2000										
2001										
2002										
2003										
2004										
2005										
2006	7.91%	7.91%	1			8.89%				1
2007	-1.81%	-3.21%	2			-3.13%			7.65%	2
2008	1.76%	1.60%	2			9.78%				1
2009	10.15%	11.39%	3			8.44%			5.29%	2
2010	10.14%	13.11%	2			14.64%			7.44%	2
2011	8.70%	8.09%	3			7.70%			1.10%	3
2012	7.33%	6.56%	4		9.15%	6.70%	5.76%		3.54%	7
2013	4.09%	5.49%	9		7.56%	7.50%	6.80%		1.82%	5
2014	3.76%	4.71%	10		7.36%	6.92%	4.92%		2.81%	7
2015	6.02%	5.30%	14		9.68%	7.73%	5.92%		3.02%	8
2016	6.87%	7.00%	11		10.13%	7.70%	6.84%		3.91%	4
2017	5.85%	5.75%	17	11.72%	10.79%	8.10%	5.69%	-0.06%	5.93%	15
2018	6.53%	5.53%	11		6.21%	-38.81%	-87.18%		56.65%	4

Source: PitchBook. Geography: Europe. Data as of June 30, 2020



Private debt

# IRRs by vintage







## Private debt

## PMEs by vintage

## S&amp;P 500 index

## Bloomberg Barclays Pan-Europe High Yield Index

Vintage year	Pooled IRR	Index return	KS-PME	Pooled IRR	Index return	KS-PME	Number of funds
1996							
1997							
1998							
1999							
2000							
2001							
2002							
2003							
2004							
2005							
2006	7.91%	8.21%	1.23	7.91%	6.09%	0.91	1
2007	-1.81%	7.85%	0.58	-1.81%	5.08%	0.57	2
2008	1.76%	8.82%	0.55	1.76%	5.18%	0.84	2
2009	10.15%	14.51%	0.95	10.15%	9.81%	1.09	3
2010	10.14%	12.10%	0.88	10.14%	4.04%	1.20	2
2011	8.70%	11.46%	0.83	8.70%	3.04%	1.22	3
2012	7.33%	12.17%	0.84	7.33%	3.69%	1.15	4
2013	4.09%	11.81%	0.85	4.09%	1.58%	1.07	9
2014	3.76%	10.01%	0.82	3.76%	-0.48%	1.04	10
2015	6.02%	9.12%	0.91	6.02%	1.72%	1.13	14
2016	6.87%	12.30%	0.94	6.87%	3.02%	1.14	11
2017	5.85%	9.53%	0.97	5.85%	2.13%	1.14	17
2018	6.53%	5.24%	1.02	6.53%	-5.36%	1.14	11

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Private debt

# Multiples by vintage

## Pooled multiples

## Equal-weighted pooled multiples

Vintage year	TVPI	DPI	RVPI	TVPI	DPI	RVPI	Number of funds
Pre-1996							
1996							
1997							
1998							
1999							
2000							
2001							
2002							
2003							
2004							
2005							
2006	1.65x	1.65x	0.00x	1.65x	1.65x	0.00x	1
2007	0.92x	0.89x	0.03x	0.85x	0.82x	0.03x	2
2008	1.11x	0.71x	0.40x	1.09x	0.77x	0.32x	2
2009	1.38x	1.37x	0.01x	1.42x	1.38x	0.04x	3
2010	1.39x	1.25x	0.13x	1.38x	1.31x	0.07x	2
2011	1.47x	0.87x	0.61x	1.31x	0.99x	0.32x	3
2012	1.28x	1.17x	0.11x	1.25x	1.13x	0.12x	4
2013	1.11x	0.94x	0.18x	1.15x	0.92x	0.23x	9
2014	1.12x	0.66x	0.45x	1.16x	0.74x	0.42x	10
2015	1.16x	0.52x	0.64x	1.14x	0.51x	0.63x	14
2016	1.15x	0.36x	0.79x	1.17x	0.35x	0.81x	11
2017	1.10x	0.21x	0.90x	1.10x	0.18x	0.91x	17
2018	1.07x	0.07x	1.01x	1.08x	0.09x	0.99x	11

