## Private Equity Performance – Benchmarks
(as of March 31, 2019)

<table>
<thead>
<tr>
<th>Private Equity Benchmark Returns (Horizon IRR)</th>
<th>1-Year</th>
<th>3-Year</th>
<th>5-Year</th>
<th>10-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambridge Associates U.S. Private Equity Index (excluding venture capital)</td>
<td>12.8%</td>
<td>15.9%</td>
<td>12.0%</td>
<td>15.4%</td>
</tr>
<tr>
<td>Cambridge Associates U.S. Buyout Fund Index</td>
<td>13.6%</td>
<td>16.2%</td>
<td>13.8%</td>
<td>16.8%</td>
</tr>
<tr>
<td>Cambridge Associates U.S. Growth Equity Index</td>
<td>20.7%</td>
<td>19.6%</td>
<td>15.1%</td>
<td>16.8%</td>
</tr>
<tr>
<td>Cepres North America PE Index (excluding venture capital)</td>
<td>11.3%</td>
<td>13.8%</td>
<td>13.9%</td>
<td>13.4%</td>
</tr>
<tr>
<td>ILPA U.S. Private Equity Index (excluding venture capital)</td>
<td>15.2%</td>
<td>16.9%</td>
<td>14.0%</td>
<td>16.9%</td>
</tr>
<tr>
<td>State Street U.S. Private Equity Index (buyout + private debt, ex. VC)</td>
<td>12.0%</td>
<td>15.1%</td>
<td>11.7%</td>
<td>15.2%</td>
</tr>
<tr>
<td>State Street U.S. Buyout Index</td>
<td>12.8%</td>
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</table>

<table>
<thead>
<tr>
<th>Public Market Returns</th>
<th>1-Year</th>
<th>3-Year</th>
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<th>10-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russell 3000 Index (including dividends)</td>
<td>8.8%</td>
<td>13.5%</td>
<td>10.4%</td>
<td>16.0%</td>
</tr>
<tr>
<td>S&amp;P 500 Index (excluding dividends)</td>
<td>7.3%</td>
<td>11.2%</td>
<td>8.6%</td>
<td>13.5%</td>
</tr>
<tr>
<td>S&amp;P 500 Index (including dividends)</td>
<td>9.5%</td>
<td>13.5%</td>
<td>10.9%</td>
<td>15.9%</td>
</tr>
<tr>
<td>S&amp;P 500 Index (without FAANG)</td>
<td>4.6%</td>
<td>9.7%</td>
<td>7.6%</td>
<td>13.2%</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Analysis</th>
<th>1-Year</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Median Private Equity Benchmark Return (excluding venture capital)</td>
<td>12.4%</td>
<td>15.5%</td>
<td>13.0%</td>
<td>15.3%</td>
</tr>
<tr>
<td>Private Equity Benchmark Outperformance (excluding venture capital)</td>
<td>2.9%</td>
<td>2.0%</td>
<td>2.1%</td>
<td>-0.6%</td>
</tr>
</tbody>
</table>

Performance figures are based on most recent publicly available information.

1 Calculated by taking the median of Cambridge Associates U.S. Private Equity Index (excluding venture capital), Cepres North America PE Index (excluding venture capital), ILPA U.S. Private Equity Index (excluding venture capital) and State Street U.S. Private Equity Index (buyout + private debt, ex. VC).
2 Calculated by subtracting the S&P 500 Index (including dividends) return from the median private equity benchmark return.
3 FAANG means for Facebook, Apple, Amazon, Netflix, and Alphabet.
# Private Equity Performance – Benchmarks

(as of December 31, 2018)

