

Investment
Cost Effectiveness Analysis
(for the 5 years ending December 31, 2016)

South Carolina Retirement Systems
Investment Commission



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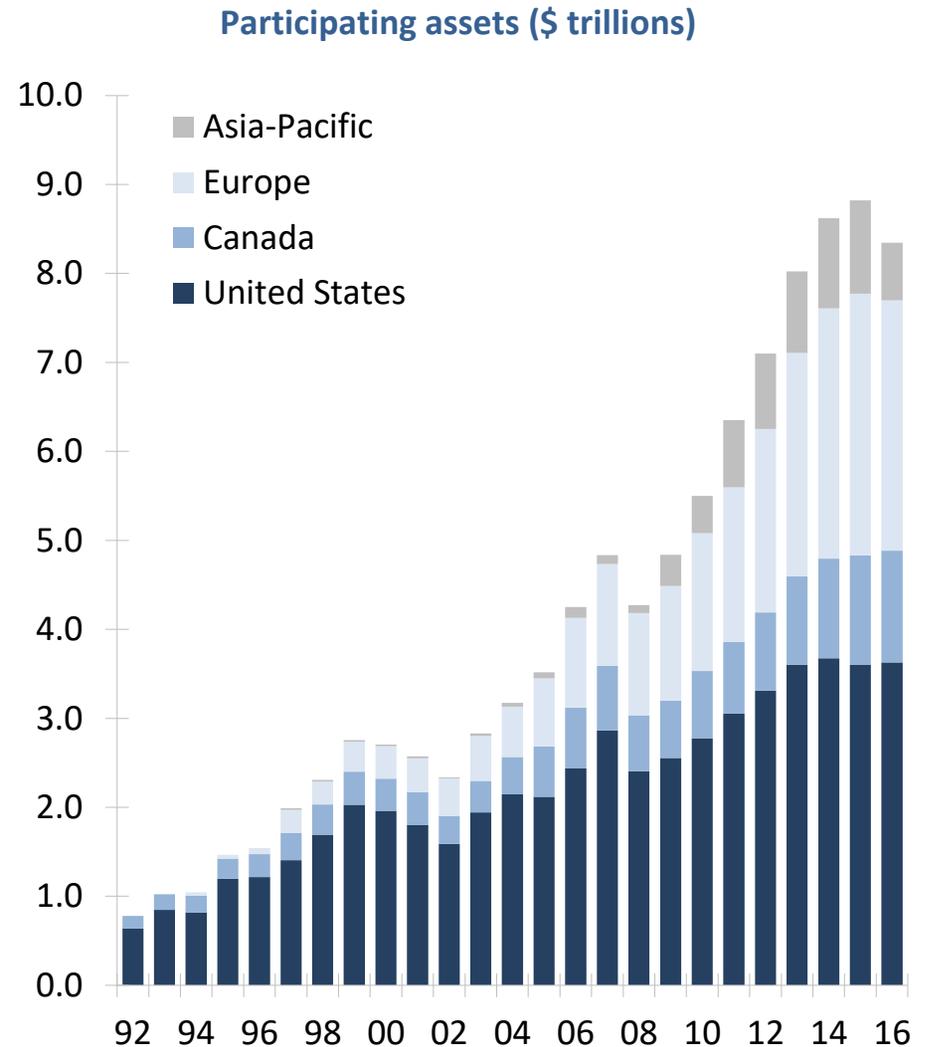
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This benchmarking report compares your cost and return performance to CEM's extensive pension database.

- 167 U.S. pension funds participate. The median U.S. fund had assets of \$8.7 billion and the average U.S. fund had assets of \$21.7 billion. Total participating U.S. assets were \$3.6 trillion.
- 76 Canadian funds participate with assets totaling \$1.3 trillion.
- 53 European funds participate with aggregate assets of \$2.8 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Denmark, Switzerland and the U.K.
- 7 Asia-Pacific funds participate with aggregate assets of \$648 billion. Included are funds from Australia, New Zealand, China and South Korea.

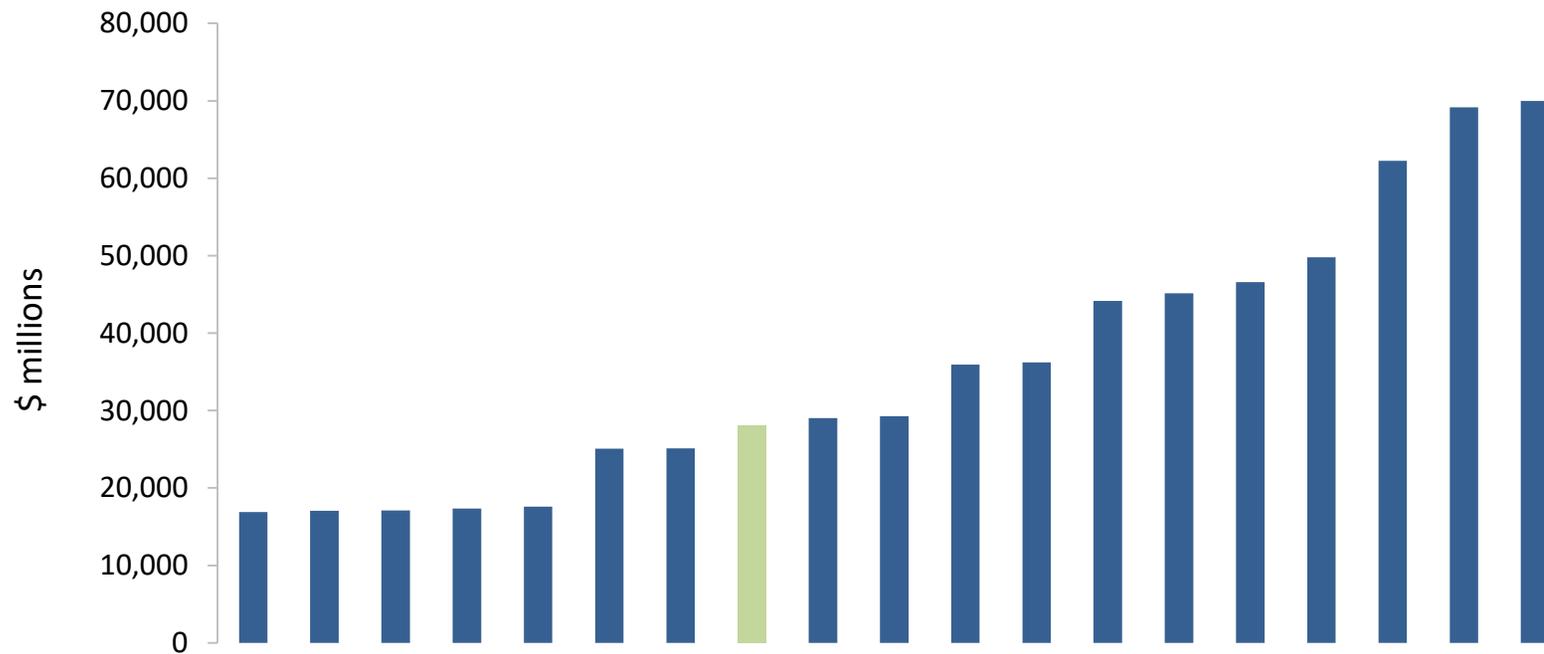
The most meaningful comparisons for your returns and value added are to the U.S. Public universe which consists of 59 funds.



The most valuable comparisons for cost performance are to your custom peer group because size impacts costs.

Peer group for South Carolina Retirement Systems Investment Commission

- 19 U.S. public sponsors from \$17 billion to \$70 billion
- Median size of \$29 billion versus your \$28 billion



To preserve client confidentiality, given potential access to documents as permitted by the Freedom of Information Act, we do not disclose your peers' names in this document.

What gets measured gets managed, so it is critical that you measure and compare the right things:

- 1. Returns**

Why do total returns differ from other funds? What was the impact of your policy mix decisions versus implementation decisions?
- 2. Net value added**

Are your implementation decisions adding value (i.e., mostly the effectiveness of active management, as well as the amount of active management versus passive management)?
- 3. Costs**

Are your costs reasonable? Costs matter and can be managed.
- 4. Cost effectiveness**

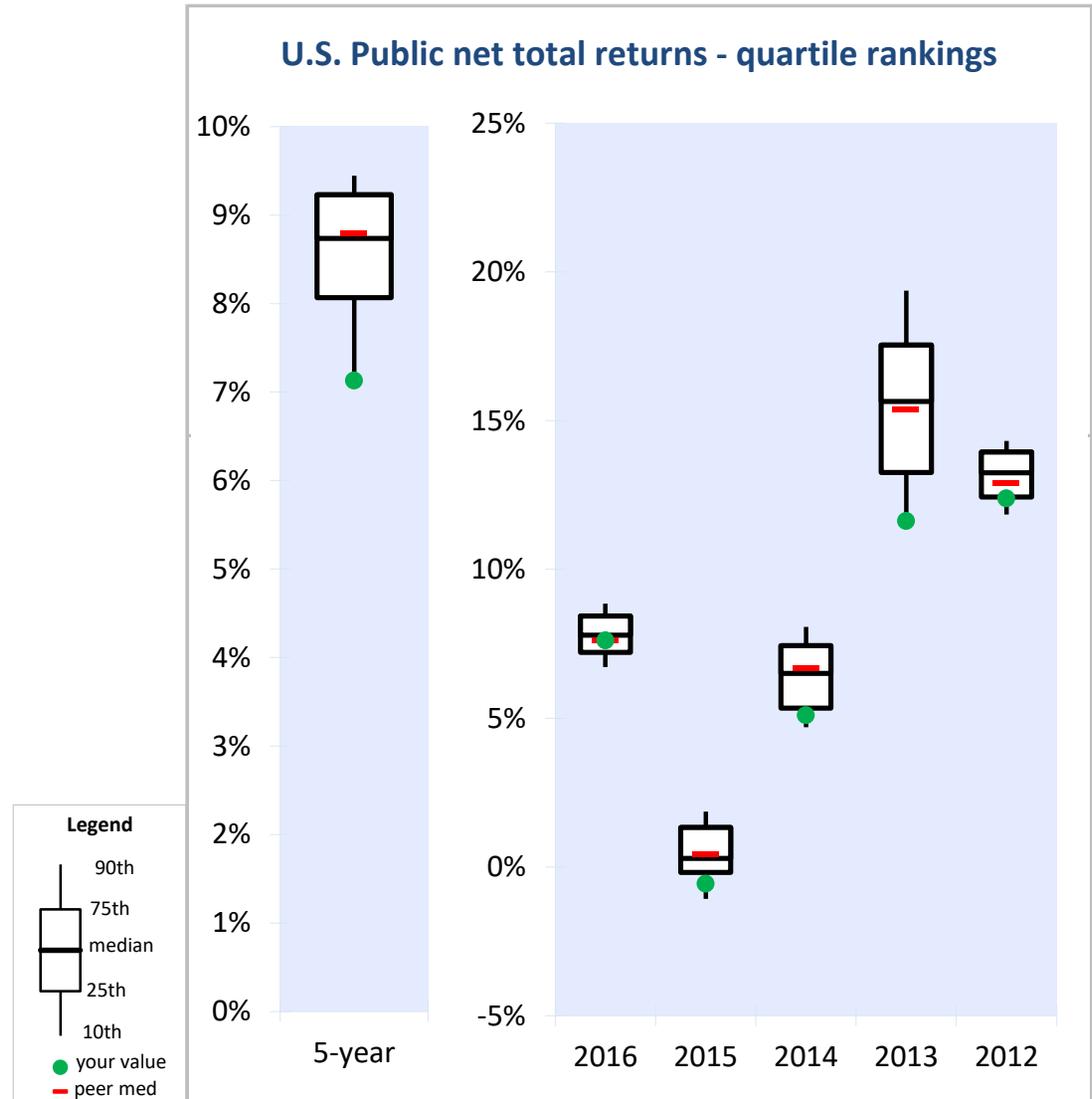
Net implementation value added versus excess cost. Does paying more get you more?

Your 5-year net total return of 7.1% was below both the U.S. Public median of 8.7% and the peer median of 8.8%.

Total returns, by themselves, provide little insight into the reasons behind relative performance. Therefore, we separate total return into its more meaningful components: policy return and value added.

| | Your 5-year |
|-----------------------|-------------|
| Net total fund return | 7.1% |
| - Policy return | 6.5% |
| = Net value added | 0.6% |

This approach enables you to understand the contribution from both policy mix decisions (which tend to be the board's responsibility) and implementation decisions (which tend to be management's responsibility).



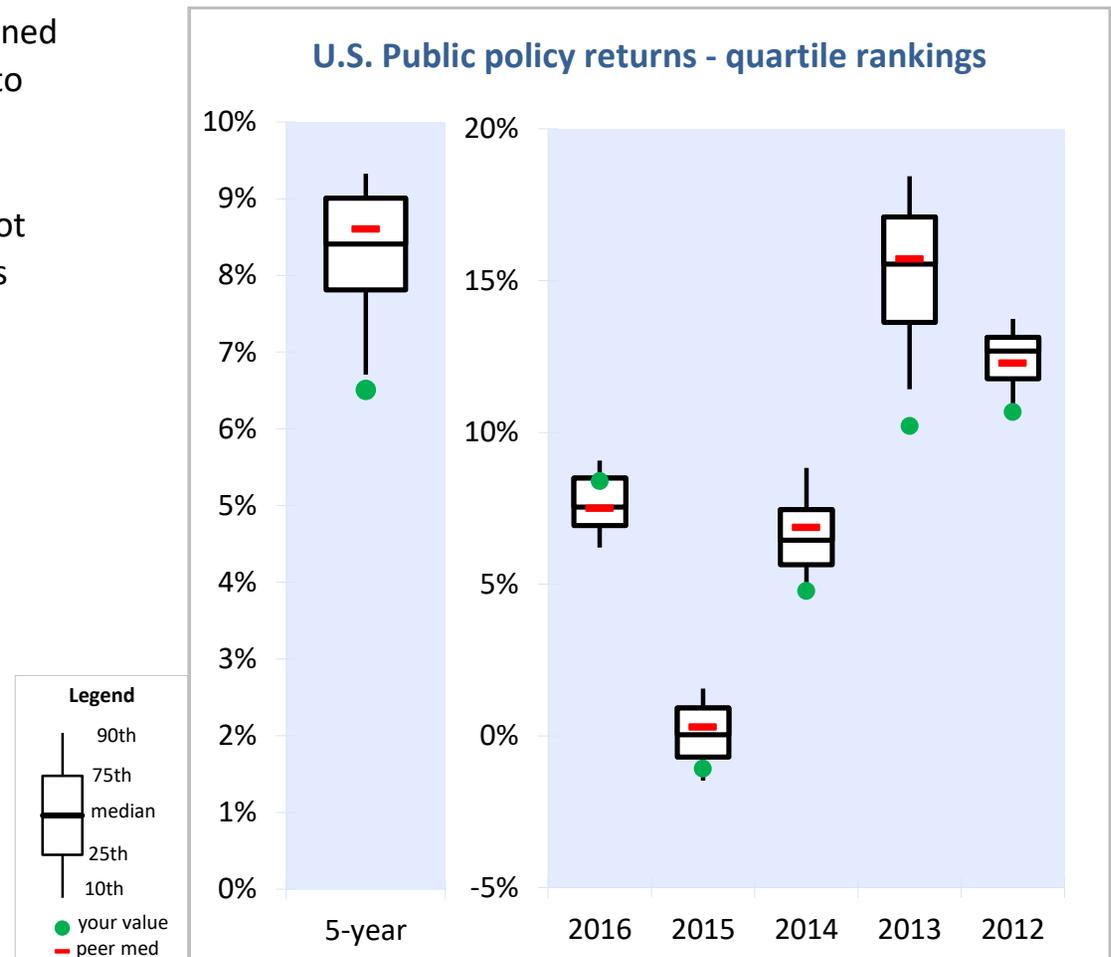
Your 5-year policy return of 6.5% was below both the U.S. Public median of 8.4% and the peer median of 8.6%.

Your policy return is the return you could have earned passively by indexing your investments according to your policy mix.

Having a higher or lower relative policy return is not necessarily good or bad. Your policy return reflects your investment policy, which should reflect your:

- Long term capital market expectations
- Liabilities
- Appetite for risk

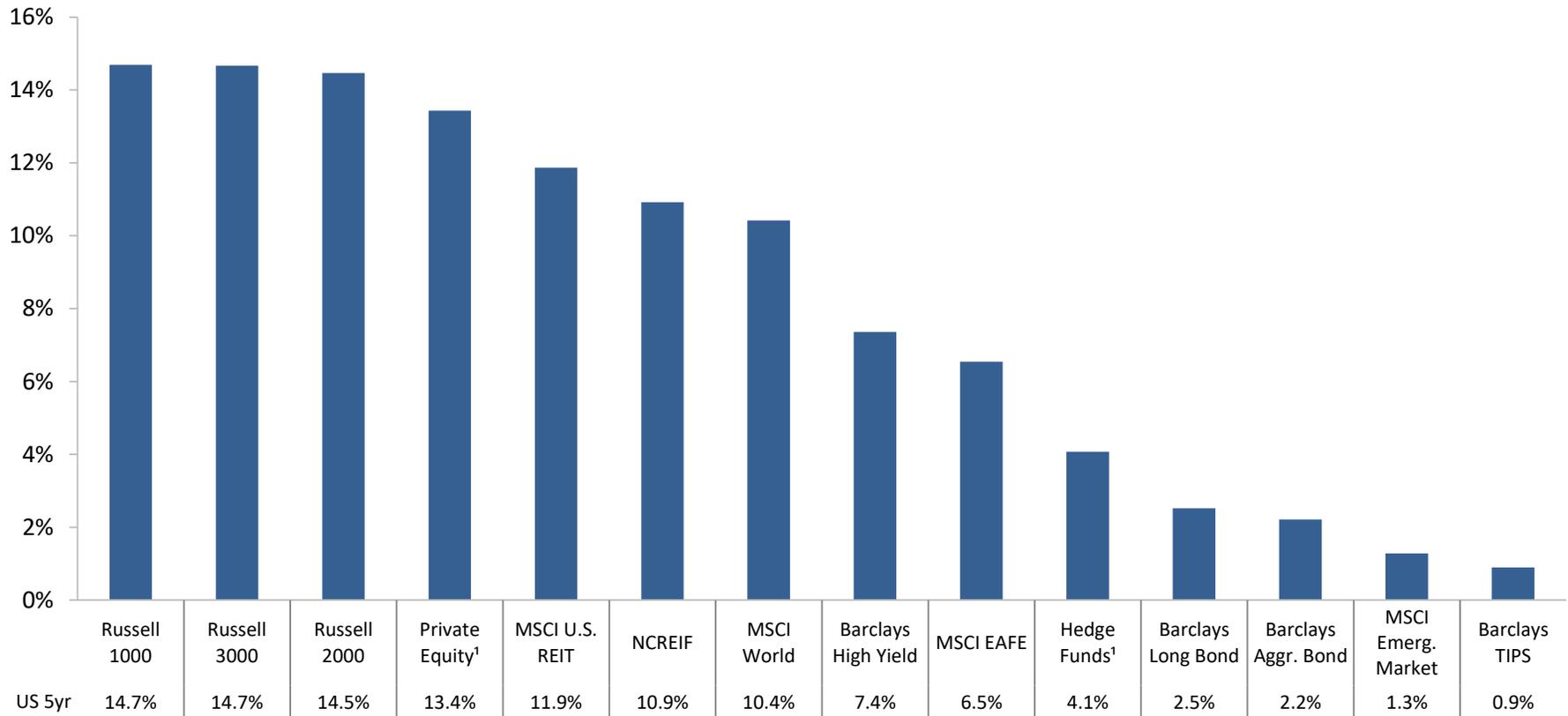
Each of these three factors is different across funds. Therefore, it is not surprising that policy returns often vary widely between funds.



To enable fairer comparisons, the policy returns of all participants except your fund were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. If CEM used this same adjustment for your fund, your 5-year policy return would be 7.3%, 0.8% higher than your actual 5-year policy return of 6.5%. Mirroring this, your 5-year total fund net value added would be 0.8% lower. Refer to the Research section pages 6-7 for details.

Differences in policy returns are caused by differences in benchmarks and policy mix. The two best performing asset classes for the 5 years ending 2016 were U.S. large cap stock (Russell 1000) and U.S. stock (Russell 3000).

5-Year returns for frequently used benchmark indices



1. The private equity benchmark is the average of the default private equity benchmark returns applied to U.S. participants. The hedge fund benchmark is the average of benchmark returns reported by U.S. participants.

Your 5-year policy return was below the U.S. Public median primarily because of:

- The negative impact of your lower weight in Total Stock (your 32% 5-year average weight versus a U.S. average of 48%). Stock outperformed fixed income over the past 5 years.
- The negative impact of your higher weight in one of the poorer performing asset classes of the past 5 years: Cash (your 4% 5-year average weight versus a U.S. average of 0%).
- The negative impact of your higher weight in one of the poorer performing asset classes of the past 5 years: Commodities (your 3% 5-year average weight versus a U.S. average of 1%).

5-year average policy mix for calendar years 2012-2016

| | Your Fund | Peer Avg. | U.S. Public Avg. |
|-------------------------------|-----------|-----------|------------------|
| Aggregated Stock ¹ | 32% | 49% | 48% |
| Total Stock | 32% | 49% | 48% |
| U.S. Bonds | 9% | 20% | 17% |
| High Yield Bonds | 6% | 2% | 2% |
| Fixed Income - Emerging | 6% | 1% | 1% |
| Global Bonds | 1% | 1% | 2% |
| Cash | 4% | 1% | 0% |
| Other Fixed Income | 0% | 3% | 5% |
| Total Fixed Income | 26% | 28% | 26% |
| Global TAA | 10% | 1% | 2% |
| Hedge Funds ² | 7% | 3% | 5% |
| Commodities | 3% | 1% | 1% |
| Real Estate incl. REITS | 5% | 8% | 8% |
| Other Real Assets* | 0% | 2% | 2% |
| Private Equity ³ | 16% | 9% | 9% |
| Total | 100% | 100% | 100% |

* Other real assets includes natural resources and infrastructure.

1. Policy benchmark switched to a single Global Equity index for public equities in 2013.

2. Does not include Absolute Return hedge fund investments used in Portable Alpha implementation.

3. Private equity includes private equity and private equity style private debt.

Your policy asset mix has changed over the past 5 years. At the end of 2016 your policy mix compared to your peers and the U.S. universe as follows:

Policy asset mix

| Asset class | Your fund | | Peer | U.S. Public |
|-----------------------------|-------------|-------------|--------------|--------------|
| | 2012 | 2016 | avg. 2016 | avg. 2016 |
| U.S. Stock | 14% | 0% | 22% | 21% |
| EAFE Stock | 8% | 0% | 3% | 5% |
| Emerging Market Stock | 8% | 0% | 1% | 2% |
| ACWIXUS Stock | 0% | 0% | 11% | 9% |
| Global Stock | 0% | 36% | 9% | 9% |
| Total Stock | 30% | 36% | 48% | 46% |
| U.S. Bonds | 12% | 10% | 19% | 16% |
| High Yield Bonds | 6% | 7% | 1% | 2% |
| Fixed Income - Emerging | 6% | 5% | 1% | 1% |
| Global Bonds | 1% | 0% | 1% | 1% |
| Cash | 7% | 2% | 1% | -1% |
| Other Fixed Income | 0% | 0% | 3% | 6% |
| Total Fixed Income | 32% | 24% | 27% | 25% |
| Global TAA | 10% | 10% | 1% | 2% |
| Hedge Funds ¹ | 5% | 4% | 3% | 5% |
| Commodities | 3% | 3% | 1% | 1% |
| Real Estate incl. REITS | 3% | 7% | 9% | 8% |
| Other Real Assets* | 0% | 1% | 3% | 3% |
| Private Equity ² | 17% | 15% | 10% | 9% |
| Total | 100% | 100% | 100% | 100% |

1. Does not include Absolute Return hedge fund investments used in Portable Alpha implementation.

2. Private equity includes private equity and private equity style private debt.

* Other real assets includes natural resources and infrastructure

Net value added is the component of total return from active management.

Your 5-year net value added was 0.6%.

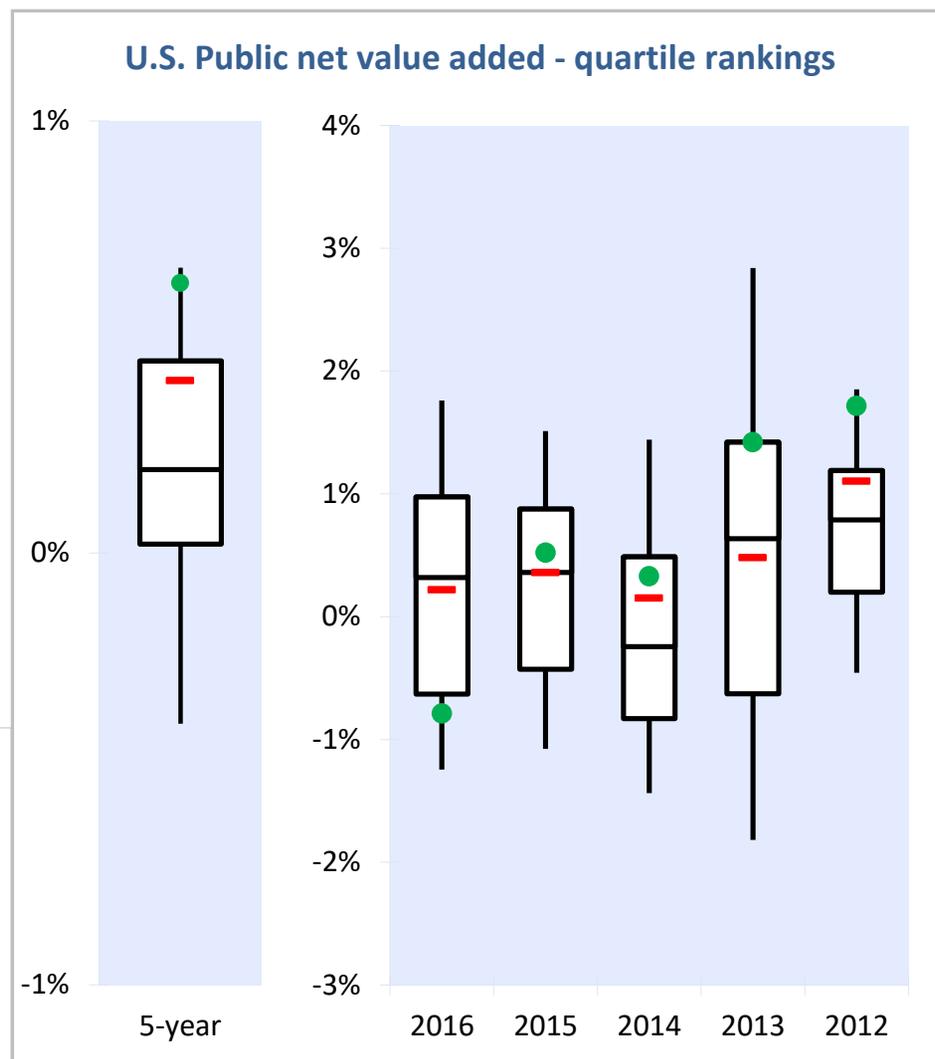
Net value added equals total net return minus policy return.

Value added for South Carolina Retirement Systems Investment Commission

| Year | Net Return | Policy Return | Net value Added |
|--------|------------|---------------|-----------------|
| 2016 | 7.6% | 8.4% | (0.8%) |
| 2015 | (0.6%) | (1.1%) | 0.5% |
| 2014 | 5.1% | 4.8% | 0.3% |
| 2013 | 11.6% | 10.2% | 1.4% |
| 2012 | 12.4% | 10.7% | 1.7% |
| 5-year | 7.1% | 6.5% | 0.6% |

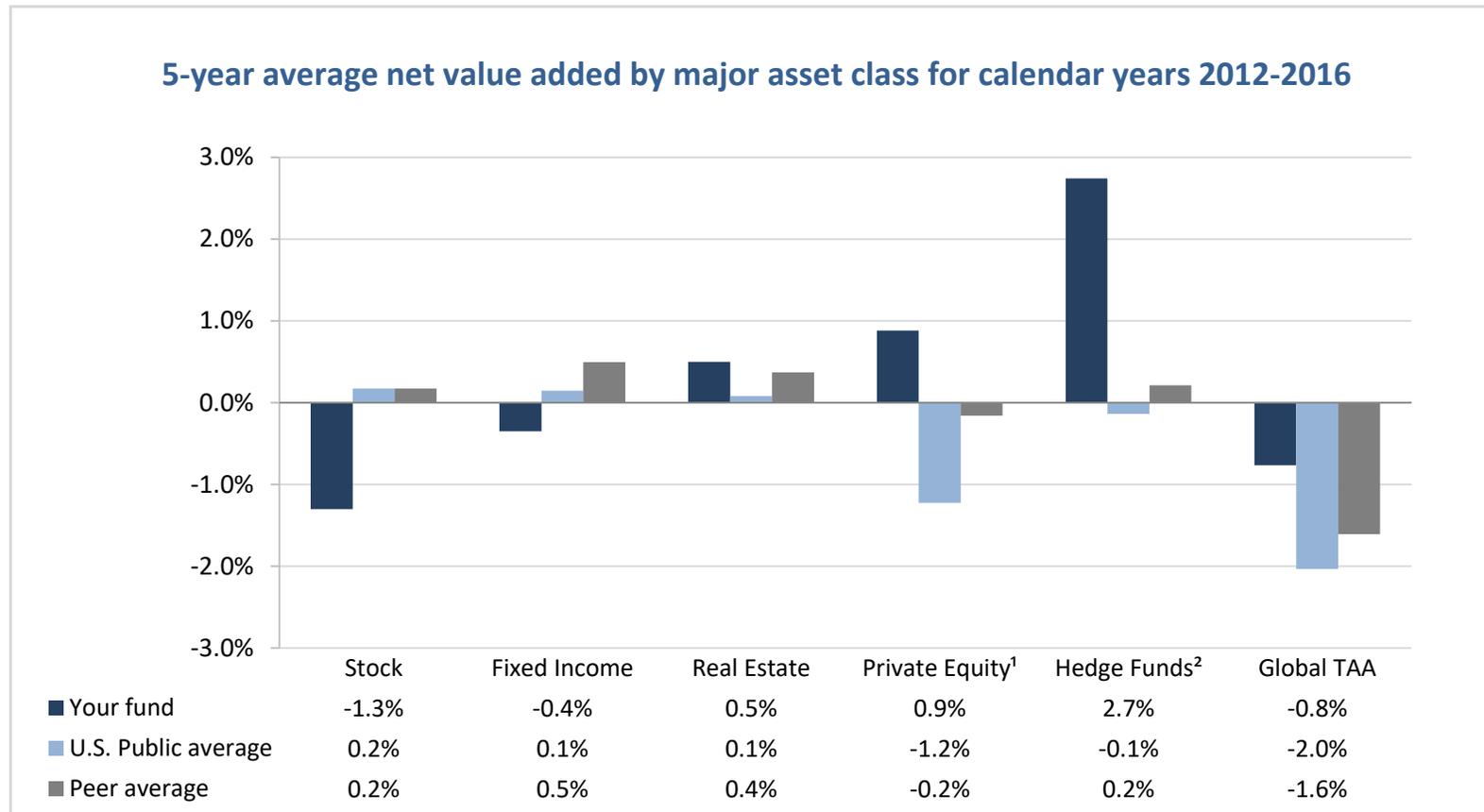
Your 5-year net value added of 0.6% compares to a median of 0.4% for your peers and 0.2% for the U.S. Public universe.

In dollars, your 0.6% 5-year value added translates into approximately \$1.0 billion of cumulative value added over 5 years, or \$0.7 billion more than if you had earned the U.S. Public median of 0.2%.



Your value added was impacted by your choice of benchmarks for private equity. CEM suggests using lagged, investable benchmarks for private equity (see Research section, pages 6-7, for reasons why). If your fund used the private equity benchmark suggested by CEM, your 5-year total fund value added would have been 0.8% lower.

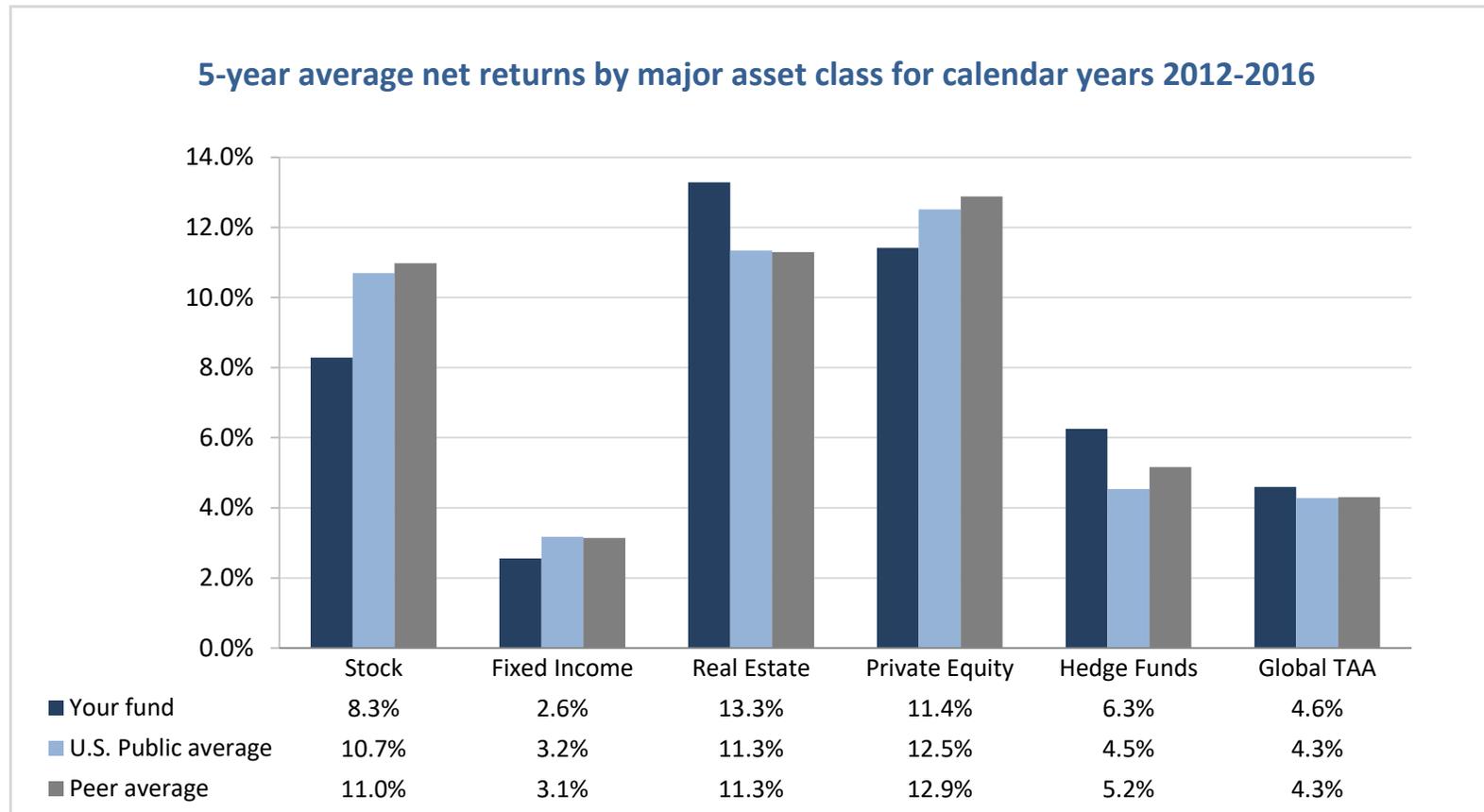
You had positive 5-year net value added in Real Estate, Private Equity and Hedge Funds.



1. To enable fairer comparisons, the private equity benchmarks of all participants, except your fund, were adjusted to reflect lagged, investable, public-market indices. If your fund used the private equity benchmark suggested by CEM, your fund's 5-year private equity net value added would have been -3.8%. Refer to the Research section, pages 6-7, for details as to why this adjustment makes for better comparisons. It is also useful to compare total returns. Your 5-year total return of 11.4% for private equity was below the U.S. average of 12.5%.

2. It is also useful to compare total returns for hedge funds. Your 5-year return of 6.3% for hedge funds was above the U.S. average of 4.5%.

You had higher 5-year net returns in Real Estate, Hedge Funds and Global TAA relative to the U.S. Public average.



Your investment costs benchmarked in this report for calendar year 2016 were \$211.6 million or 75.5 basis points.

| Asset management costs by asset class and style (\$000s) | Internal Mgmt | | External Management | | | Total | |
|--|---------------|------------------------|---------------------|---------------------|----------------------------|---------|---------|
| | Active | Overseeing of external | Passive fees | Active base fees | Perform. fees ² | | |
| U.S. Stock - Broad/All | | 516 | | 8,327 | | 8,844 | 3.2 bp |
| Stock - Emerging | | 272 | | 7,189 | | 7,461 | 2.7 bp |
| Stock - Global | | 1,397 | 468 | 8,055 | | 9,920 | 3.5 bp |
| Fixed Income - U.S. | 53 | 508 | | 2,503 | | 3,064 | 1.1 bp |
| Fixed Income - Emerging | | 435 | 19 | 6,185 | | 6,639 | 2.4 bp |
| Fixed Income - High Yield | | 537 | | 8,075 | | 8,613 | 3.1 bp |
| Cash | 384 | 341 | | 1,591 | 211 | 2,526 | 0.9 bp |
| Global TAA | | 555 | | 10,240 | 811 | 11,606 | 4.1 bp |
| Hedge Funds - Direct | | 350 | | 26,121 | 15,228 | 41,699 | 14.9 bp |
| Hedge Funds - Fund of Funds | | 563 | | 24,938 | 4,993 | 30,494 | 10.9 bp |
| REITs | | 134 | 838 | | | 972 | 0.3 bp |
| Real Estate - LPs | | 419 | | 16,706 ¹ | 10,589 ² | 17,125 | 6.1 bp |
| Real Estate - Co-investments | | 5 | | 47 | | 52 | 0.0 bp |
| Infrastructure | | 77 | | 765 | | 842 | 0.3 bp |
| Diversified Private Equity | | 382 | | 24,892 ¹ | 43,990 ² | 25,273 | 9.0 bp |
| Diversified Priv.Eq. - Fund of Funds | | 179 | | 10,667* | 1,017 ² | 10,846 | 3.9 bp |
| Diversified Priv. Eq. - Co-investments | | 210 | | 3,233 | | 3,443 | 1.2 bp |
| Other Private Equity | | 456 | | 17,130 ¹ | 16,791 ² | 17,586 | 6.3 bp |
| Other Private Equity - Co-investments | | 2 | | 15 | | 17 | 0.0 bp |
| Overlay Programs | | 229 | | 1,077 | | 1,305 | 0.5bp |
| Total excluding private asset performance fees | | | | | | 208,326 | 74.3bp |

Oversight, custodial and other costs ³

| | | | | | | | |
|--|--|--|--|--|--|-------|--------|
| Oversight of the fund | | | | | | 1,056 | 0.4 bp |
| Trustee & custodial | | | | | | 925 | 0.3bp |
| Consulting and performance measurement | | | | | | 940 | 0.3bp |
| Audit | | | | | | 99 | 0.0bp |
| Other | | | | | | 267 | 0.1bp |
| Total oversight, custodial & other costs | | | | | | 3,288 | 1.2bp |

Total investment costs (excl. transaction costs & private asset performance fees) 211,614 75.5bp

Footnotes

¹ Cost derived from the partnership level detail you provided. Costs are based on partnership contract terms.