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Private 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-1996											
1996											
1997											
1998											
1999											
2000											
2001											
2002											
2003											
2004											
2005											
2006			1.65x					1.65x			1
2007			0.85x					0.82x			2
2008			1.10x					0.75x			2
2009			1.40x					1.28x			3
2010			1.38x					1.30x			2
2011			1.13x					1.07x			3
2012		1.34x	1.26x	1.18x			1.20x	1.19x	1.12x		4
2013		1.29x	1.13x	1.11x			1.11x	1.00x	0.78x		9
2014	1.29x	1.24x	1.16x	1.09x	1.00x	1.13x	0.98x	0.76x	0.64x	0.14x	10
2015	1.31x	1.25x	1.13x	1.07x	0.92x	0.79x	0.71x	0.47x	0.39x	0.20x	14
2016	1.41x	1.23x	1.18x	1.08x	1.04x	0.69x	0.44x	0.23x	0.18x	0.08x	11
2017	1.23x	1.18x	1.11x	1.06x	0.95x	0.29x	0.23x	0.17x	0.11x	0.05x	17
2018	1.16x	1.11x	1.04x	1.03x	0.68x	0.22x	0.14x	0.05x	0.01x	0.00x	11

Source: PitchBook. Geography: Europe. Data as of June 30, 2020



## Private debt

## Quarterly return

Quarter end	1-quarter return
Q1 2001	
Q2 2001	
Q3 2001	
Q4 2001	
Q1 2002	
Q2 2002	
Q3 2002	
Q4 2002	
Q1 2003	
Q2 2003	
Q3 2003	
Q4 2003	
Q1 2004	
Q2 2004	
Q3 2004	
Q4 2004	
Q1 2005	
Q2 2005	
Q3 2005	
Q4 2005	
Q1 2006	
Q2 2006	
Q3 2006	
Q4 2006	

Quarter end	1-quarter return
Q1 2007	
Q2 2007	
Q3 2007	
Q4 2007	
Q1 2008	
Q2 2008	1.82%
Q3 2008	-13.46%
Q4 2008	-8.12%
Q1 2009	-0.67%
Q2 2009	8.02%
Q3 2009	13.14%
Q4 2009	3.73%
Q1 2010	-0.68%
Q2 2010	-6.26%
Q3 2010	11.38%
Q4 2010	5.04%
Q1 2011	5.29%
Q2 2011	-6.00%
Q3 2011	-1.55%
Q4 2011	-0.31%
Q1 2012	2.46%
Q2 2012	1.68%
Q3 2012	-3.48%
Q4 2012	11.43%

Quarter end	1-quarter return
Q1 2013	8.86%
Q2 2013	-5.39%
Q3 2013	2.51%
Q4 2013	1.53%
Q1 2014	5.21%
Q2 2014	0.42%
Q3 2014	-0.72%
Q4 2014	-0.27%
Q1 2015	24.95%
Q2 2015	-16.00%
Q3 2015	5.19%
Q4 2015	-2.64%
Q1 2016	5.46%
Q2 2016	0.08%
Q3 2016	5.53%
Q4 2016	-5.02%
Q1 2017	-1.67%
Q2 2017	9.22%
Q3 2017	3.62%
Q4 2017	0.94%
Q1 2018	3.08%
Q2 2018	0.17%
Q3 2018	-1.25%
Q4 2018	-1.23%

Quarter end	1-quarter return
Q1 2019	1.74%
Q2 2019	-0.13%
Q3 2019	2.98%
Q4 2019	4.01%
Q1 2020	-2.23%
Q2 2020	2.69%

