INTRODUCTION

Preqin was founded in 2003 and pioneered the use of the Freedom of Information Act (FOIA) to collect fund level returns data from public pension plans with the goal of improving transparency and performance benchmarking within the industry. FOIA requests still remain an important part of Preqin’s performance data collection process, however today this is combined with voluntary data submission from more than 2,200 fund managers globally, and enables Preqin to offer the most extensive and transparent coverage of net-to-LP private capital fund performance data, with metrics for more than 9,100 vehicles. In terms of capital raised, this represents over 60% of all funds raised historically.

The purpose of this document is to act as a useful guide to all aspects of Preqin’s private capital performance data collection and validation; as well as insight into the different data sets and metrics available. Should you have any questions or would like to discuss providing data to Preqin, please do not hesitate to contact us at teamperformance@preqin.com.
REASONS TO CONTRIBUTE DATA

BE SEEN BY THOUSANDS OF INVESTORS AND INVESTMENT DECISION-MAKERS AROUND THE WORLD

- Fundraising? Looking for new investors? Our clients use Preqin’s databases and Preqin Investor Network for information and data on potential investment opportunities on a daily basis.
- 7,800+ investment professionals on Preqin Investor Network.
- 20,000-24,000 total logins monthly from institutional investors.

BE CONSIDERED AMONG THE BEST AND MOST NOTABLE PERFORMERS IN THE INDUSTRY

- By contributing data to Preqin, your firm and funds will be ranked among the thousands of other fund managers already listed on the database.
- Feature in our league tables that are published regularly in our books and reports.
- Use personalized images provided for by Preqin in your marketing materials to show your rankings.

CONTRIBUTE TO INDUSTRY BENCHMARKS AND HELP FURTHER RESEARCH INTO THIS AREA

- Information surrounding the alternative assets industry is difficult to obtain, not always up to date and not always accurate or reliable.
- Assist in the collection of comprehensive and most up-to-date intelligence in the alternatives industry.
- Help industry experts use actual market data to further research in this area.

ENSURE THAT THE DATA WE HOLD FOR YOUR FIRM AND FUNDS IS CORRECT

- Our dedicated teams of researchers are constantly updating the database from known, publicly available sources.
- Review and verify your profiles.
- Make sure we are showing your most up-to-date information.

CONTRIBUTING IS FREE AND SIMPLE

- Free to be listed on the database.
- Our numerous methods of contributing help make it easy for you to share your data.
- Update and review your profiles as often as you like.

www.preqin.com/sharedata
OVERVIEW OF SOURCING, VALIDATING AND UPDATING PERFORMANCE DATA

DATA SOURCES
Preqin collects performance data from a variety of sources to ensure a high degree of accuracy and confidence. Since the inception of the database, Preqin has collected performance figures from institutional investors, which are obtained via Freedom of Information Act (FOIA) requests, including CalPERS, Washington State Investment Board and Florida State Board of Administration among many others both in the US and the UK.

Preqin also collects a substantial proportion of its performance data from fund managers directly, with over 2,200 firms submitting to date. Regular contributors are reached out to every quarter to ensure we have the latest fund data available. Fund managers are increasingly recognizing the importance of providing the most accurate and most recent data to us as Preqin subscribers, many of whom are institutional investors, use the databases to search for new investment opportunities and view performance on a fund level. Other sources of data include listed firm financial reports, public filings and annual reports.

DATA VALIDATION
Guidelines are provided to GPs and FOIA sources when submitting performance data to us to ensure calculations are consistent with our methodologies. The data is then reviewed internally by our performance team and cross referenced against a benchmark of similar funds, as well as against other sources reporting for the same fund.

We will reach out to the GP if we feel further verification is required to support the metrics provided. This is usually in the form of relevant pages from an LP report. Although very rare, there have historically been a handful of instances when we are not confident in the data provided to us and we have chosen to exclude the data from our database.

The overall process of receiving, validating and uploading performance data can take up to two weeks. In this timeframe, Preqin are looking to ensure the validity and consistency of the performance data received, thus offering the most accurate and trustworthy information in the market.

UPDATING PERFORMANCE DATA
Once collected and validated, all the performance data that we collect is made available to subscribers via our range of online services. We also offer a range of performance related tools for users to compare, benchmark and analyse the data. Subscribers use the data for a variety of purposes including: benchmarking, competitor analysis, due diligence and market intelligence.