Refer to Appendix A for full details.

² Total cost excludes carry/performance fees for real estate, infrastructure, natural resources and private equity. Performance fees are included for the public market asset classes and hedge funds.

³ Excludes non-investment costs, such as PBGC premiums and preparing checks for retirees.

* Diversified private equity fund of funds have a 100 bps default for base fees added in addition to reported underlying fees.

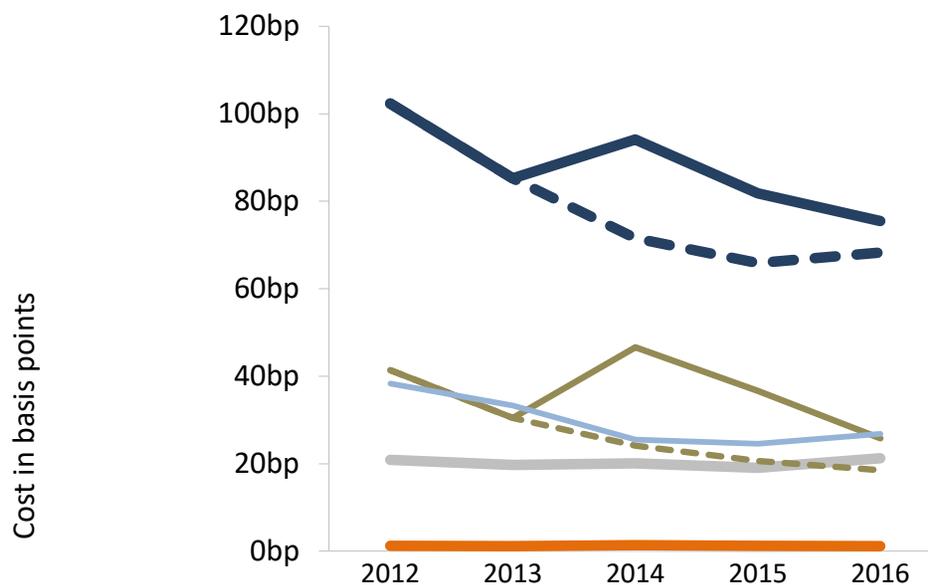
Your costs decreased between 2012 and 2016.

Your costs decreased primarily because:

- You decreased your investment in the highest cost asset classes. Your holdings of hedge funds, real estate and private equity decreased from 38% of assets in 2012 to 33% in 2016.
- You increased your use of lower cost passive and internal management from 9% of assets in 2012 to 19% in 2016.
- You decreased your use of funds of funds from 31% of hedge funds, real estate and private equity in 2012 to 26% in 2016. Funds of funds are higher cost than direct funds.

Starting in 2014, CEM began including hedge fund performance fees in total costs. Prior year costs do not include hedge fund performance fees. Your cost in 2016 excluding hedge fund performance fees was 68.3 bps.

Trend in your investment costs



| | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|-------|------|------|------|------|
| Public Assets (ex. hedge funds ex. overlay) | 20.9 | 19.7 | 20.1 | 19.1 | 21.2 |
| Hedge Funds (before perf. fees) | 41.4 | 30.5 | 24.1 | 20.6 | 18.5 |
| Hedge Funds | 41.4 | 30.5 | 46.6 | 36.6 | 25.8 |
| Overlay | 0.6 | 0.5 | 0.5 | 0.4 | 0.5 |
| Private Assets | 38.3 | 33.3 | 25.5 | 24.6 | 26.8 |
| Oversight | 1.2 | 1.1 | 1.4 | 1.2 | 1.2 |
| Total Cost (before HF perf. fees) | 102.4 | 85.2 | 71.6 | 65.9 | 68.3 |
| Total Cost | 102.4 | 85.2 | 94.1 | 81.8 | 75.5 |

Your total investment cost of 75.5 bps was above both the peer median of 68.4 bps and the U.S. public median of 56.3 bps.

Differences in total investment cost are often caused by two factors that are often outside of management's control:

- Asset mix, particularly holdings of the highest cost asset classes: real estate (excl REITS), infrastructure, hedge funds and private equity. These high cost assets equaled 33% of your fund's assets at the end of 2016 versus a peer average of 24%.
- Fund size. Bigger funds have advantages of scale.

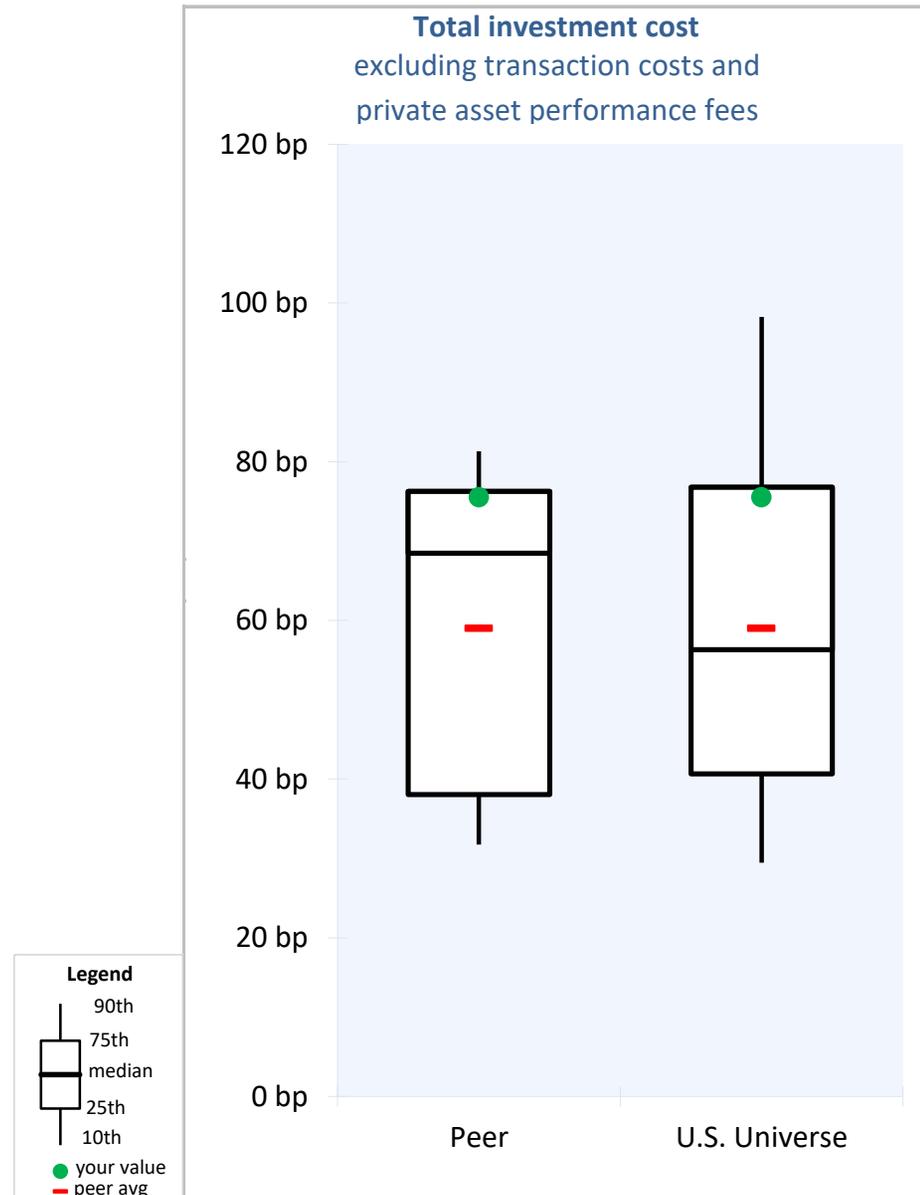
Therefore, to assess whether your costs are high or low given your unique asset mix and size, CEM calculates a benchmark cost for your fund. This analysis is shown on the following page.

Asset mix is set by policy and may include high cost asset classes. Peers who do not have high cost asset classes in their policy mix will have lower total costs. Therefore, policy asset mix is a major driver of total cost.

Fund size is also a major driver of cost because funds with a larger size have scale advantages are often able to negotiate lower

A total cost comparison to peers which is not adjusted for asset mix and fund size will not be an appropriate measure because of these factors. Used out of context, a total cost comparison could be misleading and lead to the wrong conclusion.

In order to provide plan sponsors with accurate feedback regarding reasonableness of costs, CEM takes asset mix and overall fund size into consideration. CEM calculates a benchmark cost for your fund that considers your unique asset mix and style. This analysis is shown on the following page.



Benchmark cost analysis suggests that, after adjusting for fund size and asset mix, your fund was slightly low cost by 1.0 basis points in 2016.

Your benchmark cost is an estimate of what your cost would be given your actual asset mix and the median costs that your peers pay for similar services. It represents the cost your peers would incur if they had your actual asset mix.

Your total cost of 75.5 bp was slightly below your benchmark cost of 76.5 bp. Thus, your cost savings was 1.0 bp.

Your cost versus benchmark

| | \$000s | basis points |
|----------------------------|---------|--------------|
| Your total investment cost | 211,614 | 75.5 bp |
| Your benchmark cost | 214,293 | 76.5 bp |
| Your excess cost | (2,679) | (1.0) bp |

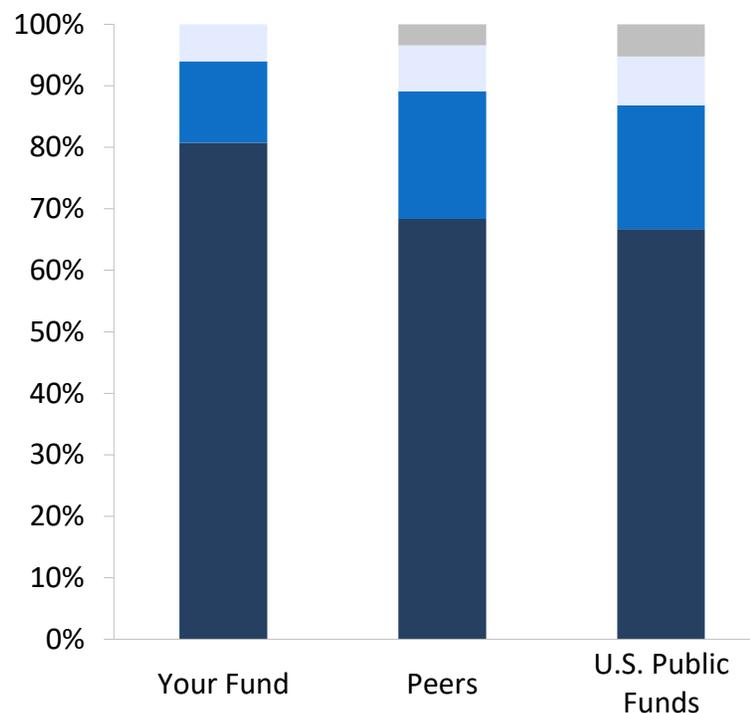
Differences in cost performance are often caused by differences in implementation style.

Implementation style is defined as the way in which your fund implements asset allocation. It includes internal, external, active, passive and fund of funds styles.

The greatest cost impact is usually caused by differences in the use of:

- External active management because it tends to be much more expensive than internal or passive management. You used more external active management than your peers (your 81% versus 68% for your peers).
- Within external active holdings, fund of funds usage because it is more expensive than direct fund investment. You had more in fund of funds. Your 26% of hedge funds, real estate and private equity in fund of funds compared to 15% for your peers.

Implementation style¹



| | | | |
|------------------|-----|-----|-----|
| Internal passive | 0% | 3% | 5% |
| Internal active | 6% | 7% | 8% |
| External passive | 13% | 21% | 20% |
| External active | 81% | 68% | 67% |

1. The graph above does not take into consideration the impact of derivatives. The values in the graph are calculated using average holdings.

Differences in implementation style cost you 4.8 bp relative to your peers.

Calculation of the cost impact of differences in implementation style for calendar year 2016

| Asset class | Your avg holdings in \$mils (A) | % External active | | | Premium vs passive & internal ¹ (C) | Cost/ (savings) \$000s bps (A X B X C) | |
|---|------------------------------------|-------------------|--------------|---------------------|---|---|---------------|
| | | You | Peer average | More/ (less) (B) | | | |
| U.S. Stock - Broad/All | 1,820 | 99.9% | 34.2% | 65.7% | 39.5 bp | 4,724 | |
| Stock - Emerging | 957 | 100.0% | 78.9% | 21.1% | 52.4 bp | 1,059 | |
| Stock - Global | 4,922 | 49.8% | 66.0% | (16.2%) | 37.3 bp | (2,971) | |
| Fixed Income - U.S. | 1,993 | 89.9% | 71.5% | 18.3% | 13.5 bp | 494 | |
| Fixed Income - Emerging | 1,532 | 88.4% | 94.0% | (5.7%) | 31.6 bp | (274) | |
| Fixed Income - High Yield | 1,893 | 100.0% | 100.0% | 0.0% | | 0 | |
| Global TAA | 1,956 | 100.0% | 100.0% | 0.0% | | 0 | |
| REITs | 276 | 0.0% | 68.9% | (68.9%) | 42.7 bp | (811) | |
| Infrastructure | 274 | 100.0% | 100.0% | 0.0% | | 0 | |
| Partnerships, as a proportion of external: | 274 | 0.0% | 78.2% | (78.2%) | 45.5 bp | (976) | |
| Real Estate ex-REITs | 1,614 | 100.0% | 98.6% | 1.4% | N/A ² | 0 | |
| Partnerships, as a proportion of external: | 1,614 | 100.0% | 48.6% | 51.4% | 49.4 bp | 4,097 | |
| Diversified Private Equity | 2,916 | 100.0% | 100.0% | 0.0% | N/A ² | 0 | |
| Other private equity | 1,478 | 100.0% | 100.0% | 0.0% | | 0 | |
| Impact of less/more external active vs. lower cost styles | | | | | | 5,342 | 1.9 bp |
| | | | | | | <u>Fund of funds % of LPs vs. direct LP¹</u> | |
| Hedge Funds | 3,217 | 61.7% | 33.0% | 28.7% | 53.5 bp | 4,943 | |
| Performance Fee Impact: | 3,217 | 61.7% | 33.0% | 28.7% | N/A ² | 0 | |
| Real Estate ex-REITs - LPs | 1,614 | 0.0% | 2.8% | (2.8%) | N/A ² | 0 | |
| Diversified Private Equity - LPs | 2,916 | 17.3% | 12.2% | 5.1% | 78.3 bp | 1,168 | |
| Impact of less/more fund of funds vs. direct LPs | | | | | | 6,111 | 2.2 bp |
| | | | | | | <u>Overlays and other</u> | |
| Impact of higher use of portfolio level overlays | | | | | | 1,885 | 0.7 bp |
| Impact of mix of internal passive, internal active, and external passive ³ | | | | | | 6 | 0.0 bp |
| Total impact of differences in implementation style | | | | | | 13,345 | 4.8 bp |

Footnotes

1. The cost premium is the additional cost of external active management relative to the average of other lower cost implementation styles - internal passive, internal active and external passive.
2. A cost premium listed as 'N/A' indicates that there was not enough peer data in one or both styles to calculate the premium.
3. The 'Impact of mix of internal passive, internal active and external passive' quantifies the net cost impact of differences in cost between, and your relative use of, these 'low-cost' styles.

The net impact of paying more/less for external asset management costs saved 5.6 bps.

Cost impact of paying more/(less) for external asset management for calendar year 2016

| | Your avg holdings in \$mils (A) | Cost in bps | | | Cost/ (savings) in \$000s (A X B) |
|---|--|--------------------|----------------|------------------------|--|
| | | Your Fund | Peer median | More/ (less) (B) | |
| U.S. Stock - Broad/All - Passive | 1 | 2.8 | 2.0 | 0.8 | 0 |
| U.S. Stock - Broad/All - Active | 1,819 | 48.6 | 41.5 | 7.1 | 1,294 |
| Stock - Emerging - Active | 957 | 78.0 | 60.2 | 17.8 | 1,703 |
| Stock - Global - Passive | 2,470 | 4.7 | 4.9 | (0.2) | (47) |
| Stock - Global - Active | 2,452 | 35.7 | 42.2 | (6.5) | (1,596) |
| Fixed Income - U.S. - Active | 1,791 | 16.8 | 15.7 | 1.1 | 197 |
| Fixed Income - Emerging - Passive | 178 | 3.9 | Insufficient | | |
| Fixed Income - Emerging - Active | 1,354 | 48.5 | 35.5 | 13.0 | 1,758 |
| Fixed Income - High Yield - Active | 1,893 | 45.5 | 35.5 | 10.0 | 1,895 |
| Global TAA - Active | 1,956 | 59.3 ¹ | 73.2* | (13.8) | (2,704) |
| Hedge Funds - Active | 1,232 | 214.9 ¹ | 140.8 | 74.1 | 9,127 |
| | | Performance Fees: | | | |
| | 1,232 | 123.6 | 56.0* | 67.6 | 8,330 |
| Hedge Funds - Fund of Fund | 1,985 | 128.5 ¹ | 194.3 | (65.8) | (13,053) |
| | | Performance Fees: | | | |
| | 1,985 | 25.2 | 56.0* | (30.8) | (6,119) |
| Infrastructure - Active | 274 | 30.7 | 85.4 | (54.7) | (1,500) |
| REITs - Passive | 276 | 35.3 | 9.1 | 26.2 | 722 |
| Real Estate ex-REITs - Limited Partnership | 1,614 | 106.4 | 120.3 | (13.9) | (2,237) |
| Diversified Private Equity - Active | 2,412 | 119.1 ¹ | 165.0 | (45.9) | (11,078) |
| Diversified Private Equity - Fund of Fund | 504 | 215.3 ¹ | 243.3 | (28.0) | (1,411) |
| Other Private Equity - Active | 1,478 | 119.1 ¹ | 116.5 | 2.6 | 390 |
| | <i>Notional</i> | | | | |
| Derivatives/Overlays - Passive Beta | 4,627 | 2.8 | 5.6* | (2.8) | (1,289) |
| Total impact of paying more/less for external management | | | | | (15,617) |
| Total in bps | | | | | (5.6) bp |

'Insufficient' indicates insufficient peer and universe data to do meaningful comparisons.

*Universe median used as peer data was insufficient.

¹ You paid performance fees in these asset classes.

² You paid performance fees in these asset classes but they are excluded in this analysis because most of your peers did not have this data readily available for disclosure

You paid more than peers for active hedge fund performance fees due to stronger performance, but less for fund of fund hedge funds.

Cost impact of paying more/(less) for private asset performance fees for calendar year 2016

| | Your avg holdings in \$mils (A) | Cost in bps | | | Cost/ (savings) in \$000s (A X B) |
|--|--|--------------|-----------------|------------------------|--|
| | | Your Fund | Univ. median | More/ (less) (B) | |
| Hedge Funds - Active | 1,232 | 123.6 | 56.0* | 67.6 | 8,330 |
| Hedge Funds - Fund of Fund | 1,985 | 25.2 | 56.0* | (30.8) | (6,119) |
| Total for private asset performance fees | | | | | 2,211 |
| Total in bps | | | | | 0.8 bp |

Your hedge funds outperformed their benchmark by 2.7% over 5 years compared to the U.S. public average, which underperformed their benchmark by 0.1%. Your 5-year return for hedge funds of 6.3% was also above the U.S. average of 4.5%

The net impact of paying more/less for internal asset management costs rounds to 0.0 bps.

**Cost impact of paying more/(less) for internal asset management
for calendar year 2016**

| | Your avg holdings in \$mils (A) | Cost in bps | | | Cost/ (savings) in \$000s (A X B) |
|--|--|--------------|----------------|------------------------|--|
| | | Your Fund | Peer median | More/ (less) (B) | |
| Fixed Income - U.S. - Active | 202 | 2.6 | 2.5 | 0.1 | 2 |
| Total impact of paying more/less for internal management | | | | | 2 |
| Total in bps | | | | | 0.0 bp |

The net impact of differences in oversight, custodial & other costs saved 0.1 bps.

Cost impact of differences in oversight, custodial & other costs for calendar year 2016

| | Your avg holdings in \$mils (A) | Cost in bps | | | Cost/ (savings) in \$000s (A X B) |
|---------------------|--|--------------|----------------|------------------------|--|
| | | Your fund | Peer median | More/ (less) (B) | |
| Oversight | 28,025 | 0.4 | 0.6 | (0.2) | (596) |
| Consulting | 28,025 | 0.3 | 0.3 | 0.0 | 84 |
| Custodial | 28,025 | 0.3 | 0.3 | 0.1 | 196 |
| Audit | 28,025 | 0.0 | 0.0 | (0.0) | (40) |
| Other | 28,025 | 0.1 | 0.1 | (0.0) | (52) |
| Total | | | | | (408) |
| Total in bps | | | | | (0.1) bp |

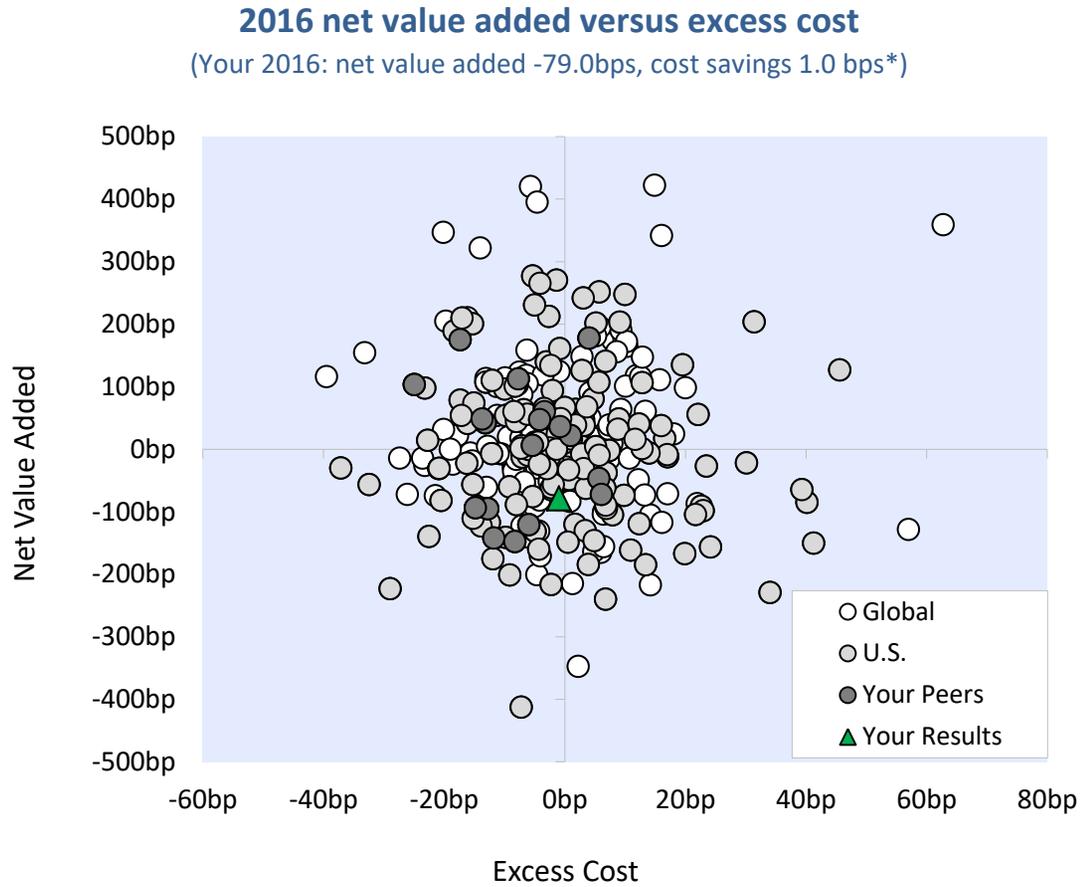
¹ Oversight of the fund includes staff salaries, direct expenses (travel, fees paid to directors, director's insurance, etc.) and related unallocated overhead pertaining to overseeing the fund assets. Include the costs of executives and their staff responsible for the total fund or responsible for overseeing multiple asset categories (for example, CEO, CIO office, Board of Director/Investment Committee etc.). Staff responsible for overseeing a single asset class category (i.e. private assets, stock, etc.) have their costs included with that asset category.

In summary, your fund was slightly low cost because you paid less than peers for similar services, primarily within hedge fund performance fees. These savings were mostly offset by your higher cost implementation style.

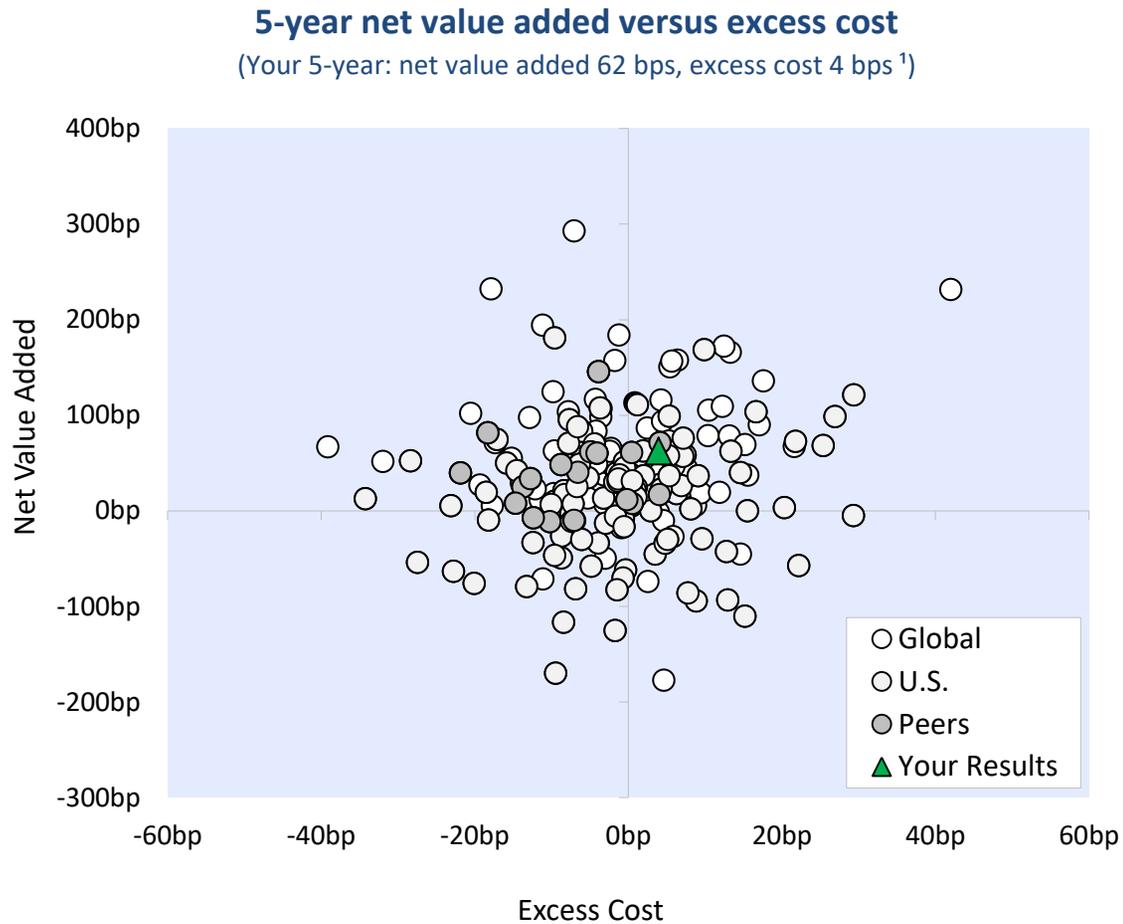
Explanation of your cost status

| | Excess Cost/ (Savings) | |
|---|---------------------------|--------------|
| | \$000s | bps |
| 1. Higher cost implementation style | | |
| • More external active management (less lower cost passive and internal) | 5,342 | 1.9 |
| • More fund of funds | 6,111 | 2.2 |
| • More overlays | 1,885 | 0.7 |
| • Other style differences | 6 | 0.0 |
| | <u>13,345</u> | <u>4.8</u> |
| 2. Paying less than peers for similar services | | |
| • External investment management costs | (15,617) | (5.6) |
| • Internal investment management costs | 2 | 0.0 |
| • Oversight, custodial & other costs | (408) | (0.1) |
| | <u>(16,024)</u> | <u>(5.7)</u> |
| Total savings | (2,679) | (1.0) |

Your 2016 performance placed in the negative value added, low cost quadrant of the cost effectiveness chart.



Your fund achieved 5-year net value added of 62 bps and excess cost of 4 bps on the cost effectiveness chart.



1. Your 5-year excess cost of 4 basis points is the average of your excess cost for the past 5 years.

| | 2016 | 2015 | 2014 | 2013 | 2012 | 5-year |
|-----------------|--------|-------|-------|--------|--------|--------|
| Net value added | -79 bp | 52 bp | 33 bp | 142 bp | 172 bp | 62 bp |
| Excess Cost | -1 bp | 5 bp | 14 bp | 2 bp | 0 bp | 4 bp |

Key takeaways

Returns

- Your 5-year net total return was 7.1%. This was below the U.S. Public median of 8.7% and below the peer median of 8.8%.
- Your 5-year policy return was 6.5%. This was below the U.S. Public median of 8.4% and below the peer median of 8.6%.
- Your 5-year policy return was lower primarily because your policy mix had less allocation to better performing U.S. stock and greater allocation to less risky, lower performing cash than the U.S. Public and peer averages.

Value added

- Your 5-year net value added was 0.6%. This was above the U.S. Public median of 0.2% and above the peer median of 0.4%.
- In dollar terms, your 0.6% value added equals approximately \$1.0 billion over 5 years.

Cost and cost effectiveness

- Your investment cost of 75.5 bps was below your benchmark cost of 76.5 bps. This suggests that your fund was slightly low cost compared to your peers.
- Your fund was slightly low cost because you paid less than peers for similar services, primarily within hedge fund performance fees. These savings were mostly offset by your higher cost implementation style.
- Your fund achieved 5-year net value added of 62 bps and excess cost of 4 bps on the cost effectiveness chart.

2

Research and Trends

| | |
|--|----|
| Net value added | |
| - By region | 2 |
| - Trends | 3 |
| - By asset class | 4 |
| - By style | 5 |
| Private equity benchmarks | 6 |
| Implementation style | |
| - U.S. trends | 8 |
| - Global | 9 |
| Policy asset mix | |
| - U.S. trends | 10 |
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| Risk by type | 12 |
| Risk versus return | 13 |
| Impact of inflation sensitivity on policy asset mix decisions | 14 |
| Cost trends | 15 |
| Performance of defined benefit versus defined contribution plans | 16 |

The region with the highest net value added was Europe.

Value added by region¹ (period ending December 31, 2016)

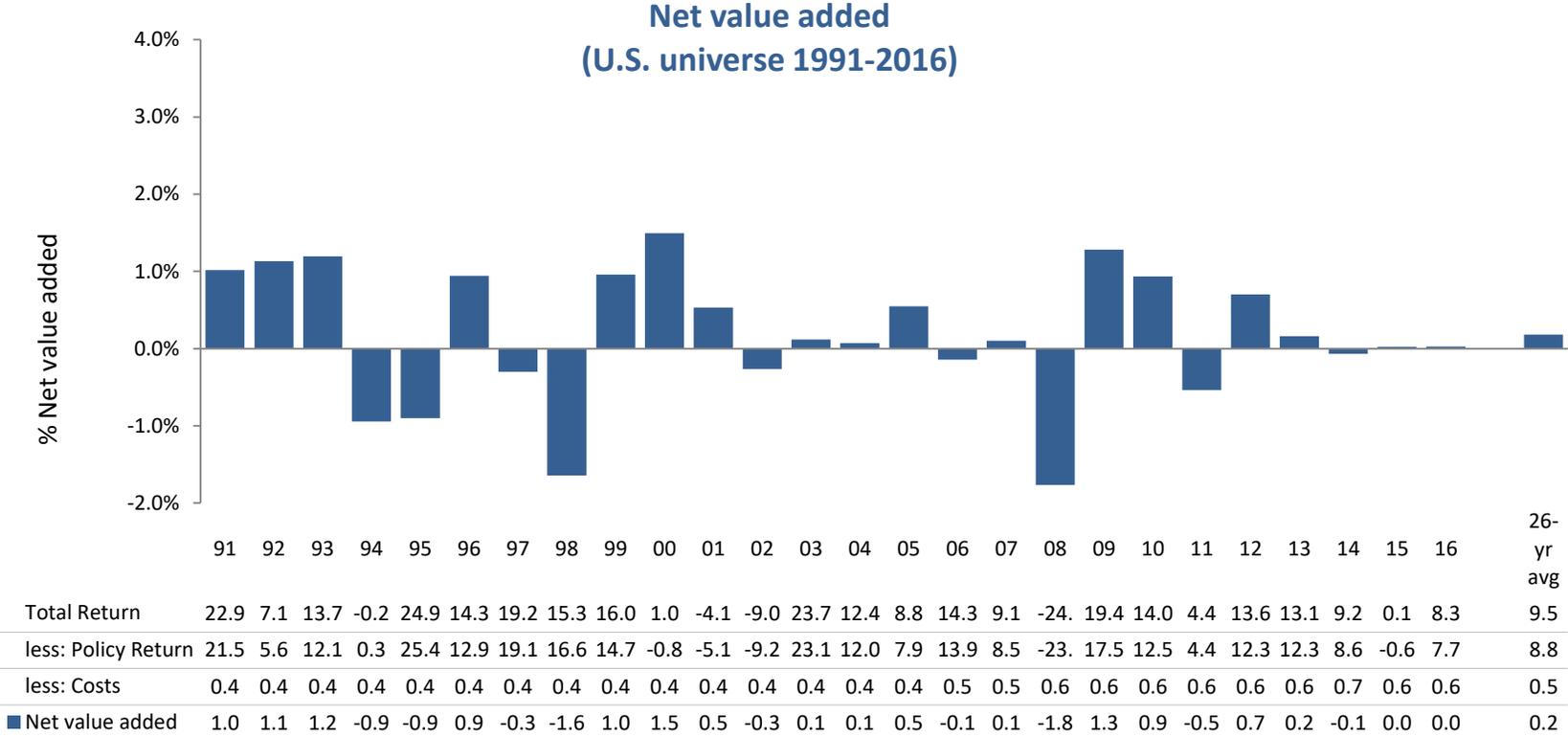
| | All funds | U.S. funds | Canadian funds | European funds | Asia-Pacific funds |
|-------------------------------|------------------------------|------------------------------|------------------------------|---|---|
| | 26-year average ³ | 26-year average ³ | 26-year average ³ | 23-year ² average ³ | 17-year ² average ³ |
| Total return | 8.95% | 9.50% | 8.02% | 7.25% | 7.96% |
| - Policy return | 8.35% | 8.85% | 7.48% | 6.53% | 7.59% |
| - <u>Costs</u> | <u>0.43%</u> | <u>0.48%</u> | <u>0.38%</u> | <u>0.31%</u> | <u>0.47%</u> |
| = Net value added | 0.17% | 0.18% | 0.17% | 0.41% | -0.10% |
| | | | | | |
| # of annual observations | 8,008 | 4,432 | 2,437 | 982 | 129 |
| Median fund size (\$ billion) | 7.0 | 8.0 | 2.9 | 31.8 | 40.0 |

1. Only regions with more than four participating funds are separately disclosed. Funds from regions with fewer than four participating funds are included in Global/ All Funds.

2. The shorter time periods for European and Asia-Pacific funds reflect the dates that CEM started collecting data in those regions.

3. Averages are the arithmetic average of annual averages.

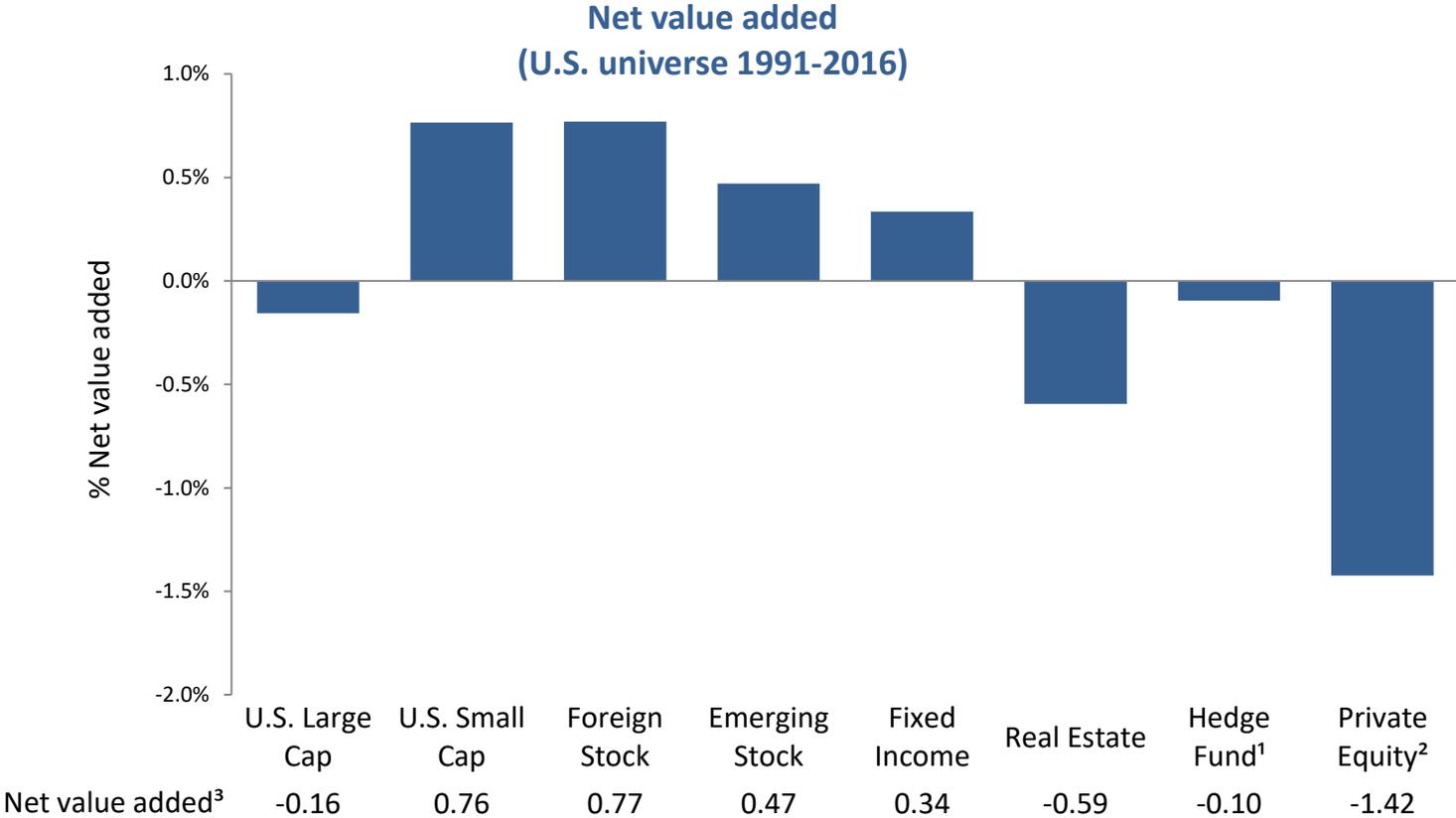
In the U.S., net value added averaged 0.2% over the past 26 years ending 2016.



| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|------|-----|------|------|------|------|------|------|------|------|------|------|------|------|-----|------|-----|------|------|------|------|------|------|------|------|-----|-----|
| Total Return | 22.9 | 7.1 | 13.7 | -0.2 | 24.9 | 14.3 | 19.2 | 15.3 | 16.0 | 1.0 | -4.1 | -9.0 | 23.7 | 12.4 | 8.8 | 14.3 | 9.1 | -24. | 19.4 | 14.0 | 4.4 | 13.6 | 13.1 | 9.2 | 0.1 | 8.3 | 9.5 |
| less: Policy Return | 21.5 | 5.6 | 12.1 | 0.3 | 25.4 | 12.9 | 19.1 | 16.6 | 14.7 | -0.8 | -5.1 | -9.2 | 23.1 | 12.0 | 7.9 | 13.9 | 8.5 | -23. | 17.5 | 12.5 | 4.4 | 12.3 | 12.3 | 8.6 | -0.6 | 7.7 | 8.8 |
| less: Costs | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.7 | 0.6 | 0.6 | 0.5 |
| ■ Net value added | 1.0 | 1.1 | 1.2 | -0.9 | -0.9 | 0.9 | -0.3 | -1.6 | 1.0 | 1.5 | 0.5 | -0.3 | 0.1 | 0.1 | 0.5 | -0.1 | 0.1 | -1.8 | 1.3 | 0.9 | -0.5 | 0.7 | 0.2 | -0.1 | 0.0 | 0.0 | 0.2 |

Value added analysis is based on 4,432 annual fund total performance observations from the CEM U.S. universe for the 26-year period ending 2016. The 26-year average is an arithmetic average of the annual averages.