# Funds of funds

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## Funds of funds

## IRR by vintage

## Pooled IRRs

## IRR hurdle rates

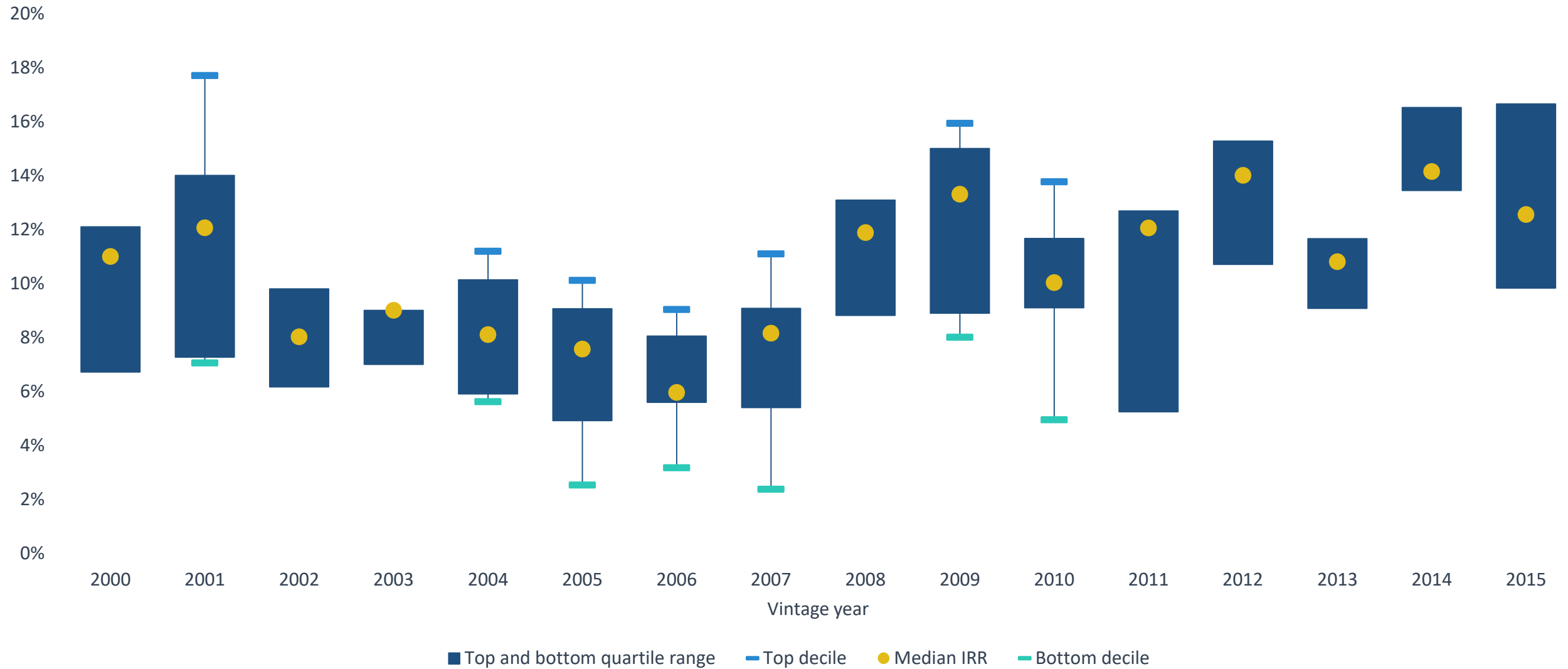
Vintage year	Pooled IRR	Equal-weighted pooled IRR	Number of funds	Top decile	Top quartile	Median IRR	Bottom quartile	Bottom decile	Standard deviation	Number of funds
Pre-1996						10.08%			1.77%	2
1996										
1997						14.50%				1
1998	9.38%	9.06%	2			11.23%			8.41%	3
1999	1.91%	1.91%	1			15.38%			4.13%	2
2000					12.10%	11.00%	6.72%		3.38%	7
2001	18.07%	12.16%	3	17.70%	14.00%	12.06%	7.27%	7.05%	4.33%	13
2002					9.80%	8.03%	6.17%		2.99%	4
2003					9.00%	9.00%	7.00%		1.54%	5
2004	7.45%	7.06%	4	11.19%	10.14%	8.10%	5.91%	5.62%	2.47%	12
2005	4.96%	5.75%	3	10.11%	9.06%	7.57%	4.92%	2.53%	2.96%	11
2006	7.89%	6.04%	5	9.04%	8.05%	5.96%	5.60%	3.17%	5.05%	12
2007	6.01%	5.45%	9	11.10%	9.08%	8.15%	5.40%	2.37%	4.41%	18
2008	-5.84%	3.85%	5		13.09%	11.88%	8.82%		3.00%	9
2009	9.43%	10.34%	7	15.93%	15.00%	13.30%	8.90%	8.01%	4.99%	13
2010	10.04%	10.58%	8	13.77%	11.67%	10.03%	9.10%	4.95%	4.09%	13
2011	11.41%	9.70%	5		12.69%	12.05%	5.25%		5.53%	7
2012	10.67%	11.54%	3		15.28%	14.00%	10.71%		4.06%	7
2013	10.99%	6.24%	8		11.66%	10.80%	9.08%		3.18%	4
2014	13.04%	9.37%	9		16.52%	14.14%	13.45%		4.76%	7
2015	14.08%	17.43%	4		16.65%	12.55%	9.83%		3.90%	6
2016	9.93%	6.24%	8	18.57%	15.99%	11.92%	7.92%	4.11%	6.08%	10
2017	11.13%	9.93%	4		10.42%	6.25%	3.48%		7.00%	4
2018	9.55%	10.23%	5		16.45%	7.80%	1.66%		11.03%	4