Preqin’s market benchmarks are available for free as part of our Research Center which contains a large amount of commentary, analysis, newsletters and research reports.

COMPLIANCE
We understand that fund managers are faced with an increasingly intensive regulatory environment. Preqin provides only factual data on its online products and never makes any explicit or implicit recommendations and/or facilitates transactions of any sort between investors and fund managers. Preqin positions itself as an impartial data provider, and therefore the information displayed on our products does not constitute marketing and/or promotional materials, nor constitute general advertising, solicitation or a public offer of securities and as such, is not a regulated activity.
PERFORMANCE METRICS DEFINITIONS

Vintage Year: The year in which the first capital is called from LPs for investment.

Capital Calls/Contribution: Measure of the cumulative LP capital invested. This amount should include management fees. It is shown as a % of total LP commitment:

\[
\text{Capital Called (\%)} = \frac{\text{Total LP Contribution}}{\text{Total LP Commitment}} \times 100
\]

Note: Capital Called may exceed 100% due to recycling of capital

Capital Distribution (DPI): The returns that an investor in a fund receives. It is the income and capital realised from investments less expenses and liabilities. This amount should exclude any carry/performance fees earned by the GP. It is shown as a % of total LP Contribution:

\[
\text{DPI (\%)} = \frac{\text{Total LP Distribution}}{\text{Total LP Contribution}} \times 100
\]

Fair Value/Market Value (RVPI): A valuation that represents the amount at which an asset could be acquired or sold in a transaction between willing parties. Also referred to as Ending Market Value, Net Asset Value or Residual Value. This amount should exclude any carry/performance fees earned by the GP. It is shown as a % of total LP Contributions:

\[
\text{RVPI (\%)} = \frac{\text{Unrealised Value of Fund}}{\text{Total LP Contribution}} \times 100
\]

Note: Portfolio valuations should be carried out in accordance with IFRS; GAAP; FAS 157 and/or International Private Equity and Venture Capital (IPEVC) guidelines.

Net Multiple: Reveals how many times investors have, or are likely to get their money back and make a profit from their investments. It is the sum of the DPI plus RVPI, expressed as a multiple:

\[
\text{Multiple (X)} = \frac{(\text{Distribution (\%)} + \text{Value (\%)})}{100}
\]

Net Internal Rate of Return (IRR\%): Money-weighted return expressed as a percentage. Net IRR uses the present sum of cash contributed, the present value of distributions and the current value of unrealised investments and applies a discount. This amount should exclude any carry/performance fees earned by the GP.

CALCULATION EXAMPLE
The following example simulates how to calculate the performance ratio for a fund with the following characteristics:

- Total LP Commitment = USD 10,000,000
- Total Capital Called to Date = USD 1,455,000
- Total Distribution to Date = USD 750,000
- Unrealised Fair Value = USD 1,190,000
- As of Date: 30-Jun-2009

Called-Up Ratio:
The called-up ratio in this example would be calculated as follows:

\[
\text{Capital Called (\%)} = \frac{1,455,000}{10,000,000} \times 100
\]

\[
\text{Capital Called (\%)} = 14.6
\]
Distribution to Paid-In (DPI %) Ratio:
The distribution to paid-in ratio in this example would be calculated as follows:
Total Distributions to Date = 750,000
Total Capital Called = 1,455,000

\[
\text{Distribution to Paid-In (DPI \%) = } \frac{750,000}{1,455,000} \times 100
\]

Distribution to Paid-In (DPI %) = 51.5

Remaining Value to Paid-In (RVPI %) Ratio:
Then the remaining value to paid-in ratio in this example would be calculated as follows:
Unrealised Fair Value = 1,190,000
Total Capital Called = 1,455,000

\[
\text{Remaining Value to Paid-In (RVPI \%) = } \frac{1,190,000}{1,455,000} \times 100
\]

Remaining Value to Paid-In (RVPI %) = 81.8

Net IRR (Internal Rate of Return):
If the transactions for this fund were as following - the net IRR can be calculated on Excel using the cash flow data:

<table>
<thead>
<tr>
<th>Transaction Type</th>
<th>Transaction Date</th>
<th>Transaction Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Call</td>
<td>12/01/2014</td>
<td>-100,000</td>
</tr>
<tr>
<td>Capital Call</td>
<td>23/01/2014</td>
<td>-105,000</td>
</tr>
<tr>
<td>Capital Call</td>
<td>15/01/2014</td>
<td>-100,000</td>
</tr>
<tr>
<td>Capital Call</td>
<td>14/02/2014</td>
<td>-175,000</td>
</tr>
<tr>
<td>Management Fees</td>
<td>29/03/2017</td>
<td>-10,000</td>
</tr>
<tr>
<td>Capital Call</td>
<td>14/04/2017</td>
<td>-100,000</td>
</tr>
<tr>
<td>Capital Call</td>
<td>23/06/2014</td>
<td>-105,000</td>
</tr>
<tr>
<td>Capital Call</td>
<td>14/09/2014</td>
<td>-100,000</td>
</tr>
<tr>
<td>Capital Call</td>
<td>23/11/2014</td>
<td>-175,000</td>
</tr>
<tr>
<td>Management Fees</td>
<td>29/12/2014</td>
<td>-10,000</td>
</tr>
<tr>
<td>Capital Call</td>
<td>14/04/2015</td>
<td>-100,000</td>
</tr>
<tr>
<td>Capital Call</td>
<td>18/09/2017</td>
<td>100,000</td>
</tr>
<tr>
<td>Distribution</td>
<td>13/11/2015</td>
<td>250,000</td>
</tr>
<tr>
<td>Management Fees</td>
<td>29/12/2015</td>
<td>-10,000</td>
</tr>
<tr>
<td>Capital Call</td>
<td>23/06/2016</td>
<td>-105,000</td>
</tr>
<tr>
<td>Distribution</td>
<td>29/06/2016</td>
<td>300,000</td>
</tr>
<tr>
<td>Capital Call</td>
<td>18/09/2016</td>
<td>-50,000</td>
</tr>
<tr>
<td>Management Fees</td>
<td>29/12/2016</td>
<td>-10,000</td>
</tr>
<tr>
<td>Capital Call</td>
<td>17/01/2017</td>
<td>-100,000</td>
</tr>
<tr>
<td>Distribution</td>
<td>14/05/2017</td>
<td>200,000</td>
</tr>
<tr>
<td>Unrealised Fair Value</td>
<td>30/06/2017</td>
<td>1,190,000</td>
</tr>
</tbody>
</table>

Net IRR: 14.0%

Performance Overview
Using the ratios calculated above, the performance ratios for this fund will be as following:

<table>
<thead>
<tr>
<th>Fund Name</th>
<th>Vintage</th>
<th>Type</th>
<th>Total LP Commitment (Mn)</th>
<th>Called (%)</th>
<th>Dist. (%) (DPI)</th>
<th>Rem. Value (RVPI)</th>
<th>Net IRR (%)</th>
<th>As-of Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Fund</td>
<td>2014</td>
<td>Venture</td>
<td>10 USD</td>
<td>14.6</td>
<td>51.5</td>
<td>81.8</td>
<td>14.0</td>
<td>30-Jun-17</td>
</tr>
</tbody>
</table>

FREQUENTLY ASKED QUESTIONS

Do we collect gross performance figures?
All performance metrics are shown net of fees and carry (excluding the called %). This is to reflect net-to-LP returns.
Do we calculate net IRR?
Most net IRRs are reported to us directly from the GP or from an LP source. Preqin only calculate the net IRR if we collect cashflow data for that fund – the source reporting in the fund must be reliable; reporting every quarter and reporting the called, DPI and RVPI metrics to us.

Why does the net IRR for some funds show as ‘n/m’?
Prequin does not show the net IRR% for funds in the first three years of their fund-cycle as it is deemed too early for the fund’s IRR to be meaningful.

Do we convert performance data to the currency the fund is denominated in, if different?
Where possible, sources that report in the fund’s denominated currency are used. If a different currency is used, no conversions are made. Over 95% of funds, however, use a source that reports data in its denominated currency.

Should the total LP commitment amount/performance metrics include leveraged capital?
All the performance data we show is from the perspective of the investor, therefore, the fund level net IRRs we publish are since inception and net of management and performance fees. They are also calculated based on only the equity committed to the fund, excluding any leverage or debt used to finance investments.

Is there a way of making the performance data for a liquidated fund static?
Once a fund has liquidated and a final row of performance data is provided (with an RVPI% or 0%), this data will be static on the product. The as at dates will update every quarter automatically.