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<th>Private Equity Benchmark Returns (Horizon IRR)</th>
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<tr>
<td>BISON Private Equity Benchmark</td>
<td>11.2%</td>
<td>14.2%</td>
<td>12.5%</td>
<td>13.5%</td>
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<tr>
<td>Cambridge Associates U.S. Private Equity Index (excluding venture capital)</td>
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<td>Cambridge Associates U.S. Buyout Fund Index</td>
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<td>10.1%</td>
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<td>State Street U.S. Buyout Index</td>
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<td>S&amp;P 500 Index (including dividends)</td>
<td>-4.4%</td>
<td>9.3%</td>
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<td>13.1%</td>
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<td>S&amp;P 500 Index (without FAANG)(^3)</td>
<td>-8.8%</td>
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<td>Median Private Equity Benchmark Return (excluding venture capital)(^1)</td>
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</tr>
<tr>
<td>Private Equity Benchmark Outperformance (excluding venture capital)(^2)</td>
<td>15.1%</td>
<td>4.7%</td>
<td>3.3%</td>
<td>1.1%</td>
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Performance figures are based on most recent publicly available information.

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\(^1\) Calculated by taking the median of BISON Private Equity Benchmark, Cambridge Associates U.S. Private Equity Index (excluding venture capital), Cepres North America PE Index (excluding venture capital), ILPA U.S. Private Equity Index (excluding venture capital) and State Street U.S. Private Equity Index (buyout + private debt, ex. VC).

\(^2\) Calculated by subtracting the S&P 500 Index (including dividends) return from the median private equity benchmark return.

\(^3\) FAANG means for Facebook, Apple, Amazon, Netflix, and Alphabet.

Returns are reported net of fees, unless otherwise stated. Returns exceeding one year are annualized. Public market returns are time-weighted.
$100 dollars invested in US public markets compared to $100 dollars invested in US private equity

Source: Cambridge Associates and S&P Capital IQ

* Net to limited partners

Source: Cambridge Associates and S&P Capital IQ
Private Equity Performance – Public Pensions (as of March 31, 2019)

Return

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<tr>
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1. Median of Cambridge Associates U.S. Private Equity Index (excluding venture capital), Cepres North America PE Index (excluding venture capital), ILPA U.S. Private Equity Index (excluding venture capital), and State Street U.S. Private Equity Index (buyout + private debt, ex. VC).
2. Median return of pension fund private equity investments included in this report.

Performance figures of private equity benchmarks are reported as IRRs, while those of pension fund private equity investments are reported as time-weighted returns. Pension fund private equity investment returns reflect the performance of the asset class itself, as well as the fund manager’s ability to identify profitable investment opportunities. The private equity asset class may be defined differently depending on the pension fund.
Private Equity Performance – Public Pensions
(as of December 31, 2018)

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Private Equity Benchmarks

**BISON Private Equity Benchmark**
Bison's North American Buyout & Growth Equity pooled return indices draw from a transparent dataset of close to 2,000 funds with since inception cash flows. The indices cover buyout, growth equity, and infrastructure funds formed between 1991 and 2018.

**Cambridge Associates U.S. Private Equity Indices**
The US Private Equity Index is compiled using data from 1,493 US private equity funds formed between 1986 and 2018. The firms include buyout, growth equity, private equity energy and mezzanine funds, including fully liquidated partnerships. The US Buyout Fund Index and US Growth Equity Index reflect the performance of 866 U.S. buyout funds (formed between 1986 and 2018) and 269 US growth equity funds (formed between 1986 and 2018), respectively.

**Cepres Private Equity Index**
The CepreX Private Equity Index is compiled using data from 2,435 U.S. funds. These funds cover industries such as Consumer industry, Healthcare/LS, HighTech/IT, Industrials and Infrastructure. Funds from all stages except venture capital form a part of this index, falling under the time frame 2000-March 2019.

**ILPA (Institutional Limited Partners Association) U.S. Private Equity Index**
The ILPA U.S. Private Equity Index is a subset of ILPA Private Markets Benchmark and excludes the performance of venture capital funds. The ILPA Private Markets Benchmark is compiled using data from over 4,057 global (U.S. & ex U.S.) funds formed between 1981 and 2019. Fund types included in the ILPA Private Markets Benchmark are private equity, venture capital, distressed securities, fund of funds, secondary funds and natural resource funds.

**State Street GX Private Equity Index**