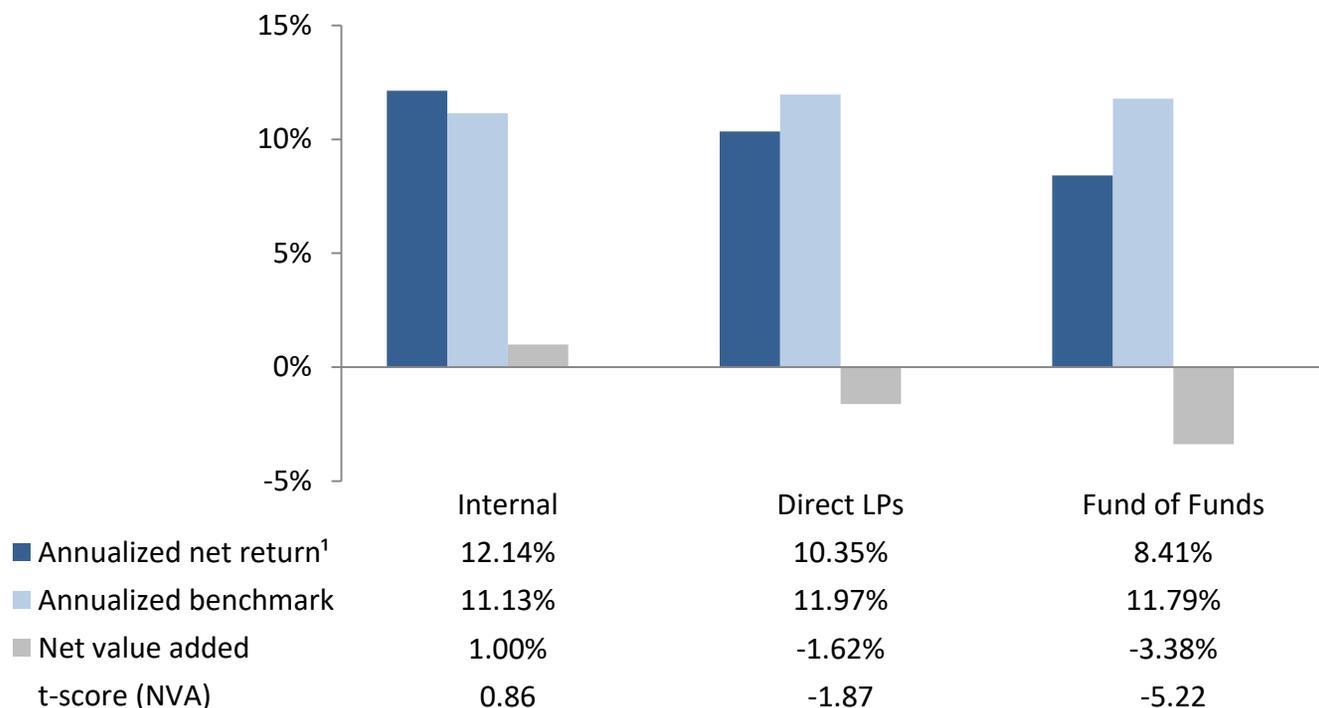
The asset class that had the highest net value added in the U.S. universe over the past 26 years was Foreign Stock.



1. Hedge Fund gross value added performance reflect data for the 17 year period from 2000 to 2016.
 2. The net value added calculation for private equity uses the average benchmark of all U.S. participants.
 3. Value added analysis is from 4,432 annual fund performance observations from the CEM U.S. universe for the 26-year period ending 2016. Value added reflects the asset weighted value added of all mandates in each asset category including indexed holdings. Averages shown above are the arithmetic average of the annual averages of all observations of funds with holdings in the asset category for each year.

Costs matter - Lower cost internal investment in private equity outperformed direct LPs. Direct LPs outperformed fund of funds.

Private equity net returns and value added¹ (1996-2016)



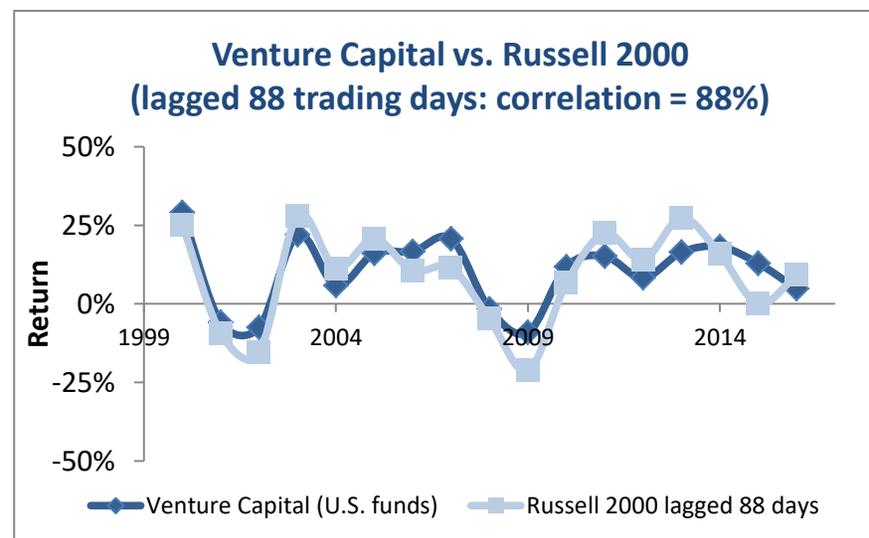
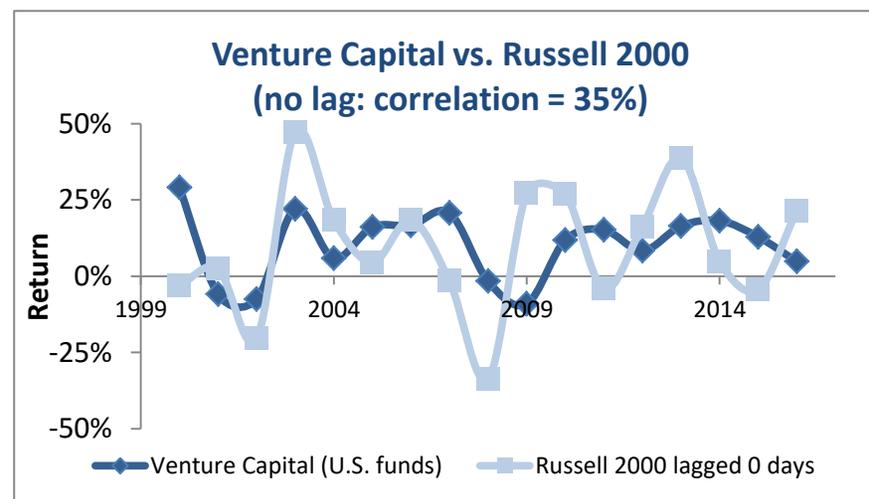
1. Private equity performance by investment style research was updated on June 27 2017. Net value added has dropped by a significant margin since the original research spanning 1996-2012. The reason for the drop was the 2013 bull market in small cap equities which is the basis of the benchmark.

2. To compare the performance of private equity implementation styles over long periods, Monte Carlo simulations were used to capture differences in risk between styles. For details, see "How Implementation Style and Costs Affect Private Equity Performance", Alex Beath, Chris Flynn, and Jody MacIntosh, International Journal of Pension Management pp. 50, vol. 7, issue 1, Spring 2014.

Private equity benchmarks used by most funds are flawed.

A high proportion of the benchmarks used for illiquid assets by participants in the CEM universe are flawed. Flaws include:

- Timing mismatches due to lagged reporting. For example, as the graphs on the right demonstrate, reported venture capital returns clearly lag the returns of stock indices. Yet most funds that use stock indices to benchmark their private equity do not use lagged benchmarks. The result is substantial noise when interpreting performance. For example, for 2008 the Russell 2000 index return was 27.2% versus -21.3% if lagged 88 trading days. Thus if a fund earned the average reported venture capital return for 2008 of -9.1%, they would have mistakenly believed that their value added from venture capital was -36.2% using the un-lagged benchmarks versus 12.2% using the same benchmark lagged to match the average 88 day reporting lag of venture capital funds.
- Un-investable peer-based benchmarks. Peer based benchmarks reflect the reporting lags in peer portfolios so they have much better correlations than un-lagged investable benchmarks. But their relationship statistics are not as good as for lagged investable benchmarks.
- Aspirational premiums (i.e., benchmark + 2%). Premiums cannot be achieved passively, and evidence suggests that a fund has to be substantially better than average to attain them. More importantly, when comparing performance to other funds, they need to be excluded to ensure a level playing field.



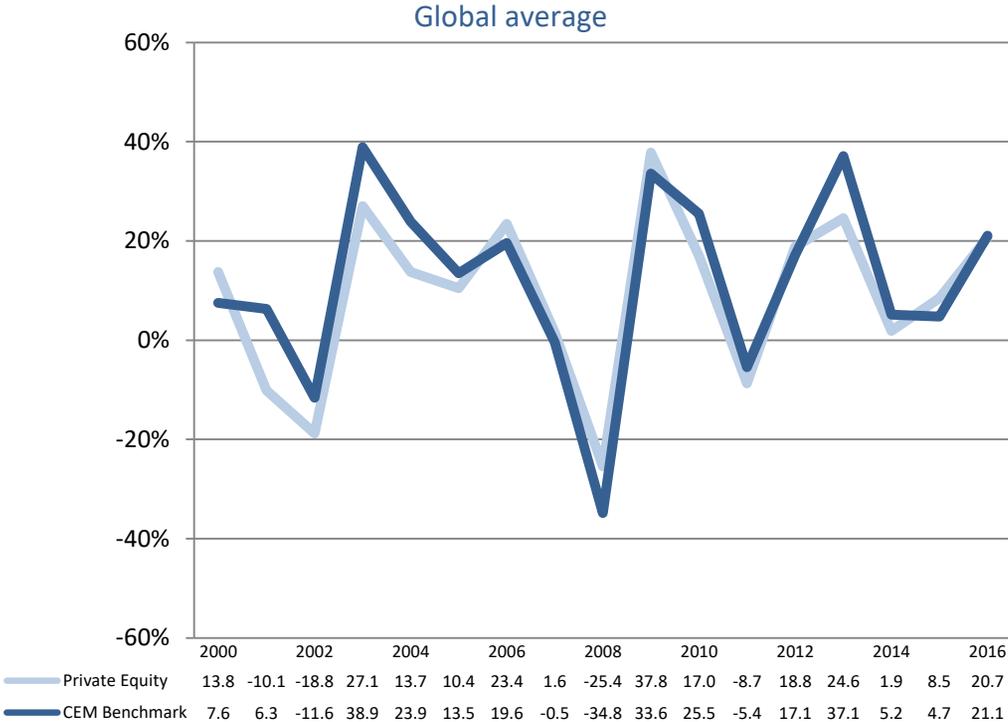
To enable fairer comparisons, CEM uses default private equity benchmarks.

Benchmarks used for private equity by most participants in the CEM universe are flawed (see previous page). So to enable fairer comparisons, CEM replaced the reported private equity benchmarks of all funds except yours with defaults. The defaults are:

- Investable. They are comprised of lagged small cap benchmarks.
- Custom lagged for each participant. Your default benchmark had a lag of 63 trading days. Different portfolios had different lags. CEM estimated the lag on private equity portfolios with multi-year histories by comparing annual private equity returns to public market proxies with 1 day of lag, 2 days of lag, 3 days of lag, etc. At some number of days lag, correlation between the two series is maximized. The median lag was 101 trading days (i.e., approximately 142 calendar days or 4.7 calendar months)
- Regional mix adjusted based on the average estimated mix of regions in private equity portfolios for a given country.

The result is the default benchmarks are superior to most self-reported benchmarks. Correlations improve to a median of 84% for the default benchmarks versus 48% for self-reported benchmarks. Other statistics such as volatility were also much better.

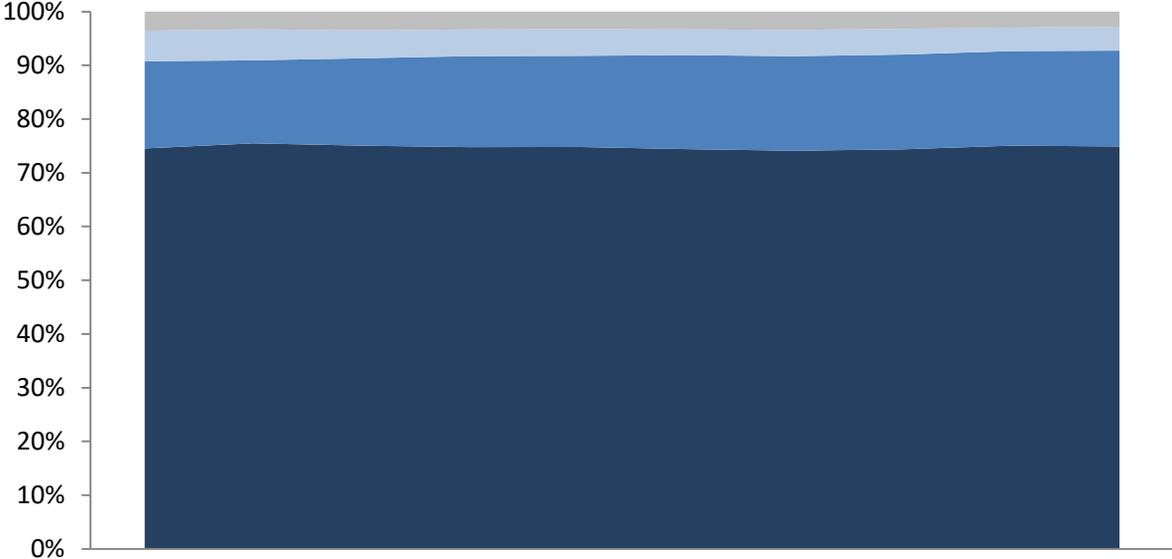
Private equity returns versus default benchmark returns¹



1. To enable better comparison between lagged returns and lagged benchmarks, lags have been removed from both. See "Asset allocation and fund performance of defined benefit pension funds in the United States, 1998-2014" by Alexander D. Beath and Chris Flynn for details.

For U.S. plans, external active management has remained stable at 75% over the past 10 years.

Implementation style by year - U.S.

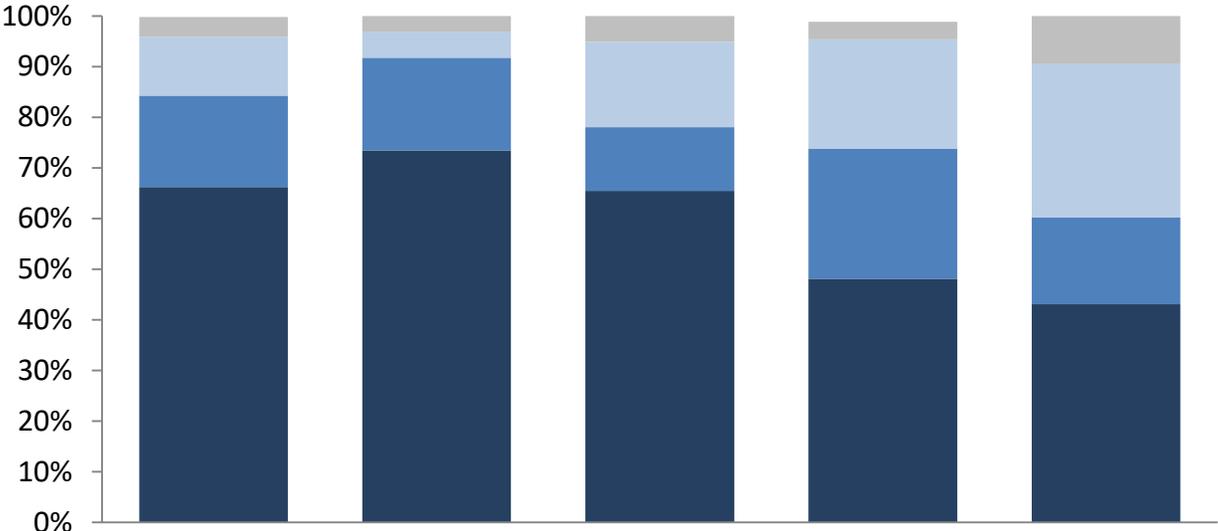


| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|----------------------|------|------|------|------|------|------|------|------|------|------|
| ■ % Internal passive | 4% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% | 3% |
| ■ % Internal active | 6% | 6% | 5% | 5% | 5% | 5% | 5% | 5% | 4% | 4% |
| ■ % External passive | 16% | 15% | 16% | 17% | 17% | 18% | 18% | 18% | 18% | 18% |
| ■ % External active | 75% | 75% | 75% | 75% | 75% | 74% | 74% | 74% | 75% | 75% |

• This analysis is based on 79 U.S. funds with 10 consecutive years of data.

U.S. funds have more externally managed active assets than funds in most other regions.

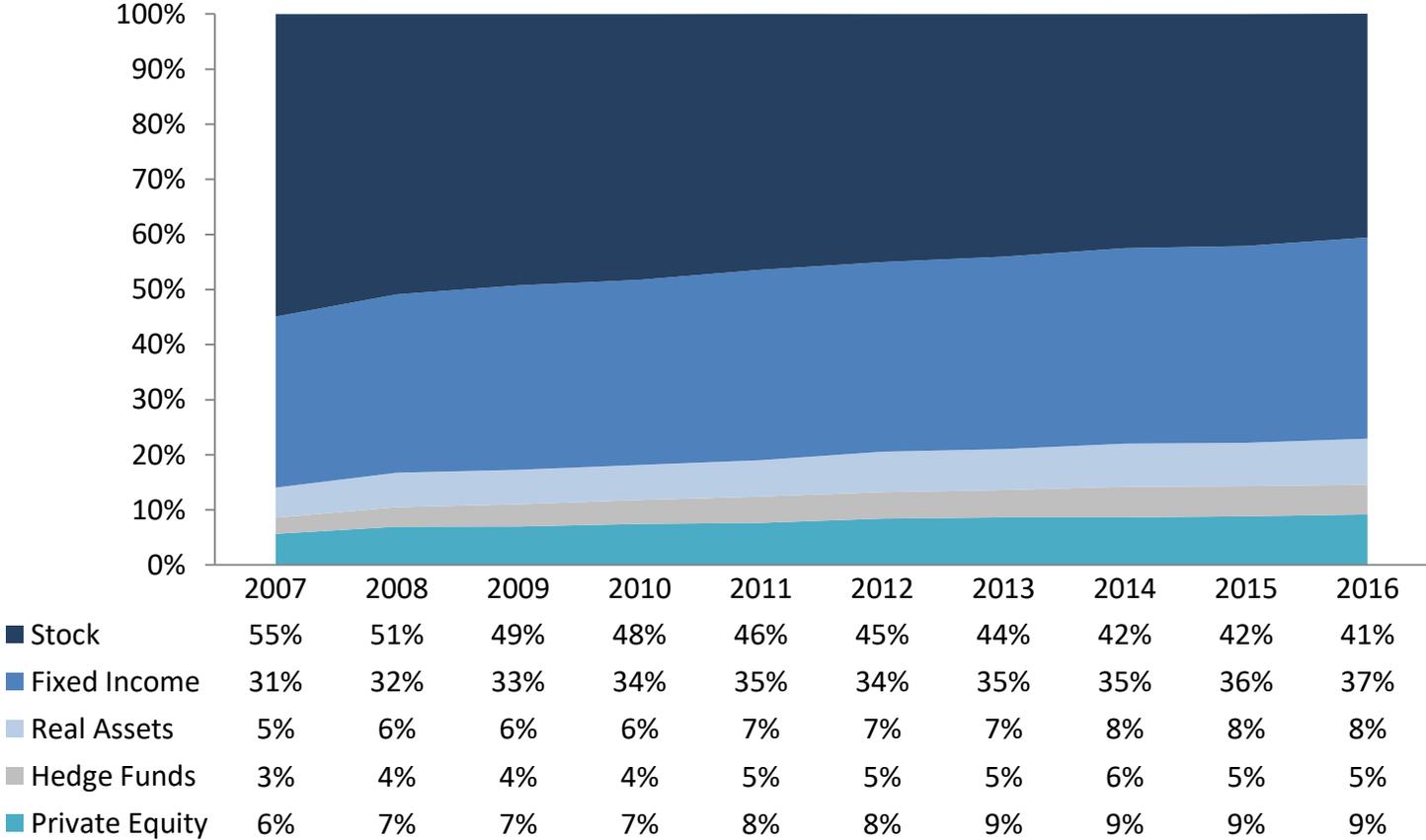
Implementation style by region - 2016 average



| | | | | | |
|----------------------------|-----|-----|-----|------|------|
| ■ % Internal passive | 4% | 3% | 5% | 3% | 10% |
| ■ % Internal active | 12% | 5% | 17% | 22% | 30% |
| ■ % External passive | 18% | 18% | 13% | 26% | 17% |
| ■ % External active | 66% | 73% | 65% | 48% | 43% |
| Number of funds | 303 | 167 | 76 | 53 | 5 |
| Median fund in \$ billions | 7.0 | 8.0 | 2.9 | 31.8 | 40.0 |

For U.S. plans, combined policy weights for real assets, private equity and hedge funds increased from 14% in 2007 to 23% in 2016.

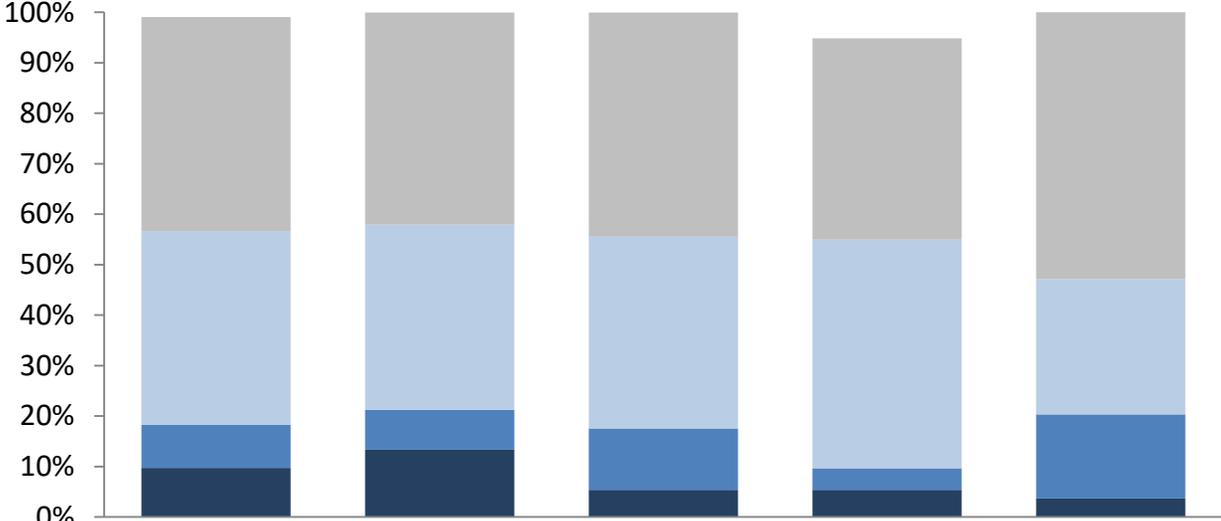
Policy mix by year - U.S.



• This analysis is based on 79 U.S. funds with 10 consecutive years of data.

U.S. funds have less fixed income but more private equity than funds in other regions.

Policy asset mix by region - 2016 average



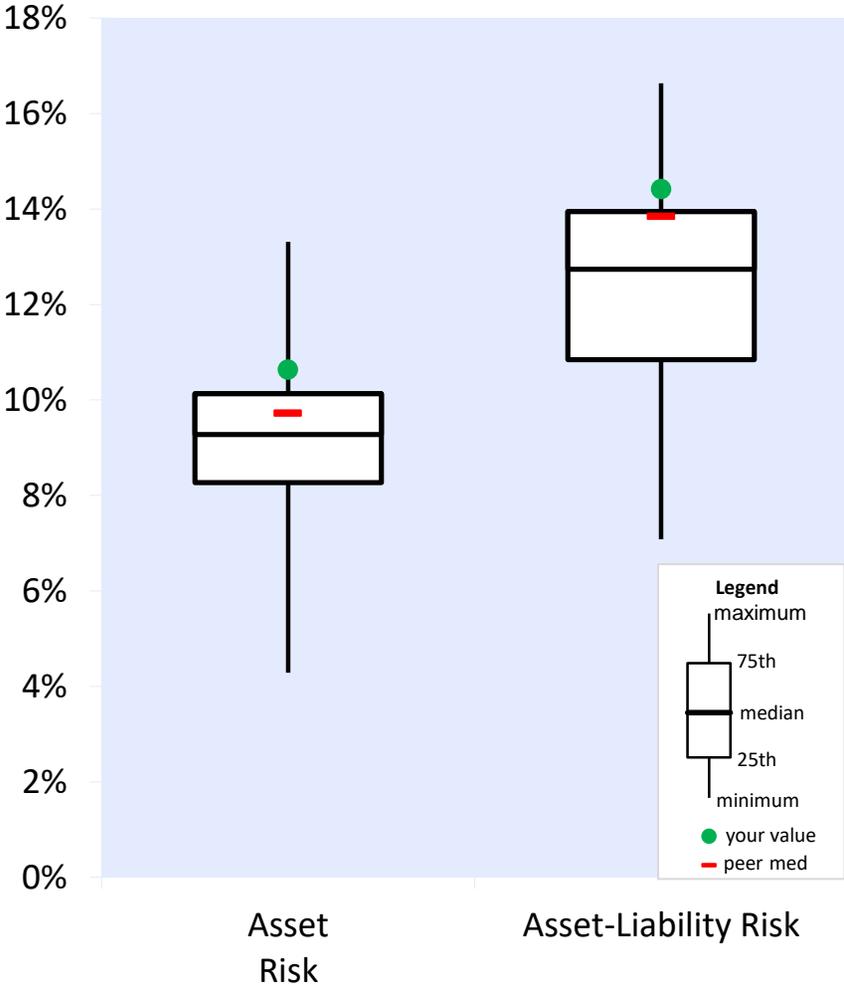
| | | | | | |
|------------------------------|-----|-----|-----|------|------|
| ■ Stock | 42% | 42% | 44% | 40% | 53% |
| ■ Fixed Income | 38% | 37% | 38% | 45% | 27% |
| ■ Real Assets | 9% | 8% | 12% | 4% | 17% |
| ■ Priv. Equity & Hedge Funds | 10% | 13% | 5% | 5% | 4% |
| Number of funds | 303 | 167 | 76 | 53 | 5 |
| Median fund in \$ billions | 7.0 | 8.0 | 2.9 | 31.8 | 40.0 |

Risk by type

Your asset risk of 10.6% was above the U.S. median of 9.3%. Asset risk is the standard deviation of your policy return. It is based on the historical variance of, and covariance between, the asset classes in your policy mix.

Asset-liability risk is the standard deviation of funded status caused by market factors. It is a function of the standard deviations of your asset risk, your marked-to-market liabilities and the correlation between the two.

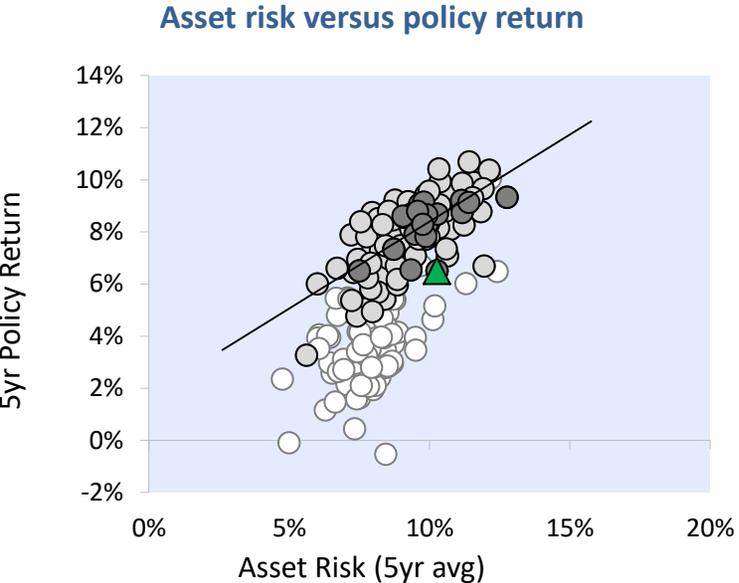
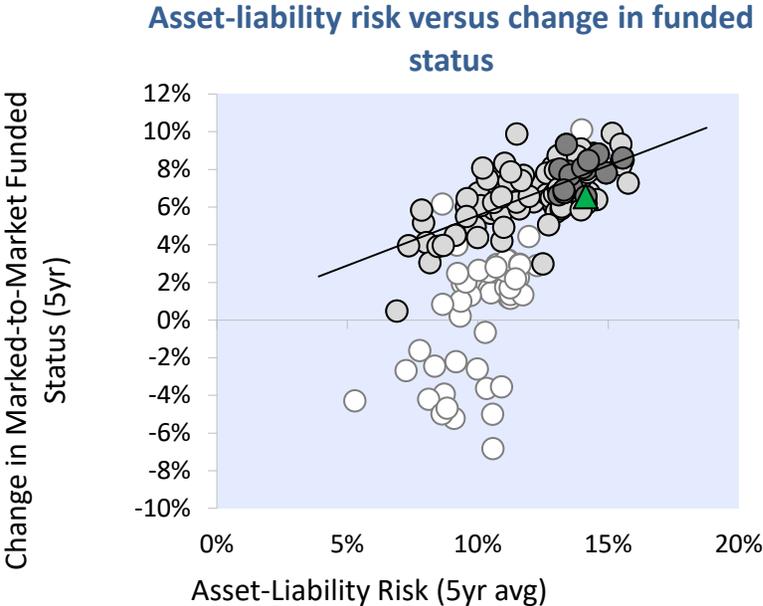
U.S. risk levels at December 31, 2016



Risk versus return

Higher asset-liability risk was associated with positive changes in marked-to-market funded status.

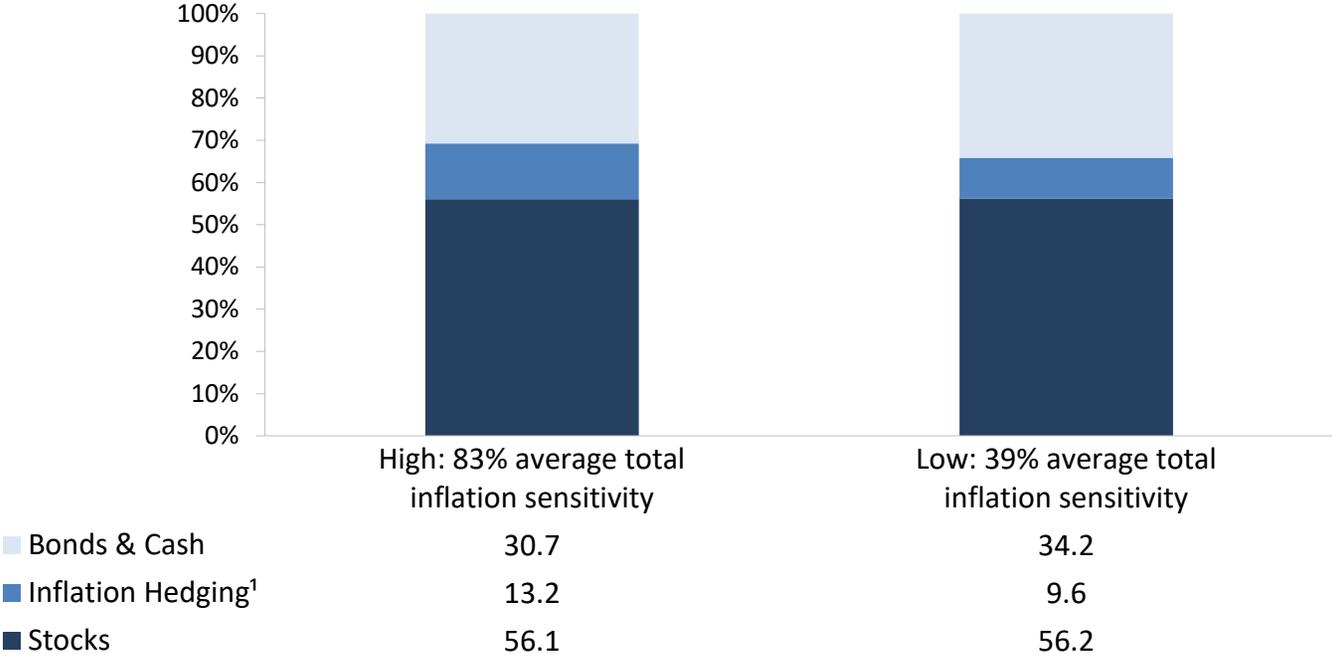
Higher asset risk was associated with higher policy returns.



Impact of inflation sensitivity on policy asset mix decisions

One would expect plans with more inflation sensitivity to have more inflation hedging assets and fewer nominal bonds than plans with less inflation sensitivity. Although this is true, the difference is small: inflation hedging assets represent 13.2% of assets at plans with high inflation sensitivity versus 9.6% at plans with lower inflation sensitivity.

**Average policy asset mix:
Plans with above vs. below average inflation sensitivity**

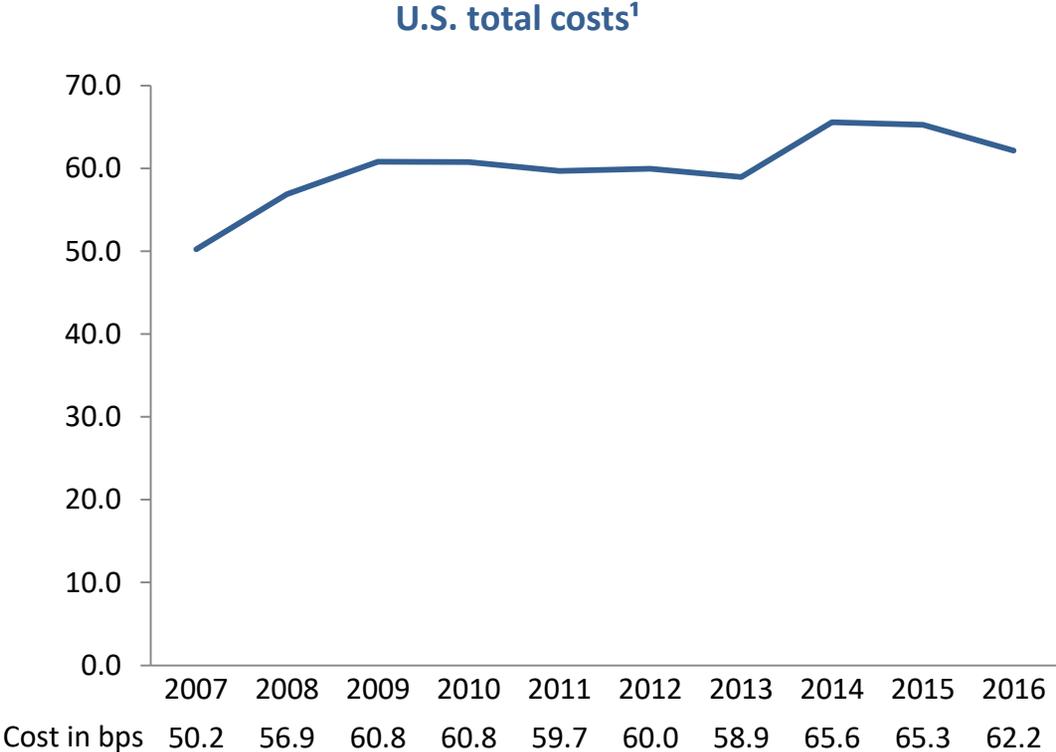


1. Inflation hedge assets include inflation-indexed bonds, commodities, real estate & REITs, infrastructure and natural resources.

U.S. fund costs have grown by 12 basis points on average over the last 10 years.

Reasons for the increase in costs include:

- Allocation to the more expensive asset classes - hedge funds, real assets and private equity- increased from 14% to 23% on average.
- Changes in implementation style have had a minor impact.



1. This analysis is based on 79 U.S. funds with 10 consecutive years of data.

U.S. defined benefit plans have outperformed defined contribution plans.

U.S. defined benefit plans have outperformed defined contribution plans.

DB versus DC return and value added - U.S.

| | 20-yr average ending 2016 ² | | |
|------------------------------|--|--------|------------|
| | DB | DC | Difference |
| Total return | 7.61% | 6.60% | 1.01% |
| - Policy return ¹ | 7.03% | 6.25% | 0.78% |
| - Costs | 0.50% | 0.39% | 0.11% |
| = Net value added | 0.08% | -0.05% | 0.12% |
| Number of observations | 3,613 | 2,430 | |

Differences in asset mix have been the primary reason for the outperformance of U.S. defined benefit plans.