Source: PitchBook. Geography: Europe. Data as of June 30, 2020



Funds of funds

# IRRs by vintage





Funds of funds

# PMEs by vintage

## S&P 500 index

## Morningstar Europe Index

Vintage year	Pooled IRR	Index return	KS-PME	Pooled IRR	Index return	KS-PME	Number of funds
1996							
1997							
1998	9.38%	6.85%	1.31	9.38%			2
1999	1.91%	6.06%	0.88	1.91%	4.55%	0.72	1
2000							
2001	18.07%	6.52%	1.27	18.07%	4.66%	1.12	3
2002							
2003							
2004	7.45%	8.23%	0.99	7.45%	5.25%	1.13	4
2005	4.96%	8.30%	0.80	4.96%	4.44%	1.06	3
2006	7.89%	8.21%	0.81	7.89%	3.45%	1.14	5
2007	6.01%	7.85%	0.75	6.01%	1.72%	1.10	9
2008	-5.84%	8.82%	0.35	-5.84%	1.64%	0.50	5
2009	9.43%	14.51%	0.89	9.43%	8.02%	1.27	7
2010	10.04%	12.10%	0.89	10.04%	4.23%	1.26	8
2011	11.41%	11.46%	0.99	11.41%	3.11%	1.40	5
2012	10.67%	12.17%	1.01	10.67%	4.55%	1.36	3
2013	10.99%	11.81%	1.03	10.99%	3.07%	1.37	8
2014	13.04%	10.01%	1.09	13.04%	0.47%	1.35	9
2015	14.08%	9.12%	1.10	14.08%	1.49%	1.34	4
2016	9.93%	12.30%	1.01	9.93%	4.24%	1.23	8
2017	11.13%	9.53%	1.07	11.13%	2.08%	1.24	4
2018	9.55%	5.24%	1.05	9.55%	-6.44%	1.23	5

Source: PitchBook. Geography: Europe . Data as of June 30, 2020





Funds of funds

# Multiples by vintage

## Pooled multiples

## Equal-weighted pooled multiples

Vintage year	TVPI	DPI	RVPI	TVPI	DPI	RVPI	Number of funds
Pre-1996							
1996							
1997							
1998	1.60x	1.59x	0.01x	1.65x	1.63x	0.02x	2
1999	1.11x	1.11x	0.00x	1.11x	1.11x	0.00x	1
2000							
2001	1.76x	1.75x	0.01x	1.64x	1.57x	0.07x	3
2002							
2003							
2004	1.45x	1.42x	0.04x	1.44x	1.39x	0.05x	4
2005	1.32x	1.19x	0.13x	1.42x	1.13x	0.30x	3
2006	1.56x	1.38x	0.18x	1.42x	1.19x	0.23x	5
2007	1.43x	1.14x	0.29x	1.38x	1.09x	0.29x	9
2008	0.72x	0.60x	0.11x	1.20x	0.87x	0.33x	5
2009	1.51x	0.76x	0.76x	1.58x	0.84x	0.73x	7
2010	1.55x	1.08x	0.48x	1.65x	0.87x	0.78x	8
2011	1.59x	0.73x	0.86x	1.52x	0.57x	0.95x	5
2012	1.45x	0.59x	0.85x	1.51x	0.52x	0.99x	3
2013	1.41x	0.32x	1.09x	1.28x	0.21x	1.06x	8
2014	1.40x	0.38x	1.02x	1.30x	0.33x	0.97x	9
2015	1.32x	0.26x	1.06x	1.37x	0.29x	1.08x	4
2016	1.26x	0.11x	1.15x	1.16x	0.09x	1.07x	8
2017	1.13x	0.02x	1.11x	1.11x	0.03x	1.08x	4
2018	1.13x	0.18x	0.95x	1.12x	0.25x	0.88x	5

