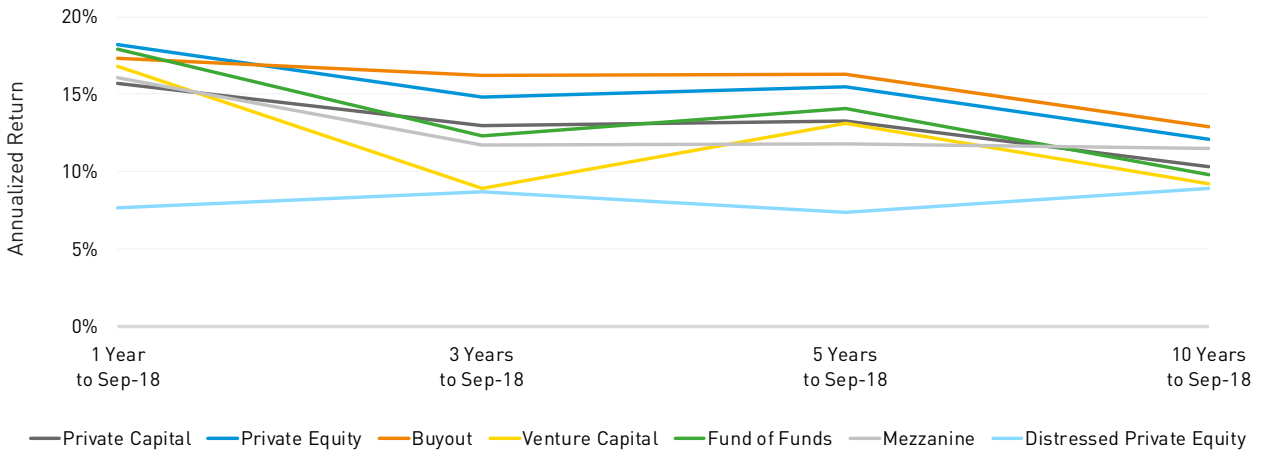


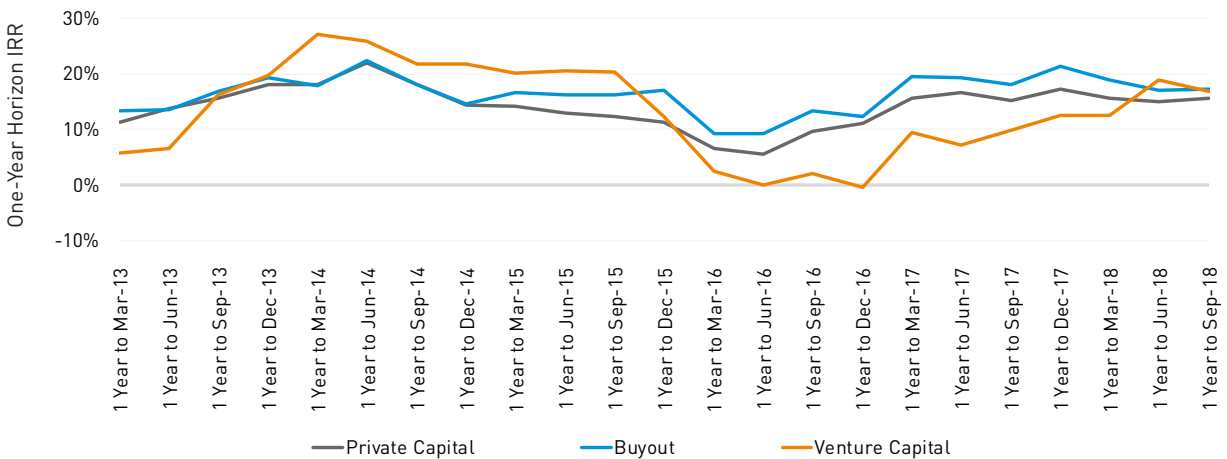


**Fig. 1: Private Equity Horizon IRRs by Fund Type**



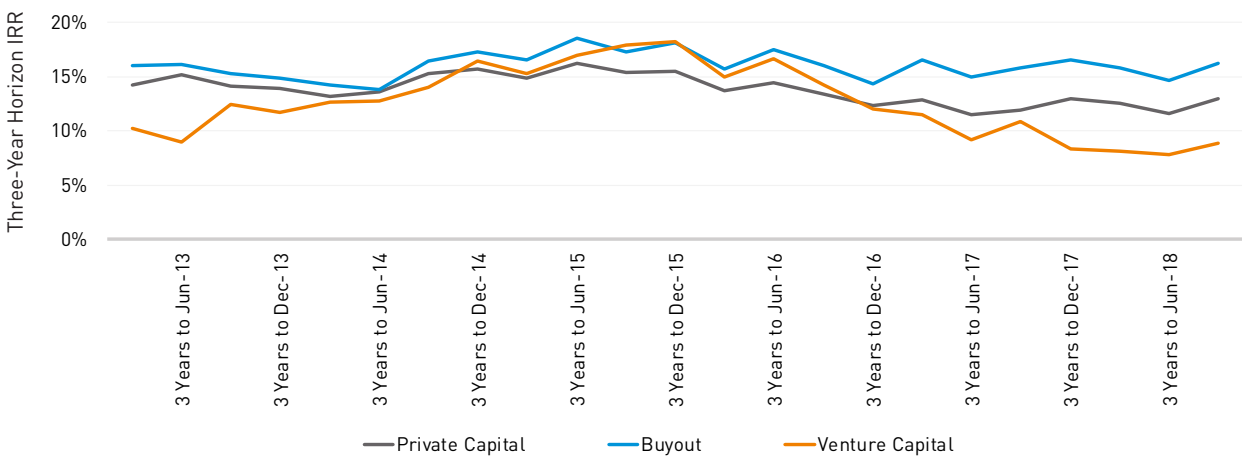
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 2: Rolling One-Year Horizon IRRs by Fund Type**



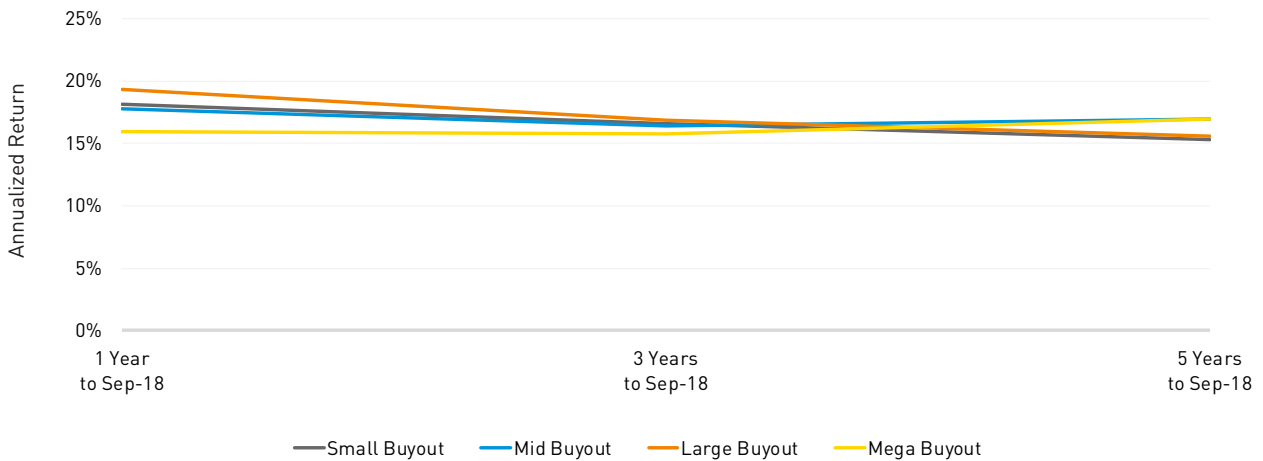
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 3: Rolling Three-Year Horizon IRRs by Fund Type**