DB versus DC asset mix - U.S.

| Asset class (Ranked by returns) | Asset mix ³ | | Returns ⁴ | |
|------------------------------------|------------------------|-------|----------------------|-------|
| | DB | DC | DB | DC |
| Private Equity | 4% | n/a | 12.2% | n/a |
| Real Estate, REITs | 5% | n/a | 9.6% | n/a |
| Employer Stock | 0% | 20% | n/a | 10.0% |
| Stock U.S. Small & Mid Cap | 6% | 8% | 8.9% | 9.5% |
| Hedge Funds | 3% | n/a | 6.9% | n/a |
| Bonds | 32% | 11% | 6.5% | 5.6% |
| Stock Non U.S. & Global | 24% | 8% | 6.1% | 5.9% |
| Stock U.S. Broad or Large Cap | 25% | 30% | 7.7% | 7.7% |
| Stable Value | n/a | 16% | n/a | 4.3% |
| Cash | 2% | 7% | 2.8% | 2.6% |
| Total | 100% | 100% | 7.6% | 6.6% |
| Number of observations | 3,613 | 2,143 | | |

1. DC policy return = weights of holdings X benchmarks

2. Returns are the geometric average of annual averages.

3. 20 years ending 2016. Equals arithmetic average of annual asset mix weights.

4. 20 years from 1997 to 2016. Returns are the geometric average of the annual averages for each asset class. Hedge funds were not treated as a separate asset class until 2000, so 60% stock, 40% bond returns were used as a proxy for 1997-1999.

n/a= insufficient data.

3

Description of peer group and universe

| | |
|--|---|
| Peer group | 2 |
| CEM global universe | 3 |
| Universe subsets | 4 |
| Implementation style, actual mix and policy mix: | |
| - by universe subset | 5 |
| - trends from 2012 to 2016 | 6 |
| Implementation style by asset class | 7 |
| Actual mix from 2012 to 2016 | 8 |
| Policy mix from 2012 to 2016 | 9 |

Peer group

Your peer group is comprised of 19 U.S. public funds, with assets ranging from \$16.9 billion to \$70.0 billion versus your \$28.0 billion. The median size is \$29.3 billion.

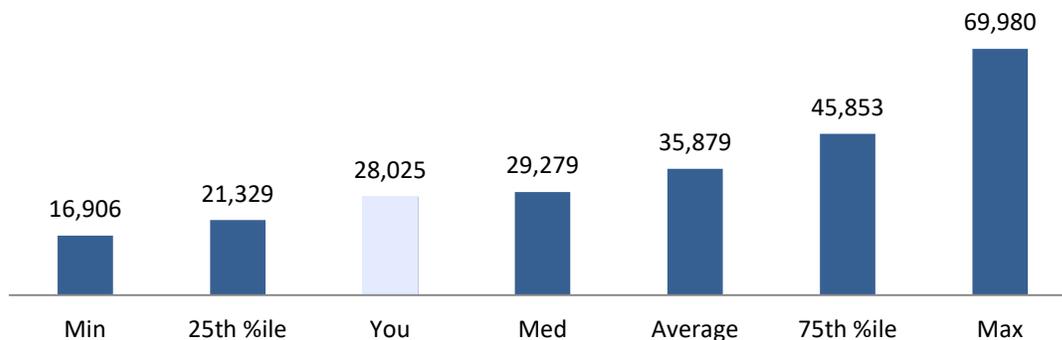
In order to preserve client confidentiality, we do not disclose your peers' names in this document due to the Freedom of Information Act. Your peer group consist of plans with the following characteristics:

Peer Group Characteristics - 2016

| | Your Plan | Peers | U.S. Public |
|----------------------------------|-----------|-------------|-------------|
| <u>Plan Assets (\$ billions)</u> | | | |
| Range | 28.0 | 16.9 - 70.0 | 1.3 - 292.9 |
| Median | | 29.3 | 17.4 |
| <u># of Plans</u> | | | |
| Public | 1 | 19 | 59 |
| <u>Implementation style</u> | | | |
| % External active | 80.7 | 68.3 | 66.5 |
| % External passive | 13.3 | 21.0 | 20.4 |
| % Internal active | 6.0 | 7.2 | 7.8 |
| % Internal passive | 0.0 | 3.5 | 5.3 |
| <u>Asset mix</u> | | | |
| % Stock | 27.5 | 46.6 | 46.5 |
| % Fixed Income | 31.7 | 26.6 | 26.1 |
| % Real Assets | 6.9 | 11.7 | 11.5 |
| % Private Equity | 15.4 | 9.6 | 8.5 |
| % Hedge Funds & Other | 18.5 | 5.4 | 5.2 |

Your peer group is selected such that your fund size is usually close to the median of your peer group. Size is the primary criteria for choosing your peer group, because size greatly impacts how much you pay for services. Generally, the larger your fund, the smaller your unit operating costs (i.e., the economies of scale impact).

Total fund assets (\$ millions) - you versus peers

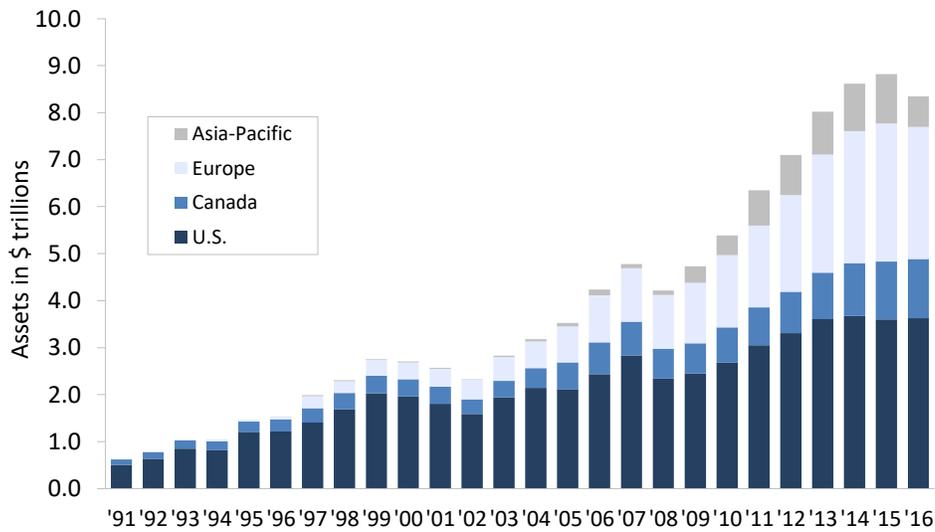


CEM global universe

CEM has been providing investment benchmarking solutions since 1991. The 2016 survey universe is comprised of 303 funds representing \$8.3 trillion in assets. The breakdown by region is as follows:

- 167 U.S. pension funds with aggregate assets of \$3.6 trillion.
- 76 Canadian pension funds with aggregate assets of \$1,257 billion.
- 53 European pension funds with aggregate assets of \$2.8 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Denmark, Switzerland and the UK.
- 7 Asia-Pacific pension funds with aggregate assets of \$648 billion.

CEM global universe



Universe subsets

CEM's global survey universe is comprised of 303 funds with total assets of \$8.3 trillion. Your fund's returns and costs are compared to the following two subsets of the global universe:

- Peers - Your peer group is comprised of 19 U.S. public funds ranging in size from \$16.9 - \$70.0 billion. The peer median of \$29.3 billion compares to your \$28.0 billion.
- U.S. Public - The U.S. Public universe is comprised of 59 funds ranging in size from \$1.3 - \$292.9 billion. The median fund is \$17.4 billion.

Universe subsets by number of funds and assets

| Peer group ¹ | U.S. by type | | | | Global by country | | | | | |
|--|--------------|--------|-------|-------|-------------------|--------|--------|--------------|-------|-------|
| | Corp. | Public | Other | Total | U.S. | Canada | Europe | Asia-Pacific | Total | |
| # of funds | | | | | | | | | | |
| 2016 | 19 | 98 | 59 | 10 | 167 | 167 | 76 | 53 | 7 | 303 |
| 2015 | 19 | 101 | 63 | 10 | 174 | 174 | 80 | 60 | 12 | 326 |
| 2014 | 19 | 98 | 66 | 13 | 177 | 177 | 89 | 145 | 12 | 423 |
| 2013 | 19 | 112 | 65 | 15 | 192 | 192 | 90 | 153 | 10 | 445 |
| 2012 | 19 | 120 | 68 | 14 | 202 | 202 | 89 | 143 | 14 | 448 |
| # of funds with uninterrupted data for: | | | | | | | | | | |
| 1 yr | 19 | 98 | 59 | 10 | 167 | 167 | 76 | 53 | 7 | 303 |
| 2 yrs | 19 | 81 | 55 | 10 | 146 | 146 | 62 | 38 | 7 | 253 |
| 3 yrs | 19 | 75 | 53 | 9 | 137 | 137 | 58 | 34 | 7 | 236 |
| 4 yrs | 19 | 70 | 48 | 8 | 126 | 126 | 55 | 33 | 6 | 220 |
| 5 yrs | 19 | 67 | 47 | 7 | 121 | 121 | 53 | 25 | 6 | 205 |
| 6 yrs | 19 | 66 | 45 | 7 | 118 | 118 | 48 | 21 | 6 | 193 |
| Total assets (\$ billions) | | | | | | | | | | |
| 2016 | 682 | 1,010 | 2,481 | 136 | 3,627 | 3,627 | 1,257 | 2,814 | 648 | 8,346 |
| 2015 | 656 | 964 | 2,508 | 130 | 3,601 | 3,601 | 1,228 | 2,943 | 1,047 | 8,819 |
| 2014 | 656 | 1,034 | 2,508 | 163 | 3,674 | 3,674 | 1,121 | 2,814 | 1,011 | 8,619 |
| 2013 | 621 | 1,045 | 2,396 | 163 | 3,604 | 3,604 | 990 | 2,512 | 915 | 8,021 |
| 2012 | 559 | 1,005 | 2,210 | 97 | 3,311 | 3,311 | 878 | 2,061 | 849 | 7,099 |
| 2016 asset distribution (\$ billions) | | | | | | | | | | |
| Avg | 35.9 | 10.3 | 42.0 | 13.6 | 21.7 | 21.7 | 16.5 | 53.1 | 92.6 | 27.5 |
| Max | 70.0 | | 292.9 | | 292.9 | 292.9 | | | | |
| 75th %ile | 45.9 | | 49.3 | | 23.5 | 23.5 | | | | |
| Median | 29.3 | | 17.4 | | 8.7 | 8.7 | | | | |
| 25th %ile | 21.3 | | 6.7 | | 2.8 | 2.8 | | | | |
| Min | 16.9 | | 1.3 | | 0.2 | 0.2 | | | | |

1. Peer group statistics are for your 2016 peer group only as your peer group may have included different funds in prior years.

Implementation style, actual mix and policy mix by universe subset

Implementation style, actual mix and policy mix - 2016 (as a % of year-end assets)

| | Your fund ¹ | Peer group | U.S. by type | | | | Global by country | | | | |
|-----------------------------|------------------------|------------|--------------|------------|------------|------------|-------------------|------------|------------|--------------|------------|
| | | | Corp. | Public | Other | Total | U.S. | Canada | Europe | Asia-Pacific | Total |
| Implementation style | | | | | | | | | | | |
| External active | 71.4 | 65.4 | 74.5 | 63.5 | 68.4 | 70.2 | 70.2 | 63.5 | 45.1 | 38.8 | 63.4 |
| Fund of funds | 9.3 | 2.8 | 3.3 | 3.0 | 3.3 | 3.2 | 3.2 | 1.9 | 3.0 | 1.9 | 2.8 |
| External passive | 13.3 | 21.0 | 16.8 | 20.4 | 20.8 | 18.3 | 18.3 | 12.6 | 25.7 | 12.2 | 18.0 |
| Internal active | 6.0 | 7.2 | 3.8 | 7.8 | 2.3 | 5.1 | 5.1 | 16.8 | 21.6 | 33.1 | 11.6 |
| Internal passive | <u>0.0</u> | <u>3.5</u> | <u>1.6</u> | <u>5.3</u> | <u>5.3</u> | <u>3.1</u> | <u>3.1</u> | <u>5.1</u> | <u>3.5</u> | <u>13.9</u> | <u>3.9</u> |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 99 | 100 | 100 |
| Actual asset mix | | | | | | | | | | | |
| Stock | 27.5 | 46.6 | 38.9 | 46.5 | 43.0 | 41.8 | 41.8 | 45.0 | 38.8 | 40.1 | 42.1 |
| Fixed income | 31.7 | 26.6 | 44.0 | 26.1 | 34.4 | 37.1 | 37.1 | 36.5 | 44.9 | 36.5 | 38.3 |
| Global TAA | 7.0 | 0.7 | 1.9 | 2.1 | 1.4 | 2.0 | 2.0 | 0.7 | 0.1 | 0.7 | 1.3 |
| Real assets | 6.9 | 11.7 | 5.2 | 11.5 | 10.3 | 7.7 | 7.7 | 11.8 | 8.4 | 16.0 | 9.1 |
| Hedge funds | 11.5 | 4.8 | 5.7 | 5.2 | 4.1 | 5.4 | 5.4 | 2.7 | 2.1 | 2.4 | 4.1 |
| Private equity | <u>15.4</u> | <u>9.6</u> | <u>4.3</u> | <u>8.5</u> | <u>6.8</u> | <u>5.9</u> | <u>5.9</u> | <u>3.2</u> | <u>2.7</u> | <u>4.3</u> | <u>4.7</u> |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 97 | 100 | 99 |
| Policy asset mix | | | | | | | | | | | |
| Stock | 36.1 | 47.6 | 39.1 | 46.5 | 45.0 | 42.0 | 42.0 | 44.5 | 39.9 | 48.4 | 42.4 |
| Fixed income | 23.6 | 26.7 | 44.1 | 25.2 | 32.8 | 36.7 | 36.7 | 38.0 | 45.3 | 31.0 | 38.4 |
| Global TAA | 10.0 | 0.9 | 1.8 | 1.9 | 2.1 | 1.8 | 1.8 | 0.9 | 0.1 | 0.7 | 1.3 |
| Real assets | 11.0 | 12.1 | 4.9 | 12.4 | 10.6 | 7.9 | 7.9 | 12.2 | 4.3 | 15.0 | 8.5 |
| Hedge funds | 4.0 | 3.1 | 5.2 | 4.9 | 3.4 | 5.0 | 5.0 | 1.5 | 2.1 | 1.2 | 3.5 |
| Private equity | <u>15.3</u> | <u>9.6</u> | <u>4.9</u> | <u>9.2</u> | <u>6.2</u> | <u>6.5</u> | <u>6.5</u> | <u>2.9</u> | <u>3.2</u> | <u>3.7</u> | <u>5.0</u> |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 95 | 100 | 99 |

1. Due to the fact that your fund provided average assets, the above tables show your implementation style and asset mix using average assets rather than year-end.

Implementation style, actual mix and policy mix trends

Implementation style, actual mix and policy mix - 2012 to 2016 (as a % of year-end assets)

| | Your fund ¹ | | | | | Peer average ² | | | | | U.S. Public average ² | | | | |
|-----------------------------|------------------------|-------------|-------------|-------------|-------------|---------------------------|------------|------------|------------|------------|----------------------------------|------------|------------|------------|------------|
| | 2016 | 2015 | 2014 | 2013 | 2012 | 2016 | 2015 | 2014 | 2013 | 2012 | 2016 | 2015 | 2014 | 2013 | 2012 |
| Implementation style | | | | | | | | | | | | | | | |
| External active | 80.7 | 75.2 | 74.3 | 76.8 | 90.5 | 68.3 | 68.1 | 67.6 | 67.8 | 68.4 | 63.8 | 64.0 | 63.6 | 63.4 | 64.7 |
| External passive | 13.3 | 17.8 | 14.2 | 9.7 | 5.4 | 21.0 | 20.9 | 20.6 | 20.0 | 20.1 | 21.0 | 20.9 | 20.9 | 20.8 | 20.0 |
| Internal active | 6.0 | 7.0 | 11.5 | 13.5 | 4.1 | 7.2 | 7.6 | 8.1 | 8.3 | 7.8 | 9.4 | 9.4 | 9.3 | 9.5 | 9.0 |
| Internal passive | <u>0.0</u> | <u>0.0</u> | <u>0.0</u> | <u>0.0</u> | <u>0.0</u> | <u>3.5</u> | <u>3.4</u> | <u>3.7</u> | <u>3.9</u> | <u>3.7</u> | <u>5.9</u> | <u>5.8</u> | <u>6.3</u> | <u>6.3</u> | <u>6.3</u> |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Actual asset mix | | | | | | | | | | | | | | | |
| Stock | 27.5 | 25.7 | 18.5 | 13.5 | 16.2 | 46.6 | 47.0 | 48.6 | 49.9 | 47.8 | 46.8 | 47.5 | 49.2 | 51.1 | 49.5 |
| Fixed income | 31.7 | 36.5 | 42.4 | 44.4 | 34.9 | 26.6 | 28.4 | 28.5 | 28.6 | 30.2 | 26.0 | 26.6 | 26.6 | 26.5 | 28.1 |
| Global TAA | 7.0 | 7.5 | 7.5 | 6.5 | 10.2 | 0.7 | 0.7 | 0.8 | 0.7 | 0.9 | 1.7 | 1.6 | 1.6 | 1.4 | 1.4 |
| Real assets | 6.9 | 4.2 | 3.8 | 3.9 | 4.5 | 11.7 | 10.3 | 9.2 | 8.2 | 8.2 | 11.4 | 10.5 | 9.4 | 8.4 | 8.3 |
| Hedge funds | 11.5 | 11.8 | 12.8 | 16.2 | 17.9 | 4.8 | 4.7 | 4.6 | 4.4 | 4.2 | 5.1 | 5.4 | 5.4 | 5.1 | 4.6 |
| Private equity | <u>15.4</u> | <u>14.5</u> | <u>15.0</u> | <u>15.5</u> | <u>16.2</u> | <u>9.6</u> | <u>8.8</u> | <u>8.4</u> | <u>8.2</u> | <u>8.6</u> | <u>8.9</u> | <u>8.4</u> | <u>7.8</u> | <u>7.5</u> | <u>8.0</u> |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Policy asset mix | | | | | | | | | | | | | | | |
| Stock | 36.1 | 34.0 | 31.0 | 31.0 | 30.0 | 47.6 | 48.7 | 49.0 | 49.9 | 49.1 | 46.8 | 48.1 | 48.4 | 49.3 | 49.6 |
| Fixed income | 23.6 | 22.0 | 27.0 | 27.0 | 32.0 | 26.7 | 27.7 | 27.9 | 28.8 | 29.8 | 25.2 | 25.1 | 25.4 | 26.7 | 27.6 |
| Global TAA | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 1.3 | 1.4 | 1.5 | 1.5 | 1.4 |
| Real assets | 11.0 | 8.0 | 8.0 | 8.0 | 6.0 | 12.1 | 10.5 | 9.9 | 9.1 | 9.1 | 12.3 | 11.1 | 10.7 | 9.8 | 9.5 |
| Hedge funds | 4.0 | 10.0 | 8.0 | 8.0 | 5.0 | 3.1 | 3.1 | 3.3 | 2.8 | 2.6 | 4.7 | 4.8 | 4.8 | 3.9 | 3.5 |
| Private equity | <u>15.3</u> | <u>16.0</u> | <u>16.0</u> | <u>16.0</u> | <u>17.0</u> | <u>9.6</u> | <u>9.1</u> | <u>9.1</u> | <u>8.6</u> | <u>8.5</u> | <u>9.7</u> | <u>9.5</u> | <u>9.3</u> | <u>8.9</u> | <u>8.3</u> |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

1. Due to the fact that your fund provided average assets, the above tables show your trend in implementation style and asset mix using average assets rather than year-end.

2. Trends are based on the 47 U.S. Public and 19 peer funds with 5 consecutive years of data ending 2016.

Implementation style by asset class

Implementation style impacts your costs, because external active management tends to be more expensive than internal or passive (or indexed) management and fund-of-funds usage is more expensive than direct fund investment.

Implementation style by asset class - 2016 (as a % of average assets)

| | Your fund % | | | | | Peer average % | | | | | U.S. Public average % | | | | |
|-----------------------------------|-------------|-------------|-------------|-------------|------------|----------------|-------------|-------------|-------------|------------|-----------------------|-------------|-------------|-------------|------------|
| | External | | | Internal | | External | | | Internal | | External | | Internal | | |
| | Active | FOFs | Index | Active | Index | Active | FOFs | Index | Active | Index | Active | FOFs | Index | Active | Index |
| U.S. Stock - Broad/All | 99.9 | | 0.1 | 0.0 | 0.0 | 34.2 | | 55.8 | 4.5 | 5.5 | 30.6 | | 51.4 | 4.2 | 13.7 |
| U.S. Stock - Large Cap | | | | | | 33.2 | | 40.9 | 13.5 | 12.3 | 30.3 | | 46.8 | 6.5 | 16.3 |
| U.S. Stock - Mid Cap | | | | | | 62.5 | | 0.0 | 20.2 | 17.2 | 60.5 | | 2.7 | 11.6 | 25.2 |
| U.S. Stock - Small Cap | | | | | | 83.7 | | 1.0 | 4.9 | 10.3 | 81.6 | | 10.6 | 3.9 | 3.9 |
| Stock - EAFE | | | | | | 40.6 | | 51.0 | 7.9 | 0.5 | 51.7 | | 33.1 | 6.4 | 8.8 |
| Stock - ACWIxU.S. | | | | | | 73.2 | | 26.8 | 0.0 | 0.0 | 63.4 | | 35.8 | 0.8 | 0.0 |
| Stock - Emerging | 100.0 | | 0.0 | 0.0 | 0.0 | 78.9 | | 11.2 | 1.4 | 8.5 | 77.5 | | 14.2 | 4.3 | 4.1 |
| Stock - Global | 49.8 | | 50.2 | 0.0 | 0.0 | 66.0 | | 22.4 | 0.0 | 11.6 | 69.4 | | 20.6 | 4.2 | 5.8 |
| Stock - Other | | | | | | 56.2 | | 0.0 | 4.5 | 39.3 | 82.1 | | 3.2 | 8.7 | 6.0 |
| Total Stock | 67.9 | | 32.1 | 0.0 | 0.0 | 50.5 | | 36.5 | 5.9 | 7.1 | 49.9 | | 35.9 | 4.7 | 9.5 |
| Fixed Income - U.S. | 89.9 | | 0.0 | 10.1 | 0.0 | 71.5 | | 6.8 | 21.3 | 0.4 | 62.4 | | 13.2 | 23.1 | 1.3 |
| Fixed Income - U.S. Gov't | | | | | | 19.3 | | 80.7 | 0.0 | 0.0 | 18.8 | | 78.3 | 2.9 | 0.0 |
| Fixed Income - U.S. Credit | | | | | | 100.0 | | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 0.0 | 0.0 |
| Fixed Income - Long Bonds | | | | | | 0.0 | | 0.0 | 0.0 | 0.0 | 79.1 | | 0.0 | 2.5 | 18.3 |
| Fixed Income - EAFE | | | | | | 0.0 | | 0.0 | 0.0 | 0.0 | 88.1 | | 0.0 | 11.9 | 0.0 |
| Fixed Income - Emerging | 88.4 | | 11.6 | 0.0 | 0.0 | 94.0 | | 6.0 | 0.0 | 0.0 | 97.0 | | 2.5 | 0.5 | 0.0 |
| Fixed Income - Global | | | | | | 100.0 | | 0.0 | 0.0 | 0.0 | 73.6 | | 2.0 | 24.4 | 0.0 |
| Fixed Income - Inflation Indexed | | | | | | 48.8 | | 38.6 | 12.6 | 0.0 | 44.0 | | 32.5 | 9.5 | 14.0 |
| Fixed Income - High Yield | 100.0 | | 0.0 | 0.0 | 0.0 | 100.0 | | 0.0 | 0.0 | 0.0 | 97.5 | | 1.8 | 0.8 | 0.0 |
| Fixed Income - Mortgages | | | | | | 0.0 | | 100.0 | 0.0 | 0.0 | 18.8 | | 1.3 | 74.1 | 5.8 |
| Fixed Income - Private Debt | | | | | | 52.1 | | 0.0 | 47.9 | 0.0 | 88.6 | | 0.0 | 11.4 | 0.0 |
| Fixed Income - Other | | | | | | 99.9 | | 0.1 | 0.0 | 0.0 | 91.3 | | 2.8 | 3.9 | 2.1 |
| Cash | 44.9 | | 0.0 | 55.1 | 0.0 | 59.3 | | 0.0 | 40.7 | 0.0 | 46.8 | | 0.0 | 53.2 | 0.0 |
| Total Fixed Income | 77.1 | | 2.2 | 20.7 | 0.0 | 70.4 | | 12.5 | 16.9 | 0.2 | 65.5 | | 11.9 | 20.1 | 2.5 |
| Commodities | | | | | | 100.0 | | 0.0 | 0.0 | 0.0 | 83.4 | | 6.5 | 3.0 | 7.2 |
| Infrastructure | 100.0 | 0.0 | n/a | 0.0 | n/a | 96.1 | 3.9 | n/a | 0.0 | n/a | 92.3 | 4.2 | n/a | 3.5 | n/a |
| Natural Resources | | | n/a | | n/a | 100.0 | 0.0 | n/a | 0.0 | n/a | 98.6 | 0.0 | n/a | 1.4 | n/a |
| REITs | 0.0 | 0.0 | 100.0 | 0.0 | 0.0 | 68.9 | 0.0 | 26.7 | 4.4 | 0.0 | 74.7 | 0.0 | 15.2 | 1.6 | 8.5 |
| Real Estate ex-REITs | 100.0 | 0.0 | n/a | 0.0 | n/a | 97.6 | 0.8 | n/a | 1.5 | 0.0 | 94.5 | 2.0 | n/a | 3.5 | 0.0 |
| Other Real Assets | | | n/a | | n/a | 100.0 | 0.0 | n/a | 0.0 | n/a | 98.3 | 0.0 | n/a | 1.7 | n/a |
| Total Real Assets | 85.7 | 0.0 | 14.3 | 0.0 | 0.0 | 96.5 | 0.0 | 2.1 | 1.4 | 0.0 | 94.5 | 0.0 | 1.4 | 3.0 | 1.0 |
| Hedge Funds | 38.3 | 61.7 | n/a | 0.0 | n/a | 67.0 | 33.0 | n/a | 0.0 | n/a | 72.9 | 27.1 | n/a | 0.0 | n/a |
| Global TAA | 100.0 | 0.0 | n/a | 0.0 | n/a | 100.0 | 0.0 | n/a | 0.0 | n/a | 94.8 | 0.0 | n/a | 5.2 | n/a |
| Diversified Private Equity | 68.1 | 31.9 | n/a | 0.0 | n/a | 84.5 | 15.5 | n/a | 0.0 | n/a | 79.6 | 20.3 | n/a | 0.1 | n/a |
| Venture Capital | | | n/a | | n/a | 70.8 | 29.2 | n/a | 0.0 | n/a | 66.3 | 30.5 | n/a | 3.2 | n/a |
| LBO | | | n/a | | n/a | 99.5 | 0.5 | n/a | 0.0 | n/a | 97.0 | 3.0 | n/a | 0.0 | n/a |
| Other Private Equity | 100.0 | 0.0 | n/a | 0.0 | n/a | 100.0 | 0.0 | n/a | 0.0 | n/a | 98.8 | 0.0 | n/a | 1.2 | n/a |
| Total Private Equity | 87.3 | 12.7 | n/a | 0.0 | n/a | 89.4 | 10.6 | n/a | 0.0 | n/a | 85.7 | 14.1 | n/a | 0.2 | n/a |
| Total Fund - Avg. Holdings | 71.4 | 9.3 | 13.3 | 6.0 | 0.0 | 65.7 | 2.7 | 20.7 | 7.4 | 3.4 | 63.7 | 2.9 | 20.2 | 7.9 | 5.2 |

Actual mix

Actual asset mix - 2012 to 2016 (as a % of year-end assets)

| | Your fund % ¹ | | | | | Peer average % | | | | | U.S. Public average % | | | | | |
|----------------------------------|--------------------------|-------------|-------------|-------------|-------------|----------------|-------------|-------------|-------------|-------------|-----------------------|-------------|-------------|-------------|-------------|-----|
| | 2016 | 2015 | 2014 | 2013 | 2012 | 2016 | 2015 | 2014 | 2013 | 2012 | 2016 | 2015 | 2014 | 2013 | 2012 | |
| Employer Stock | | | | | | | | | | | | | | | | |
| U.S. Stock - Broad/All | 6.5 | 5.8 | 8.1 | 7.6 | 7.8 | 10.2 | 10.8 | 11.0 | 12.2 | 11.2 | 7.3 | 6.9 | 6.6 | 9.3 | 7.1 | |
| U.S. Stock - Large Cap | | | | | | 12.0 | 11.6 | 12.3 | 11.1 | 10.8 | 13.3 | 14.1 | 15.4 | 14.0 | 15.1 | |
| U.S. Stock - Mid Cap | | | | | | 0.7 | 0.7 | 0.7 | | | 0.7 | 0.9 | 0.8 | 0.2 | 0.1 | |
| U.S. Stock - Small Cap | | | | | | 1.9 | 2.2 | 2.6 | 3.5 | 3.2 | 2.3 | 2.9 | 3.2 | 4.2 | 4.4 | |
| Stock - EAFE | | | | 2.5 | 2.5 | 1.1 | 5.0 | 5.3 | 5.3 | 5.7 | 5.5 | 6.1 | 6.7 | 6.8 | 8.0 | 7.3 |
| Stock - ACWIxU.S. | | | | | | 8.9 | 8.9 | 9.2 | 10.1 | 9.6 | 8.0 | 8.2 | 8.2 | 8.5 | 7.9 | |
| Stock - Emerging | 3.4 | 3.2 | 3.4 | 3.4 | 7.4 | 2.8 | 2.3 | 2.4 | 2.5 | 2.8 | 2.9 | 3.0 | 3.2 | 3.2 | 3.4 | |
| Stock - Global | 17.6 | 16.6 | 4.5 | | | 4.9 | 4.9 | 4.6 | 4.5 | 4.3 | 5.2 | 4.1 | 4.0 | 3.8 | 3.8 | |
| Stock - Other | | | | | | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.8 | 1.0 | 1.2 | 0.8 | 0.6 | |
| Total Stock | 27.5 | 25.7 | 18.5 | 13.5 | 16.2 | 46.6 | 47.0 | 48.6 | 49.9 | 47.8 | 46.5 | 47.7 | 49.3 | 52.0 | 49.7 | |
| Fixed Income - U.S. | 7.1 | 9.2 | 8.8 | 8.2 | 10.7 | 14.8 | 15.8 | 17.7 | 18.1 | 19.9 | 13.9 | 14.2 | 14.2 | 15.2 | 17.3 | |
| Fixed Income - U.S. Gov't | | | | | | 1.9 | 1.9 | 0.4 | | | 0.6 | 0.6 | 0.2 | 0.0 | 0.0 | |
| Fixed Income - U.S. Credit | | | | | | 0.0 | 0.1 | 0.2 | | | 0.0 | 0.3 | 0.1 | 0.0 | 0.0 | |
| Fixed Income - Long Bonds | | | | | | | | | | | 0.9 | 1.0 | 1.0 | 0.7 | 0.2 | |
| Fixed Income - EAFE | | | | | | | | | | 0.3 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | |
| Fixed Income - Emerging | 5.5 | 4.7 | 4.0 | 3.1 | 2.9 | 1.3 | 1.2 | 1.0 | 0.8 | 0.7 | 1.0 | 0.9 | 0.9 | 0.8 | 0.8 | |
| Fixed Income - Global | | 3.0 | 3.7 | 3.6 | 4.0 | 0.8 | 1.2 | 1.3 | 2.0 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 | 2.1 | |
| Fixed Income - Inflation Indexed | | | | | | 1.8 | 2.4 | 2.3 | 2.3 | 2.5 | 1.8 | 1.9 | 1.8 | 1.7 | 2.0 | |
| Fixed Income - High Yield | 6.8 | 5.2 | 4.0 | 4.3 | 5.4 | 1.4 | 1.3 | 1.2 | 1.0 | 1.5 | 1.6 | 1.5 | 1.6 | 1.6 | 2.0 | |
| Fixed Income - Mortgages | | | | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | |
| Fixed Income - Private Debt | | | | | | 0.5 | 0.3 | 0.3 | 0.1 | 0.1 | 0.7 | 0.7 | 0.6 | 0.2 | 0.2 | |
| Fixed Income - Other | | | | | | 1.7 | 1.7 | 1.4 | 1.1 | 0.8 | 1.1 | 1.0 | 1.0 | 0.7 | 0.7 | |
| Cash | 12.4 | 14.3 | 21.9 | 25.2 | 11.9 | 2.4 | 2.4 | 2.8 | 3.2 | 2.5 | 2.5 | 2.3 | 2.4 | 2.6 | 1.9 | |
| Total Fixed Income | 31.7 | 36.5 | 42.4 | 44.4 | 34.9 | 26.6 | 28.4 | 28.5 | 28.6 | 30.2 | 26.1 | 26.5 | 26.0 | 25.8 | 27.7 | |
| Commodities | | | | | 1.0 | 0.3 | 0.2 | 0.3 | 0.3 | 0.4 | 0.7 | 0.5 | 0.6 | 0.5 | 0.6 | |
| Infrastructure | 0.6 | | | | | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 | 0.4 | 0.3 | 0.3 | 0.2 | 0.3 | |
| Natural Resources | | | | | | 0.7 | 0.6 | 0.5 | 0.4 | 0.3 | 0.9 | 0.6 | 0.5 | 0.4 | 0.3 | |
| REITs | 1.0 | | | | | 0.9 | 0.9 | 1.0 | 1.0 | 0.9 | 0.8 | 0.8 | 0.9 | 0.7 | 0.7 | |
| Real Estate ex-REITs | 5.3 | 4.2 | 3.8 | 3.9 | 3.5 | 8.2 | 7.8 | 6.8 | 6.1 | 6.3 | 7.8 | 7.4 | 6.4 | 6.2 | 6.3 | |
| Other Real Assets | | | | | | 1.3 | 0.7 | 0.3 | 0.2 | 0.2 | 1.0 | 0.8 | 0.6 | 0.4 | 0.3 | |
| Total Real Assets | 6.9 | 4.2 | 3.8 | 3.9 | 4.5 | 11.7 | 10.3 | 9.2 | 8.2 | 8.2 | 11.5 | 10.4 | 9.4 | 8.5 | 8.6 | |
| Hedge Funds | 11.5 | 11.8 | 12.8 | 16.2 | 17.9 | 4.8 | 4.7 | 4.6 | 4.4 | 4.2 | 5.2 | 5.5 | 5.4 | 5.1 | 4.7 | |
| Global TAA | 7.0 | 7.5 | 7.5 | 6.5 | 10.2 | 0.7 | 0.7 | 0.8 | 0.7 | 0.9 | 2.1 | 1.7 | 2.4 | 1.3 | 1.5 | |
| Div. Private Equity | 9.7 | 8.9 | 9.3 | 9.6 | 8.8 | 7.1 | 6.8 | 6.5 | 6.9 | 7.0 | 6.3 | 5.6 | 5.2 | 5.4 | 5.8 | |
| Venture Capital | | | | | | 0.2 | 0.2 | 0.1 | 0.1 | 0.0 | 0.4 | 0.5 | 0.4 | 0.3 | 0.3 | |
| LBO | | | | | | 1.2 | 1.1 | 1.1 | 0.6 | 0.7 | 1.3 | 1.6 | 1.5 | 1.3 | 1.3 | |
| Other Private Equity | 5.8 | 5.5 | 5.7 | 5.9 | 7.4 | 1.0 | 0.7 | 0.7 | 0.7 | 0.8 | 0.5 | 0.5 | 0.4 | 0.4 | 0.4 | |
| Total Private Equity | 15.4 | 14.5 | 15.0 | 15.5 | 16.2 | 9.6 | 8.8 | 8.4 | 8.2 | 8.6 | 8.5 | 8.2 | 7.6 | 7.4 | 7.8 | |
| Total Fund | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | |
| Count | 1 | 1 | 1 | 1 | 1 | 19 | 19 | 19 | 19 | 19 | 59 | 63 | 66 | 65 | 68 | |
| Median Assets (\$ billions) | 28.0 | 29.4 | 29.2 | 28.6 | 26.6 | 29.3 | 29.4 | 29.2 | 28.6 | 26.6 | 17.4 | 16.8 | 16.4 | 15.7 | 14.0 | |