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



Funds 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-1996											
1996											
1997											
1998			1.65x					1.63x			2
1999			1.11x					1.11x			1
2000											
2001			1.70x					1.70x			3
2002											
2003											
2004		1.49x	1.44x	1.39x			1.45x	1.35x	1.29x		4
2005			1.37x					1.18x			3
2006		1.50x	1.43x	1.30x			1.22x	1.22x	1.14x		5
2007		1.49x	1.38x	1.18x			1.31x	1.08x	0.93x		9
2008		1.39x	1.34x	1.28x			1.02x	0.99x	0.87x		5
2009		1.68x	1.59x	1.43x			0.97x	0.81x	0.61x		7
2010		1.66x	1.59x	1.48x			1.02x	0.83x	0.74x		8
2011		1.68x	1.62x	1.24x			0.86x	0.48x	0.45x		5
2012			1.45x					0.64x			3
2013		1.45x	1.30x	1.12x			0.41x	0.15x	0.07x		8
2014		1.43x	1.33x	1.25x			0.27x	0.27x	0.19x		9
2015		1.50x	1.34x	1.22x			0.41x	0.28x	0.16x		4
2016		1.28x	1.19x	1.15x			0.13x	0.12x	0.06x		8
2017		1.15x	1.08x	1.04x			0.05x	0.02x	0.01x		4
2018		1.19x	1.04x	1.02x			0.15x	0.12x	0.00x		5

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Funds of funds

# Quarterly return

Quarter end	1-quarter return
Q1 2001	1.49%
Q2 2001	0.00%
Q3 2001	-5.10%
Q4 2001	2.79%
Q1 2002	-3.27%
Q2 2002	-0.43%
Q3 2002	0.23%
Q4 2002	-1.86%
Q1 2003	-1.34%
Q2 2003	6.11%
Q3 2003	-0.71%
Q4 2003	6.09%
Q1 2004	6.25%
Q2 2004	3.26%
Q3 2004	6.94%
Q4 2004	5.35%
Q1 2005	3.20%
Q2 2005	3.45%
Q3 2005	8.62%
Q4 2005	8.58%
Q1 2006	7.25%
Q2 2006	9.54%
Q3 2006	8.72%
Q4 2006	9.52%

Quarter end	1-quarter return
Q1 2007	4.63%
Q2 2007	12.80%
Q3 2007	3.01%
Q4 2007	3.29%
Q1 2008	45.39%
Q2 2008	-4.75%
Q3 2008	-10.61%
Q4 2008	-12.49%
Q1 2009	-4.31%
Q2 2009	-14.45%
Q3 2009	7.02%
Q4 2009	2.33%
Q1 2010	3.52%
Q2 2010	-3.35%
Q3 2010	8.97%
Q4 2010	-1.64%
Q1 2011	4.46%
Q2 2011	6.43%
Q3 2011	-4.32%
Q4 2011	-2.86%
Q1 2012	7.07%
Q2 2012	0.02%
Q3 2012	-0.60%
Q4 2012	3.50%

Quarter end	1-quarter return
Q1 2013	2.51%
Q2 2013	2.89%
Q3 2013	0.89%
Q4 2013	0.54%
Q1 2014	-3.62%
Q2 2014	12.86%
Q3 2014	-1.25%
Q4 2014	-6.35%
Q1 2015	7.69%
Q2 2015	9.21%
Q3 2015	3.86%
Q4 2015	-4.97%
Q1 2016	3.24%
Q2 2016	2.68%
Q3 2016	7.42%
Q4 2016	-3.17%
Q1 2017	1.43%
Q2 2017	8.03%
Q3 2017	6.73%
Q4 2017	-2.17%
Q1 2018	6.32%
Q2 2018	1.70%
Q3 2018	5.00%
Q4 2018	-1.12%

Quarter end	1-quarter return
Q1 2019	1.49%
Q2 2019	2.32%
Q3 2019	-1.79%
Q4 2019	11.57%
Q1 2020	-4.67%
Q2 2020	2.60%