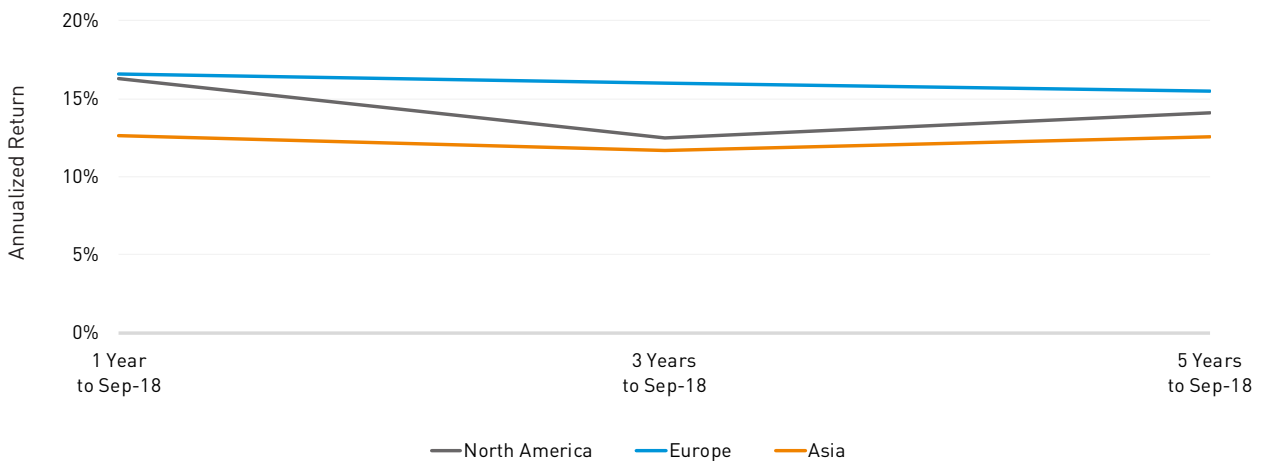
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 4: Buyout Fund Horizon IRRs by Size\***



Source: Preqin Pro. Data as of 30 September 2018

**Fig. 5: Private Capital Horizon IRRs by Fund Primary Geographic Focus**



Source: Preqin Pro. Data as of 30 September 2018

## Data Source

Preqin's online platform is the industry's most extensive source of net-to-LP private capital fund performance, with full metrics for over 10,000 named vehicles.

For more information, or to arrange a demonstration, please visit:

[www.preqin.com/privateequity](http://www.preqin.com/privateequity)

\*Size ranges:

Vintage 1992-1996: Small Buyout ≤ £200mn, Mid Buyout \$201-500mn, Large Buyout > \$500mn

Vintage 1997-2004: Small Buyout ≤ \$300mn, Mid Buyout \$301-750mn, Large Buyout \$751mn-2bn, Mega Buyout > \$2bn

Vintage 2005-2018: Small Buyout ≤ \$500mn, Mid Buyout \$501-1,500mn, Large Buyout \$1,501mn-4.5bn, Mega Buyout > \$4.5bn

**Fig. 6: Private Capital Assets under Management by Vintage Year**

<u>Vintage Year</u>	<u>Dry Powder (\$bn)</u>	<u>Unrealized Value (\$bn)</u>
2000	3.5	4.0
2001	3.1	3.2
2002	2.8	2.2
2003	2.1	2.8
2004	2.8	5.7
2005	7.7	22.1
2006	13.4	79.2
2007	24.5	145.1
2008	18.6	168.4
2009	5.1	82.1
2010	14.0	141.1
2011	17.6	340.7
2012	20.6	370.9
2013	53.8	459.8
2014	103.2	617.5
2015	201.0	611.5
2016	398.8	532.1
2017	554.4	290.4
2018	739.6	103.7

Source: Preqin Pro. Data as of 30 September 2018

**Fig. 7: Private Capital Assets under Management by Geographic Focus**

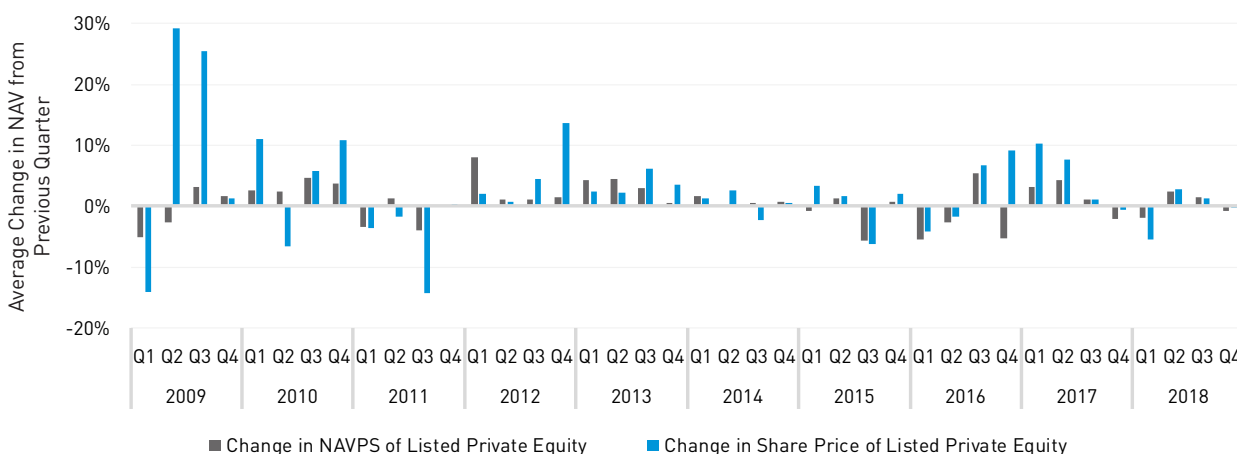
<u>Geographic Focus</u>	<u>Dry Powder (\$bn)</u>	<u>Unrealized Value (\$bn)</u>
North America	1,162.6	2,111.6
Europe	500.2	838.0
Asia	412.1	812.3
Africa	8.7	29.3
Australasia	17.7	30.7
Latin America	21.3	61.7
Middle East & Israel	9.0	30.3
Diversified Multi-Regional	68.8	69.2