Should the total fund size/performance metrics include leverage?
These should be reported based on only the equity committed to the fund, excluding any leverage or debt used to finance investments.
PREQIN BENCHMARKS & QUARTILE RANKINGS

WHAT IS IT?

Preqin Benchmarks are calculated using performance information for over 9,000 private capital funds; the largest pool of fund returns data available globally. Subscribers to Preqin's Performance Analyst database can view the individual returns for all constituent funds on a named basis as well as having access to Preqin's custom benchmark tool.

METHODOLOGY

Market Benchmark searches can be made based on funds' vintage, investment strategy and geographic focus. Within each benchmark group, performance metrics of called-up, distribution, unrealized value, multiples and net IRRs are calculated for the following:

- **Median** – the middle value from an ordered set of a specific benchmark grouping (for each performance metric).
- **Average** – the mean net IRR is taken from a specific benchmark grouping to calculate the average fund performance metrics.
- **Pooled** – accounts for the timings of calls/distributions; aggregates cashflows of constituent funds and calculates resultant net IRRs.
- **Weighted** – takes the performance ratios of each individual fund and calculates a weighted average using the size of each fund.

Within each fund's benchmark grouping, funds are assigned a **Quartile Ranking** – an easy indicator of how a fund is performing relative to other funds within its benchmark grouping. The ranking applies to funds which are included in our 'Most up-to-date' range, i.e. have reported data within the past two years.

Both the multiple and net IRR rankings of each constituent fund are used to determine the fund's overall quartile rank, with equal weighting. If one of the two metrics is unknown, its ranking is estimated based on the known metric's ranking. In instances where the sample size is too small for a specific benchmark group, the fund will be compared to a broader category.

Example:

A 2014 vintage Europe-focused Growth fund will follow the below expansion routes and be allocated a default benchmark where there are at least 8 funds in the benchmark group.

Best case — Most granular

Expand region focus
Revert to specific region and expand fund type grouping
Expand region focus
Revert to specific region and expand fund type grouping
Expand region focus

2014/Europe/Growth
2014/All Regions/Growth
2014/Europe/All-Private Equity
2014/All Regions/All-Private Equity
2014/Europe/Private Capital
2014/All Regions/Private Capital

Buyout funds and real estate funds also take into account fund size group and primary strategy, respectively, when assigning benchmark groups.

We also show historic quarterly performance data, which can be searched for using the 'As of date' filter. This allows benchmarks to be evaluated as-at different quarters during the funds' life cycle.

Users also have the option of using the Custom Benchmarks tool on the product, which offers a way to create tailor-made peer groups of funds from which benchmark data can then be extracted.

SOURCES

Preqin receives performance data from GPs, LPs and listed sources. For a given as-at date for a fund, one source is chosen based on consistency, completeness and timeliness – it is this data which is then used for benchmarks. The historic chosen sources can be viewed for each fund, along with the rest of the sources reporting data for the fund. For some reported data, we are unable to disclose the source.

Users have three options when downloading performance data for a given fund:

1. Download all chosen historical data
2. Download all sources data for a given as-at date
3. Download all data for a given source

It is also possible for users to access all historical data from all sources via an API. Across all funds and sources, Preqin currently holds
over 205,000 historical performance data records, with over 130,000 benchmarking data points.

**FREQUENTLY ASKED QUESTIONS**

**Why does the median DPI and RVPI not always sum to the median multiple?**
Each of the metrics – Called, DPI, RVPI, Net Multiple and Net IRR – are calculated independently, so the median is pulled for each of the metrics individually.

**Why doesn’t the quartile ranking change for a fund when I change the benchmark criteria on a benchmark search?**
Quartile rankings are based on funds’ pre-assigned benchmark grouping. Changing the Market or Custom Benchmark search will change all output calculations apart from quartile ranking.

**Why does the quartile ranking show as ‘n/m’ for some funds?**
Quartile rankings are not shown for funds within the first three years of their fund-cycle, as it is deemed too early for the fund’s IRR to be meaningful.

**Are the market benchmarks reported in USD?**
Performance metrics are calculated in the currency the source has reported in, no conversions are made.

**Why are there no median/ quartile boundaries figures showing for some benchmarks?**
At least 4 funds are required for a median benchmark metric to be calculated. At least 8 funds are required for quartile boundaries to be calculated.