# Secondaries

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## Secondaries

## IRR by vintage

## Pooled IRRs

## IRR hurdle rates

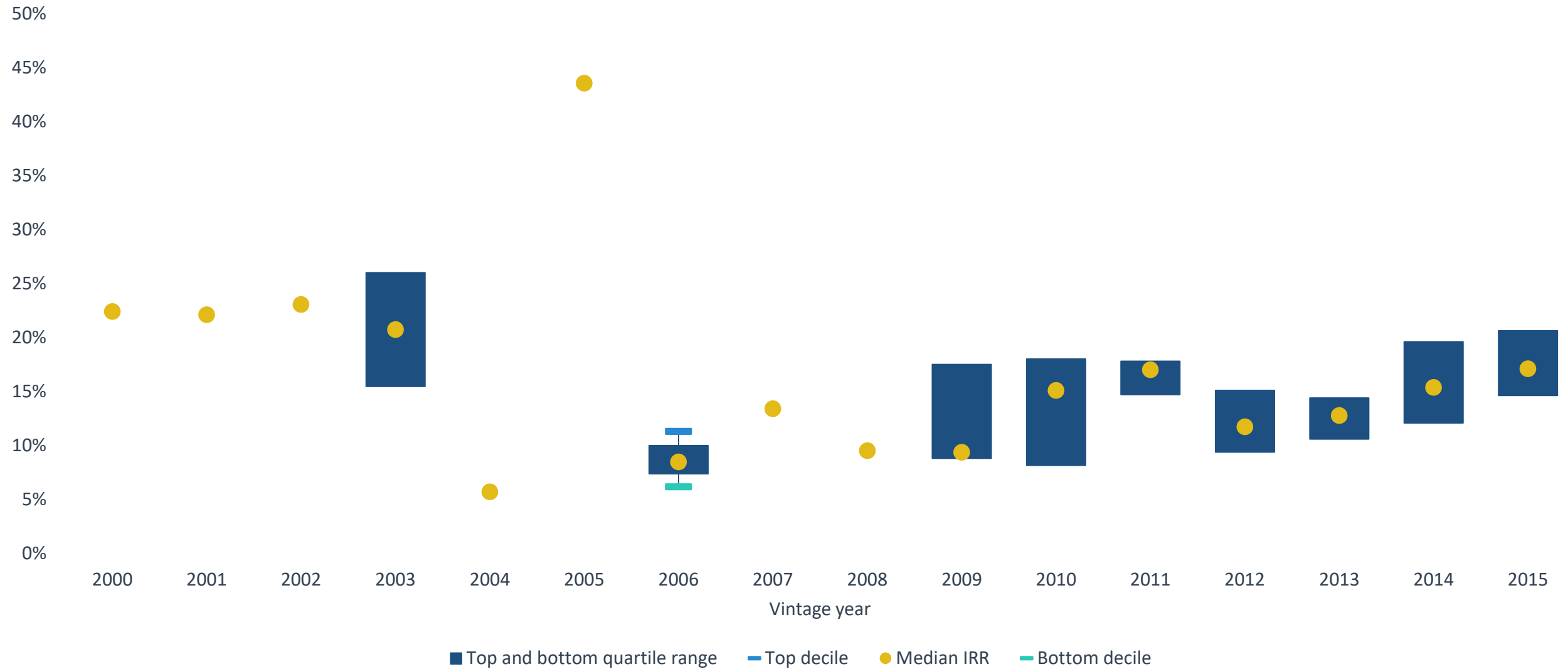
Vintage year	Pooled IRR	Equal-weighted pooled IRR	Number of funds	Top decile	Top quartile	Median IRR	Bottom quartile	Bottom decile	Standard deviation	Number of funds
Pre-1996										
1996										
1997										
1998	29.61%	29.61%	1			23.20%				1
1999	14.07%	14.07%	1			39.38%			14.71%	3
2000	20.45%	20.45%	1			22.39%				1
2001						22.11%			2.77%	3
2002	11.94%	11.94%	1			23.04%			21.98%	3
2003					26.00%	20.73%	15.46%		6.09%	4
2004	4.65%	4.65%	1			5.70%				1
2005	6.02%	6.02%	1			43.54%			0.00%	2
2006	6.21%	4.85%	5	11.30%	10.00%	8.46%	7.37%	6.17%	4.30%	10
2007						13.39%			3.11%	3
2008	9.87%	10.30%	5			9.51%				1
2009	10.00%	14.48%	3		17.50%	9.36%	8.80%		5.99%	5
2010	11.25%	10.29%	2		18.00%	15.09%	8.15%		7.48%	5
2011	14.56%	15.85%	3		17.80%	17.00%	14.70%		4.46%	7
2012	14.91%	16.66%	2		15.11%	11.72%	9.39%		4.37%	4
2013	7.77%	7.64%	7		14.40%	12.77%	10.59%		9.84%	7
2014	11.57%	7.03%	5		19.60%	15.36%	12.07%		6.51%	4
2015	5.33%	15.98%	6		20.63%	17.10%	14.63%		8.66%	4
2016	13.59%	14.22%	2		16.07%	11.59%	9.61%		5.95%	6
2017	15.78%	22.15%	4		18.80%	7.00%	6.00%		8.50%	9
2018	-18.56%	48.16%	3			61.64%			19.01%	2