Source: Preqin Pro. Data as of 30 September 2018

**Fig. 8: Private Capital Assets under Management by Fund Type**

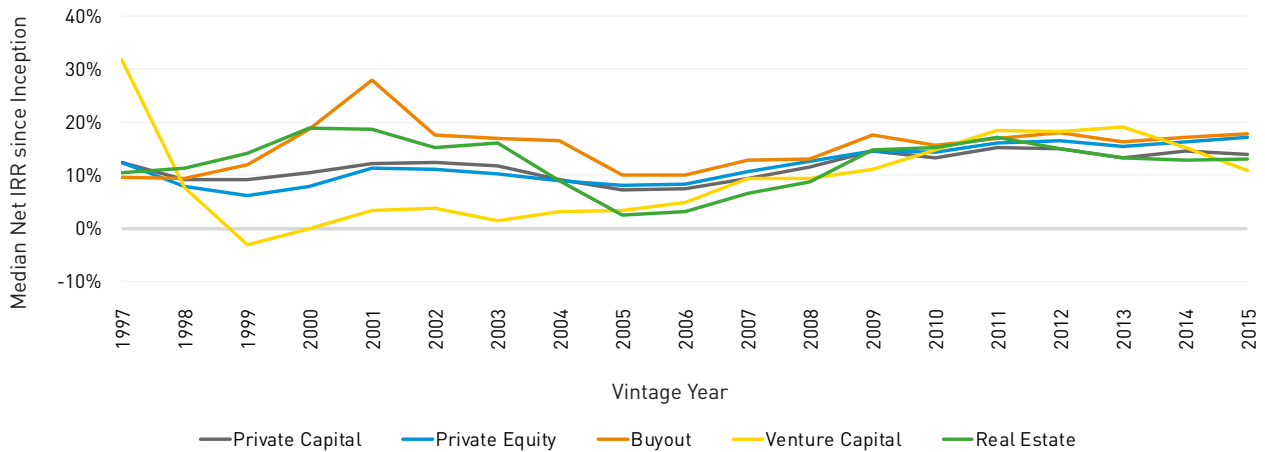
<u>Fund Type</u>	<u>Dry Powder (\$bn)</u>	<u>Unrealized Value (\$bn)</u>
Private Equity	1,268.3	2,386.5
Real Estate	326.4	596.9
Private Debt	352.3	485.1
Infrastructure	189.3	347.4
Natural Resources Only	64.2	167.4

Source: Preqin Pro. Data as of 30 September 2018

**Fig. 9: Change in NAVPS and Share Price of Listed Private Equity by Quarter, Q1 2009 - Q4 2018**

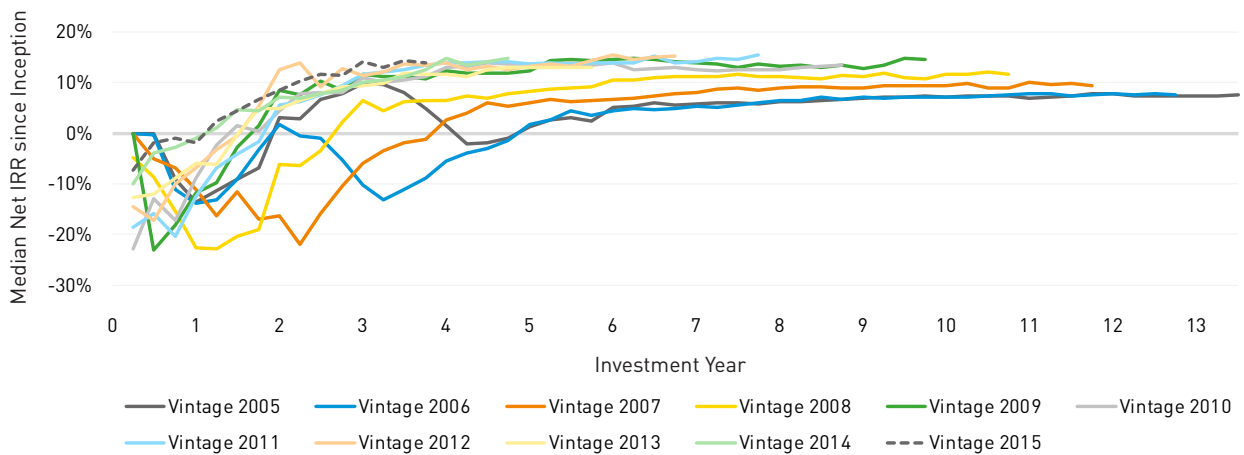
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 10: Private Capital Median Net IRRs by Fund Type**



Source: Preqin Pro. Data as of 30 September 2018

**Fig. 11: Private Capital – J-Curve: Annual Median Net IRRs by Vintage Year**



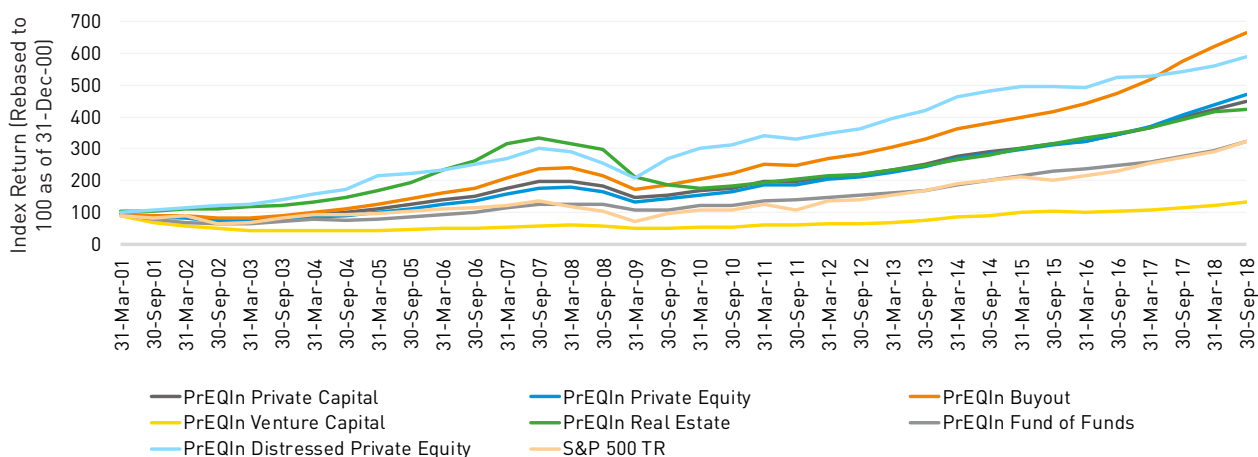
Source: Preqin Pro. Data as of 30 September 2018

## Preqin's Private Equity Data Platform

Preqin provides unrivalled data and intelligence on private equity & venture capital, including fundraising, fund managers, institutional investors, fund performance, deals and exits, service providers, fund terms and conditions and more.