1. Your asset mix is based on average assets rather than year-end.

Policy mix

Policy asset mix - 2012 to 2016 (as a % of average assets)

| | Your fund % | | | | | Peer average % | | | | | U.S. Public average % | | | | |
|----------------------------------|-------------|-------------|-------------|-------------|-------------|----------------|-------------|-------------|-------------|-------------|-----------------------|-------------|-------------|-------------|-------------|
| | 2016 | 2015 | 2014 | 2013 | 2012 | 2016 | 2015 | 2014 | 2013 | 2012 | 2016 | 2015 | 2014 | 2013 | 2012 |
| Employer Stock | | | | | | | | | | | | | | | |
| U.S. Stock - Broad/All | | | | | 14.0 | 15.2 | 17.4 | 16.5 | 17.8 | 18.6 | 10.2 | 10.4 | 9.2 | 11.0 | 10.8 |
| U.S. Stock - Large Cap | | | | | | 6.4 | 5.2 | 6.4 | 5.8 | 5.3 | 9.3 | 9.5 | 11.4 | 9.9 | 11.2 |
| U.S. Stock - Mid Cap | | | | | | 0.4 | 0.2 | 0.2 | | | 0.3 | 0.4 | 0.4 | 0.2 | 0.1 |
| U.S. Stock - Small Cap | | | | | | 0.5 | 0.3 | 0.4 | 1.1 | 0.8 | 1.4 | 1.6 | 1.7 | 2.2 | 2.7 |
| Stock - EAFE | | | | | 8.0 | 3.3 | 4.2 | 4.2 | 5.4 | 6.2 | 4.6 | 5.1 | 5.3 | 7.1 | 7.0 |
| Stock - ACWIXU.S. | | | | | | 10.6 | 10.2 | 10.6 | 10.7 | 10.6 | 8.7 | 9.0 | 9.4 | 7.7 | 8.6 |
| Stock - Emerging | | | | | 8.0 | 1.5 | 0.9 | 0.7 | 1.3 | 1.2 | 2.1 | 2.2 | 2.0 | 2.2 | 2.0 |
| Stock - Global | 36.1 | 34.0 | 31.0 | 31.0 | | 9.4 | 10.1 | 9.8 | 7.5 | 6.0 | 9.2 | 8.9 | 8.0 | 8.6 | 6.7 |
| Stock - Other | | | | | | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.6 | 0.7 | 0.7 | 0.4 | 0.2 |
| Total Stock | 36.1 | 34.0 | 31.0 | 31.0 | 30.0 | 47.6 | 48.7 | 49.0 | 49.9 | 49.1 | 46.5 | 47.9 | 48.1 | 49.3 | 49.3 |
| Fixed Income - U.S. | 10.0 | 10.0 | 7.0 | 7.0 | 12.0 | 17.9 | 19.3 | 19.9 | 20.3 | 21.2 | 15.2 | 15.7 | 16.0 | 18.1 | 19.2 |
| Fixed Income - U.S. Gov't | | | | | | 1.6 | 1.6 | | | | 0.5 | 0.5 | | | |
| Fixed Income - U.S. Credit | | | | | | | | | | | | 0.2 | | | |
| Fixed Income - Long Bonds | | | | | | | | | | | 1.7 | 1.6 | 1.5 | 1.1 | 0.2 |
| Fixed Income - EAFE | | | | | | | | | | 0.3 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 |
| Fixed Income - Emerging | 5.0 | 5.0 | 6.0 | 6.0 | 6.0 | 1.1 | 1.0 | 0.8 | 0.8 | 1.1 | 0.9 | 0.9 | 0.9 | 0.7 | 0.8 |
| Fixed Income - Global | | | 3.0 | 3.0 | 1.0 | 0.5 | 0.4 | 1.4 | 1.4 | 1.3 | 1.5 | 1.6 | 1.9 | 1.3 | 2.0 |
| Fixed Income - Inflation Indexed | | | | | | 1.8 | 1.8 | 2.2 | 2.3 | 2.0 | 2.7 | 2.6 | 2.6 | 2.5 | 1.8 |
| Fixed Income - High Yield | 6.6 | 5.0 | 6.0 | 6.0 | 6.0 | 1.3 | 1.3 | 1.9 | 2.0 | 1.8 | 1.9 | 1.7 | 1.8 | 2.1 | 1.9 |
| Fixed Income - Mortgages | | | | | | | | | | 0.0 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 |
| Fixed Income - Private Debt | | | | | | 0.3 | 0.3 | 0.3 | 0.0 | | 0.8 | 0.7 | 0.5 | 0.1 | 0.1 |
| Fixed Income - Other | | | | | | 1.4 | 1.2 | 0.5 | 0.9 | 1.0 | 0.7 | 0.5 | 0.6 | 0.6 | 0.7 |
| Cash | 2.0 | 2.0 | 5.0 | 5.0 | 7.0 | 0.8 | 0.9 | 1.1 | 1.2 | 1.2 | -1.0 | -0.9 | -0.8 | -0.1 | 0.7 |
| Total Fixed Income | 23.6 | 22.0 | 27.0 | 27.0 | 32.0 | 26.7 | 27.7 | 27.9 | 28.8 | 29.8 | 25.2 | 25.2 | 25.2 | 26.7 | 27.5 |
| Commodities | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 0.6 | 0.6 | 0.7 | 0.6 | 0.6 | 1.2 | 1.0 | 1.1 | 0.9 | 0.7 |
| Infrastructure | 1.0 | | | | | 0.4 | 0.2 | 0.2 | 0.1 | 0.2 | 0.6 | 0.3 | 0.4 | 0.4 | 0.5 |
| Natural Resources | | | | | | 0.7 | 0.5 | 0.4 | 0.4 | 0.4 | 1.0 | 0.7 | 0.5 | 0.7 | 0.4 |
| REITs | 0.7 | | | | | 0.7 | 0.5 | 0.8 | 0.8 | 1.2 | 0.6 | 0.7 | 0.7 | 0.6 | 0.7 |
| Real Estate ex-REITs | 6.3 | 5.0 | 5.0 | 5.0 | 3.0 | 8.0 | 7.8 | 7.3 | 6.7 | 6.4 | 7.6 | 7.4 | 7.3 | 6.8 | 6.7 |
| Other Real Assets | | | | | | 1.8 | 0.9 | 0.6 | 0.5 | 0.4 | 1.3 | 0.9 | 0.9 | 0.5 | 0.6 |
| Total Real Assets | 11.0 | 8.0 | 8.0 | 8.0 | 6.0 | 12.1 | 10.5 | 9.9 | 9.1 | 9.1 | 12.4 | 11.0 | 10.9 | 10.0 | 9.7 |
| Hedge Funds | 4.0 | 10.0 | 8.0 | 8.0 | 5.0 | 3.1 | 3.1 | 3.3 | 2.8 | 2.6 | 4.9 | 5.0 | 5.2 | 4.3 | 4.0 |
| Global TAA | 10.0 | 10.0 | 10.0 | 10.0 | 10.0 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 1.9 | 1.7 | 2.1 | 1.2 | 1.3 |
| Div. Private Equity | 8.9 | 9.0 | 9.0 | 9.0 | 8.5 | 7.5 | 7.3 | 7.7 | 7.3 | 7.1 | 7.2 | 7.0 | 7.0 | 6.8 | 6.6 |
| Venture Capital | | | | | | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 |
| LBO | | | | | | 1.0 | 1.0 | 0.6 | 0.6 | 0.6 | 1.2 | 1.5 | 1.0 | 1.1 | 1.1 |
| Other Private Equity | 6.4 | 7.0 | 7.0 | 7.0 | 8.5 | 0.9 | 0.7 | 0.7 | 0.7 | 0.8 | 0.5 | 0.4 | 0.4 | 0.3 | 0.3 |
| Total Private Equity | 15.3 | 16.0 | 16.0 | 16.0 | 17.0 | 9.6 | 9.1 | 9.1 | 8.6 | 8.5 | 9.2 | 9.1 | 8.6 | 8.4 | 8.1 |
| Total Fund | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Count | 1 | 1 | 1 | 1 | 1 | 19 | 19 | 19 | 19 | 19 | 59 | 63 | 66 | 65 | 68 |

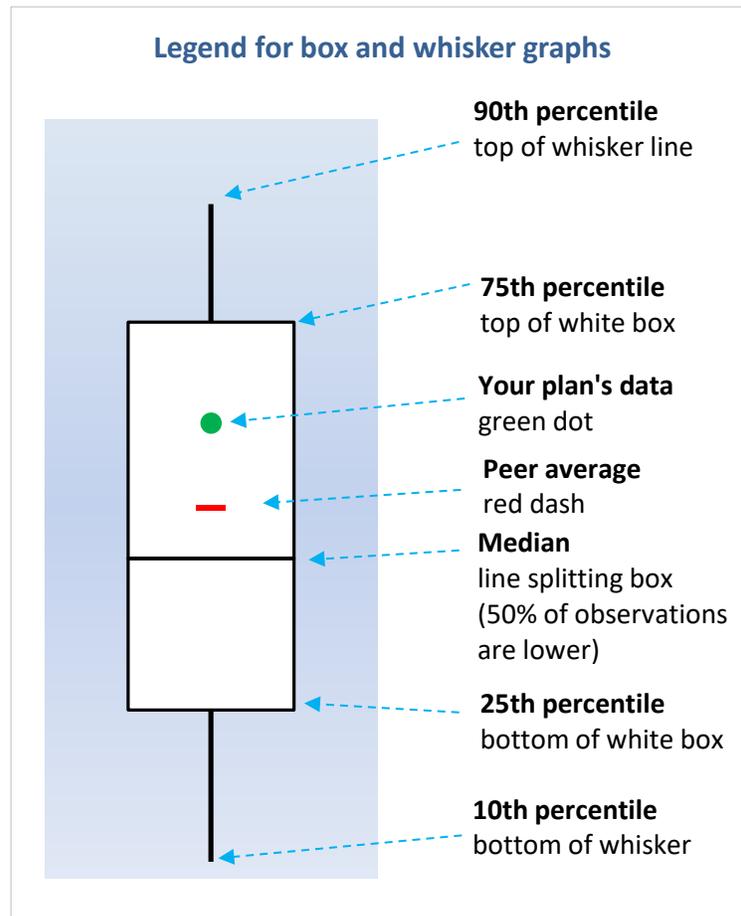
4

Returns, Benchmarks and Value Added

| | |
|---|----|
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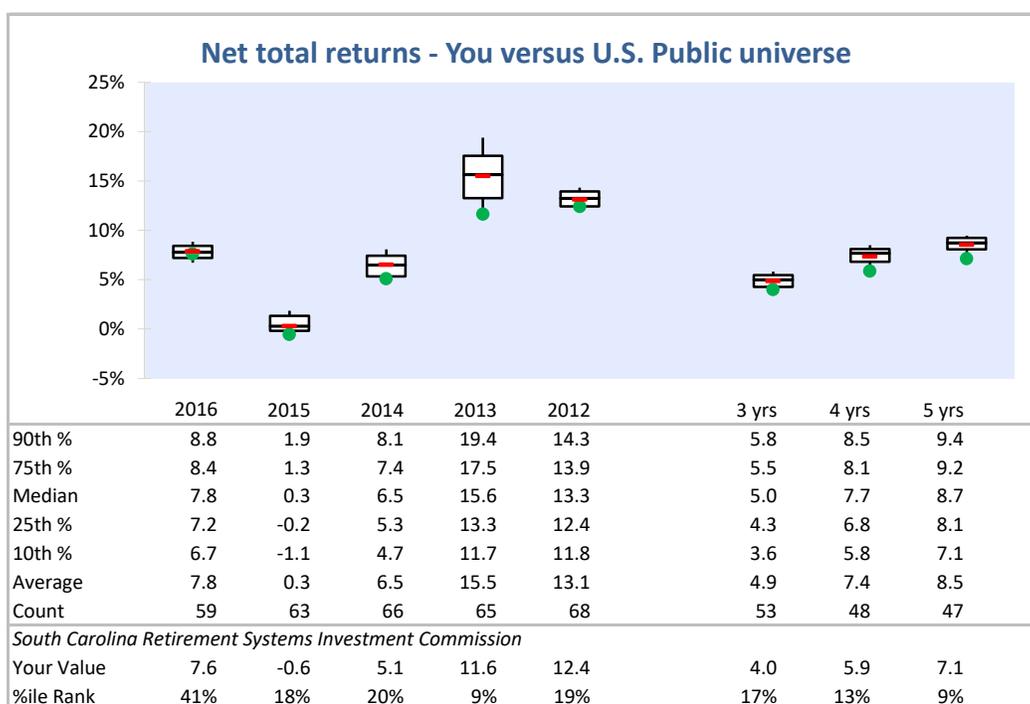
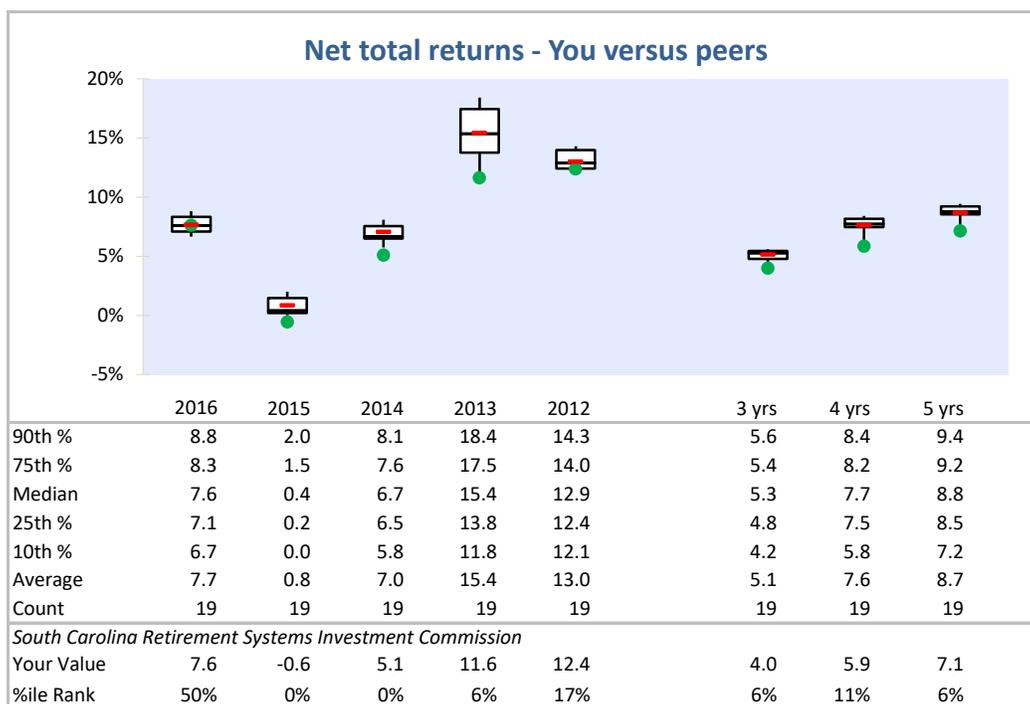
Interpreting box and whisker graphs

Box and whisker graphs are used extensively in this report because they show visually where you rank relative to all observations. At a glance you can see which quartile your data falls in.



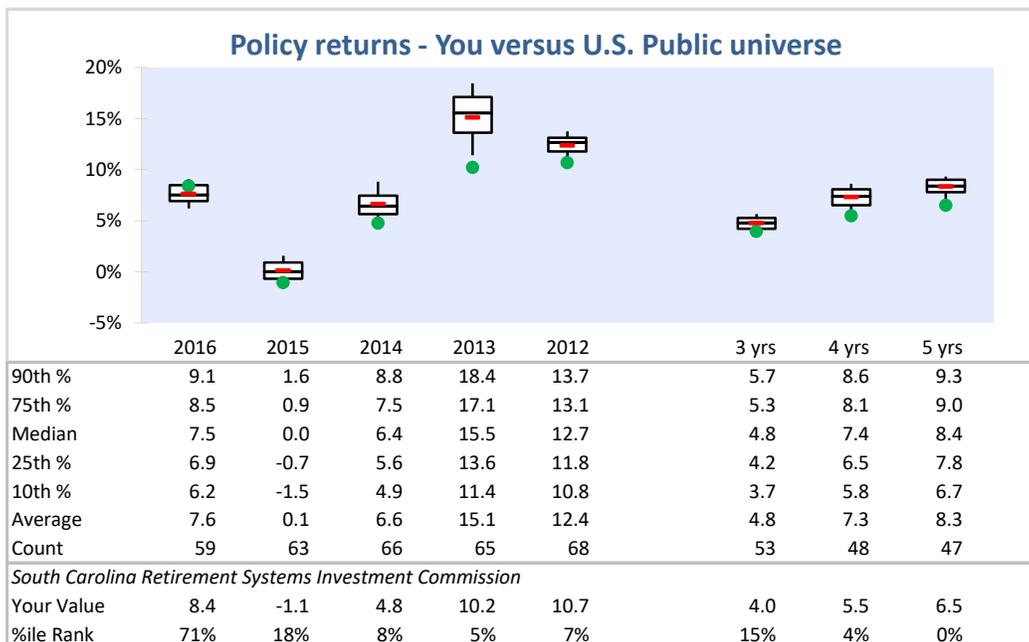
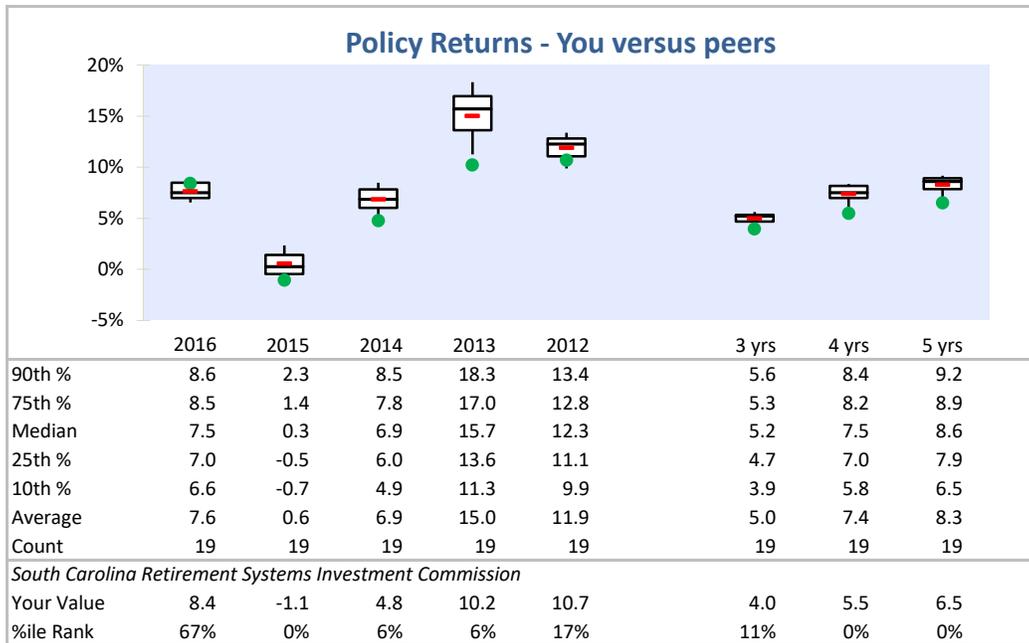
Net total returns

Your 5-year net total return of 7.1% was below the peer median and below the median of the U.S. Public universe. Comparisons of total return do not help you understand the reasons behind relative performance. To understand the relative contributions from policy asset mix decisions and implementation decisions we separate total return into its more meaningful components - policy return and implementation value added.



Policy returns

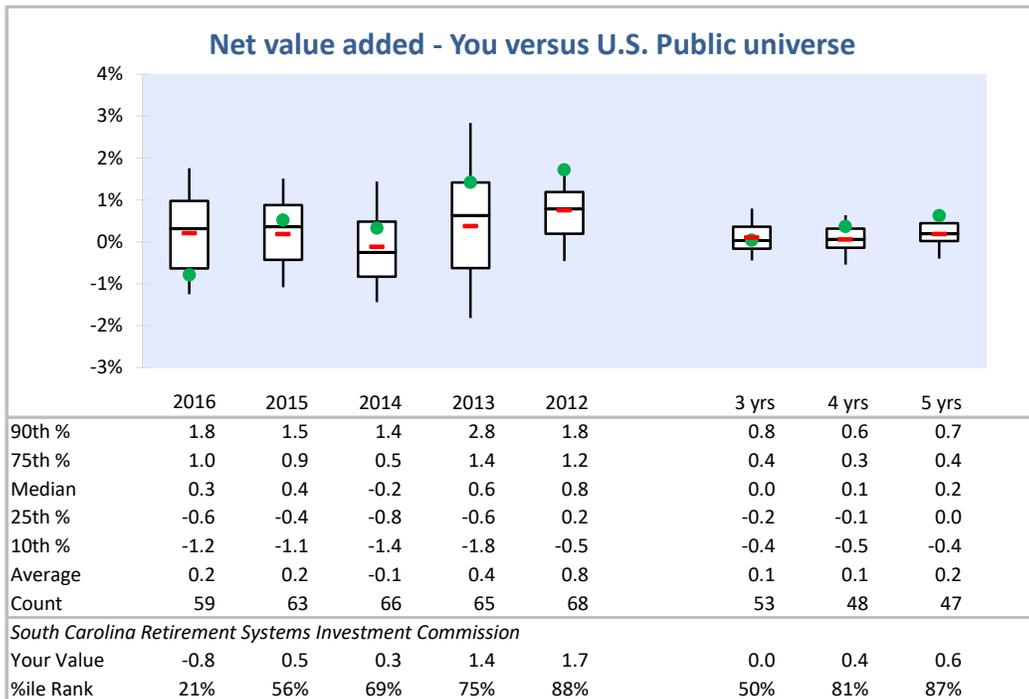
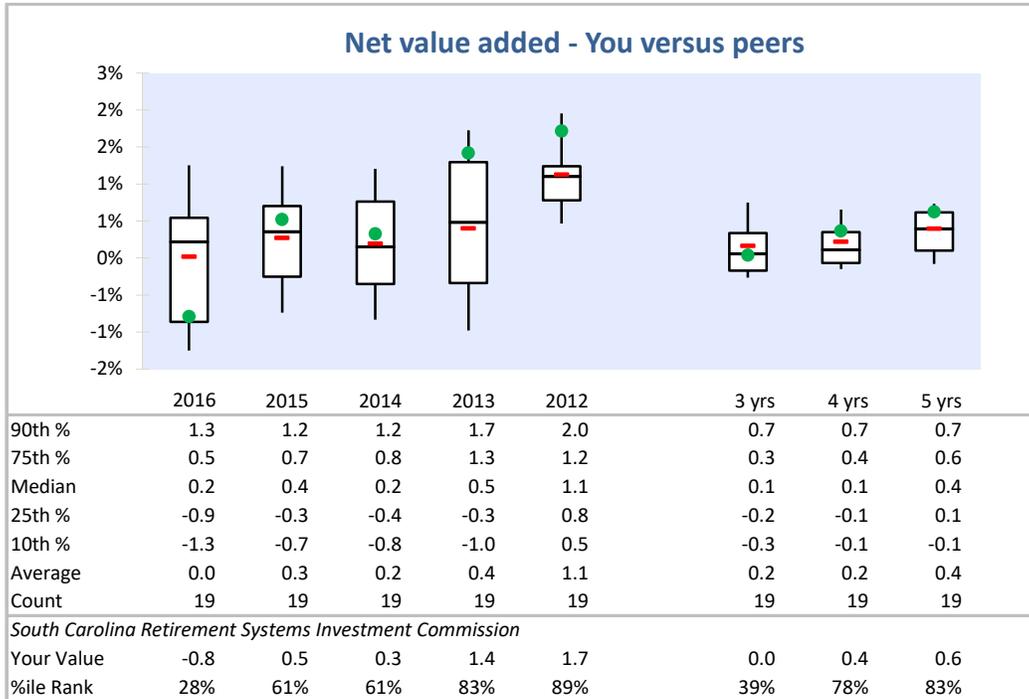
Your 5-year policy return of 6.5% was below the peer median and below the median of the U.S. Public universe. Policy return is the return you would have earned had you passively implemented your policy asset mix decision through your benchmark portfolios.



To enable fairer comparisons, the policy returns of all participants except your fund were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. If CEM used this same adjustment for your fund, your 5-year policy return would be 7.3%, 0.8% higher than your actual 5-year policy return of 6.5%. Mirroring this, your 5-year total fund net value added would be 0.8% lower. Refer to the Research section pages 6-7 for details.

Net value added

Your 5-year net value added of 0.6% was among the highest in your peer group and among the highest in the U.S. Public universe. Net value added is the difference between your net total return and your policy return.



Net returns by asset class

| Asset class | Your fund % | | | | | | Peer average % | | | | | | U.S. Public average % | | | | | |
|----------------------------------|-------------|-------|------|------|------|------|----------------|-------|-------|------|------|------|-----------------------|-------|-------|------|------|------|
| | 2016 | 2015 | 2014 | 2013 | 2012 | 5-yr | 2016 | 2015 | 2014 | 2013 | 2012 | 5-yr | 2016 | 2015 | 2014 | 2013 | 2012 | 5-yr |
| U.S. Stock - Broad/All | 9.5 | -14.0 | 8.6 | 35.6 | 18.0 | 10.3 | 11.3 | -1.2 | 10.3 | 34.4 | 16.4 | 13.7 | 11.3 | -0.4 | 10.9 | 33.4 | 16.2 | 13.7 |
| U.S. Stock - Large Cap | | | | | | | 11.3 | 1.1 | 13.2 | 32.9 | 16.0 | 14.5 | 11.2 | 1.0 | 12.6 | 33.5 | 16.2 | 14.4 |
| U.S. Stock - Mid Cap | | | | | | | 15.1 | -1.5 | 10.4 | | | | 12.5 | -2.7 | 8.7 | 38.6 | 20.5 | 14.7 |
| U.S. Stock - Small Cap | | | | | | | 18.5 | -3.2 | 6.2 | 38.6 | 16.9 | 14.6 | 18.8 | -3.5 | 5.1 | 38.9 | 16.1 | 14.2 |
| Stock - EAFE | | | | -5.1 | 14.7 | 16.6 | 3.4 | 0.9 | -3.4 | 22.8 | 18.5 | 8.0 | 3.0 | 0.3 | -3.9 | 23.3 | 17.4 | 7.5 |
| Stock - Emerging | 10.1 | -15.9 | -0.3 | -3.2 | 19.5 | 1.3 | 12.5 | -14.9 | -1.8 | -1.6 | 19.8 | 2.1 | 10.1 | -13.7 | -1.3 | -1.5 | 18.8 | 1.9 |
| Stock - ACWIxU.S. | | | | | | | 3.3 | -2.5 | -3.5 | 19.4 | 18.2 | 6.5 | 3.5 | -2.6 | -3.6 | 18.9 | 17.9 | 6.4 |
| Stock - Global | 6.0 | -0.4 | 4.1 | | | | 7.7 | -0.6 | 5.2 | 26.8 | 16.1 | 10.7 | 7.5 | -1.2 | 3.8 | 24.1 | 15.3 | 9.6 |
| Stock - Other | | | | | | | 10.9 | -4.4 | -2.1 | 15.9 | 16.6 | 7.0 | 9.9 | -5.5 | 3.1 | 19.1 | 12.6 | 7.5 |
| Stock - Total | 7.4 | -5.4 | 4.0 | 18.9 | 18.6 | 8.3 | 9.0 | -1.3 | 5.5 | 26.7 | 17.2 | 11.0 | 8.9 | -1.6 | 5.0 | 26.5 | 16.9 | 10.7 |
| Fixed Income - U.S. | 3.8 | 0.5 | 5.1 | -1.7 | 5.9 | 2.7 | 4.0 | 0.4 | 6.1 | -1.4 | 6.7 | 3.1 | 3.7 | 0.3 | 5.8 | -1.5 | 7.0 | 3.0 |
| Fixed Income - U.S. Gov't | | | | | | | -0.3 | 0.9 | 1.0 | | | | 0.1 | 0.9 | 3.7 | -5.0 | 4.2 | 0.7 |
| Fixed Income - U.S. Credit | | | | | | | 6.0 | -1.8 | 4.4 | | | | 6.0 | -2.0 | 6.5 | -1.2 | 10.5 | 3.9 |
| Fixed Income - EAFE | | | | | | | | | | | | | 5.6 | -8.1 | -1.3 | -3.1 | 0.9 | -1.3 |
| Fixed Income - Emerging | 11.7 | -6.4 | 0.1 | -8.7 | 19.3 | 2.7 | 10.8 | -4.5 | -0.1 | -7.7 | 17.6 | 2.8 | 10.9 | -5.0 | -0.5 | -7.6 | 16.7 | 2.5 |
| Fixed Income - Global | | -0.6 | 2.7 | -1.5 | 10.9 | | 2.9 | -0.2 | 6.2 | -0.5 | 8.8 | 3.4 | 5.7 | -2.1 | 3.5 | -0.6 | 8.5 | 2.9 |
| Fixed Income - Long Bonds | | | | | | | | | | | | | 3.2 | -3.8 | 22.3 | -7.5 | 10.2 | 4.3 |
| Fixed Income - Inflation Indexed | | | | | | | 5.4 | -1.9 | 4.8 | -7.3 | 7.7 | 1.6 | 5.8 | -1.6 | 4.7 | -7.3 | 7.6 | 1.7 |
| Fixed Income - High Yield | 8.9 | -1.3 | 1.2 | 6.5 | 11.9 | 5.3 | 11.2 | -3.0 | 2.0 | 6.7 | 13.5 | 5.9 | 11.9 | -3.1 | 3.3 | 7.0 | 15.7 | 6.7 |
| Fixed Income - Mortgages | | | | | | | 2.2 | 2.2 | 5.5 | 0.7 | 25.4 | 6.8 | 2.9 | 3.7 | 7.2 | 5.0 | 11.9 | 6.1 |
| Fixed Income - Private Debt | | | | | | | 7.1 | 1.6 | 6.1 | 8.4 | 8.3 | 6.3 | 6.0 | 1.2 | 2.7 | 7.5 | 7.3 | 4.9 |
| Fixed Income - Other | | | | | | | 6.5 | -0.8 | 6.7 | 10.9 | 12.8 | 7.1 | 5.8 | 0.0 | 5.5 | 8.0 | 12.3 | 6.2 |
| Cash | 0.4 | 0.1 | 0.2 | 1.1 | 1.0 | 0.6 | 0.7 | 0.4 | 0.2 | 0.3 | 0.5 | 0.4 | 1.1 | 0.0 | 0.3 | 0.2 | 0.6 | 0.4 |
| Fixed Income - Total | 5.4 | -1.0 | 1.6 | 0.0 | 7.0 | 2.6 | 4.6 | -0.3 | 5.1 | -0.9 | 7.5 | 3.1 | 4.7 | -0.5 | 5.4 | -1.2 | 7.9 | 3.2 |
| Commodities | | | | | | | 6.7 | -24.9 | -15.2 | -9.3 | -1.3 | -9.4 | 11.6 | -26.5 | -16.7 | -7.3 | 0.2 | -8.7 |
| Infrastructure | -5.8 | | | | | | 5.7 | -2.7 | 14.4 | 7.4 | 7.1 | 6.3 | 9.0 | 4.2 | 12.3 | 9.8 | 6.4 | 8.3 |
| REITs | -5.0 | | | | | | 2.8 | 1.9 | 19.3 | 5.0 | 19.9 | 9.5 | 4.9 | 2.1 | 19.7 | 4.3 | 21.2 | 10.1 |
| Natural Resources | | | | | | | 7.5 | -2.9 | 10.0 | 8.4 | 4.7 | 5.5 | 6.9 | -5.6 | 10.8 | 6.3 | 1.8 | 3.9 |
| Real Estate ex-REITs | 1.6 | 15.5 | 19.5 | 21.1 | 9.9 | 13.3 | 9.1 | 13.8 | 13.3 | 11.6 | 8.8 | 11.3 | 8.6 | 13.0 | 12.4 | 12.5 | 10.3 | 11.3 |
| Other Real Assets | | | | | | | 12.4 | -16.9 | 6.3 | 14.8 | 3.1 | 3.3 | 11.6 | -11.0 | 5.2 | 10.3 | 4.1 | 3.7 |
| Real Assets - Total | 0.1 | 15.5 | 19.5 | 21.1 | 8.3 | 12.6 | 8.2 | 9.8 | 13.4 | 10.2 | 9.7 | 10.3 | 8.7 | 7.9 | 11.1 | 10.4 | 10.0 | 9.6 |
| Hedge Funds | 1.5 | 2.2 | 5.7 | 11.5 | 10.8 | 6.3 | 2.0 | 0.7 | 5.1 | 10.6 | 7.7 | 5.2 | 2.2 | -0.1 | 4.6 | 9.9 | 6.4 | 4.5 |
| Global TAA | 7.9 | -5.2 | 4.8 | 3.4 | 12.9 | 4.6 | 6.8 | -4.2 | 5.9 | 1.2 | 12.6 | 4.3 | 8.6 | -4.5 | 5.4 | 2.0 | 10.7 | 4.3 |
| Diversified Private Equity | 10.6 | 4.0 | 17.0 | 21.4 | 9.7 | 12.4 | 9.5 | 8.4 | 17.3 | 18.1 | 12.3 | 13.0 | 8.6 | 8.0 | 15.5 | 17.6 | 13.1 | 12.5 |
| LBO | | | | | | | 12.1 | 4.3 | 16.1 | 28.6 | 14.0 | 14.8 | 10.5 | 8.4 | 14.4 | 18.1 | 13.0 | 12.9 |
| Venture Capital | | | | | | | 7.4 | 9.4 | 12.8 | 19.3 | 6.7 | 11.0 | 5.4 | 12.7 | 17.9 | 16.1 | 8.7 | 12.0 |
| Other Private Equity | 8.8 | 0.6 | 10.5 | 15.5 | 13.9 | 9.7 | 7.3 | 3.4 | 10.5 | 14.6 | 16.3 | 10.3 | 7.9 | 6.4 | 15.0 | 15.5 | 8.6 | 10.6 |
| Private Equity - Total | 9.9 | 2.7 | 14.5 | 19.0 | 11.6 | 11.4 | 9.3 | 7.9 | 17.1 | 18.0 | 12.6 | 12.9 | 8.7 | 8.6 | 15.5 | 17.3 | 12.7 | 12.5 |
| Total Fund Return | 7.6 | -0.6 | 5.1 | 11.6 | 12.4 | 7.1 | 7.7 | 0.8 | 7.0 | 15.4 | 13.0 | 8.7 | 7.8 | 0.3 | 6.5 | 15.5 | 13.1 | 8.5 |

You were not able to provide full year returns for all of the components of returns shown in italics. The default is to set the unavailable return equal to the benchmark return.

Benchmark returns by asset class

| Asset class | Your fund % | | | | | | Peer average % | | | | | | U.S. Public average % | | | | | |
|---|-------------|-------|-------|------|------|------|----------------|-------|-------|------|------|------|-----------------------|-------|-------|-------|------|------|
| | 2016 | 2015 | 2014 | 2013 | 2012 | 5-yr | 2016 | 2015 | 2014 | 2013 | 2012 | 5-yr | 2016 | 2015 | 2014 | 2013 | 2012 | 5-yr |
| U.S. Stock - Broad/All | 11.8 | 0.5 | 12.6 | 33.6 | 16.0 | 14.4 | 12.8 | 0.6 | 12.8 | 33.2 | 16.3 | 14.7 | 12.4 | 0.7 | 12.7 | 33.2 | 16.3 | 14.6 |
| U.S. Stock - Large Cap | | | | | | | 12.2 | 1.2 | 13.3 | 32.8 | 16.2 | 14.7 | 12.2 | 1.1 | 13.2 | 32.9 | 16.2 | 14.7 |
| U.S. Stock - Mid Cap | | | | | | | 15.9 | -2.3 | 10.9 | | | | 12.5 | -2.0 | 10.8 | 33.9 | 17.7 | 14.0 |
| U.S. Stock - Small Cap | | | | | | | 19.6 | -3.5 | 6.9 | 38.2 | 16.9 | 14.8 | 20.2 | -3.4 | 6.0 | 37.9 | 16.9 | 14.7 |
| Stock - EAFE | | | | -4.9 | 22.8 | 17.3 | 3.0 | -0.6 | -3.9 | 23.2 | 17.4 | 7.3 | 2.3 | -1.0 | -4.2 | 22.1 | 17.2 | 6.8 |
| Stock - Emerging | 11.2 | -14.9 | -2.2 | -2.6 | 18.2 | 1.3 | 11.3 | -15.0 | -2.1 | -2.7 | 18.4 | 1.3 | 10.8 | -14.5 | -1.9 | -1.7 | 18.2 | 1.6 |
| Stock - ACWIxU.S. | | | | | | | 4.2 | -5.0 | -3.8 | 16.2 | 17.0 | 5.3 | 4.5 | -4.8 | -3.7 | 16.4 | 17.1 | 5.5 |
| Stock - Global | 8.2 | -2.4 | 4.2 | 22.8 | | | 8.1 | -1.9 | 4.6 | 23.9 | 16.3 | 9.8 | 7.8 | -1.7 | 3.4 | 22.2 | 15.0 | 9.0 |
| Stock - Other | | | | | | | 11.3 | -6.0 | -2.0 | 12.9 | 15.0 | 5.9 | 9.4 | -6.3 | 1.1 | 18.2 | 12.6 | 6.6 |
| Stock - Total | 8.2 | -2.4 | 4.2 | 22.8 | 16.9 | 9.6 | 9.5 | -1.6 | 5.7 | 25.9 | 16.6 | 10.8 | 9.4 | -2.0 | 5.1 | 25.5 | 16.6 | 10.5 |
| Fixed Income - U.S. | 2.7 | 0.6 | 6.0 | -2.0 | 4.2 | 2.2 | 2.9 | 0.4 | 6.0 | -2.1 | 4.9 | 2.4 | 2.8 | 0.4 | 6.1 | -2.0 | 5.0 | 2.4 |
| Fixed Income - U.S. Gov't | | | | | | | -0.2 | 0.7 | 0.8 | | | | 0.2 | 0.8 | 3.7 | -5.1 | 2.0 | 0.3 |
| Fixed Income - U.S. Credit | | | | | | | 3.7 | 0.2 | 5.8 | | | | 3.7 | -0.7 | 6.3 | -2.0 | 4.2 | 2.2 |
| Fixed Income - EAFE | | | | | | | | | | | 1.5 | | 7.8 | -6.0 | -3.0 | -3.8 | 2.0 | -0.7 |
| Fixed Income - Emerging | 10.2 | -7.1 | 0.7 | -7.1 | 17.2 | 2.3 | 10.1 | -4.5 | -0.1 | -7.2 | 17.2 | 2.7 | 9.9 | -5.2 | 0.2 | -6.5 | 16.9 | 2.7 |
| Fixed Income - Global | | | 1.0 | 7.6 | -0.1 | 4.3 | 3.4 | 0.3 | 5.7 | -1.2 | 5.8 | 2.8 | 4.5 | -0.9 | 3.7 | -1.6 | 4.0 | 1.9 |
| Fixed Income - Long Bonds | | | | | | | | | | | | | 3.6 | -1.9 | 20.1 | -10.0 | 4.6 | 2.8 |
| Fixed Income - Inflation Indexed | | | | | | | 5.3 | -2.0 | 5.0 | -5.6 | 6.9 | 1.8 | 5.8 | -1.7 | 4.7 | -6.6 | 7.2 | 1.7 |
| Fixed Income - High Yield | 12.3 | -1.2 | 3.4 | 3.7 | 14.2 | 6.3 | 15.3 | -3.7 | 2.6 | 6.7 | 14.3 | 6.8 | 15.1 | -3.9 | 2.3 | 6.6 | 13.9 | 6.6 |
| Fixed Income - Mortgages | | | | | | | 2.3 | 2.2 | 6.1 | 0.7 | 9.3 | 4.1 | 3.1 | 2.0 | 4.4 | 0.2 | 7.3 | 3.3 |
| Fixed Income - Private Debt | | | | | | | 11.4 | 1.8 | 8.3 | 9.5 | 12.9 | 8.7 | 9.6 | -0.4 | 4.3 | 6.5 | 5.7 | 5.1 |
| Fixed Income - Other | | | | | | | 8.7 | -1.4 | 7.1 | 7.7 | 9.7 | 6.3 | 6.8 | 0.4 | 5.8 | 5.4 | 8.0 | 5.3 |
| Cash | 0.3 | 0.1 | 0.5 | 0.1 | 0.4 | 0.3 | 0.3 | 0.0 | 0.1 | 0.2 | 0.1 | 0.1 | 0.4 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 |
| Fixed Income - Total | 6.7 | -1.6 | 3.4 | -1.3 | 7.7 | 2.9 | 4.1 | -0.3 | 5.3 | -1.6 | 5.9 | 2.6 | 5.0 | -0.3 | 7.3 | -2.5 | 6.0 | 3.0 |
| Commodities | 15.6 | -24.7 | -17.0 | -9.5 | -1.1 | -8.4 | 10.5 | -18.5 | -13.6 | -9.5 | -1.0 | -7.0 | 11.3 | -22.8 | -16.6 | -5.1 | 0.4 | -7.3 |
| Infrastructure | 12.5 | | | | | | 7.5 | 3.4 | 5.6 | 3.6 | 5.9 | 5.2 | 7.2 | 5.0 | 6.5 | 6.8 | 7.1 | 6.5 |
| REITs | 8.5 | | | | | | 7.0 | 3.7 | 23.4 | 3.4 | 21.1 | 11.4 | 6.7 | 2.9 | 20.7 | 3.2 | 22.7 | 10.9 |
| Natural Resources | | | | | | | 6.6 | 0.2 | 5.1 | 6.8 | 7.0 | 5.1 | 7.0 | -0.5 | 7.0 | 7.6 | 7.2 | 5.6 |
| Real Estate ex-REITs | 10.8 | 15.7 | 13.2 | 13.8 | 10.5 | 12.8 | 8.8 | 12.9 | 11.0 | 11.5 | 10.5 | 10.9 | 8.5 | 13.5 | 11.7 | 11.6 | 11.0 | 11.3 |
| Other Real Assets | | | | | | | 10.0 | -10.0 | 6.8 | 13.1 | 6.1 | 4.9 | 12.0 | -8.8 | 5.1 | 10.3 | 5.6 | 4.6 |
| Real Assets - Total | 12.1 | 0.6 | 1.8 | 5.1 | 4.7 | 4.8 | 8.5 | 8.9 | 9.4 | 9.3 | 10.6 | 9.3 | 8.8 | 7.0 | 8.7 | 9.2 | 10.2 | 8.8 |
| Hedge Funds | 3.3 | -1.1 | 3.0 | 9.1 | 3.5 | 3.5 | 3.7 | 2.8 | 4.2 | 8.6 | 5.5 | 5.0 | 3.1 | 1.3 | 4.0 | 9.3 | 5.9 | 4.7 |
| Global TAA | 7.9 | -2.0 | 2.3 | 10.4 | 8.7 | 5.4 | 7.5 | 1.9 | 4.0 | 8.5 | 7.8 | 5.9 | 6.7 | 0.6 | 5.1 | 10.0 | 9.6 | 6.3 |
| Diversified Private Equity ¹ | 16.3 | 0.9 | 18.0 | 25.1 | 10.7 | 13.9 | 7.8 | 4.2 | 18.9 | 28.9 | 7.9 | 13.2 | 7.0 | 4.8 | 15.7 | 30.5 | 12.8 | 13.8 |
| LBO ¹ | | | | | | | 10.9 | 4.1 | 13.0 | 34.6 | 13.2 | 14.7 | 9.9 | 4.5 | 14.6 | 31.4 | 12.5 | 14.2 |
| Venture Capital ¹ | | | | | | | 10.6 | 5.0 | 13.0 | 34.6 | 13.2 | 14.9 | 9.0 | 5.4 | 14.8 | 30.9 | 13.9 | 14.5 |
| Other Private Equity ¹ | 7.0 | 2.4 | 5.4 | 6.5 | 9.3 | 6.1 | 6.9 | 4.3 | 12.0 | 26.0 | 12.1 | 12.0 | 9.0 | 4.6 | 13.5 | 29.9 | 14.4 | 14.0 |
| Private Equity ¹ - Total | 12.4 | 1.5 | 12.4 | 17.0 | 10.0 | 10.5 | 7.4 | 4.3 | 18.3 | 28.8 | 8.2 | 13.0 | 7.1 | 4.9 | 15.4 | 30.2 | 12.8 | 13.7 |
| Total Policy Return | 8.4 | -1.1 | 4.8 | 10.2 | 10.7 | 6.5 | 7.6 | 0.6 | 6.9 | 15.0 | 11.9 | 8.3 | 7.6 | 0.1 | 6.6 | 15.1 | 12.4 | 8.2 |

1. To enable fairer comparisons, the policy returns of all participants except your fund were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. If CEM used this same adjustment for your fund, your 5-year policy return would be 7.3%, 0.8% higher than your actual 5-year policy return of 6.5%. Mirroring this, your 5-year total fund net value added would be 0.8% lower. Refer to the Research section pages 6-7 for details.