Source: PitchBook. Geography: Europe. Data as of June 30, 2020



Secondaries

# IRRs by vintage





## Secondaries

## PMEs by vintage

## S&amp;P 500 index

## Morningstar Europe Index

Vintage year	Pooled IRR	Index return	KS-PME	Pooled IRR	Index return	KS-PME	Number of funds
1996							
1997							
1998	29.61%	6.85%	1.29	29.61%			1
1999	14.07%	6.06%	1.44	14.07%	4.55%	1.27	1
2000	20.45%	5.68%	1.52	20.45%	3.85%	1.26	1
2001							
2002	11.94%	7.50%	1.13	11.94%	6.01%	1.04	1
2003							
2004	4.65%	8.23%	0.80	4.65%	5.25%	1.01	1
2005	6.02%	8.30%	0.96	6.02%	4.44%	1.46	1
2006	6.21%	8.21%	0.90	6.21%	3.45%	1.08	5
2007							
2008	9.87%	8.82%	0.84	9.87%	1.64%	1.13	5
2009	10.00%	14.51%	0.88	10.00%	8.02%	1.09	3
2010	11.25%	12.10%	0.94	11.25%	4.23%	1.20	2
2011	14.56%	11.46%	1.07	14.56%	3.11%	1.49	3
2012	14.91%	12.17%	1.06	14.91%	4.55%	1.34	2
2013	7.77%	11.81%	0.90	7.77%	3.07%	1.15	7
2014	11.57%	10.01%	1.04	11.57%	0.47%	1.28	5
2015	5.33%	9.12%	0.96	5.33%	1.49%	1.16	6
2016	13.59%	12.30%	1.09	13.59%	4.24%	1.32	2
2017	15.78%	9.53%	1.13	15.78%	2.08%	1.33	4
2018	-18.56%	5.24%	0.96	-18.56%	-6.44%	1.05	3

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Secondaries

# Multiples by vintage

## Pooled multiples

## Equal-weighted pooled multiples

Vintage year	TVPI	DPI	RVPI	TVPI	DPI	RVPI	Number of funds
Pre-1996							
1996							
1997							
1998	1.46x	1.46x	0.00x	1.46x	1.46x	0.00x	1
1999	1.43x	1.43x	0.00x	1.43x	1.43x	0.00x	1
2000	1.81x	1.81x	0.00x	1.81x	1.81x	0.00x	1
2001							
2002	1.36x	1.36x	0.00x	1.36x	1.36x	0.00x	1
2003							
2004	1.34x	1.32x	0.02x	1.34x	1.32x	0.02x	1
2005	1.64x	1.64x	0.00x	1.64x	1.64x	0.00x	1
2006	1.30x	1.25x	0.05x	1.22x	1.18x	0.04x	5
2007							
2008	1.58x	1.26x	0.32x	1.64x	1.24x	0.40x	5
2009	1.32x	1.20x	0.12x	1.70x	1.44x	0.26x	3
2010	1.42x	1.37x	0.06x	1.45x	1.23x	0.22x	2
2011	1.75x	1.20x	0.56x	1.91x	1.18x	0.72x	3
2012	1.58x	1.19x	0.39x	1.56x	0.97x	0.59x	2
2013	1.27x	0.93x	0.34x	1.29x	0.69x	0.60x	7
2014	1.32x	0.50x	0.82x	1.25x	0.46x	0.79x	5
2015	1.10x	0.23x	0.86x	1.37x	0.60x	0.78x	6
2016	1.29x	0.25x	1.05x	1.33x	0.47x	0.87x	2
2017	1.22x	0.09x	1.13x	1.34x	0.16x	1.18x	4
2018	0.93x	0.06x	0.88x	1.23x	0.07x	1.17x	3