For more information, or to arrange a demonstration, please visit:

[www.preqin.com/privateequity](http://www.preqin.com/privateequity) or email [info@preqin.com](mailto:info@preqin.com)

**Fig. 12: PrEQIn Quarterly Index: All Strategies vs. S&P 500 TR Index (Rebased to 100 as of 31 December 2000)**

Source: Preqin Pro. Data as of 30 September 2018

**Fig. 13: Consistent Top Performing Buyout Fund Managers**

Firm	Headquarters	Total Funds Raised in Past 10 Years (\$mn)	Overall No. of Funds with Quartile Ranking	No. of Funds in Top Quartile	No. of Funds in Second Quartile	Average Quartile Rank
Veritas Capital	US	6,585	5	5	0	1.00
Brookfield Capital Partners	Canada	11,500	3	3	0	1.00
Main Capital Partners	Netherlands	430	3	3	0	1.00
MBK Partners	South Korea	9,220	3	3	0	1.00
Ufenau Capital Partners	Switzerland	1,069	3	3	0	1.00
Morgan Stanley Global Private Equity	US	2,718	5	4	1	1.20
Vista Equity Partners	US	38,766	8	6	2	1.25
Nautic Partners	US	2,941	4	3	1	1.25
FIMI	Israel	1,920	6	5	0	1.33
Inflexion Private Equity Partners	UK	7,634	6	4	2	1.33
Egeria Capital Management	Netherlands	1,722	3	2	1	1.33
Industrial Growth Partners	US	1,400	3	2	1	1.33
Montefiore Investment	France	967	3	2	1	1.33
The Growth Fund	Australia	645	3	2	1	1.33
Charlesbank Capital Partners	US	9,380	5	3	2	1.40
Flexpoint Ford	US	1,314	5	3	2	1.40
TA Associates	US	12,112	14	10	1	1.50
Hellman & Friedman	US	36,300	8	5	2	1.50
Waterland Private Equity Investments	Netherlands	5,397	6	3	3	1.50
Altor	Sweden	5,758	4	3	0	1.50
AUCTUS Management	Germany	503	4	2	2	1.50
Baird Capital Partners	US	783	4	2	2	1.50
Novacap	Canada	1,367	4	2	2	1.50
ONCAP	Canada	1,883	4	2	2	1.50

Source: Preqin Pro. Data as of 30 September 2018

**Fig. 14: Consistent Top Performing Growth Fund Managers**

<b>Firm</b>	<b>Headquarters</b>	<b>Total Funds Raised in Past 10 Years (\$mn)</b>	<b>Overall No. of Funds with Quartile Ranking</b>	<b>No. of Funds in Top Quartile</b>	<b>No. of Funds in Second Quartile</b>	<b>Average Quartile Rank</b>
Ampersand Capital Partners	US	895	5	5	0	1.00
Creador Management Company	Malaysia	1,384	3	3	0	1.00
KJK Capital	Finland	313	3	3	0	1.00
Trustbridge Partners	China	11,371	5	4	1	1.20
LLR Partners	US	2,150	4	2	2	1.50
Insight Venture Partners	US	16,422	8	4	3	1.63
Whiz Partners	Japan	427	3	2	0	1.67
Summit Partners	US	12,965	3	1	2	1.67
Clairvest Group	Canada	1,870	5	2	2	1.80
Technology Crossover Ventures	US	7,730	5	2	2	1.80
JMI Equity	US	3,105	6	2	3	1.83
Spectrum Equity	US	3,055	6	2	2	2.00
PENM Partners	Vietnam	256	4	2	0	2.00
TPG	US	48,825	3	1	1	2.00
Amundi Private Equity	France	556	3	0	3	2.00
Frontier Capital	US	1,340	3	0	3	2.00
SAIF Partners	Hong Kong	1,402	3	0	3	2.00

Source: Preqin Pro. Data as of 30 September 2018

**Fig. 15: Consistent Top Performing Venture Capital Fund Managers**

<u>Firm</u>	<u>Headquarters</u>	<u>Total Funds Raised in Past 10 Years (\$mn)</u>	<u>Overall No. of Funds with Quartile Ranking</u>	<u>No. of Funds in Top Quartile</u>	<u>No. of Funds in Second Quartile</u>	<u>Average Quartile Rank</u>
Benchmark Capital	US	1,178	3	3	0	1.00
Click Ventures	Hong Kong	15	3	3	0	1.00
East Ventures	Singapore	135	3	3	0	1.00
G Squared	US	500	3	3	0	1.00
Merus Capital	US	193	3	3	0	1.00
Avalon Ventures	US	402	6	5	1	1.17
OrbiMed Advisors	US	5,164	5	4	1	1.20
Sequoia Capital	US	22,547	5	4	1	1.20
CRCM Ventures	US	103	4	3	1	1.25
Pontifax	Israel	593	4	3	1	1.25
Vickers Venture Partners	Singapore	362	4	3	1	1.25
Matrix Partners	US	1,650	6	4	2	1.33
AJU IB Investment	South Korea	793	3	2	1	1.33
Blackbird	Australia	363	3	2	1	1.33
Cottonwood Technology Fund	US	41	3	2	1	1.33
Forbion	Netherlands	1,003	3	2	1	1.33
Foresite Capital	US	1,518	3	2	1	1.33
Future Venture Capital	Japan	25	3	2	1	1.33
Index Ventures	UK	5,336	3	2	1	1.33
Langsheng Investment	China	157	3	2	1	1.33
New Leaf Venture Partners	US	338	3	2	1	1.33
Peregrine Ventures	Israel	75	3	2	1	1.33
Target Partners	Germany	225	3	2	1	1.33
Third Rock Ventures	US	1,558	3	2	1	1.33
Battery Ventures	US	3,850	11	8	2	1.36
GGV Capital	US	4,815	8	5	3	1.38
CRV	US	1,688	5	3	2	1.40
Union Square Ventures	US	1,282	5	3	2	1.40
Summit Partners	US	12,965	10	5	5	1.50
Arboretum Ventures	US	433	4	3	0	1.50
Cervin Ventures	US	143	4	3	0	1.50
Pappas Capital	US	183	4	2	2	1.50

Source: Preqin Pro. Data as of 30 September 2018

**Fig. 16: Consistent Top Performing Private Equity Fund of Funds Managers**

<u>Firm</u>	<u>Headquarters</u>	<u>Total Funds Raised in Past 10 Years (\$mn)</u>	<u>Overall No. of Funds with Quartile Ranking</u>	<u>No. of Funds in Top Quartile</u>	<u>No. of Funds in Second Quartile</u>	<u>Average Quartile Rank</u>
ATP Private Equity Partners	Denmark	4,498	4	4	0	1.00
SwanCap Partners	Germany	2,402	3	3	0	1.00
Twin Bridge Capital Partners	US	453	3	3	0	1.00
TrueBridge Capital Partners	US	1,725	6	3	3	1.50
Bay Hills Capital	US	190	6	2	4	1.67
Bowside Capital	US	116	3	2	0	1.67
Weathergage Capital	US	564	8	5	1	1.75
SVB Capital	US	3,291	4	2	1	1.75
Accolade Partners	US	802	5	3	1	1.80
Greenspring Associates	US	5,916	7	4	1	1.86
Private Advisors	US	2,396	8	3	3	1.88
Industry Ventures	US	3,197	9	5	1	1.89
LGT Capital Partners	Switzerland	18,158	15	5	6	2.00
Spur Capital Partners	US	374	5	3	0	2.00
Altamar Capital Partners	Spain	2,358	5	2	2	2.00
HQ Capital International	US	2,559	5	2	2	2.00
Emerald Hill Capital Partners	Hong Kong	700	3	2	0	2.00
Darwin Ventures	US	216	3	1	1	2.00

Source: Preqin Pro. Data as of 30 September 2018

# The Importance of PME Benchmarking

Investors and fund managers alike frequently benchmark private equity returns against public markets in order to gauge the relative performance of their investments. For LPs, it is an important exercise which can inform portfolio construction decisions and help to evaluate the performance of one asset class against another. For fund managers, it forms a key aspect of fund marketing to help secure LP commitments.