Net value added by asset class

| Asset class | Your fund % | | | | | | Peer average % | | | | | | U.S. Public average % | | | | | |
|---|-------------|-------|------|------|------|------|----------------|------|------|-------|------|------|-----------------------|------|------|-------|------|------|
| | 2016 | 2015 | 2014 | 2013 | 2012 | 5-yr | 2016 | 2015 | 2014 | 2013 | 2012 | 5-yr | 2016 | 2015 | 2014 | 2013 | 2012 | 5-yr |
| U.S. Stock - Broad/All | -2.3 | -14.5 | -3.9 | 2.1 | 2.0 | -4.0 | -1.4 | -1.8 | -2.4 | 1.2 | 0.1 | -1.0 | -1.1 | -1.2 | -1.7 | 0.2 | -0.1 | -0.8 |
| U.S. Stock - Large Cap | | | | | | | -0.9 | -0.1 | -0.1 | 0.1 | -0.3 | -0.2 | -1.0 | -0.1 | -0.5 | 0.6 | -0.1 | -0.2 |
| U.S. Stock - Mid Cap | | | | | | | -0.8 | 0.8 | -0.5 | | | | 0.1 | -0.7 | -2.1 | 4.7 | 2.8 | 0.7 |
| U.S. Stock - Small Cap | | | | | | | -1.1 | 0.3 | -0.7 | 0.4 | 0.0 | -0.2 | -1.4 | -0.1 | -1.0 | 1.0 | -0.8 | -0.5 |
| Stock - EAFE | | | -0.2 | -8.1 | -0.7 | | 0.4 | 1.5 | 0.5 | -0.4 | 1.1 | 0.7 | 0.7 | 1.3 | 0.3 | 1.2 | 0.2 | 0.7 |
| Stock - Emerging | -1.1 | -1.0 | 1.9 | -0.7 | 1.3 | 0.0 | 1.2 | 0.1 | 0.3 | 1.1 | 1.4 | 0.8 | -0.7 | 0.8 | 0.6 | 0.2 | 0.6 | 0.3 |
| Stock - ACWIxU.S. | | | | | | | -0.8 | 2.8 | 0.2 | 3.8 | 1.2 | 1.2 | -0.9 | 2.2 | 0.1 | 2.7 | 0.9 | 0.9 |
| Stock - Global | -2.2 | 1.9 | 0.0 | | | | -0.4 | 1.3 | 0.7 | 2.8 | -0.1 | 0.8 | -0.2 | 0.3 | 0.4 | 2.1 | 0.2 | 0.5 |
| Stock - Other | | | | | | | 3.3 | 1.6 | -0.1 | 3.0 | 1.6 | 1.1 | 1.3 | 0.9 | 2.0 | 0.3 | -0.6 | 0.9 |
| Stock - Total | -0.9 | -3.1 | -0.1 | -3.9 | 1.6 | -1.3 | -0.5 | 0.3 | -0.1 | 0.8 | 0.6 | 0.2 | -0.5 | 0.4 | -0.2 | 1.0 | 0.2 | 0.2 |
| Fixed Income - U.S. | 1.1 | 0.0 | -0.9 | 0.3 | 1.7 | 0.4 | 1.1 | 0.0 | 0.1 | 0.6 | 1.8 | 0.7 | 0.9 | -0.2 | -0.3 | 0.5 | 2.0 | 0.6 |
| Fixed Income - U.S. Gov't | | | | | | | -0.2 | 0.1 | 0.2 | | | | -0.1 | 0.2 | 0.0 | 0.1 | 2.2 | 0.4 |
| Fixed Income - U.S. Credit | | | | | | | 2.3 | -2.0 | -1.4 | | | | 2.3 | -1.2 | 0.2 | 0.8 | 6.3 | 1.6 |
| Fixed Income - EAFE | | | | | | | | | | | | -1.7 | -2.3 | -2.1 | 1.7 | 0.7 | -1.1 | -0.6 |
| Fixed Income - Emerging | 1.6 | 0.7 | -0.6 | -1.6 | 2.1 | 0.3 | 0.6 | 0.0 | 0.0 | -0.5 | 0.4 | 0.1 | 1.0 | 0.2 | -1.0 | -1.1 | -0.3 | -0.2 |
| Fixed Income - Global | | -1.7 | -4.9 | -1.4 | 6.6 | | -0.5 | -0.4 | 0.5 | 0.7 | 3.0 | 0.6 | 1.2 | -1.2 | -0.3 | 1.0 | 4.5 | 1.0 |
| Fixed Income - Long Bonds | | | | | | | | | | | | | -0.9 | -1.7 | 3.3 | 1.5 | 5.6 | 1.5 |
| Fixed Income - Inflation Indexed | | | | | | | 0.2 | 0.2 | -0.3 | -1.7 | 0.7 | -0.2 | 0.0 | 0.0 | -0.2 | -0.9 | 0.4 | -0.1 |
| Fixed Income - High Yield | -3.4 | -0.1 | -2.2 | 2.8 | -2.3 | -1.0 | -4.0 | 0.7 | -0.6 | 0.0 | -0.8 | -0.9 | -3.2 | 0.9 | 0.7 | 0.4 | 1.6 | 0.2 |
| Fixed Income - Mortgages | | | | | | | -0.2 | 0.0 | -0.6 | 0.0 | 16.1 | 2.7 | -0.2 | 1.8 | 2.8 | 4.8 | 4.5 | 2.7 |
| Fixed Income - Private Debt | | | | | | | -4.3 | -0.2 | -2.2 | -1.0 | -4.6 | -2.4 | -3.3 | 1.7 | -1.6 | 1.0 | 1.6 | -0.2 |
| Fixed Income - Other | | | | | | | -1.1 | 0.7 | -0.4 | 1.6 | 0.6 | 0.8 | -0.5 | -0.4 | 0.1 | 2.2 | 3.8 | 1.0 |
| Cash | 0.1 | 0.0 | -0.3 | 1.0 | 0.7 | 0.3 | 0.4 | 0.3 | 0.1 | 0.2 | 0.4 | 0.3 | 0.7 | -0.1 | 0.2 | 0.1 | 0.4 | 0.3 |
| Fixed Income - Total | -1.4 | 0.7 | -1.8 | 1.2 | -0.7 | -0.4 | 0.5 | 0.0 | -0.2 | 0.7 | 1.5 | 0.5 | -0.3 | -0.3 | -1.9 | 1.2 | 1.9 | 0.1 |
| Commodities | | | | | -1.9 | | -2.0 | -0.2 | 1.9 | 0.2 | -0.3 | -2.5 | 0.6 | -3.3 | 1.3 | -2.3 | -0.2 | -1.3 |
| Infrastructure | -18.3 | | | | | | -1.7 | -6.1 | 8.9 | 3.8 | 1.3 | 1.1 | 1.8 | -0.8 | 5.9 | 3.0 | -0.7 | 1.8 |
| REITs | -13.5 | | | | | | -4.1 | -1.8 | -4.1 | 1.6 | -1.2 | -1.9 | -1.8 | -0.8 | -1.0 | 1.1 | -0.7 | -0.8 |
| Natural Resources | | | | | | | 0.9 | -3.1 | 4.9 | 1.6 | -2.3 | 0.4 | -0.4 | -4.7 | 3.7 | -1.6 | -5.4 | -1.7 |
| Real Estate ex-REITs | -9.2 | -0.2 | 6.4 | 7.3 | -0.6 | 0.5 | 0.3 | 0.9 | 2.3 | 0.2 | -1.7 | 0.4 | 0.1 | -0.5 | 0.7 | 0.8 | -0.7 | 0.1 |
| Other Real Assets | | | | | | | 2.4 | -6.9 | -0.5 | 1.7 | -3.0 | -1.6 | -0.3 | -2.7 | 0.1 | -1.1 | -1.8 | -0.8 |
| Real Assets - Total | -12.1 | 14.9 | 17.7 | 16.0 | 3.6 | 7.8 | -0.3 | 0.9 | 4.0 | 0.9 | -0.9 | 0.9 | -0.1 | 1.0 | 2.4 | 1.2 | -0.2 | 0.9 |
| Hedge Funds | -1.8 | 3.3 | 2.7 | 2.4 | 7.3 | 2.7 | -1.4 | -2.0 | 0.8 | 1.9 | 2.2 | 0.2 | -1.0 | -1.4 | 0.5 | 0.6 | 0.5 | -0.1 |
| Global TAA | 0.0 | -3.2 | 2.6 | -7.0 | 4.2 | -0.8 | -0.7 | -6.1 | 1.8 | -7.3 | 4.8 | -1.6 | 1.9 | -5.1 | 0.4 | -8.0 | 1.1 | -2.0 |
| Diversified Private Equity ¹ | -5.7 | 3.2 | -1.0 | -3.7 | -0.9 | -1.5 | 1.7 | 4.2 | -1.6 | -10.8 | 4.4 | -0.2 | 1.7 | 3.2 | -0.2 | -12.9 | 0.3 | -1.3 |
| LBO ¹ | | | | | | | 1.2 | 0.2 | 3.0 | -6.0 | 0.8 | 0.0 | 0.6 | 3.9 | -0.1 | -13.3 | 0.5 | -1.4 |
| Venture Capital ¹ | | | | | | | -3.3 | 4.4 | -0.2 | -15.3 | -6.5 | -3.9 | -3.6 | 7.4 | 3.0 | -14.8 | -5.3 | -2.4 |
| Other Private Equity ¹ | 1.9 | -1.8 | 5.1 | 9.0 | 4.6 | 3.7 | 1.0 | -0.9 | -1.5 | -11.4 | 4.2 | -1.7 | -0.9 | 1.7 | 2.4 | -14.4 | -6.6 | -3.4 |
| Private Equity ¹ - Total | -2.4 | 1.2 | 2.0 | 2.0 | 1.7 | 0.9 | 1.9 | 3.6 | -1.2 | -10.8 | 4.4 | -0.2 | 1.6 | 3.8 | 0.1 | -12.9 | -0.1 | -1.2 |
| Total fund | -0.8 | 0.5 | 0.3 | 1.4 | 1.7 | 0.6 | 0.0 | 0.3 | 0.2 | 0.4 | 1.1 | 0.4 | 0.2 | 0.2 | -0.1 | 0.4 | 0.8 | 0.3 |

Total net value add is determined by both actual and policy allocation. It is the outcome of total net return (page 6) minus total benchmark return (page 7).

Aggregate net returns are an asset weighted average of all categories that the fund has an actual allocation to. Aggregate benchmark returns are a policy weighted average and includes only those categories that are part of your policy fund's mix.

You were not able to provide full year returns for all of the components of returns of asset classes with values shown in italics. The default is to set the unavailable return equal to the benchmark return.

1. To enable fairer comparisons, the policy returns of all participants except your fund were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. If CEM used this same adjustment for your fund, your 5-year policy return would be 7.3%, 0.8% higher than your actual 5-year policy return of 6.5%. Mirroring this, your 5-year total fund net value added would be 0.8% lower. Refer to the Research section pages 6-7 for details.

Most frequently used benchmarks by asset class - 2016 - Stock

How many of your peers use the most frequently used benchmarks by universe

| Benchmark Description | Return ¹ | # Using | |
|-------------------------------|---------------------|---------|-----|
| | | Peers | US |
| <u>U.S. Stock - Broad/All</u> | | | |
| Russell 3000 | 12.7 | 7 | 39 |
| S&P 500 | 9.6 | 1 | 5 |
| Wilshire 5000 | 13.4 | 1 | 4 |
| Custom | 12.7 | | 2 |
| Other | 12.3 | 4 | 20 |
| Total | 12.4 | 13 | 70 |
| <u>U.S. Stock - Large Cap</u> | | | |
| S&P 500 | 12.0 | 3 | 41 |
| Russell 1000 | 12.1 | 2 | 28 |
| Custom | 11.0 | 2 | 8 |
| russell 3000 | 12.6 | 1 | 7 |
| Other | 13.2 | 2 | 24 |
| Total | 12.2 | 10 | 108 |
| <u>U.S. Stock - Small Cap</u> | | | |
| Russell 2000 | 21.3 | 3 | 59 |
| russell 2500 | 17.3 | 3 | 15 |
| Custom | 17.5 | | 7 |
| RUSSELL 2000 INDEX | 21.3 | | 2 |
| Other | 20.7 | 4 | 27 |
| Total | 20.4 | 10 | 110 |
| <u>Stock - EAFE</u> | | | |
| MSCI EAFE net | 1.1 | 4 | 30 |
| MSCI EAFE | 1.3 | | 10 |
| Custom | 3.0 | 1 | 9 |
| MSCI EAFE gross | 1.5 | | 6 |
| Other | 2.8 | 4 | 45 |
| Total | 2.1 | 9 | 100 |
| <u>Stock - Europe</u> | | | |
| MSCI ACWI gross | 8.5 | | 1 |
| Total | 8.5 | | 1 |

| Benchmark Description | Return ¹ | # Using | |
|-----------------------------|---------------------|---------|-----|
| | | Peers | US |
| <u>Stock - Emerging</u> | | | |
| MSCI Emerging Market net | 11.2 | 6 | 38 |
| MSCI Emerging Markets | 10.8 | 2 | 15 |
| Custom | 10.8 | 1 | 7 |
| MSCI Emerging Market gross | 13.4 | 1 | 4 |
| Other | | 3 | 49 |
| Total | 6.3 | 13 | 113 |
| <u>Stock - ACWIxU.S.</u> | | | |
| MSCI ACWI xUS net | 4.2 | 4 | 18 |
| MSCI ACWI xUS gross | 5.0 | 2 | 7 |
| MSCI ACWI ex-US | 4.5 | | 3 |
| MSCI ACWI xUS IMI net | 4.4 | 1 | 3 |
| Other | 4.3 | 6 | 51 |
| Total | 4.4 | 13 | 82 |
| <u>Stock - Global</u> | | | |
| MSCI ACWI net | 7.8 | 2 | 12 |
| MSCI World net | 7.5 | | 7 |
| Custom | 8.5 | | 5 |
| MSCI ACWI | 7.7 | | 5 |
| Other | 7.9 | 5 | 55 |
| Total | 7.9 | 7 | 84 |
| <u>Stock - Asia-Pacific</u> | | | |
| MSCI ACWI gross | 8.5 | | 1 |
| Total | 8.5 | | 1 |

1. Return reflects the average return provided to CEM for the described benchmark. Often, different returns for the same described benchmark are provided due to revisions (particularly for real estate benchmarks), rounding and differences in calculation methodology (particularly for hedged returns).

Most frequently used benchmarks by asset class - 2016 - Fixed Income

| Benchmark Description | Return ¹ | # Using | |
|-------------------------------------|---------------------|---------|-----|
| | | Peers | US |
| <u>Fixed Income - U.S.</u> | | | |
| Barclays US Aggregate | 2.6 | 10 | 38 |
| Custom | 1.2 | 1 | 10 |
| Barclays Aggregate | 2.6 | | 4 |
| Barclays Capital Aggregate | 2.7 | 1 | 3 |
| Other | 3.2 | 6 | 45 |
| Total | 2.8 | 18 | 100 |
| <u>Fixed Income - EAFE</u> | | | |
| Barclays Global Aggregate ex US | 1.5 | | 1 |
| CalPERS Barclays International Fixe | 7.8 | | 1 |
| Citi Non-US World Gov't Bond Inde | 14.2 | | 1 |
| Total | 7.8 | | 3 |
| <u>Fixed Income - Global</u> | | | |
| Barclays Global Aggregate | 2.7 | 1 | 3 |
| Custom | 7.5 | | 3 |
| Barclays Capital Global Aggregate f | 4.3 | 1 | 2 |
| Barclays US Aggregate | 2.6 | | 2 |
| Other | 3.9 | 3 | 20 |
| Total | 4.1 | 5 | 30 |
| <u>Fixed Income - Emerging</u> | | | |
| Custom | 10.2 | 1 | 6 |
| JP Morgan EMBI Global Diversified | 10.2 | 1 | 5 |
| Barclays Global Emerging Market | 9.9 | | 2 |
| EMBI Global Diversified | 10.0 | 1 | 2 |
| Other | 9.7 | 7 | 36 |
| Total | 9.9 | 10 | 51 |

| Benchmark Description | Return ¹ | # Using | |
|---|---------------------|---------|----|
| | | Peers | US |
| <u>Fixed Income - High Yield</u> | | | |
| Barclays US Corp High Yield | 17.1 | | 8 |
| Custom | 12.5 | 1 | 8 |
| Barclays US Corp High Yield 2% Cap | 17.1 | | 3 |
| Merrill Lynch High Yield | 16.0 | 1 | 3 |
| Other | 15.2 | 7 | 53 |
| Total | 15.2 | 9 | 75 |
| <u>Fixed Income - Inflation Indexed</u> | | | |
| Barclays US TIPS | 4.7 | 3 | 15 |
| Custom | 10.1 | 2 | 4 |
| 67% Barclays Global Inflation-Linke | 5.3 | | 1 |
| 70% Barclays US TIPS/30% Barclays | 6.4 | | 1 |
| Other | 4.9 | 3 | 18 |
| Total | 5.4 | 8 | 39 |
| <u>Fixed Income - Mortgages</u> | | | |
| Custom | 4.1 | | 3 |
| Barclays Mortgage Index Lagged | 3.6 | | 1 |
| Barclays U.S. MBS | 1.7 | | 1 |
| Barclays US Aggregate | 2.6 | | 1 |
| Other | 2.6 | 1 | 6 |
| Total | 3.0 | 1 | 12 |
| <u>Fixed Income - Long Bonds</u> | | | |
| Custom | 6.2 | | 17 |
| Barclays US Long G/C | 6.7 | | 12 |
| Barclays US Long Credit | 9.6 | | 3 |
| Barclays Long Corporate | 11.0 | | 2 |
| Other | 7.0 | | 55 |
| Total | 7.0 | | 89 |

Most frequently used benchmarks by asset class - 2016 - Hedge Funds and Real Assets²

| Benchmark Description | Return ¹ | # Using | |
|-----------------------------------|---------------------|---------|-----|
| | | Peers | US |
| <u>Global TAA</u> | | | |
| Custom | 6.4 | | 18 |
| .65 S&P 500 Index | 7.9 | | 1 |
| 3 month/91 Day T-Bill + 900 bps | 9.4 | | 1 |
| 40% S&P 500; 29% Barclays Treasu | 4.2 | | 1 |
| Other | 6.7 | 2 | 26 |
| Total | 6.6 | 2 | 47 |
| <u>Hedge Funds</u> | | | |
| Custom | 4.5 | 2 | 26 |
| HFRI Fund of Funds Composite Ind | 0.2 | | 5 |
| HFRX Global Hedge Fund | 2.5 | | 3 |
| HFRI Equity Hedge Index | 5.5 | | 2 |
| Other | 2.7 | 10 | 68 |
| Total | 3.1 | 12 | 104 |
| <u>Commodities</u> | | | |
| Bloomberg Commodity Index | 10.0 | 2 | 8 |
| Custom | 10.3 | | 5 |
| Dow Jones UBS Commodity Index | 11.8 | | 4 |
| Bloomberg Commodity Index Total | 11.8 | 1 | 2 |
| Other | 12.7 | 1 | 19 |
| Total | 11.6 | 4 | 38 |
| <u>REITs</u> | | | |
| Your REIT benchmark | 6.0 | 6 | 29 |
| Wilshire REIT | 7.2 | 2 | 6 |
| Custom | 6.1 | | 4 |
| Blended Bmk w/ 90 day lag + 300 t | 11.1 | | 1 |
| Other | 6.4 | 2 | 15 |
| Total | 6.4 | 10 | 55 |

| Benchmark Description | Return ¹ | # Using | |
|----------------------------------|---------------------|---------|-----|
| | | Peers | US |
| <u>Infrastructure</u> | | | |
| Custom | 7.2 | 2 | 7 |
| CPI + 5% | 7.0 | 1 | 4 |
| CPI + 4% | 6.2 | | 2 |
| [Domestic CPI+4%]xw3 + Actual Re | 7.0 | | 1 |
| Other | 7.9 | 3 | 23 |
| Total | 7.6 | 6 | 37 |
| <u>Natural Resources</u> | | | |
| Custom | 3.9 | 1 | 7 |
| NCREIF TIMBERLAND | 4.1 | 1 | 3 |
| CPI + 5% | 7.1 | 1 | 2 |
| NCREIF Timberland Index | 2.0 | 1 | 2 |
| Other | 7.3 | 4 | 25 |
| Total | 6.1 | 8 | 39 |
| <u>Real Estate ex-REITs</u> | | | |
| Custom | 8.6 | 6 | 23 |
| NCREIF | 8.0 | 1 | 12 |
| NCREIF ODCE | 8.4 | 1 | 9 |
| NCREIF Qtr lag | 9.2 | 1 | 8 |
| Other | 8.5 | 10 | 83 |
| Total | 8.5 | 19 | 135 |

2. In order to eliminate the substantial noise caused by inconsistent and often inappropriate private equity benchmarks (see Research section page 6), the private equity benchmarks of all participants were adjusted to reflect investable private equity benchmarks based on lagged, small-cap stock. As a result of this adjustment, the most commonly used private equity benchmarks are not shown.

Your policy return and value added calculation - 2016

2016 Policy Return and Value Added

| Asset class | Policy weight | Benchmark Description | Return | Net return | Value added |
|--|---------------|--|--------|--------------|-------------|
| U.S. Stock - Broad/All | | MSCI US Net & MSCI US IMI Net Mid-year Blend | 11.8% | 9.5% | -2.3% |
| Stock - Emerging | | MSCI Emerging Market Net | 11.2% | 10.1% | -1.1% |
| Stock - Global | 36.1% | MSCI ACWI Net & MSCI ACWI IMI Net Mid-year Blend | 8.2% | 6.0% | -2.2% |
| Fixed Income - U.S. | 10.0% | Barclays US Aggregate | 2.7% | 3.8% | 1.1% |
| Fixed Income - Emerging | 5.0% | 50% JPM EMBI Global Diversified/50% JPM-GBI-EM C | 10.2% | 11.7% | 1.6% |
| Fixed Income - High Yield | 6.6% | 50%Bar U.S. High Yield 2% / 50%S&P LSTA Leveraged | 12.3% | 8.9% | -3.4% |
| Cash | 2.0% | BofA Merrill Lynch 3 Month US Treasury Bill GOO1 | 0.3% | 0.4% | 0.1% |
| Commodities | 3.0% | Bloomberg Commodity Total Return Index & 50% MSCI W | 15.6% | | |
| Infrastructure | 1.0% | Dow Jones Brookfield Global Infrastructure Net Inde) | 12.5% | -5.8% | -18.3% |
| REITs | 0.7% | Your REIT benchmark | 8.5% | -5.0% | -13.5% |
| Real Estate ex-REITs | 6.3% | NCREIF ODCE Index + 75 bps | 10.8% | 1.6% | -9.2% |
| Hedge Funds | 4.0% | HFRI Fund Weighted Composite Index & 50% MSCI W | 3.3% | 1.5% | -1.8% |
| Global TAA | 10.0% | 50% MSCI World Net/50% Citi WGBI & 50% MSCI Wc | 7.9% | 7.9% | 0.0% |
| Diversified Private Equity | 8.9% | 80% Russell 3000 / 20% MSCI EAFE Lagged + 300 Bps | 16.3% | 10.6% | -5.7% |
| Other Private Equity | 6.4% | S&P/LSTA + 150 Bps 3 Month Lag | 7.0% | 8.8% | 1.9% |
| Total | 100.0% | | | | |
| Net Actual Return (reported by you) | | | | | 7.6% |
| Calculated Policy Return = sum of (policy weights X benchmark returns) | | | | 8.7% | |
| Adjustment to reflect rebalancing and overlay impacts | | | | <u>-0.3%</u> | |
| Policy Return | | | | | <u>8.4%</u> |
| Net Value Added (Net Return - Policy Return) | | | | | -0.8% |

Your policy return and value added calculations - 2012 to 2015

2015 Policy Return and Value Added

| Asset class | Policy weight | Benchmark Description | Benchmark Return | Net return | Value added |
|---|---------------|-----------------------|------------------|------------|--------------|
| U.S. Stock | | Russell 3000 | 0.5% | -14.0% | -14.5% |
| Stock - Emerging | | MSCI Emerging M | -14.9% | -15.9% | -1.0% |
| Stock - Global | 34.0% | MSCI All Country | -2.4% | -0.4% | 1.9% |
| Fixed Income - U.S. | 10.0% | Barclays US Aggre | 0.6% | 0.5% | 0.0% |
| Fixed Income - Emerging | 5.0% | 50% JPM EMBI GI | -7.1% | -6.4% | 0.7% |
| Fixed Income - Global | 3.0% | Barclays Global A | 1.0% | -0.6% | -1.7% |
| Fixed Income - High Yield | 5.0% | 33%Bar U.S. High | -1.2% | -1.3% | -0.1% |
| Cash | 2.0% | BofA Merrill Lyncl | 0.1% | 0.1% | 0.0% |
| Commodities | 3.0% | Bloomberg Comr | -24.7% | | |
| Real Estate ex-REITs | 5.0% | NCREIF ODCE Ind | 15.7% | 15.5% | -0.2% |
| Hedge Funds | 10.0% | HFRI Fund Weigh | -1.1% | 2.2% | 3.3% |
| Global TAA | 10.0% | 50% MSCI World | -2.0% | -5.2% | -3.2% |
| Diversified Private Equity | 9.0% | 80% Russell 3000 | 0.9% | 4.0% | 3.2% |
| Other Private Equity | 7.0% | S&P/LSTA + 150 B | 2.4% | 0.6% | -1.8% |
| Total | 100.0% | | | | |
| Net Return (reported by you) | | | | | -0.6% |
| Calculated policy return (sum: Policy weights x benchmarks) | | | | | -1.2% |
| Adjustment to reflect rebalancing and overlay impacts | | | | | <u>0.1%</u> |
| Policy Return | | | | | -1.1% |
| Net Value Added (Net Return - Policy Return) | | | | | 0.5% |

2013 Policy Return and Value Added

| Asset class | Policy weight | Benchmark Description | Benchmark Return | Net return | Value added |
|---|---------------|-----------------------|------------------|------------|--------------|
| U.S. Stock | | Russell 3000 (def | 33.6% | 35.6% | 2.1% |
| Stock - EAFE | | MSCI EAFE net (d | 22.8% | 14.7% | -8.1% |
| Stock - Emerging | | MSCI Emerging M | -2.6% | -3.2% | -0.7% |
| Stock - Global | 31.0% | MSCI ACWI | 22.8% | | |
| Fixed Income - U.S. | 7.0% | Barclays US Aggre | -2.0% | -1.7% | 0.3% |
| Fixed Income - Emerging | 6.0% | JPM EMBI Global | -7.1% | -8.7% | -1.6% |
| Fixed Income - Global | 3.0% | Barclays Global A | -0.1% | -1.5% | -1.4% |
| Fixed Income - High Yield | 6.0% | Barclays US Corp | 3.7% | 6.5% | 2.8% |
| Cash | 5.0% | 90 D T-Bill / Merri | 0.1% | 1.1% | 1.0% |
| Commodities | 3.0% | Dow Jones UBS C | -9.5% | | |
| Real Estate ex-REITs | 5.0% | NCREIF ODCE Ind | 13.8% | 21.1% | 7.3% |
| Hedge Funds | 8.0% | HFRI Fund Weigh | 9.1% | 11.5% | 2.4% |
| Global TAA | 10.0% | 50% MSCI World | 10.4% | 3.4% | -7.0% |
| Diversified Private Equity | 9.0% | 80% Russell 3000 | 25.1% | 21.4% | -3.7% |
| Other Private Equity | 7.0% | S&P/LSTA + 150 B | 6.5% | 15.5% | 9.0% |
| Total | 100.0% | | | | |
| Net Return (reported by you) | | | | | 11.6% |
| Calculated policy return (sum: Policy weights x benchmarks) | | | | | 11.6% |
| Adjustment to reflect rebalancing and overlay impacts | | | | | <u>-1.4%</u> |
| Policy Return | | | | | 10.2% |
| Net Value Added (Net Return - Policy Return) | | | | | 1.4% |

2014 Policy Return and Value Added

| Asset class | Policy weight | Benchmark Description | Benchmark Return | Net return | Value added |
|---|---------------|-----------------------|------------------|------------|-------------|
| U.S. Stock | | Russell 3000 (def | 12.6% | 8.6% | -3.9% |
| Stock - Emerging | | MSCI Emerging M | -2.2% | -0.3% | 1.9% |
| Stock - Global | 31.0% | MSCI ACWI Net | 4.2% | 4.1% | 0.0% |
| Fixed Income - U.S. | 7.0% | Barclays US Aggre | 6.0% | 5.1% | -0.9% |
| Fixed Income - Emerging | 6.0% | 50% JPM EMBI GI | 0.7% | 0.1% | -0.6% |
| Fixed Income - Global | 3.0% | Barclays Global A | 7.6% | 2.7% | -4.9% |
| Fixed Income - High Yield | 6.0% | 33%BarCapUS Co | 3.4% | 1.2% | -2.2% |
| Cash | 5.0% | 90 D T-Bill / BarC | 0.5% | 0.2% | -0.3% |
| Commodities | 3.0% | Bloomberg Comr | -17.0% | | |
| Real Estate ex-REITs | 5.0% | NCREIF ODCE Ind | 13.2% | 19.5% | 6.4% |
| Hedge Funds | 8.0% | HFRI Fund Weigh | 3.0% | 5.7% | 2.7% |
| Global TAA | 10.0% | 50% MSCI World | 2.3% | 4.8% | 2.6% |
| Diversified Private Equity | 9.0% | 80% Russell 3000 | 18.0% | 17.0% | -1.0% |
| Other Private Equity | 7.0% | S&P/LSTA + 150 B | 5.4% | 10.5% | 5.1% |
| Total | 100.0% | | | | |
| Net Return (reported by you) | | | | | 5.1% |
| Calculated policy return (sum: Policy weights x benchmarks) | | | | | 4.81% |
| Adjustment to reflect rebalancing and overlay impacts | | | | | <u>0.0%</u> |
| Policy Return | | | | | 4.8% |
| Net Value Added (Net Return - Policy Return) | | | | | 0.3% |

2012 Policy Return and Value Added

| Asset class | Policy weight | Benchmark Description | Benchmark Return | Net return | Value added |
|---|---------------|-----------------------|------------------|------------|--------------|
| U.S. Stock | 14.0% | S&P 500 | 16.0% | 18.0% | 2.0% |
| Stock - EAFE | 8.0% | MSCI EAFE net | 17.3% | 16.6% | -0.7% |
| Stock - Emerging | 8.0% | MSCI Emerging M | 18.2% | 19.5% | 1.3% |
| Stock - Global | | | | | |
| Fixed Income - U.S. | 12.0% | Barclays US Aggre | 4.2% | 5.9% | 1.7% |
| Fixed Income - Emerging | 6.0% | JPM EMBI Global | 17.2% | 19.3% | 2.1% |
| Fixed Income - Global | 1.0% | Barclays Global A | 4.3% | 10.9% | 6.6% |
| Fixed Income - High Yield | 6.0% | Barclays US Corp | 14.2% | 11.9% | -2.3% |
| Cash | 7.0% | 90 D T-Bill/Merril | 0.4% | 1.0% | 0.7% |
| Commodities | 3.0% | Dow Jones UBS C | -1.1% | -3.0% | -1.9% |
| Real Estate ex-REITs | 3.0% | NCREIF | 10.5% | 9.9% | -0.6% |
| Hedge Funds | 5.0% | HFRI Global Hedg | 3.5% | 10.8% | 7.3% |
| Global TAA | 10.0% | 50% MSCI World | 8.7% | 12.9% | 4.2% |
| Diversified Private Equity | 8.5% | 80% Russell 3000 | 10.7% | 9.7% | -0.9% |
| Other Private Equity | 8.5% | 1/3 Barcap High Y | 9.3% | 13.9% | 4.6% |
| Total | 100.0% | | | | |
| Net Return (reported by you) | | | | | 12.4% |
| Calculated policy return (sum: Policy weights x benchmarks) | | | | | 10.6% |
| Adjustment to reflect rebalancing and overlay impacts | | | | | <u>0.1%</u> |
| Policy Return | | | | | 10.7% |
| Net Value Added (Net Return - Policy Return) | | | | | 1.7% |

Profit/Loss on overlay programs

| Overlay type | Your fund | | Peer median | | | | U.S. Public median | | | | |
|-----------------------------|-----------|------|-------------|---|------|---|--------------------|-----|------|------|---|
| | 2016 | 2015 | 2016 | | 2015 | | 2016 | | 2015 | | |
| | bps | bps | bps | # | bps | # | bps | # | bps | # | |
| Int. Discretionary Currency | | | | | | | | 3 | 2 | 3 | 2 |
| Ext. Discretionary Currency | | | | | | | | -1 | 2 | 3 | 2 |
| Internal Global TAA | | | | | | | | 0 | 1 | 0 | 1 |
| External Global TAA | | | | | | | | | | | |
| Internal PolicyTilt TAA | | | | | | | | | | | |
| External PolicyTilt TAA | | | | | | | | | | | |
| Internal Commodities | | | | | | | | | | | |
| External Commodities | | | | | | | | 203 | 1 | -455 | 1 |
| Internal Long/Short | | | | | | | | | | | |
| External Long/Short | | | | | | | | | | | |
| Internal Other | | | | | | | | 0 | 2 | 1 | 2 |
| External Other | | | | | | | | 18 | 3 | 0 | 3 |
| Total Profit/Loss | | | | | | | | 4 | 9 | 0 | 9 |

Profit/loss in basis points was calculated using total fund average holdings. This was done to measure the impact of the program at the total fund level.