**What funds are included in the ‘Most Up-to-Date’ range?**
This range includes all funds which have reported performance data within the past two years. This is to maximize the number of constituent funds with a quartile ranking.

**The market benchmarks are not suitable for my fund - is there an alternative?**
Users have the option of using the Custom Benchmarks tool, which offers a way to create tailor-made peer groups of funds from which benchmark data can then be extracted.

**Given data contributions from GPs, is there a risk of survivorship bias in the data, i.e. bias towards best performing funds?**
For over 80% of funds we have performance data for, we have either an LP source or both an LP & GP source reporting data. Additionally, we have an average of over ten sources reporting data for each fund. This range of data available enables Preqin to compare data contributions from GPs against other sources reporting for the same fund, ensuring the validity and consistency of the performance data received.
ASSETS UNDER MANAGEMENT (AUM)

WHAT IS IT?
Assets under Management (AUM) is used as a measure of the size or growth of the industry. It is the sum of both Dry Powder and Unrealized Value:

- **Dry Powder**: available capital to fund managers for investment, i.e. committed capital that has not yet been called for investment
- **Unrealised Value**: Value of unrealised portfolio investments

METHODOLOGY
The AUM for a given fund is calculated as follows:

- **Dry Powder**: The capital called amount is subtracted from the fund's size/latest close size. If the Called % metric is not reported for a given fund, a benchmark Called % is used instead.
- **Unrealised Value**: The RVPI % metric is multiplied with the amount of capital called. If the RVPI % metric is not reported for a given fund, a benchmark RVPI % is used instead.

FREQUENTLY ASKED QUESTIONS

What currency are the AUM figures reported in?
AUM is reported in USD. For funds denominated in non-USD currencies, conversions to USD are made using the exchange rate at the date of the final close or latest interim close of the fund.

Why isn’t AUM shown for individual fund managers/funds?
As benchmark estimates are used in the absence of reported metrics, the unrealized value estimate may be inaccurate at just the fund manager/fund level.
We, however, show estimated dry powder for fund managers.

When does the latest quarter-end date get updated?
Like the rest of the performance tools, there is a lag of at least 6 months for the latest quarter-end date to become available. This is to ensure we have as a complete dataset as possible used when estimating the latest AUM figures.

How are annual Called and Distributed figures calculated?
This is calculated using the same dataset as AUM. Called % and DPI % metrics are used to calculate the annual called and distributed figures respectively. In the absence of these reported metrics, benchmark metrics are used instead.
HORIZON IRRS

WHAT IS IT?
Horizon IRRs indicate how a particular fund strategy or region focus is performing during a defined period. Preqin calculates horizon IRRs over 1, 3, 5 and 10 years to date, as well as rolling IRRs.

Private capital horizon IRRs should be viewed with some caution as horizon returns are calculated using cash transactions as well as portfolio valuations, which are an estimated value calculated and provided by the general partners. As an illiquid asset, private capital investors are committed for a long period of time and cannot cash in their returns on such short periods.

METHODOLOGY
Preqin calculates horizon IRRs using cash flow data for over 3,500 private capital funds. For a fund to be included in the sample for a given time horizon, it must be active at the start and the end of the period i.e. have an unrealized value reported at both start and end dates. The IRRs are calculated using:

- The fund’s Net Asset Value at the start of the period as a negative outflow
- LP contributions as a negative outflow (treated as the initial investment)
- Distributions as a positive inflow
- The fund’s Net Asset Value at the end of the period as a positive number

The horizon IRRs are capital weighted, i.e. larger funds have more of an impact on the overall calculation.

FREQUENTLY ASKED QUESTIONS
When does the latest quarter-end date get updated?
Like the rest of the performance tools, there is a lag of at least 6 months for the latest quarter-end date to become available. This is to ensure we have as a complete dataset as possible used when calculating the latest Horizon IRRs.

Can Horizon IRRs be calculated for fund categories or regions not already showing on the product?
Yes, if the fund sample size is large enough to produce a meaningful result.
WHAT IS IT?
The PrEQIn - Private Capital Quarterly Index captures in an index the return earned by investors on average in their private capital portfolios, based on the actual amount of money invested in private capital partnerships.