Private equity returns, however, are not directly comparable with public market indices, due to the asset class's illiquid nature and irregular timing of cash flows. The industry has long used the analogy of 'comparing apples with oranges' when discussing the difficulties of evaluating the differences between private equity and public market performance.

The development of the public market equivalent (PME) measure of returns provides a more meaningful, like-for-like comparison. PME metrics benchmark the performance of a fund, or a group of funds, against an appropriate public market index while accounting for the timings of the fund cash flows. When PME values are generated for many funds, they can be used as an alternative measure of ranking fund performance, while controlling for broader market behaviour.

Preqin provides PME benchmarks and individual fund-level PME comparisons on **Preqin Pro**, which already provides net-to-LP fund performance metrics for over 10,000 named private equity vehicles globally. The PME tool enables the comparison of private equity returns against six public market indices using a choice of three PME methodologies: Kaplan-Schoar PME, Long-Nickels PME and PME+. All of the methodologies utilize the since-inception cash flow data Preqin holds for over 4,500 funds.

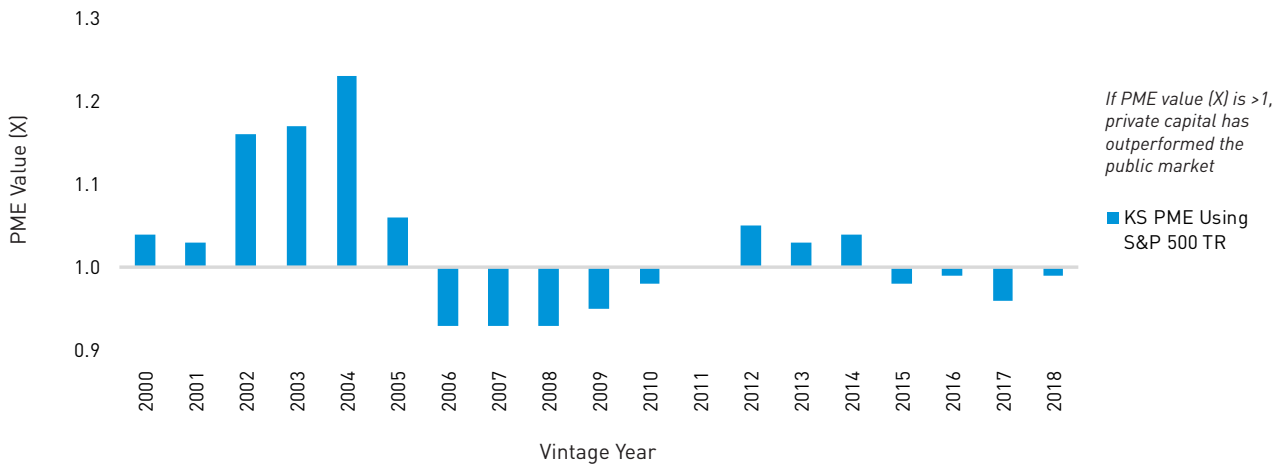
The table on the following page provides an overview of the three PME methodologies Preqin offers, along with their specific strengths and weaknesses. Having the ability to employ a number of different PME methodologies is highly desirable to an investor, but it is also important to maintain awareness that each is fundamentally an approximation until the funds are fully realized.

**PME Benchmarking Methods Offered by Preqin**

<u>Benchmark</u>	<u>Metric</u>	<u>Private Capital Outperformance if:</u>	<u>Description of Calculation</u>	<u>Strengths</u>	<u>Weaknesses</u>
KS-PME (Kaplan-Schoar)	Ratio	Value above one	<p>Calculated by discounting the private capital fund cash flows by the public market index value.</p> <p>The discounted distributions plus the current remaining value are divided by the discounted contributions to obtain the ratio.</p>	<p>The calculation looks at the ratio of outflows to inflows as opposed to generating an IRR, which is time dependent and easily manipulated.</p> <p>Easy to interpret.</p>	<p>Ignores the timings of cash flows.</p>
LN PME (Long-Nickels)	Annualized Rate	Estimated PME IRR < Private Capital Fund IRR	<p>Contributions to private capital fund are converted to an equal purchase of shares in the public index. Distributions represent liquidation of share in public index.</p> <p>IRR calculation uses same contributions and distributions as private capital fund, but with a different final period remaining value.</p>	<p>LN PME IRR is directly comparable to the private capital fund IRR, allowing an apples-to-apples comparison.</p>	<p>IRR sensitivity to early distributions. Large distributions could cause a negative PME final period remaining value, making PME IRR calculation computationally impossible.</p>
Capital Dynamics PME+	Annualized Rate	Estimated PME IRR < Private Capital Fund IRR	<p>Uses a fixed scaling factor (Lambda) to modify each distribution to ensure the PME final period remaining value is the same as the private capital fund remaining value. IRR calculation uses modified contributions and distributions but same final period remaining value.</p>	<p>As for LN PME, with the added benefit of avoiding a final period negative remaining value, making PME IRR calculation possible in more cases.</p>	<p>PME+ does not match the cash flows perfectly.</p>

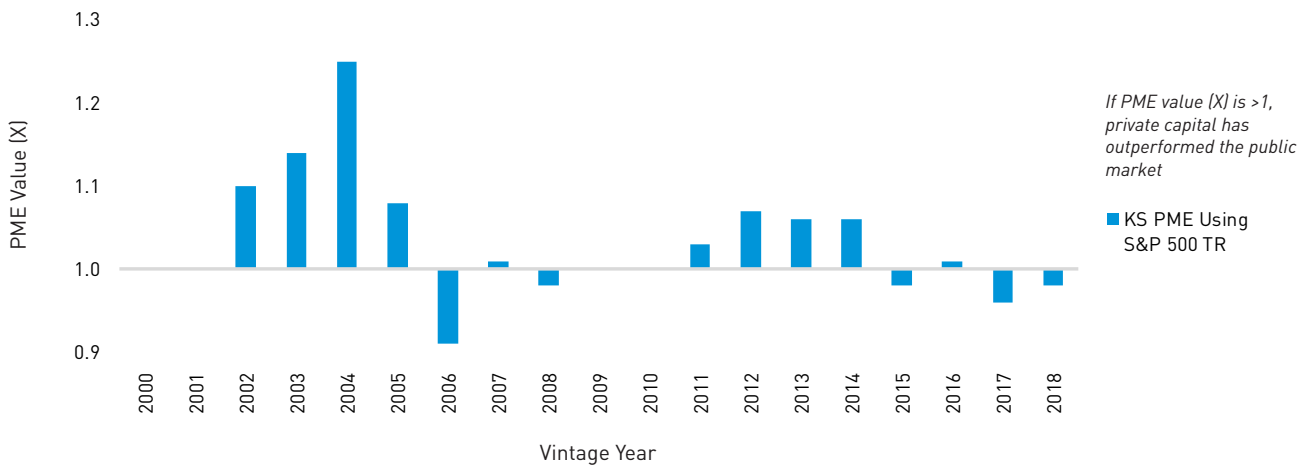
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 17: KS PME: Private Capital – Global**