5

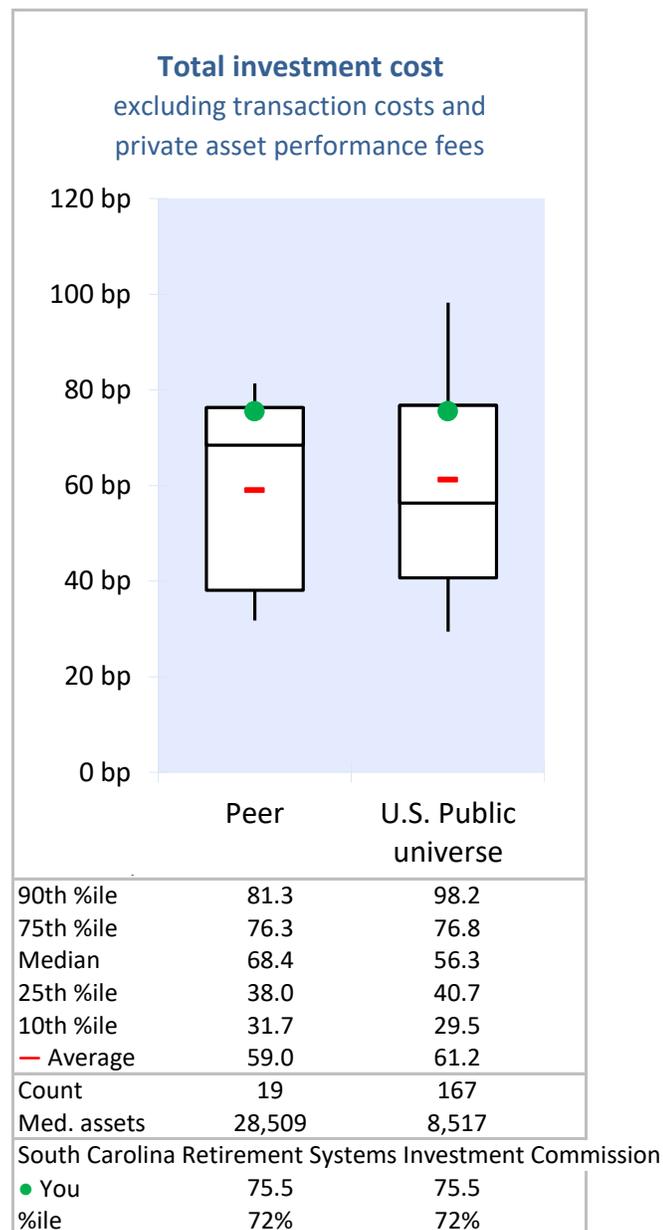
Total cost and benchmark cost

| | |
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Comparisons of total investment cost

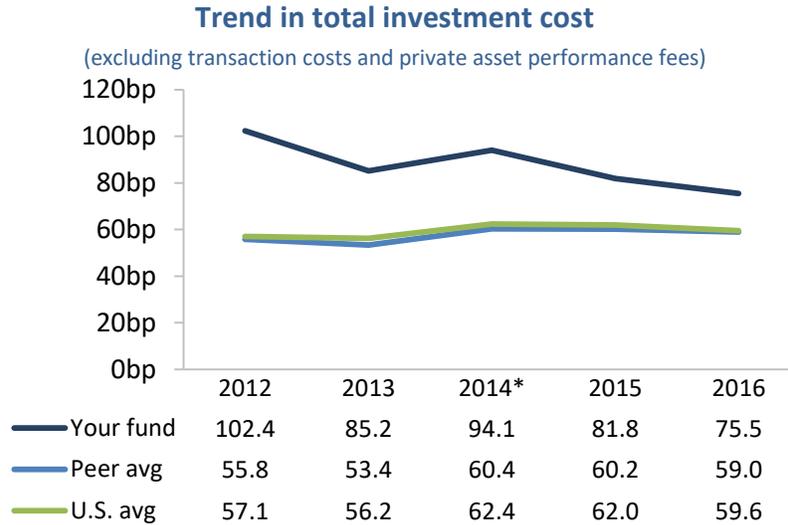
Your total investment cost, excluding transaction costs and private asset performance fees, of 75.5 bps was above the peer median of 68.4 bps.

Differences in total investment cost are often caused by two factors that are usually outside of management's control: asset mix and fund size. Therefore, to assess whether your fund's total investment cost is high or low given your unique asset mix and size, CEM calculates a benchmark cost for your fund. Benchmark cost analysis begins on page 7 of this section.



Trend in total investment cost

Your total investment cost, excluding transaction costs and private asset performance fees, decreased from 102.4 bps in 2012 to 75.5 bps in 2016.



Trend analysis is based on the 121 U.S. funds and the 19 peer funds with 5 or more consecutive years of data.

* Starting in 2014 hedge fund performance fees are being included for all participants. This is one reason for the uptick in costs relative to 2013.

Default underlying fund of fund fees are based on peer median data and default performance fees are based on universe median data.

Thus, to the extent that peers/universe adjust prior years' data and/or there is a change in peer group and the universe, your fund's prior years' costs may be different from what was shown in your previous CEM report. We are rethinking this methodology for next year.

Types of costs included in your total investment cost

The table below outlines the types of costs included in your total investment cost.

| Asset class | Internal | | External | | | |
|--|---------------------|-------------------|-------------------|--------------------------|-----------------------------|-------------------|
| | In-house total cost | Transaction costs | Manager base fees | Monitoring & other costs | Perform. fees (active only) | Transaction costs |
| <u>Public</u> (Stock, Fixed income, commodities, REITs) | ✓ | ✗ | ✓ | ✓ | ✓ | ✗ |
| Derivatives/Overlays | ✓ | ✗ | ✓ | ✓ | ✓ | ✗ |
| <u>Hedge funds & Global TAA</u> | | | | | | |
| Hedge Funds | n/a | n/a | ✓ | ✓ | ✓ | ✗ |
| Global TAA | ✓ | ✗ | ✓ | ✓ | ✓ | ✗ |
| <u>Private equity</u> (Diversified private equity, venture capital, LBO, other private equity) | ✓ | ✗ | ✓* | ✓ | ✗ | ✗ |
| <u>Private real assets</u> (Infrastructure, natural resources, real estate ex-REITs, other real assets) | ✓ | ✗ | ✓* | ✓ | ✗ | ✗ |

*For limited partnerships, external manager base fees represent gross contractual management fees.

- ✓ indicates cost is included.
- ✗ indicates cost is excluded.
- Green shading indicates that the cost type has been newly added for the 2014 data year.
- CEM currently excludes external private asset performance fees and all transaction costs from your total cost because only a limited number of participants are currently able to provide complete data.

Detailed breakdown of your total investment cost

Your 2016 total investment cost, excluding transaction costs and private asset performance fees, was 75.5 bp or \$211.6 million.

Your investment costs

| | Internal | | External Passive | | External Active | | | Total | | |
|--|----------|--------|------------------|--------------------|-----------------|----------------------------|--------------------|---------|--------|------------|
| | Passive | Active | Fees | Monitoring & Other | Base Fees | Perform. Fees ¹ | Monitoring & Other | \$000s | bps | % of Total |
| Asset management | | | | | | | | | | |
| U.S. Stock - Broad/All | | | 0 | 0 | 8,327 | 0 | 516 | 8,844 | | 4% |
| Stock - Emerging | | | | | 7,189 | 0 | 272 | 7,461 | | 4% |
| Stock - Global | | | 468 | 701 | 8,055 | 0 | 696 | 9,920 | | 5% |
| Fixed Income - U.S. | | 53 | | | 2,503 | 0 | 508 | 3,064 | | 1% |
| Fixed Income - Emerging | | | 19 | 51 | 6,185 | 0 | 384 | 6,639 | | 3% |
| Fixed Income - Global | | | | | | | | | | |
| Fixed Income - High Yield | | | | | 8,075 | 0 | 537 | 8,613 | | 4% |
| Cash | | 384 | | | 1,591 | 211 | 341 | 2,526 | | 1% |
| REITs | | | 838 | 134 | | | | 972 | | 0% |
| Real Estate ex-REITs | | | | | | | | | | |
| Real Estate ex-REITs - LPs ² | | | | | 16,706 | 10,589 ¹ | 419 | 17,125 | | 8% |
| Real Estate ex-REITs - Co-investments | | | | | 47 | | 5 | 52 | | 0% |
| Infrastructure | | | | | 765 | 0 ¹ | 77 | 842 | | 0% |
| Hedge Funds | | | | | 26,121 | 15,228 | 350 | 41,699 | | 20% |
| Hedge Funds - Fund of Funds | | | | | 2,608 | 0 | 563 | 3,172 | | 1% |
| Underlying Fund of Fund Fees | | | | | 22,330 | 4,993 | | 27,322 | | 13% |
| Global TAA | | | | | 10,240 | 811 | 555 | 11,606 | | 5% |
| Diversified Private Equity ² | | | | | 24,892 | 43,990 ¹ | 382 | 25,273 | | 12% |
| Diversified Private Equity - Fund of Funds | | | | | 4,074 | 1,017 ¹ | 179 | 4,253 | | 2% |
| Underlying Fund of Fund Fees | | | | | 6,593 | -1,679 ¹ | | 6,593 | | 3% |
| Diversified Private Equity - Co-investments | | | | | 3,233 | | 210 | 3,443 | | 2% |
| Other Private Equity ² | | | | | 17,130 | 16,791 ¹ | 456 | 17,586 | | 8% |
| Other Private Equity - Co-investments | | | | | 15 | | 2 | 17 | | 0% |
| Overlay Programs | | 0 | | | 1,077 | 0 | 229 | 1,305 | | 1% |
| Total asset management costs excluding private asset performance fees | | | | | | | | 208,326 | 74.3bp | 98% |
| Oversight, custodial & other asset related costs | | | | | | | | | | |
| Oversight of the Fund | | | | | | | | 1,056 | | 0% |
| Trustee & Custodial | | | | | | | | 925 | | 0% |
| Consulting and Performance Measurement | | | | | | | | 940 | | 0% |
| Audit | | | | | | | | 99 | | 0% |
| Other | | | | | | | | 267 | | 0% |
| Total oversight, custodial & other costs | | | | | | | | 3,288 | 1.2bp | 2% |
| Total investment costs excluding transaction costs and private asset performance fees | | | | | | | | 211,614 | 75.5bp | 100% |

¹ Starting in 2014, CEM changed its methodology to include performance fees on hedge funds in total cost used for comparison and benchmarking. Performance fees for real estate, infrastructure, natural resources and private equity are excluded.

² Base fees derived from the partnership level detail you provided.

Changes in your investment costs

The table below shows how your investment costs have changed from year to year by asset class.

Change in your investment costs (2016 - 2012)

| | Investment costs (\$000s) | | | | | Change (\$000s) | | | | Change (%) | | | |
|---|---------------------------|---------|---------|---------|---------|-----------------|---------|---------|---------|------------|-------|------|------|
| | 2016 | 2015 | 2014 | 2013 | 2012 | 2016 | 2015 | 2014 | 2013 | 2016 | 2015 | 2014 | 2013 |
| Asset management | | | | | | | | | | | | | |
| U.S. Stock - Broad/All | 8,844 | 8,242 | 10,355 | 10,152 | 10,514 | 602 | -2,113 | 203 | -362 | 7% | -20% | 2% | -3% |
| Stock - Emerging | 7,461 | 7,908 | 8,342 | 9,806 | 7,786 | -447 | -433 | -1,464 | 2,020 | -6% | -5% | -15% | 26% |
| Stock - Global | 9,920 | 7,498 | 589 | 0 | 0 | 2,422 | 6,909 | 589 | | 32% | 1174% | | |
| Fixed Income - U.S. | 3,064 | 3,886 | 4,675 | 4,693 | 4,565 | -822 | -790 | -18 | 127 | -21% | -17% | 0% | 3% |
| Fixed Income - Emerging | 6,639 | 3,402 | 3,240 | 1,707 | 2,087 | 3,237 | 162 | 1,533 | -380 | 95% | 5% | 90% | -18% |
| Fixed Income - Global | 0 | 1,594 | 3,452 | 3,193 | 3,745 | -1,594 | -1,858 | 260 | -552 | -100% | -54% | 8% | -15% |
| Fixed Income - High Yield | 8,613 | 7,488 | 6,894 | 8,468 | 6,865 | 1,125 | 593 | -1,573 | 1,602 | 15% | 9% | -19% | 23% |
| Cash | 2,526 | 3,314 | 2,779 | 2,875 | | -787 | 535 | -97 | 2,875 | -24% | 19% | -3% | |
| REITs | 972 | 0 | 0 | 0 | 0 | 972 | | | | | | | |
| Real Estate ex-REITs | 0 | 7 | 8 | 17 | 23 | -7 | -1 | -8 | -6 | -100% | -11% | -50% | -27% |
| Real Estate ex-REITs - LPs ² | 17,125 | 16,646 | 15,007 | 17,443 | 16,780 | 478 | 1,640 | -2,436 | 663 | 3% | 11% | -14% | 4% |
| Real Estate ex-REITs - Co-investments | 52 | 0 | 0 | 0 | 0 | 52 | | | | | | | |
| Infrastructure | 842 | 0 | 0 | 0 | 0 | 842 | | | | | | | |
| Hedge Funds | 41,699 | 59,180 | 56,964 | 48,108 | 35,785 | -17,481 | 2,215 | 8,856 | 12,323 | -30% | 4% | 18% | 34% |
| Hedge Funds - Fund of Funds | 3,172 | 4,322 | 10,167 | 33,458 | 23,186 | -1,150 | -5,845 | -23,290 | 10,272 | -27% | -57% | -70% | 44% |
| Underlying Fund of Fund Fees | 27,322 | 44,079 | 69,151 | 40,852 | 46,951 | -16,757 | -25,072 | 28,300 | -6,099 | -38% | -36% | 69% | -13% |
| Global TAA | 11,606 | 12,684 | 13,017 | 11,676 | 11,577 | -1,078 | -332 | 1,340 | 99 | -8% | -3% | 11% | 1% |
| Diversified Private Equity ² | 25,273 | 19,242 | 24,296 | 29,580 | 30,181 | 6,031 | -5,054 | -5,284 | -601 | 31% | -21% | -18% | -2% |
| Diversified Private Equity - Fund of Funds | 4,253 | 6,301 | 3,187 | 3,077 | 5,116 | -2,048 | 3,114 | 110 | -2,039 | -33% | 98% | 4% | -40% |
| Underlying Fund of Fund Fees | 6,593 | 10,891 | 5,919 | 7,629 | 9,339 | -4,299 | 4,973 | -1,711 | -1,710 | -39% | 84% | -22% | -18% |
| Diversified Private Equity - Co-investments | 3,443 | 1,543 | 1,827 | 714 | 88 | 1,900 | -284 | 1,113 | 626 | 123% | -16% | 156% | 708% |
| Other Private Equity ² | 17,586 | 17,605 | 24,376 | 33,568 | 36,499 | -19 | -6,770 | -9,192 | -2,931 | 0% | -28% | -27% | -8% |
| Other Private Equity - Co-investments | 17 | 46 | 4 | 4 | 2 | -29 | 42 | 0 | 2 | -64% | 1018% | -2% | 132% |
| Overlay Programs | 1,305 | 1,037 | 1,414 | 1,490 | 1,437 | 268 | -376 | -76 | 53 | 26% | -27% | -5% | 4% |
| Total excl. private asset perf. fees | 208,326 | 236,917 | 270,971 | 232,259 | 258,869 | -28,591 | -34,054 | 38,712 | -26,610 | -12% | -13% | 17% | -10% |
| Oversight, custodial & other asset related costs | | | | | | | | | | | | | |
| Oversight of the Fund | 1,056 | 1,201 | 1,478 | 1,319 | 1,039 | -145 | -277 | 159 | 279 | -12% | -19% | 12% | 27% |
| Trustee & Custodial | 925 | 766 | 426 | 317 | 254 | 160 | 340 | 108 | 63 | 21% | 80% | 34% | 25% |
| Consulting and Performance Measurement | 940 | 1,030 | 998 | 865 | 452 | -90 | 32 | 133 | 413 | -9% | 3% | 15% | 91% |
| Audit | 99 | 201 | 816 | 315 | 397 | -102 | -615 | 502 | -82 | -51% | -75% | 160% | -21% |
| Other | 267 | 345 | 287 | 293 | 951 | -78 | 59 | -7 | -657 | -23% | 20% | -2% | -69% |
| Total oversight, custodial & other costs | 3,288 | 3,543 | 4,005 | 3,109 | 3,093 | -255 | -462 | 896 | 16 | -7% | -12% | 29% | 1% |
| Total investment costs ¹ | 211,614 | 240,459 | 274,976 | 235,367 | 261,962 | -28,845 | -34,516 | 39,609 | -26,594 | -12% | -13% | 17% | -10% |
| Total in basis points | 75.5bp | 81.8bp | 94.1bp | 85.2bp | 102.4bp | | | | | | | | |

¹ Starting in 2014, CEM changed its methodology to include performance fees on hedge funds in total cost used for comparison and benchmarking. Performance fees for real estate, infrastructure, natural resources and private equity are excluded.

² Base fees derived from the partnership level detail you provided.

Total cost versus benchmark cost

Your fund's total investment cost, excluding transaction costs and private asset performance fees, was 1.0 bps below your benchmark cost of 76.5 bps. This implies that your fund was low cost by 1.0 bps compared to the peer median, after adjusting for your fund's asset mix.

Your cost versus benchmark

| | \$000s | bps |
|---|---------|---------|
| Your fund's total investment cost excluding transaction costs and illiquid asset performance fees | 211,614 | 75.5 bp |
| - Your fund's benchmark | 214,293 | 76.5 bp |
| = Your fund's cost savings | -2,679 | -1.0 bp |

Your benchmark cost is an estimate of your total costs assuming that you paid the peer median cost for each of your investment mandates and fund oversight. The calculation of your benchmark cost is shown on the following page.

The reasons why your fund's total cost was below your benchmark are summarized in the table below. Details of each of the impacts below are provided on pages 9 to 12.

Reasons why your fund was low cost

| | Cost/-Savings impact | |
|--|----------------------|---------|
| | \$000s | bps |
| <u>Differences in implementation style:</u> | | |
| External active vs. low cost styles | 5,342 | 1.9 bp |
| Fund of funds vs. external direct | 6,111 | 2.2 bp |
| Mix of internal and passive styles | 6 | 0.0 bp |
| Style impact of overlays | 1,885 | 0.7 bp |
| Total style impact | 13,345 | 4.8 bp |
| <u>Paying more/-less for similar services:</u> | | |
| External investment management | -15,617 | -5.6 bp |
| Internal investment management | 2 | 0.0 bp |
| Oversight, custodial and other | -408 | -0.1 bp |
| Total impact of paying more /-less | -16,024 | -5.7 bp |
| Total savings | -2,679 | -1.0 bp |

Benchmark cost calculation

Your 2016 benchmark cost was 76.5 basis points or \$214.3 million. It equals your holdings for each asset class multiplied by the peer median cost for the asset class. The peer median cost is the style weighted average for all implementation styles (i.e., internal passive, internal active, external passive, external active).

Calculation of your 2016 benchmark cost

| Asset class | Your average assets | Weighted peer median cost ¹ | Benchmark |
|---|---------------------|--|----------------|
| | (A) | (B) | (A X B) |
| | \$mils | | \$000s |
| Asset management costs | | | |
| U.S. Stock - Broad/All | 1,820 | 15.5 bp | 2,825 |
| Stock - Emerging | 957 | 49.1 bp | 4,699 |
| Stock - Global | 4,922 | 29.5 bp | 14,533 |
| Fixed Income - U.S. | 1,993 | 11.9 bp | 2,364 |
| Fixed Income - Emerging | 1,532 | 33.6 bp | 5,155 |
| Fixed Income - High Yield | 1,893 | 35.5 bp | 6,717 |
| Cash | 2,673 | 9.4 bp | 2,526 |
| Infrastructure | 274 | 121.0 bp | 3,319 |
| REITs | 276 | 38.5 bp | 1,061 |
| Real Estate ex-REITs | 1,614 | 94.9 bp | 15,317 |
| Hedge Funds (External) | 3,217 | 214.4 bp | 68,965 |
| Global TAA | 1,956 | 73.2 bp | 14,311 |
| Diversified Private Equity | 2,916 | 174.5 bp | 50,883 |
| Other Private Equity | 1,478 | 116.5 bp | 17,212 |
| Overlay Programs ² | 28,025 | 0.3 bp | 709 |
| Benchmark for asset management | 28,025 | 75.1 bp | 210,597 |
| Oversight, custody and other costs | | | |
| Oversight of the Fund | 28,025 | 0.6 bp | 1,653 |
| Trustee & Custodial | 28,025 | 0.3 bp | 729 |
| Consulting | 28,025 | 0.3 bp | 856 |
| Audit | 28,025 | 0.0 bp | 140 |
| Other | 28,025 | 0.1 bp | 319 |
| Benchmark for oversight, custody & other | | 1.3 bp | 3,696 |
| Total benchmark cost | | 76.5 bp | 214,293 |

1. The weighted peer median cost for asset management is the style-weighted average of the peer median costs for all implementation styles (i.e., internal passive, internal active, external passive, external active, fund of fund). It excludes performance fees on private assets. The style weights by asset class for your fund and the peers are shown on page 17 of this section.

2. Total fund average holdings is used as the base when calculating the relative cost impact of the overlay programs.

Cost impact of differences in implementation style

Differences in implementation style (i.e., external active management versus lower cost indexed and internal management, fund of funds versus lower cost direct LPs, and overlay usage) relative to your peers cost you 4.8 bps.

Calculation of the cost impact of differences in implementation style

| | Your avg holdings (mils) | % External active | | | Premium vs. internal and passive ^{1 2} | Cost/-Savings ³ (\$000s) | |
|--|--------------------------|---------------------------------------|--------------|------------|---|-------------------------------------|--------|
| | | You | Peer average | More/-Less | | | |
| | (A) | | | (B) | (C) | (A X B X C) | |
| U.S. Stock - Broad/All | 1,820 | 100% | 34% | 66% | 39 bp | 4,724 | |
| Stock - Emerging | 957 | 100% | 79% | 21% | 52 bp | 1,059 | |
| Stock - Global | 4,922 | 50% | 66% | -16% | 37 bp | -2,971 | |
| Fixed Income - U.S. | 1,993 | 90% | 72% | 18% | 14 bp | 494 | |
| Fixed Income - Emerging | 1,532 | 88% | 94% | -6% | 32 bp | -274 | |
| Fixed Income - High Yield | 1,893 | 100% | 100% | 0% | | 0 | |
| Infrastructure | 274 | 100% | 100% | 0% | | 0 | |
| partnerships as % of external: | 274 | 0% | 78% | -78% | 46 bp | -976 | |
| REITs | 276 | 0% | 69% | -69% | 43 bp | -811 | |
| Real Estate ex-REITs | 1,614 | 100% | 99% | 1% | Insufficient | 0 | |
| partnerships as % of external: | 1,614 | 100% | 49% | 51% | 49 bp | 4,097 | |
| Hedge Funds | 3,217 | 100% | 100% | 0% | | 0 | |
| Global TAA | 1,956 | 100% | 100% | 0% | | 0 | |
| Diversified Private Equity | 2,916 | 100% | 100% | 0% | Insufficient | 0 | |
| Other Private Equity | 1,478 | 100% | 100% | 0% | | 0 | |
| Total impact of differences in external active management usage | | | | | | 5,342 | 1.9 bp |
| | | <i>Fund of fund % of external LPs</i> | | | Premium vs. direct LPs ^{1 2} | | |
| Hedge Funds LPs | 3,217 | 62% | 33% | 29% | 53 bp | 4,943 | |
| Diversified Private Equity LPs | 2,916 | 17% | 12% | 5% | 78 bp | 1,168 | |
| Total impact of differences in fund of fund usage | | | | | | 6,111 | 2.2 bp |
| <i>Overlay usage</i> | | | | | | | |
| Impact of lower use of portfolio level overlays (see page 10) | | | | | | 1,885 | 0.7 bp |
| <i>Mix of low cost styles</i> | | | | | | | |
| Impact of mix of internal indexed, internal active, external indexed (see page 11) | | | | | | 6 | 0.0 bp |
| Total | | | | | | 13,345 | 4.8 bp |

1. The external active cost 'premium vs internal and passive' is the additional cost of external active management and fund of funds relative to the average of the other lower cost implementation styles: internal passive, internal active and external passive. These calculations are specific to your peer group. The fund-of-funds 'premium vs. direct LPs' is the peer-median cost of fund-of-funds minus the peer median cost for direct external active management.

2. 'Insufficient' indicates there is insufficient peer data to determine the cost premium.

Cost impact of overlays

As summarized on the previous page, the style impact of overlays cost you 0.7 bps. If you use more overlays than your peers, or more expensive types of overlays, then it increases your relative cost.

Calculation of the cost impact of differences in the use of portfolio level overlays

| | Your avg total holdings (mils) | Overlay notional amounts as a % of avg total holdings | | | Median cost as a % of notional | Your cost as a % of total holdings ¹ | Average cost as a % of total holdings | Cost/-Savings Impact (000s) |
|-----------------------------------|--------------------------------|---|--------------|------------|--------------------------------|---|---------------------------------------|-----------------------------|
| | | You | Peer Average | More/-Less | | | | |
| | (A) | | | (B) | (C) | | | (A X B X C) |
| Internal Overlays | | | | | | | | |
| Currency - Hedge | 28,025 | 0.0% | 0.0% | 0.0% | 0.2 bp | | | 0 |
| Passive Beta - Hedge | 28,025 | 0.0% | 0.1% | -0.1% | 0.2 bp | | | 0 |
| Duration - Hedge | 28,025 | 0.0% | 0.2% | -0.2% | 0.0 bp | | | 0 |
| External Overlays | | | | | | | | |
| Currency - Hedge | 28,025 | 0.0% | 1.2% | -1.2% | 2.8 bp | | | -91 |
| Currency - Discretionary | 28,025 | 0.0% | 0.9% | -0.9% | 15.8 bp | | | -417 |
| Passive Beta - Hedge | 28,025 | 16.5% | 1.1% | 15.4% | 5.6 bp | | | 2,425 |
| Duration - Hedge | 28,025 | 0.0% | 0.0% | 0.0% | 2.9 bp | | | 0 |
| Dur. Mgmt Swaption - Hedge | 28,025 | 0.0% | 0.0% | 0.0% | 3.3 bp | | | 0 |
| Global TAA - Discretionary | 28,025 | 0.0% | 0.0% | 0.0% | 9.5 bp | | | 0 |
| Policy Tilt TAA - Discretionary | 28,025 | 0.0% | 0.0% | 0.0% | 11.3 bp | | | 0 |
| Commodity Futures - Discretionary | 28,025 | 0.0% | 0.0% | 0.0% | 6.5 bp | | | 0 |
| Long/Short - Discretionary | 28,025 | 0.0% | 0.2% | -0.2% | 6.7 bp | | | -31 |
| Other - Discretionary | 28,025 | 0.0% | 0.0% | 0.0% | 4.9 bp | | | 0 |
| Total impact in 000s | | | | | | | | 1,885 |
| Total impact in basis points | | | | | | | | 0.7 bp |

1. For overlay programs (primarily certain internal, profit seeking programs) where no clear notional value is defined or provided, these types of overlays are compared in terms of cost relative to total holdings.

Cost impact of lower cost styles

As summarized on page 9, your mix of 'lower-cost' internal and passive styles cost you 0.0 bps. Details are shown below.

Cost impact of differences in your mix of 'lower-cost' implementation styles

| | Your non-external active holdings (mils) | Percent holdings (of non-external-active) | | | | | | Cost/-Savings ¹ (\$000s) |
|------------------------------|--|---|----------|-----------------|----------|------------------|----------|-------------------------------------|
| | | Internal passive | | Internal active | | External passive | | |
| | | You | Peers | You | Peers | You | Peers | |
| U.S. Stock - Broad/All | 1 | 0% | 8% | 0% | 7% | 100% | 85% | 0 |
| Stock - Global | 2,470 | 0% | 34% | 0% | 0% | 100% | 66% | 0 |
| Fixed Income - U.S. | 202 | 0% | 1% | 100% | 75% | 0% | 24% | 6 |
| Fixed Income - Emerging | 178 | 0% | 0% | 0% | 0% | 100% | 100% | 0 |
| Cash | 1,474 | 0% | Excluded | 100% | Excluded | 0% | Excluded | 0 |
| REITs | 276 | 0% | 0% | 0% | 14% | 100% | 86% | 0 |
| Total impact (\$000s) | | | | | | | | 6 |
| Total impact in basis points | | | | | | | | 0.0 bp |

1. Cost/-savings for each asset class equals non-external active holdings within each asset class X cumulative impact from the three lower cost styles. By formula: [(peer median cost for the style - peer weighted average cost of lower cost styles) X (your weight for the style - peer weight for the style)]. Peer median costs for each style are shown on page 18.

Cost impact of paying more/-less for similar services

Differences in what you paid relative to your peers for similar asset management and related oversight and support services saved you 5.7 bps.

Calculation of the cost impact of paying more/-less

| | Style | Your avg holdings (mils) (A) | Cost in bps | | | Cost/ -Savings (\$000s) (A X B) | (bps) |
|--|----------|------------------------------|-------------|--------------|----------------|---------------------------------|---------|
| | | | You | Peer median | More/-less (B) | | |
| External asset management | | | | | | | |
| U.S. Stock - Broad/All | passive | 1 | 2.8 | 2.0 | 0.8 | 0 | |
| U.S. Stock - Broad/All | active | 1,819 | 48.6 | 41.5 | 7.1 | 1,294 | |
| Stock - Emerging | active | 957 | 78.0 | 60.2 | 17.8 | 1,703 | |
| Stock - Global | passive | 2,470 | 4.7 | 4.9 | -0.2 | -47 | |
| Stock - Global | active | 2,452 | 35.7 | 42.2 | -6.5 | -1,596 | |
| Fixed Income - U.S. | active | 1,791 | 16.8 | 15.7 | 1.1 | 197 | |
| Fixed Income - Emerging | passive | 178 | 3.9 | Insufficient | | | |
| Fixed Income - Emerging | active | 1,354 | 48.5 | 35.5 | 13.0 | 1,758 | |
| Fixed Income - High Yield | active | 1,893 | 45.5 | 35.5 | 10.0 | 1,895 | |
| Infrastructure | active | 274 | 30.7 | 85.4 | -54.7 | -1,500 | |
| REITs | passive | 276 | 35.3 | 9.1 | 26.2 | 722 | |
| Real Estate ex-REITs | LP | 1,614 | 106.4 | 120.3 | -13.9 | -2,237 | |
| Hedge Funds | active | 1,232 | 214.9 | 140.8 | 74.1 | 9,127 | |
| Performance Fees | active | 1,232 | 123.6 | 56.0 | 67.6 | 8,330 | |
| Hedge Funds - Fund of Funds | F. of F. | 1,985 | 128.5 | 194.3 | -65.8 | -13,053 | |
| Performance Fees | F. of F. | 1,985 | 25.2 | 56.0 | -30.8 | -6,119 | |
| Global TAA | active | 1,956 | 59.3 | 73.2* | -13.8 | -2,704 | |
| Diversified Private Equity | active | 2,412 | 119.1 | 165.0 | -45.9 | -11,078 | |
| Diversified Private Equity | F. of F. | 504 | 215.3 | 243.3 | -28.0 | -1,411 | |
| Other Private Equity | active | 1,478 | 119.1 | 116.5 | 2.6 | 390 | |
| | | <i>Notional</i> | | | | | |
| Derivatives/Overlays - Passive Beta | | 4,627 | 2.8 | 5.6* | -2.8 | -1,289 | |
| Total for external management | | | | | | -15,617 | -5.6 bp |
| Internal asset management | | | | | | | |
| Fixed Income - U.S. | active | 202 | 2.6 | 2.5 | 0.1 | 2 | |
| Total for internal asset management | | | | | | 2 | 0.0 bp |
| Oversight, custodial, other | | | | | | | |
| Oversight of the Fund | | 28,025 | 0.4 | 0.6 | -0.2 | -596 | |
| Consulting and Performance Measurement | | 28,025 | 0.3 | 0.3 | 0.0 | 84 | |
| Trustee & Custodial | | 28,025 | 0.3 | 0.3 | 0.1 | 196 | |
| Audit | | 28,025 | 0.0 | 0.0 | 0.0 | -40 | |
| Other | | 28,025 | 0.1 | 0.1 | 0.0 | -52 | |
| Total for oversight, custodial, other | | | | | | -408 | -0.1 bp |
| Total | | | | | | -16,024 | -5.7 bp |

*Universe median used as peer data was insufficient.

Summary of why you are high or low cost by asset class

The table below summarizes where you are high and low cost by asset class. It also quantifies how much is due to differences in implementation style (i.e., differences in the mix of external active, external passive, internal active, internal passive and fund of fund usage) and how much is due to paying more or less for similar services (i.e., same asset class and style).

Summary of why you are high or low cost by asset class

| | Your cost ¹ | Benchmark = peer weighted median cost ¹ | More/-less | Your average assets | More/-less (\$000s) | Due to Impl. style (\$000s) | Due to paying more/less (\$000s) |
|---|------------------------|--|----------------|---------------------|---------------------|-----------------------------|----------------------------------|
| | (A) | (B) | (C = A - B) | (D) | (C X D) | | |
| Asset management costs | | | | | | | |
| U.S. Stock - Broad/All | 48.6 bp | 15.5 bp | 33.1 bp | 1,820 | 6,018 | 4,724 | 1,294 |
| Stock - Emerging | 78.0 bp | 49.1 bp | 28.9 bp | 957 | 2,762 | 1,059 | 1,703 |
| Stock - Global | 20.2 bp | 29.5 bp | -9.4 bp | 4,922 | -4,614 | -2,971 | -1,643 |
| Fixed Income - U.S. | 15.4 bp | 11.9 bp | 3.5 bp | 1,993 | 699 | 500 | 199 |
| Fixed Income - Emerging | 43.3 bp | 33.6 bp | 9.7 bp | 1,532 | 1,484 | -274 | 1,758 |
| Fixed Income - High Yield | 45.5 bp | 35.5 bp | 10.0 bp | 1,893 | 1,895 | 0 | 1,895 |
| Cash | 9.4 bp | 9.4 bp | 0.0 bp | 2,673 | 0 | 0 | 0 |
| Infrastructure | 30.7 bp | 121.0 bp | -90.3 bp | 274 | -2,476 | -976 | -1,500 |
| REITs | 35.3 bp | 38.5 bp | -3.2 bp | 276 | -89 | -811 | 722 |
| Real Estate ex-REITs | 106.4 bp | 94.9 bp | 11.5 bp | 1,614 | 1,860 | 4,097 | -2,237 |
| Hedge Funds (External) | 161.6 bp | 158.4 bp | 3.2 bp | 3,217 | 1,017 | 4,943 | -3,926 |
| Performance Fees: | 62.9 bp | 56.0 bp | 6.9 bp | 3,217 | 2,211 | 0 | 2,211 |
| Global TAA | 59.3 bp | 73.2 bp | -13.8 bp | 1,956 | -2,704 | 0 | -2,704 |
| Diversified Private Equity | 135.7 bp | 174.5 bp | -38.8 bp | 2,916 | -11,321 | 1,168 | -12,489 |
| Other Private Equity | 119.1 bp | 116.5 bp | 2.6 bp | 1,478 | 390 | 0 | 390 |
| Overlay Programs ² | 0.5 bp | 0.3 bp | 0.2 bp | 28,025 | 596 | 1,885 | -1,289 |
| Total asset management | 74.3 bp | 75.1 bp | -0.8 bp | 28,025 | -2,271 | 13,345 | -15,615 |
| Oversight, custody and other costs | | | | | | | |
| Oversight of the Fund | 0.4 bp | 0.6 bp | -0.2 bp | 28,025 | -596 | n/a | -596 |
| Trustee & Custodial | 0.3 bp | 0.3 bp | 0.1 bp | 28,025 | 196 | n/a | 196 |
| Consulting | 0.3 bp | 0.3 bp | 0.0 bp | 28,025 | 84 | n/a | 84 |
| Audit | 0.0 bp | 0.0 bp | 0.0 bp | 28,025 | -40 | n/a | -40 |
| Other | 0.1 bp | 0.1 bp | 0.0 bp | 28,025 | -52 | n/a | -52 |
| Total oversight, custody & other | 1.2 bp | 1.3 bp | -0.1 bp | 28,025 | -408 | n/a | -408 |
| Total | 75.5 bp | 76.5 bp | -1.0 bp | 28,025 | -2,679 | 13,345 | -16,024 |

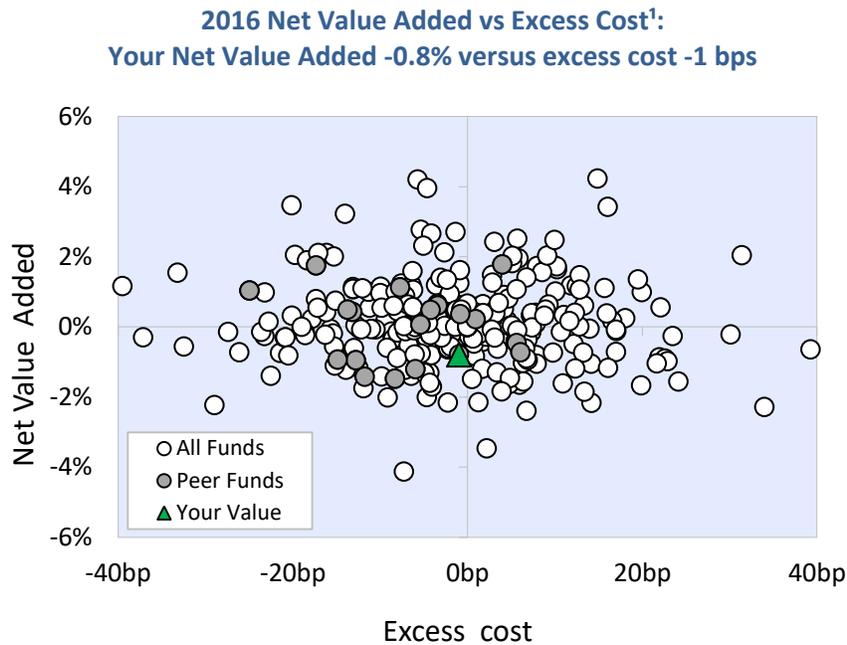
1. The weighted peer median cost for asset management is the style-weighted average of the peer median costs for all implementation styles (i.e., internal passive, internal active, external passive, external active, fund of fund). It excludes performance fees on private assets. The style weights by asset class for your fund and the peers are shown on page 17 of this section.

2. Total fund average holdings is used as the base when calculating the relative cost impact of the overlay programs.

Your cost effectiveness ranking

Being high or low cost is neither good nor bad. The more important question is, are you receiving sufficient value for your excess cost? At the total fund level, we provide insight into this question by combining your value added and your excess cost to create a snapshot your cost effectiveness performance relative to that of the survey universe.

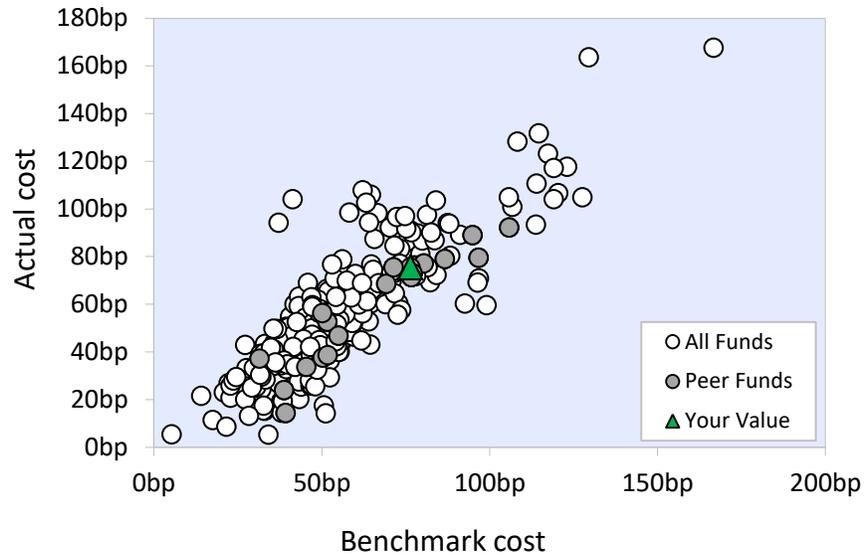
For the 2016 year, your fund ranked in the negative value added, low cost quadrant.



1. Benchmark cost and excess cost calculations are based on regression analysis (see Appendix B in this section) for all funds except your fund. Your fund's benchmark cost is based on peer-median costs (per page 7 of this section).