METHODOLOGY
\[
\% \text{ Change in Quarter} = \frac{\text{NAV at end of quarter} + \text{distributions during quarter}}{\text{NAV at start of quarter} + \text{called during quarter}} - 1
\]

\text{NAV}: \text{Net Asset Values in US Dollars}

\text{Called during quarter}: \text{Total capital drawn by fund managers in dollars during the quarter, meaning the cumulative cash called to date as at the end of the quarter minus the cumulative cash called to date as at the start of the quarter.}

\text{Distributions during quarter}: \text{Total capital distributed to LPs in dollars during the quarter, meaning the cumulative cash distributed to date as at the end of the quarter minus the cumulative cash distributed to date as at the start of the quarter.}

Each data point is individually calculated from the pool of closed-end funds for which comprehensive performance data is held, as-at both the start and end of the quarter.

Historic data points are not recalculated as time passes, and so the universe of funds for each quarterly point changes over time as funds enter/exit quarterly calculations.

FREQUENTLY ASKED QUESTIONS

What do the PrEQIn Indices show?
The indices show the quarter-to-quarter changes in the returns on invested capital. Index points are rebased from a set date (typically Q4 2000 or Q4 2007).

If an index is rebased to a certain date, what does this mean?
All indices are rebased from a fixed date to make comparisons across indices. This is done by basing the index to 100 and then adjusting each quarter using the quarterly percentage return calculated.

Can we customize the quarterly indices?
Preqin can provide indices at a more granular level subject to custom filters/restraints – this can be obtained via client services and would be data-dependant.
CASH FLOW DATA

WHAT IS IT?
Prequin’s Private Capital Cash Flow data is the industry’s largest source of reliable cash flow data, allowing users to undertake extensive financial modelling and gain a complete understanding of how private capital fund returns evolve over time. The data consists of 227,000 historical data points for over 3,500 private capital funds of all types including over 112,000 cash flow transactions and over 115,000 historical NAVs.

This dataset is made up of fund level cashflow transactions – capital calls, distributions and valuations.
- **Capital Call:** Capital called up by the GP from LPs for investment.
- **Value:** The estimated net asset value of the fund portfolio.
- **Distribution:** Capital returned to investors from the GP.

METHODOLOGY
Cash Flow data is gathered from aggregated data – typically reliable FOIA sources are used, however on occasion data is included directly from consistent-reporting GPs.

For most funds, data tends to derive from a single source that has been reporting in quarterly metrics for the fund from inception. Quarterly cash flow amounts can then be calculated from this data using the mid-point of the quarter and normalising each fund to a commitment of 10mn in the fund’s denominated currency.

FREQUENTLY ASKED QUESTIONS

**What process is in place to reduce errors?**
The cash flow calculation process is automatic based upon the quarterly performance metrics shown on the Performance Analyst product database. Each time data is imported onto this database, several quality checks are carried out to check the data from all sources for each fund – these are cross-checked against each other, as well as against historic data, to identify and remove/correct any reporting errors.

**What do positive call amounts mean?**
As most cash flow data is calculated from reported data, there can be instances whereby positive called amounts are broken out – these can be attributed to the different ways in which sources report transactions such as recallable distributions, fees, returns of capital etc.

**Why doesn’t the Cumulative Contribution column eventually add up to the Total Fund Size?**
We present the cash flow data from the perspective of a hypothetical investor with a 10 million commitment to each fund in the fund’s denominated currency. We include a column with the fund size where known so that the data can be capital weighted where necessary.

**Where can this data be found?**
This data is made available to view/download directly via the Cash Flow module, and shows on relevant fund pages – accompanying a graph showing cumulative contribution, distribution and net cash flow based upon the underlying cash flow data.
PUBLIC MARKET EQUIVALENT INDICES

WHAT IS IT?
Typically, private capital returns are not directly comparable with public market indices, due to the asset class's illiquid nature and irregular timing of cash flows. The development of the public market equivalent (PME) measure of returns, however, 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 timing of the fund cash flows.