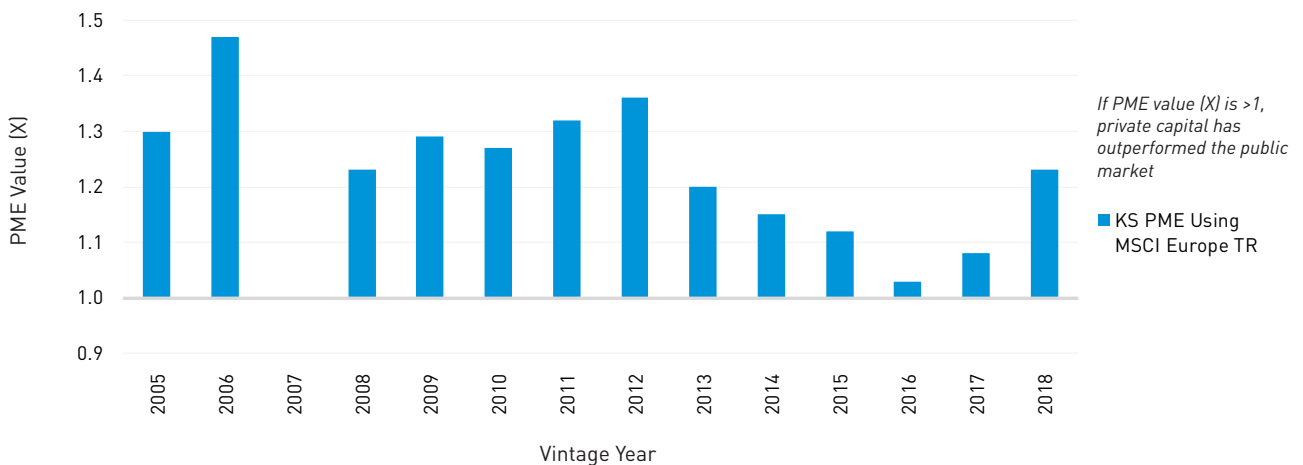
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 18: KS PME: Private Capital – North America**



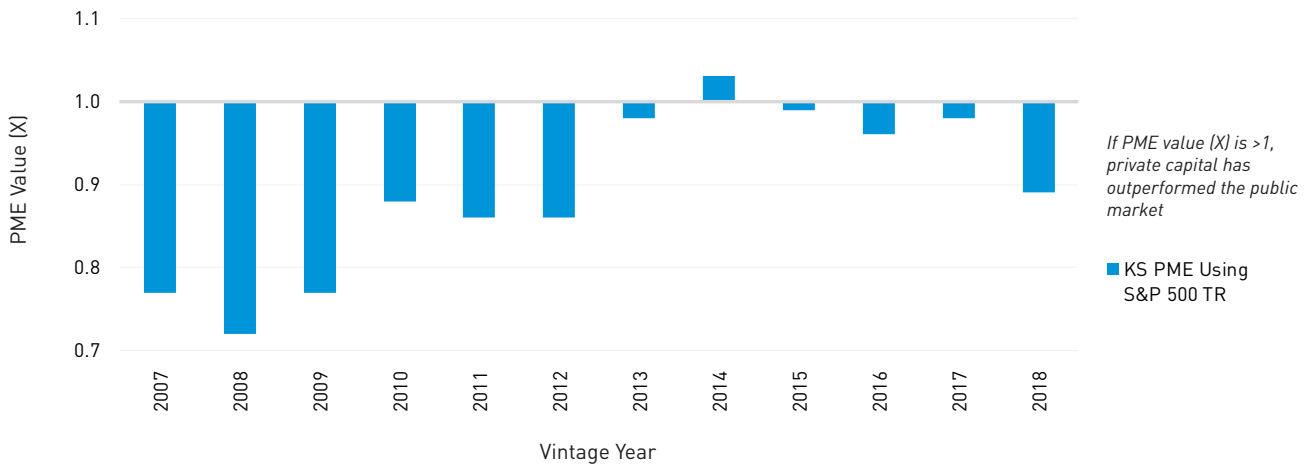
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 19: KS PME: Private Capital – Europe**



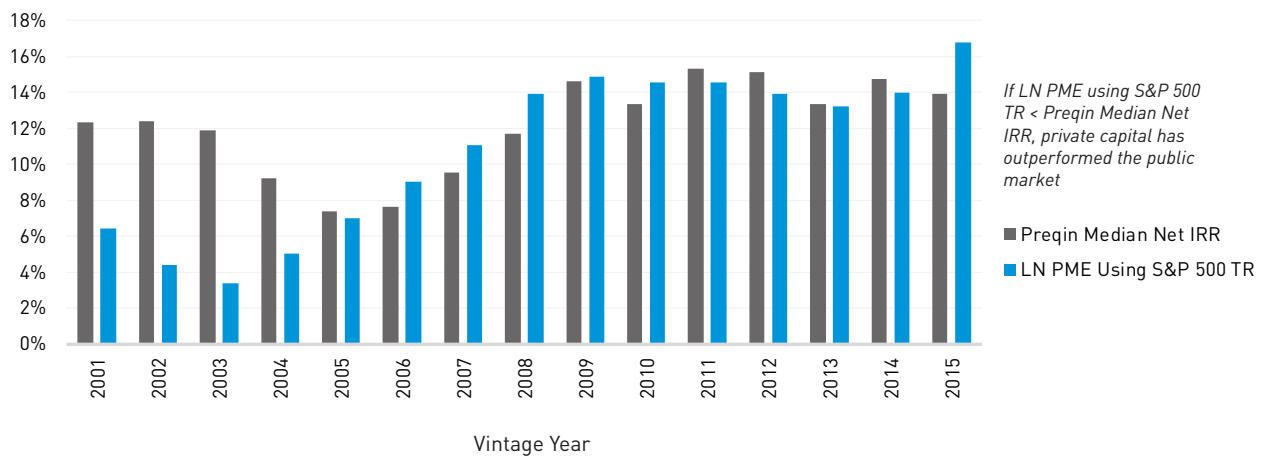
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 20: KS PME: Private Capital – Asia & Rest of World**