Source: PitchBook. Geography: Europe . Data as of June 30, 2020





## Secondaries

## Multiples by vintage

Vintage year	TVPI					DPI				Number of funds	
	Top decile	Top quartile	Median TVPI	Bottom quartile	Bottom decile	Top decile	Top quartile	Median DPI	Bottom quartile		Bottom decile
Pre-1996											
1996											
1997											
1998			1.46x					1.46x			1
1999			1.43x					1.43x			1
2000			1.81x					1.81x			1
2001											
2002			1.36x					1.36x			1
2003											
2004			1.34x					1.32x			1
2005			1.64x					1.64x			1
2006		1.42x	1.27x	1.22x			1.35x	1.26x	1.21x		5
2007											
2008		1.76x	1.72x	1.51x			1.43x	1.30x	1.14x		5
2009			1.39x					1.20x			3
2010			1.45x					1.25x			2
2011			1.88x					1.29x			3
2012			1.56x					1.00x			2
2013		1.45x	1.45x	1.19x			1.00x	0.85x	0.44x		7
2014		1.35x	1.32x	1.31x			0.54x	0.46x	0.27x		5
2015		1.51x	1.42x	1.29x			0.80x	0.72x	0.33x		6
2016			1.32x					0.40x			2
2017		1.43x	1.36x	1.25x			0.22x	0.12x	0.04x		4
2018			1.37x					0.05x			3

Source: PitchBook. Geography: Europe . Data as of June 30, 2020



## Secondaries

## Quarterly return

Quarter end	1-quarter return
Q1 2001	3.90%
Q2 2001	-9.36%
Q3 2001	
Q4 2001	
Q1 2002	12.03%
Q2 2002	1.53%
Q3 2002	-10.51%
Q4 2002	-2.33%
Q1 2003	3.04%
Q2 2003	8.33%
Q3 2003	-0.30%
Q4 2003	5.39%
Q1 2004	5.75%
Q2 2004	3.14%
Q3 2004	13.61%
Q4 2004	8.60%
Q1 2005	5.54%
Q2 2005	-4.66%
Q3 2005	2.02%
Q4 2005	1.47%
Q1 2006	7.86%
Q2 2006	3.40%
Q3 2006	-0.24%
Q4 2006	9.18%

Quarter end	1-quarter return
Q1 2007	6.62%
Q2 2007	7.73%
Q3 2007	8.56%
Q4 2007	7.02%
Q1 2008	1.53%
Q2 2008	0.03%
Q3 2008	-6.33%
Q4 2008	-4.57%
Q1 2009	-16.32%
Q2 2009	-3.88%
Q3 2009	1.13%
Q4 2009	4.64%
Q1 2010	0.01%
Q2 2010	1.16%
Q3 2010	4.58%
Q4 2010	6.25%
Q1 2011	5.62%
Q2 2011	8.54%
Q3 2011	6.03%
Q4 2011	-12.57%
Q1 2012	9.88%
Q2 2012	0.65%
Q3 2012	9.20%
Q4 2012	1.48%

Quarter end	1-quarter return
Q1 2013	3.63%
Q2 2013	4.67%
Q3 2013	-0.73%
Q4 2013	7.35%
Q1 2014	4.47%
Q2 2014	3.62%
Q3 2014	1.96%
Q4 2014	5.43%
Q1 2015	2.07%
Q2 2015	7.55%
Q3 2015	-2.90%
Q4 2015	-0.13%
Q1 2016	0.45%
Q2 2016	5.53%
Q3 2016	0.54%
Q4 2016	2.10%
Q1 2017	4.58%
Q2 2017	5.26%
Q3 2017	0.90%
Q4 2017	3.30%
Q1 2018	1.48%
Q2 2018	8.31%
Q3 2018	4.41%
Q4 2018	-2.88%

Quarter end	1-quarter return
Q1 2019	0.53%
Q2 2019	9.80%
Q3 2019	-0.96%
Q4 2019	0.63%
Q1 2020	-2.66%
Q2 2020	-10.85%



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