METHODOLOGY
The PME tool enables the comparison of private capital returns against seven public market indices using a choice of three PME methodologies: Kaplan-Schoar PME, Long Nickels PME and PME+. All the methodologies utilize the since-inception cash flow data Preqin holds for over 3,500 funds. The table below outlines the calculations involved in each of the three PME methodologies offered, and their advantages and disadvantages:

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Metric</th>
<th>Private Capital Outperformance if:</th>
<th>Description of Calculation</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>KS PME (Kaplan-Schoar)</td>
<td>Ratio</td>
<td>Value &gt; 1</td>
<td>Calculated by discounting the private capital fund cash flows by the public market index value.</td>
<td>The calculation looks at the ratio of outflows versus inflows as opposed to generating an IRR, which is time-dependent and is easily manipulated.</td>
<td>Ignores the timings of cash flows.</td>
</tr>
<tr>
<td>LN PME (Long-Nickels)</td>
<td>Annualized Rate</td>
<td>Estimated PME IRR &lt; Private Capital Fund IRR</td>
<td>Contributions to the private capital fund are converted to an equal purchase of shares in the public index. Distributions represent liquidation of share in public index. IRR calculation uses the same contributions and distributions as the private capital fund, but with a different final period remaining value.</td>
<td>LN PME IRR is directly comparable to the PE Fund IRR, allowing an apples-to-apples comparison.</td>
<td>IRR sensitive to early distributions. Large distributions could cause a negative PME final period remaining value, making PME IRR calculation computationally impossible.</td>
</tr>
<tr>
<td>PME+</td>
<td>Annualized Rate</td>
<td>Estimated PME IRR &lt; Private Capital Fund IRR</td>
<td>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.</td>
<td>As for LN PME, with the added benefit of avoiding a final period negative remaining value, making PME IRR calculation possible in more cases.</td>
<td>PME+ does not match the cash flows perfectly.</td>
</tr>
</tbody>
</table>

FREQUENTLY ASKED QUESTIONS

When does the latest quarter-end date get updated?
Like the rest of the performance tools, there is a lag of at least 6 months for the latest quarter-end date to become available. This is to ensure we have as a complete dataset as possible when calculating the latest PME values.

Which Public Market Index should I compare against?
It is important to note that we use total return market indices as these re-invest dividends back in to the index, in the same way an investor would redirect their distributions from PE funds in to other investments.
Below are suggestions of which indices to use with which fund types/regions:
- S&P 500 (primarily used for large cap US stocks) → All Private Equity, Buyout
- Russell 2000 (widely used for small-mid cap) → Venture Capital
- Russell 3000 (largest 3000 US stocks) → Buyout, Distressed Private Equity, Fund of Funds
- MSCI Europe → Europe-focused PE funds
- MSCI Emerging Markets → Emerging Market-focused PE funds
- MSCI US REIT → Real Estate
- MSCI World → All
TOP PERFORMING TABLES

WHAT IS IT?

**Most Consistent Top Performing Managers:** ranking fund managers by the average quartile ranking of their funds

**Top Performing Funds:** ranking individual funds by their Internal Rate of Return (IRR)

METHODOLOGY

**Most Consistent Top Performing Managers:**
Preqin generates quartile rankings for individual funds according to their investment strategy, geography and vintage year. Each fund universe constitutes funds with similar types, geographies and vintage years, enabling quartile rankings to be assigned using a combination of both the net IRR and multiple rankings of each constituent fund – with equal weights placed on both. In instances where the sample size is small, the funds are assigned quartile rankings that are generated against the private capital industry in its entirety.

The tables are compiled using only funds for which Preqin assigns a quartile ranking, and so for this reason, funds within the first three years of their life-cycle have been excluded as these funds are too early in their fund lives to generate meaningful IRRs. Furthermore, only managers that have raised at least 3 funds of a similar strategy are considered and further narrowed down to include only active fund managers (whereby the fund manager must have raised a similar strategy fund since 2010). The lower the average score, the more consistently the manager has performed.

The scores are calculated by assigning top-quartile funds with a score of 1, second-quartile funds are given a score of 2 and so on – and then an average of the scores is taken. Only firms with average quartile rankings of below 2.00 are considered.

\[
\text{Score} = \frac{(#\text{No. Q1 funds} \times 1) + (#\text{No. Q2 funds} \times 2) + (#\text{No. Q3 funds} \times 3) + (#\text{No. Q4 funds} \times 4)}{\text{Total number of funds with a Quartile Ranking}}
\]

**Top Performing Funds:**
To determine the best performing funds by fund type, Preqin has grouped together funds of similar vintage years and geographic focus where available. Preqin only includes funds that have called up at least 50% of committed capital and the net IRR is used as the key determinant of performance.