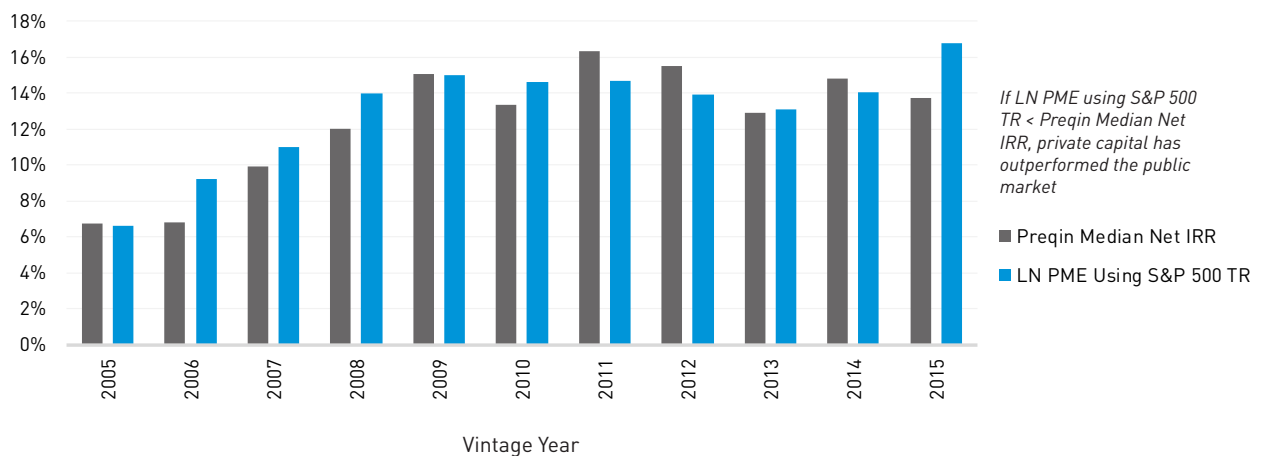
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 21: LN PME: Private Capital – Global**



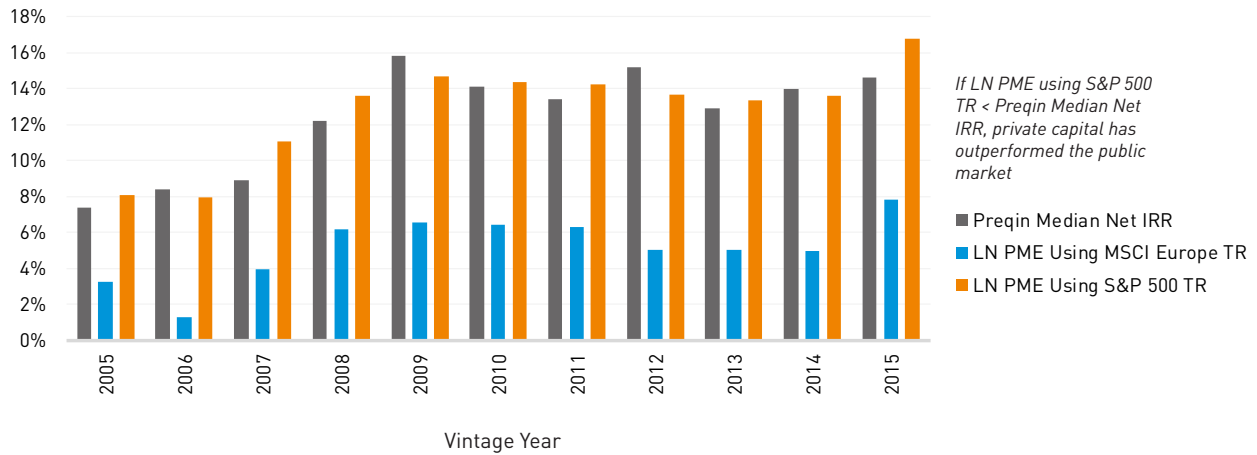
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 22: LN PME: Private Capital – North America**



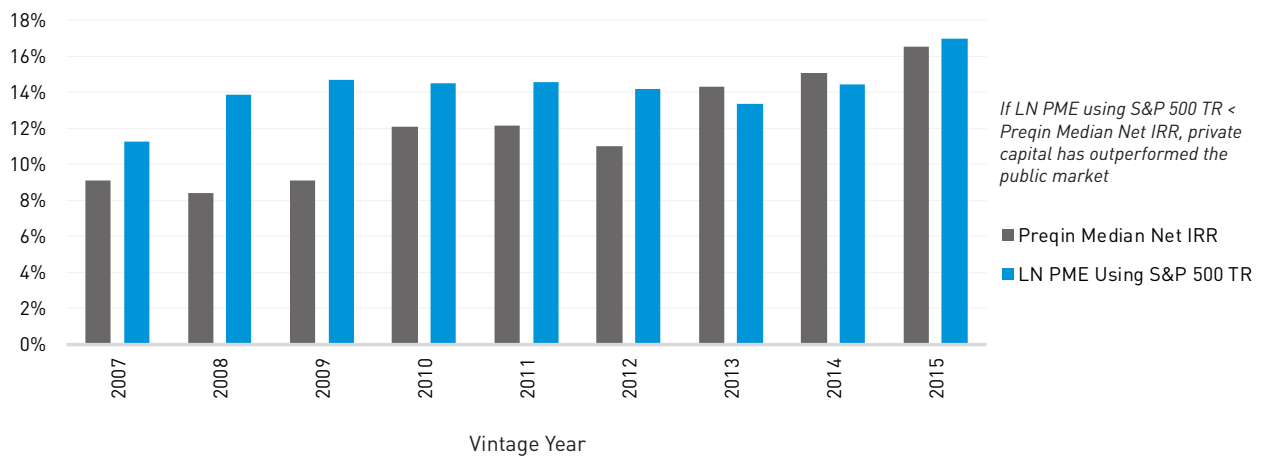
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 23: LN PME: Private Capital – Europe**



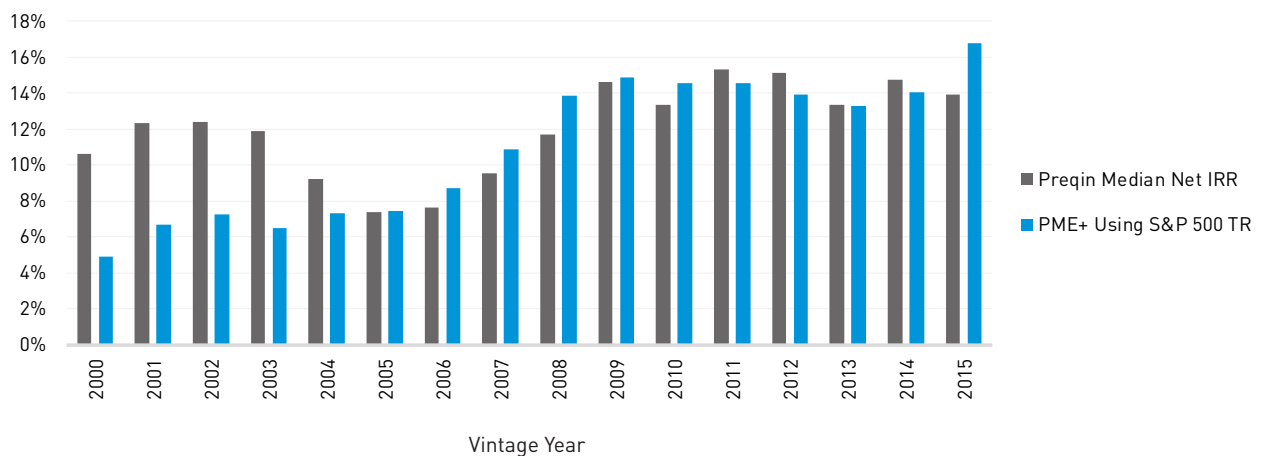
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 24: LN PME: Private Capital – Asia & Rest of World**



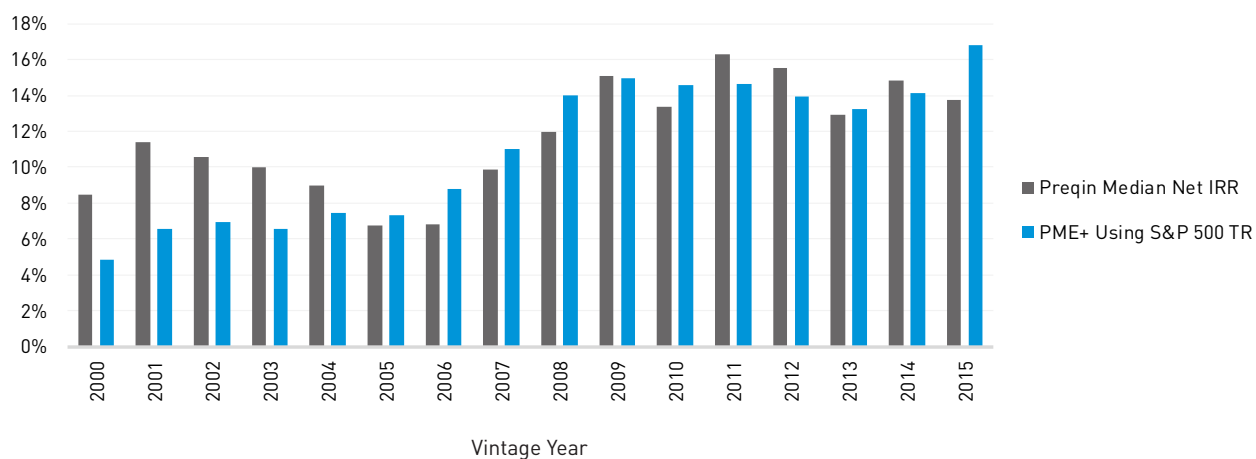
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 25: PME+: Private Capital – Global**



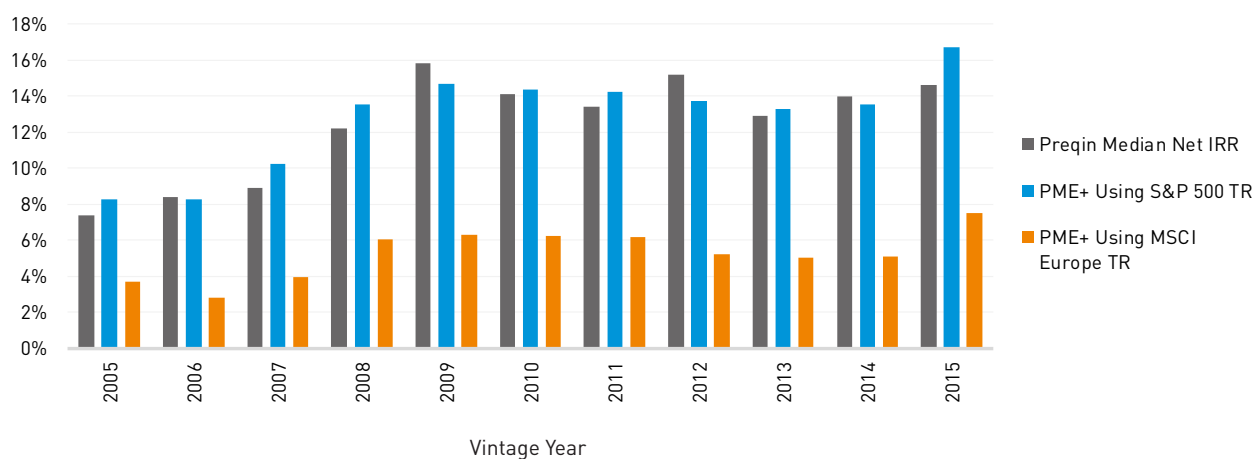
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 26: PME+: Private Capital – North America**



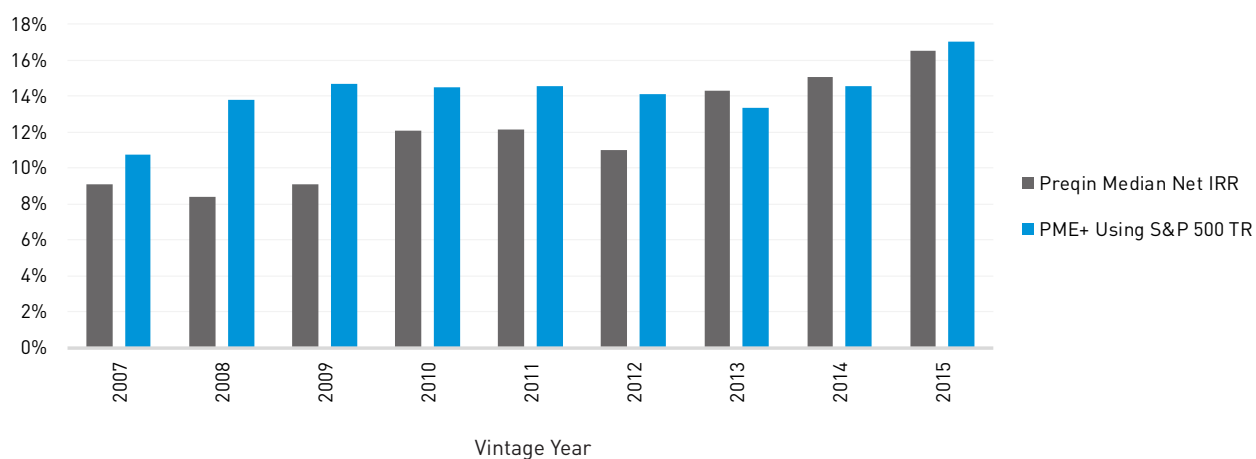
Source: Preqin Pro. Data as of 30 September 2018

**Fig. 27: PME+: Private Capital – Europe**



Source: Preqin Pro. Data as of 30 September 2018

**Fig. 28: PME+: Private Capital – Asia & Rest of World**



Source: Preqin Pro. Data as of 30 September 2018

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