Actual cost versus benchmark cost

2016 Actual Cost vs Benchmark Cost¹: Your actual cost was 75.5 bps and your benchmark cost was 76.5 bps



1. Benchmark cost calculations are based on regression analysis (see Appendix B in this section) for all funds except your fund. Your fund's benchmark cost is based on peer-median costs (per page 7 of this section).

Appendix A: Benchmarking methodology formulas and data

a) Formulas

Example calculations are for U.S. Stock - Broad/All unless otherwise indicated.

Asset class peer cost

$$\begin{aligned} &= \text{Weighted average by peer average style of peer median costs for asset class} \\ &= [(0.05 \times 2.0\text{bp}) + (0.04 \times 2.0\text{bp}) + (0.56 \times 2.0\text{bp}) + (0.34 \times 41.5\text{bp})] / (0.05 + 0.04 + 0.56 + 0.34) = 15.5\text{bp} \end{aligned}$$

Peer average low cost (by asset class)

$$\begin{aligned} &= \text{Weighted average by peer average style of peer median costs for internal passive, internal active and external passive management for asset class} \\ &= [(0.05 \times 2.0\text{bp}) + (0.04 \times 2.0\text{bp}) + (0.56 \times 2.0\text{bp})] / (0.05 + 0.04 + 0.56) = 2.0\text{bp} \end{aligned}$$

External active cost premium (by asset class)

$$\begin{aligned} &= \text{Peer median external active cost - peer average low cost} \\ &= 41.5\text{bp} - 2.0\text{bp} = 39.5\text{bp} \end{aligned}$$

Fund of funds premium (by asset class)

$$\begin{aligned} &= \text{Peer median fund-of-funds cost - peer median external active cost} \\ &= (\text{For private equity}) 243.3\text{bp} - 165.0\text{bp} = 78.3\text{bp} \end{aligned}$$

Impact from other differences in implementation style (by Asset Class)=

$$\begin{aligned} &= [(\text{Your int. pass. \%} - \text{average peer int. pass. \%}) \times (\text{peer median int. pass. cost} - \text{peer average low cost}) \\ &\quad + (\text{your int. act. \%} - \text{peer average int. act. \%}) \times (\text{peer median int. act. cost} - \text{peer average low cost}) \\ &\quad + (\text{your ext. pass. \%} - \text{average peer ext. pass. \%}) \times (\text{median peer ext. pass. cost} - \text{peer average low cost})] \\ &\quad \times \text{your average holdings} \end{aligned}$$

b) Insufficient peer data

All peer data is adjusted to ensure comparisons are made only when sufficient data is available. When too few peers have the asset class or style in question, peer costs are replaced with your fund's cost, neutralizing the effect of your cost. Major implementation styles (external active, fund of funds and combined "low cost") that you do not hold are ignored if they have insufficient data to draw major style impact conclusions. Throughout this section, 'peer median' and 'average peer style' always refer to these adjusted values. The following page shows the adjusted data used in this section.

Appendix A: Benchmarking methodology formulas and data (page 2 of 2)

c) 2016 cost data used to calculate weighted peer median costs and impact of mix differences.

| Asset Class | Your costs (basis points) | | | | | | Peer median costs (basis points) | | | | | | |
|----------------------------|---------------------------|-----------------|------------------|-----------------|------------------|---------------|----------------------------------|-----------------|------------------|----------------------|------------------|---------------|-----------------|
| | Internal Passive | Internal Active | External Passive | External Active | Limited Partner. | Fund of Funds | Internal Passive | Internal Active | External Passive | External Active | Limited Partner. | Fund of Funds | Weighted Median |
| U.S. Stock - Broad/All | | | 2.8 | 48.6 | | | 2.0 | 2.0 | 2.0 | 41.5 | | | 15.5 |
| Stock - Emerging | | | | 78.0 | | | 7.7 | 7.7 | 7.7 | 60.2 | | | 49.1 |
| Stock - Global | | | 4.7 | 35.7 | | | 4.9 | | 4.9 | 42.2 | | | 29.5 |
| Fixed Income - U.S. | | 2.6 | | 16.8 | | | 2.2 | 2.5 | 1.2 | 15.7 | | | 11.9 |
| Fixed Income - Emerging | | | 3.9 | 48.5 | | | | | Insufficient | 35.5 | | | 33.6 |
| Fixed Income - High Yield | | | | 45.5 | | | | | | 35.5 | | | 35.5 |
| Infrastructure | | | | 30.7 | | | | | | 85.4 | 130.9 | 130.9 | 121.0 |
| REITs | | | 35.3 | | | | | 9.1 | 9.1 | 51.8 | | | 38.5 |
| Real Estate ex-REITs | | | | | 106.4 | | 94.9 | | | 70.9 | 120.3 | 120.3 | 94.9 |
| Hedge Funds | | | | 214.9 | | 128.5 | | | | 140.8 | | 194.3 | 158.4 |
| Global TAA | | | | 59.3 | | | | | | 73.2 bp ¹ | | | 73.2 |
| Diversified Private Equity | | | | 119.1 | | 215.3 | | 174.5 | | 165.0 | | 243.3 | 174.5 |
| Other Private Equity | | | | 119.1 | | | | | | 116.5 | | | 116.5 |

¹Universe median used as peer data was insufficient.

d) 2016 Style weights used to calculate the weighted peer median costs and impact of mix differences.

| Style Weights | You (%) | | | | | | Peer average (%) | | | | | |
|----------------------------|------------------|-----------------|------------------|-----------------|------------------|---------------|------------------|-----------------|------------------|-----------------|------------------|---------------|
| | Internal Passive | Internal Active | External Passive | External Active | Limited Partner. | Fund of Funds | Internal Passive | Internal Active | External Passive | External Active | Limited Partner. | Fund of Funds |
| U.S. Stock - Broad/All | 0.0% | 0.0% | 0.1% | 99.9% | | | 5.5% | 4.5% | 55.8% | 34.2% | | |
| Stock - Emerging | 0.0% | 0.0% | 0.0% | 100.0% | | | 8.5% | 1.4% | 11.2% | 78.9% | | |
| Stock - Global | 0.0% | 0.0% | 50.2% | 49.8% | | | 11.6% | 0.0% | 22.4% | 66.0% | | |
| Fixed Income - U.S. | 0.0% | 10.1% | 0.0% | 89.9% | | | 0.4% | 21.3% | 6.8% | 71.5% | | |
| Fixed Income - Emerging | 0.0% | 0.0% | 11.6% | 88.4% | | | 0.0% | 0.0% | 6.0% | 94.0% | | |
| Fixed Income - High Yield | 0.0% | 0.0% | 0.0% | 100.0% | | | 0.0% | 0.0% | 0.0% | 100.0% | | |
| Cash | | 55.1% | | 44.9% | | | Excluded | Excluded | Excluded | Excluded | Excluded | Excluded |
| Infrastructure | | 0.0% | | 100.0% | 0.0% | 0.0% | 0.0% | 0.0% | 21.8% | 76.0% | 2.2% | |
| REITs | 0.0% | 0.0% | 100.0% | 0.0% | | | 0.0% | 4.4% | 26.7% | 68.9% | | |
| Real Estate ex-REITs | | 0.0% | | 0.0% | 100.0% | 0.0% | | 1.4% | | 50.7% | 46.5% | 1.4% |
| Hedge Funds | | | | 38.3% | | 61.7% | | | | 67.0% | | 33.0% |
| Global TAA | | 0.0% | | 100.0% | | | | 0.0% | | 100.0% | | |
| Diversified Private Equity | | 0.0% | | 82.7% | | 17.3% | | 0.0% | | 87.8% | | 12.2% |
| Other Private Equity | | 0.0% | | 100.0% | | | | 0.0% | | 100.0% | | |

The above data was adjusted as noted when there were insufficient peers, or for other reasons where direct comparisons were inappropriate.

Appendix B: Regression based benchmarks

Regression Benchmark Cost Equations

| | 2016 | | 2015 | | 2014 | | 2013 | | 2012 | |
|---------------------------------|--------|-------|--------|-------|--------|-------|--------|-------|--------|-------|
| | Coeff. | "t" |
| Constant | 80.2 | 17.9 | 76.5 | 17.4 | 84.4 | 19.2 | 76.8 | 18.2 | 73.2 | 18.9 |
| Size in millions (Log 10) | -14.9 | -13.4 | -13.7 | -12.8 | -15.7 | -14.6 | -14.2 | -13.3 | -13.7 | -13.8 |
| <u>Percentage of assets in:</u> | | | | | | | | | | |
| Stocks | 14.2 | 3.3 | 11.1 | 2.8 | 14.3 | 3.3 | 19.6 | 4.5 | 19.0 | 4.6 |
| Real estate | 78.6 | 6.1 | 47.1 | 3.5 | 56.7 | 3.7 | 56.9 | 3.8 | 55.1 | 4.2 |
| Private equity & hedge funds | 193.6 | 27.3 | 208.1 | 28.2 | 205.2 | 27.4 | 203.3 | 26.9 | 208.1 | 30.5 |
| Country variable (1 if Cdn) | -5.4 | -3.1 | -2.9 | -1.7 | -6.9 | -4.0 | -8.1 | -4.7 | -6.4 | -4.1 |
| | All | | All | | All | | All | | All | |
| Standard error | 12.9 | | 14.5 | | 14.5 | | 14.6 | | 13.1 | |
| R-squared | 71% | | 65% | | 67% | | 65% | | 71% | |
| F statistic | 178.5 | | 184.1 | | 185.9 | | 175.1 | | 219.0 | |
| Sample size | 374 | | 486 | | 449 | | 466 | | 454 | |

In order to compare your fund's cost effectiveness to the global survey universe, a benchmark cost for all participants is required.

The benchmark operating cost for all other funds is determined using regression analysis. The regression equation coefficients and "t statistics" are shown in the table above. An absolute "t" of greater than 2 indicates that the coefficient is statistically significant in predicting the dependent variable, in this case, the benchmark cost.

The benchmark equations have been remarkably robust. Although the coefficients change every year, primarily because of changes in the composition of the survey universe, they remain similar in relative magnitude and direction.

Most importantly, the R-squareds have been high. In 2016, the R-squared was 71% which means that fund size, asset mix and nationality explain more than 71% of the differences in costs between funds. This is good explanatory power.

Below is a description of the coefficients:

- Size = Log10 (fund size in millions)
- % Stocks = proportion in stocks (coefficient changed in 2011)
- % Real estate = proportion directly invested in real estate and infrastructure.
- % Private equity = proportion in direct and fund-of-funds venture capital, other private equity and hedge funds.
- Country variable = 1 if your country of origin is Canada, otherwise 0.

6

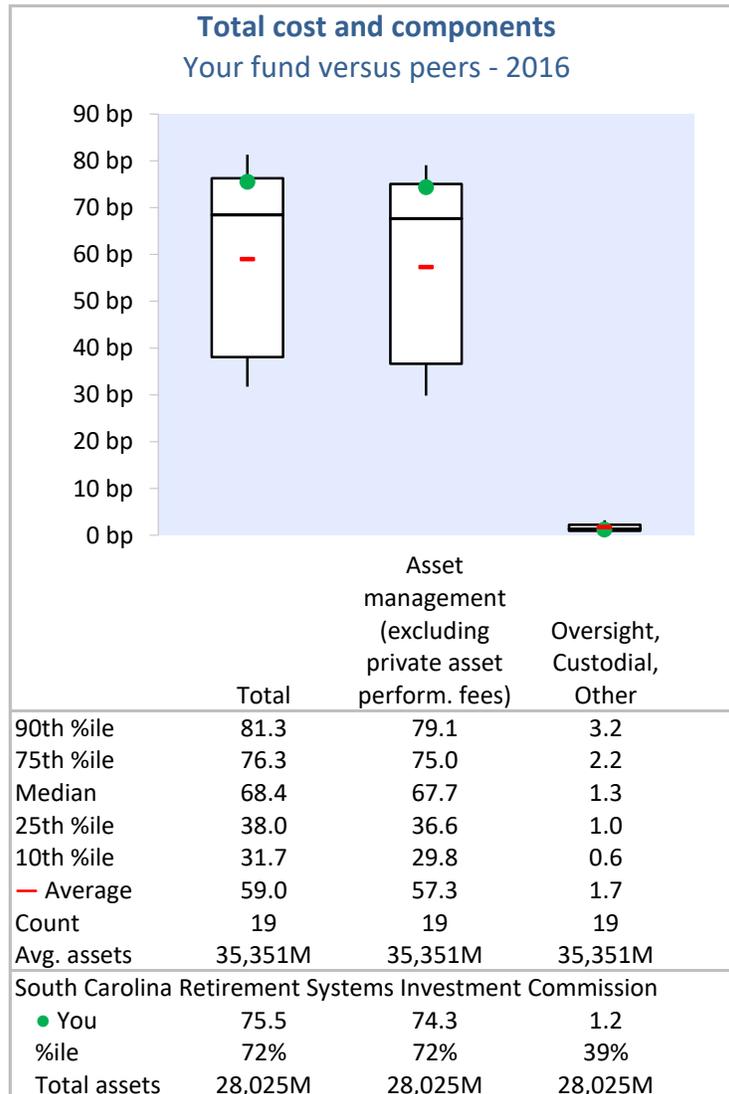
Cost comparisons

| | |
|----------------------------------|----|
| Total fund cost | 2 |
| Governance, operations & support | 3 |
| Public asset classes | |
| - Stock | 4 |
| - Fixed Income | 13 |
| - Commodities | 25 |
| - REITs | 26 |
| Real asset classes | |
| - Real estate ex-REITs | 27 |
| - Infrastructure | 28 |
| - Natural resources | 29 |
| - Other real assets | 30 |
| Private equity | |
| - Diversified private equity | 31 |
| - LBO | 32 |
| - Venture capital | 33 |
| - Other private equity | 34 |
| Global TAA | 35 |
| Hedge Funds | 36 |
| Overlays | 37 |

Total fund cost

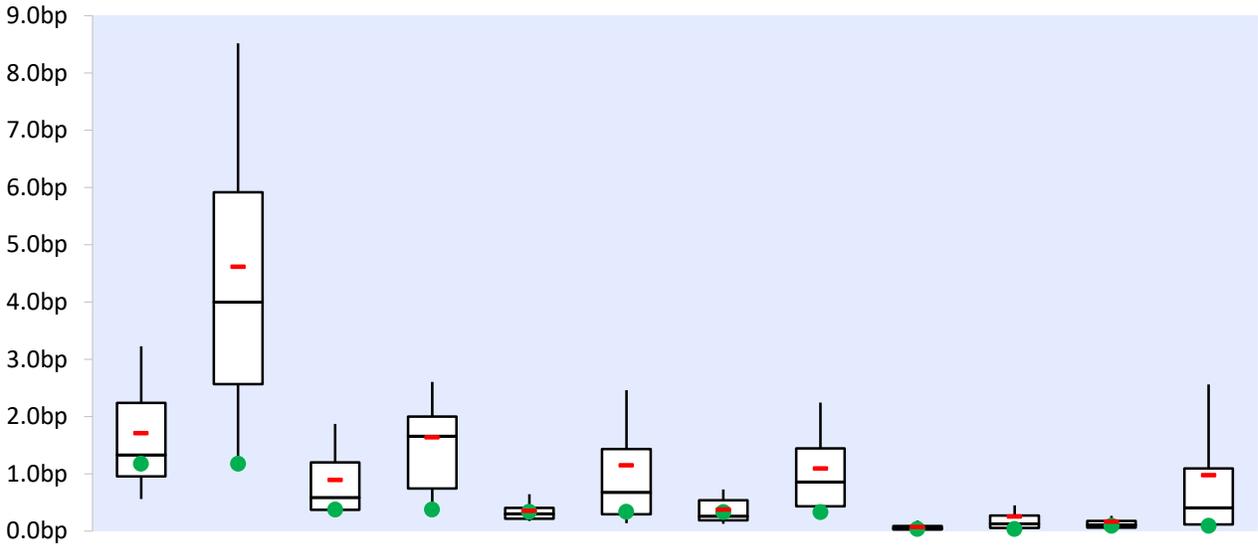
Total costs are benchmarked in the previous section. In this section, your fund's costs are compared on a line-item basis to your peers. This enables you to understand better why you may be a high or low cost fund and it also identifies and quantifies major cost differences that may warrant further investigation.

The 25th to 75th percentile range is the most relevant since higher and lower values may include outliers caused by unusual circumstances, such as performance-based fees. Count refers to the number of funds in your peer group that have costs in this category. It enables you to gauge the statistical significance.



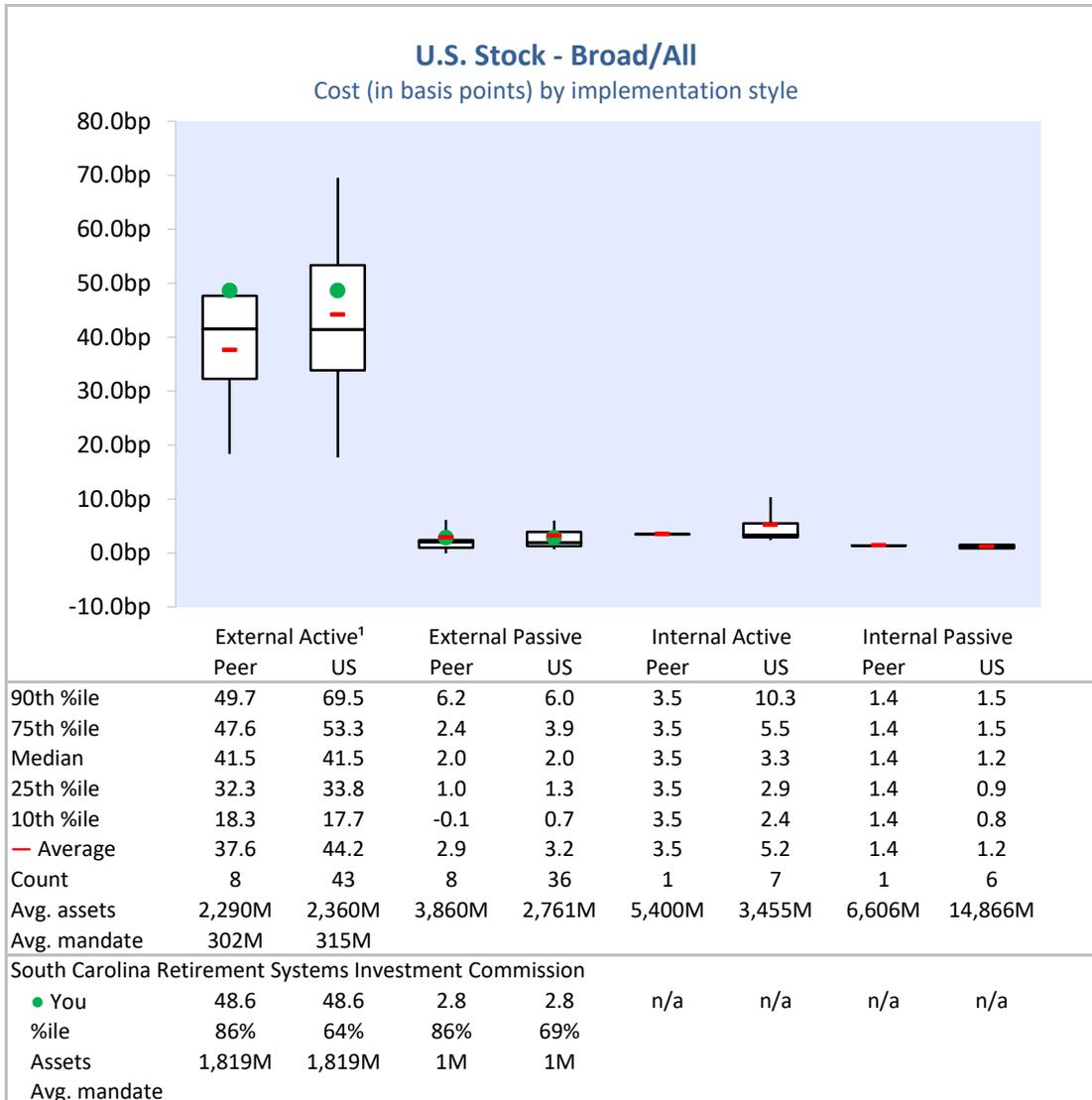
Governance, operations & support

Cost (in basis points) as a % of total plan assets



| | Total | | Oversight ¹ | | Consulting & Perf. Meas. | | Custody | | Audit | | Other | |
|---|---------|---------|------------------------|---------|--------------------------|---------|---------|---------|---------|---------|---------|---------|
| | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US |
| 90th %ile | 3.2 | 8.5 | 1.9 | 2.6 | 0.6 | 2.5 | 0.7 | 2.2 | 0.2 | 0.4 | 0.3 | 2.6 |
| 75th %ile | 2.2 | 5.9 | 1.2 | 2.0 | 0.4 | 1.4 | 0.5 | 1.4 | 0.1 | 0.3 | 0.2 | 1.1 |
| Median | 1.3 | 4.0 | 0.6 | 1.7 | 0.3 | 0.7 | 0.3 | 0.9 | 0.0 | 0.1 | 0.1 | 0.4 |
| 25th %ile | 1.0 | 2.6 | 0.4 | 0.7 | 0.2 | 0.3 | 0.2 | 0.4 | 0.0 | 0.1 | 0.1 | 0.1 |
| 10th %ile | 0.6 | 1.2 | 0.3 | 0.4 | 0.2 | 0.1 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| — Average | 1.7 | 4.6 | 0.9 | 1.6 | 0.4 | 1.1 | 0.4 | 1.1 | 0.1 | 0.3 | 0.2 | 1.0 |
| Count | 19 | 167 | 19 | 167 | 14 | 144 | 18 | 160 | 15 | 149 | 16 | 123 |
| Avg. assets | 35,351M | 21,536M | 35,351M | 21,536M | 35,351M | 21,536M | 35,351M | 21,536M | 35,351M | 21,536M | 35,351M | 21,536M |
| South Carolina Retirement Systems Investment Commission | | | | | | | | | | | | |
| ● You | 1.2 | 1.2 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.0 | 0.0 | 0.1 | 0.1 |
| %ile | 39% | 9% | 28% | 10% | 62% | 29% | 65% | 18% | 29% | 13% | 33% | 20% |
| Plan assets | 28,025M | 28,025M | 28,025M | 28,025M | 28,025M | 28,025M | 28,025M | 28,025M | 28,025M | 28,025M | 28,025M | 28,025M |

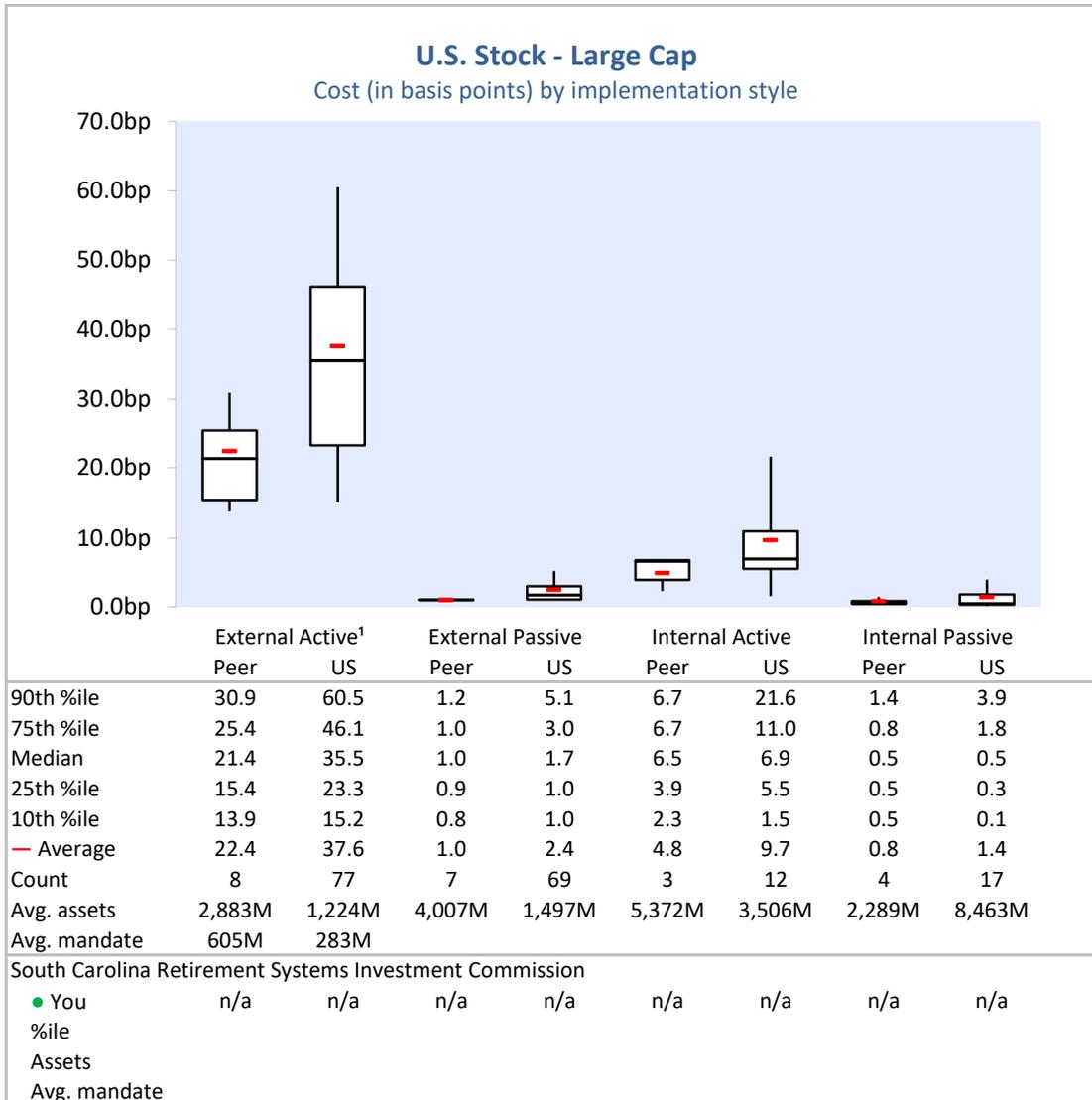
1. Oversight costs include the salaries and benefits of executives and their staff responsible for overseeing the entire fund or multiple asset classes and the fees/salaries of the Board or Investment Committee. All costs associated with the above including fees/salaries, travel, director's insurance and attributed overhead are included. Given fiduciary obligations, having the lowest oversight costs is not necessarily optimal. Some sponsors with lower-than-average executive and administration costs compensate by having-higher-than average consulting costs.



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|-----------------|---------------|
| Base fees | 45.8 | 34.1 | 38.9 |
| Performance fees* | 0.0 | 2.3 | 4.5 |
| Internal and other | <u>2.8</u> | <u>1.2</u> | <u>0.7</u> |
| Total | 48.6 | 37.6 | 44.2 |

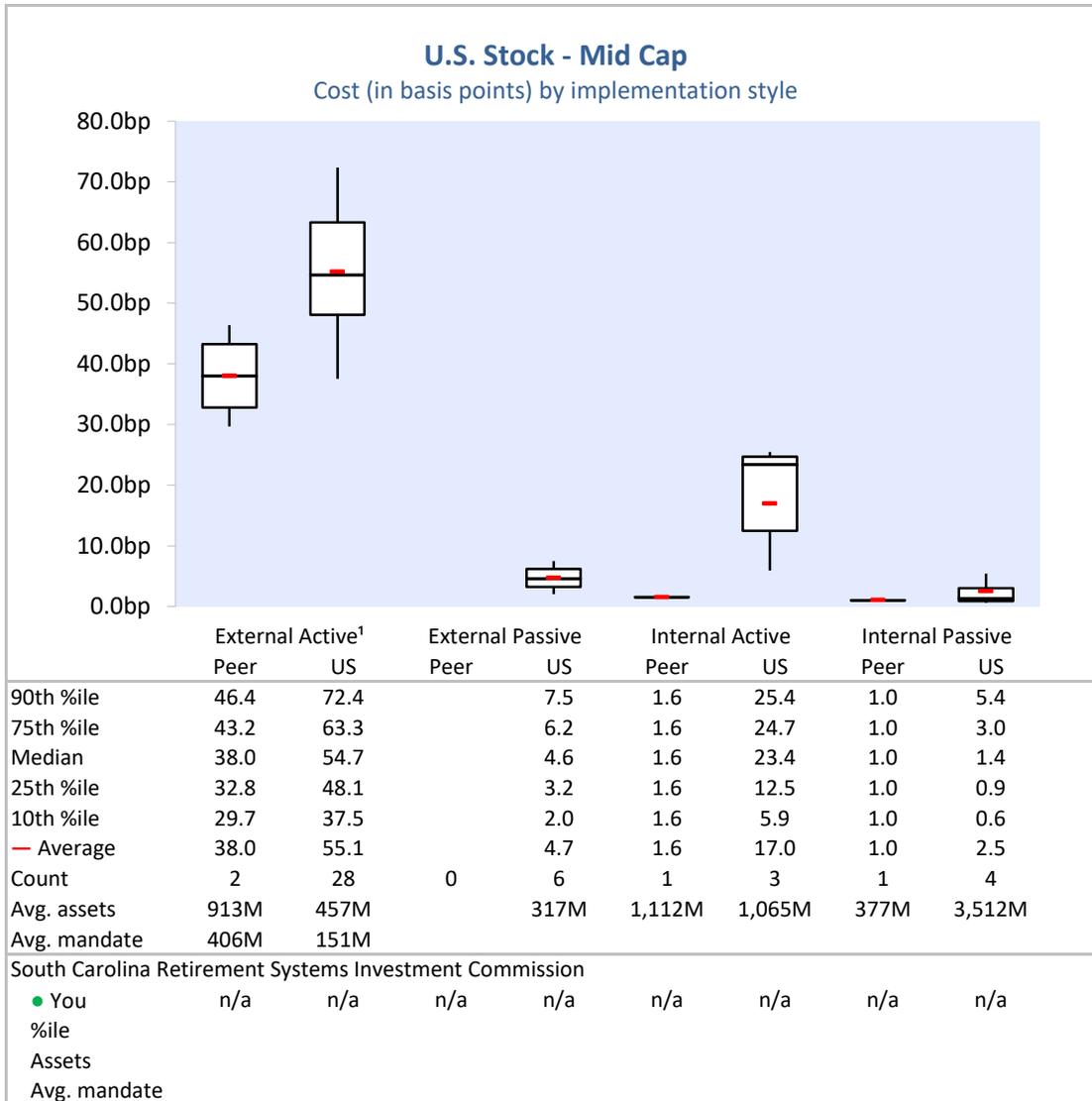
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 3.6 bps for peers (5 funds) and 8.8 bps for US participants (22 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|--------------|------------|
| Base fees | n/a | 20.8 | 34.7 |
| Performance fees* | n/a | 1.3 | 2.6 |
| Internal and other | <u>n/a</u> | <u>0.4</u> | <u>0.3</u> |
| Total | n/a | 22.4 | 37.6 |

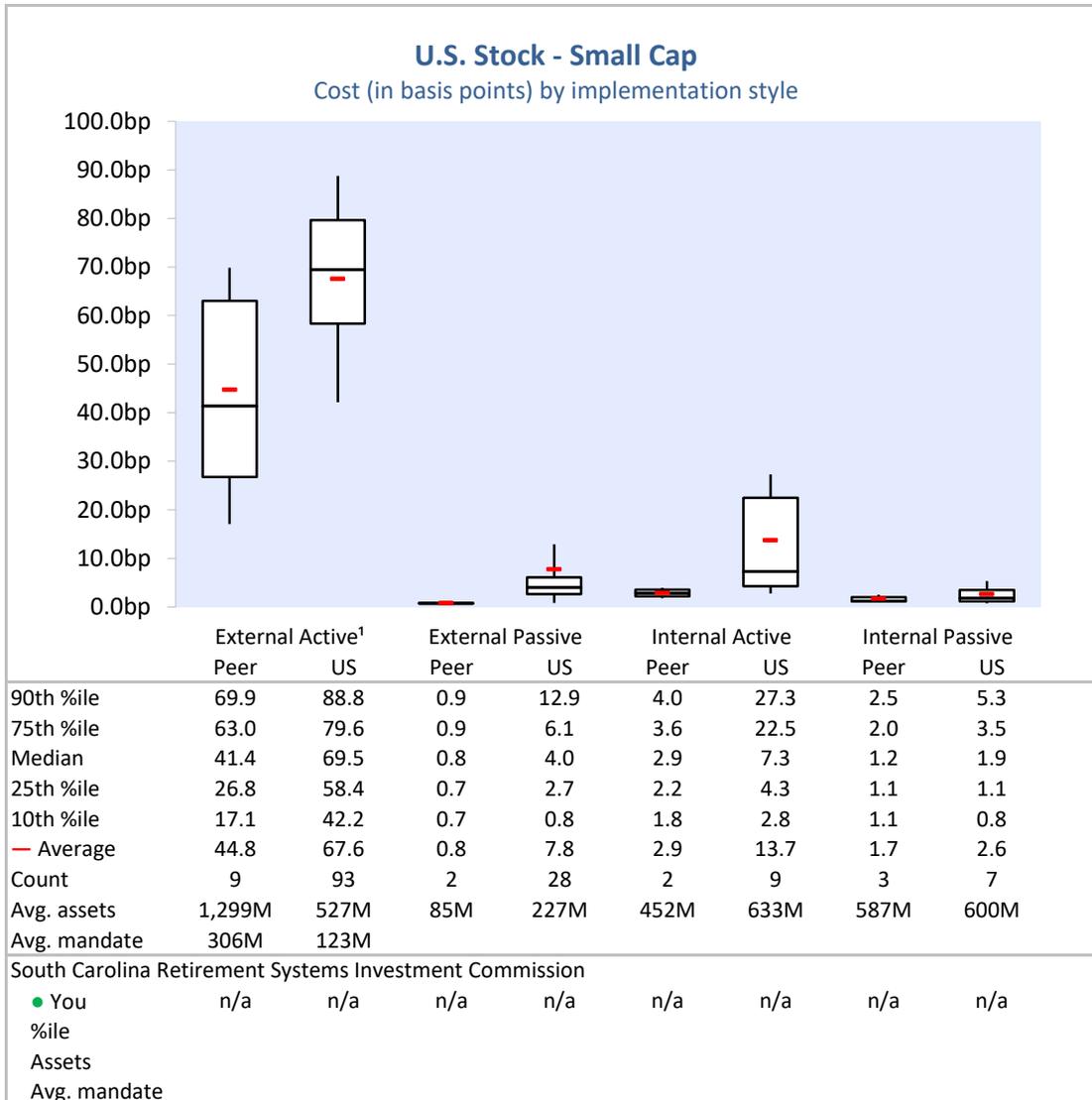
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 5.2 bps for peers (2 funds) and 11.8 bps for US participants (17 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|--------------|------------|
| Base fees | n/a | 38.0 | 53.0 |
| Performance fees* | n/a | 0.0 | 1.7 |
| Internal and other | <u>n/a</u> | <u>0.0</u> | <u>0.4</u> |
| Total | n/a | 38.0 | 55.1 |

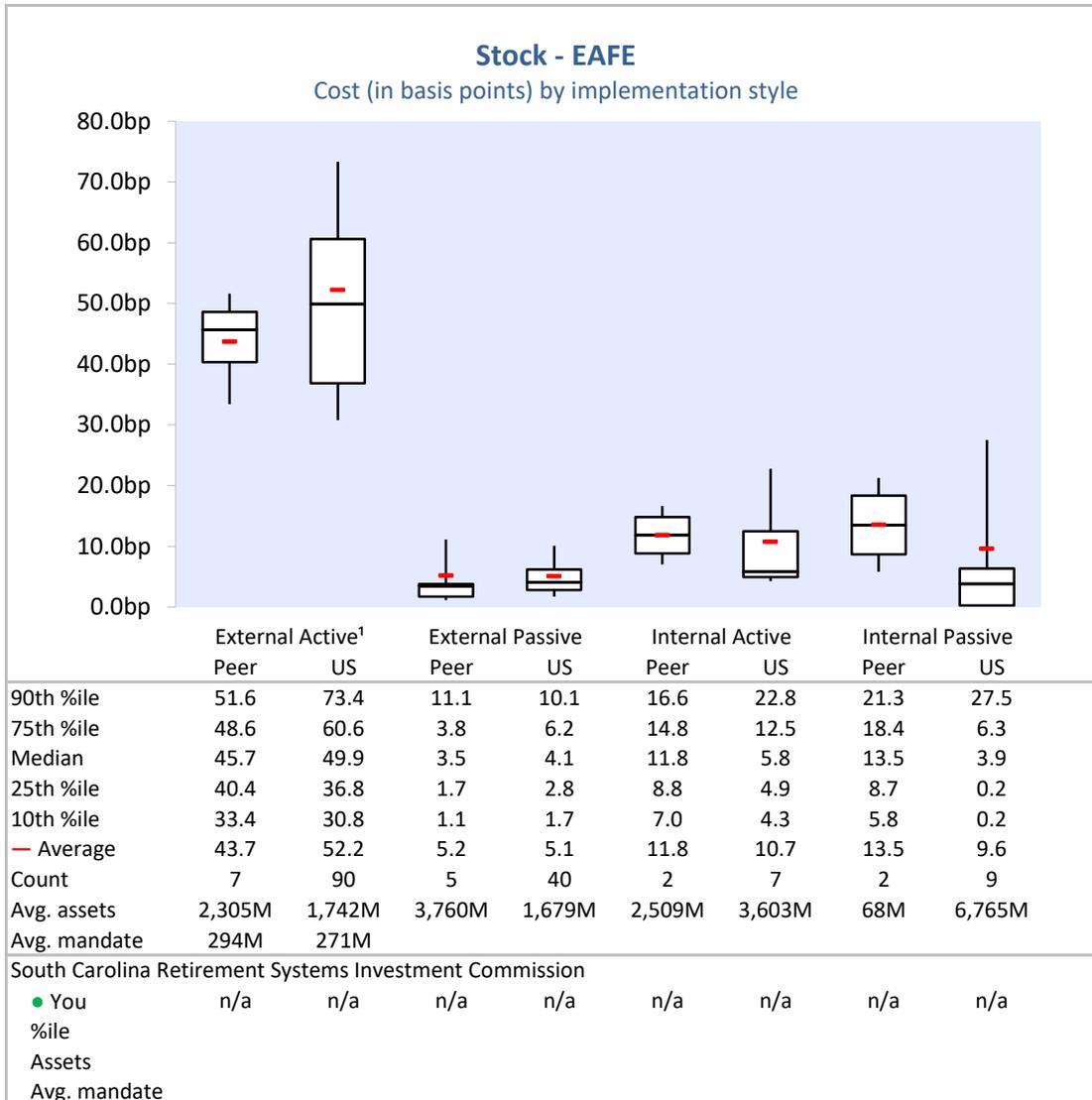
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 16.1 bps for US participants (3 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|--------------|------------|
| Base fees | n/a | 42.4 | 65.2 |
| Performance fees* | n/a | 2.0 | 2.2 |
| Internal and other | <u>n/a</u> | <u>0.4</u> | <u>0.2</u> |
| Total | n/a | 44.8 | 67.6 |

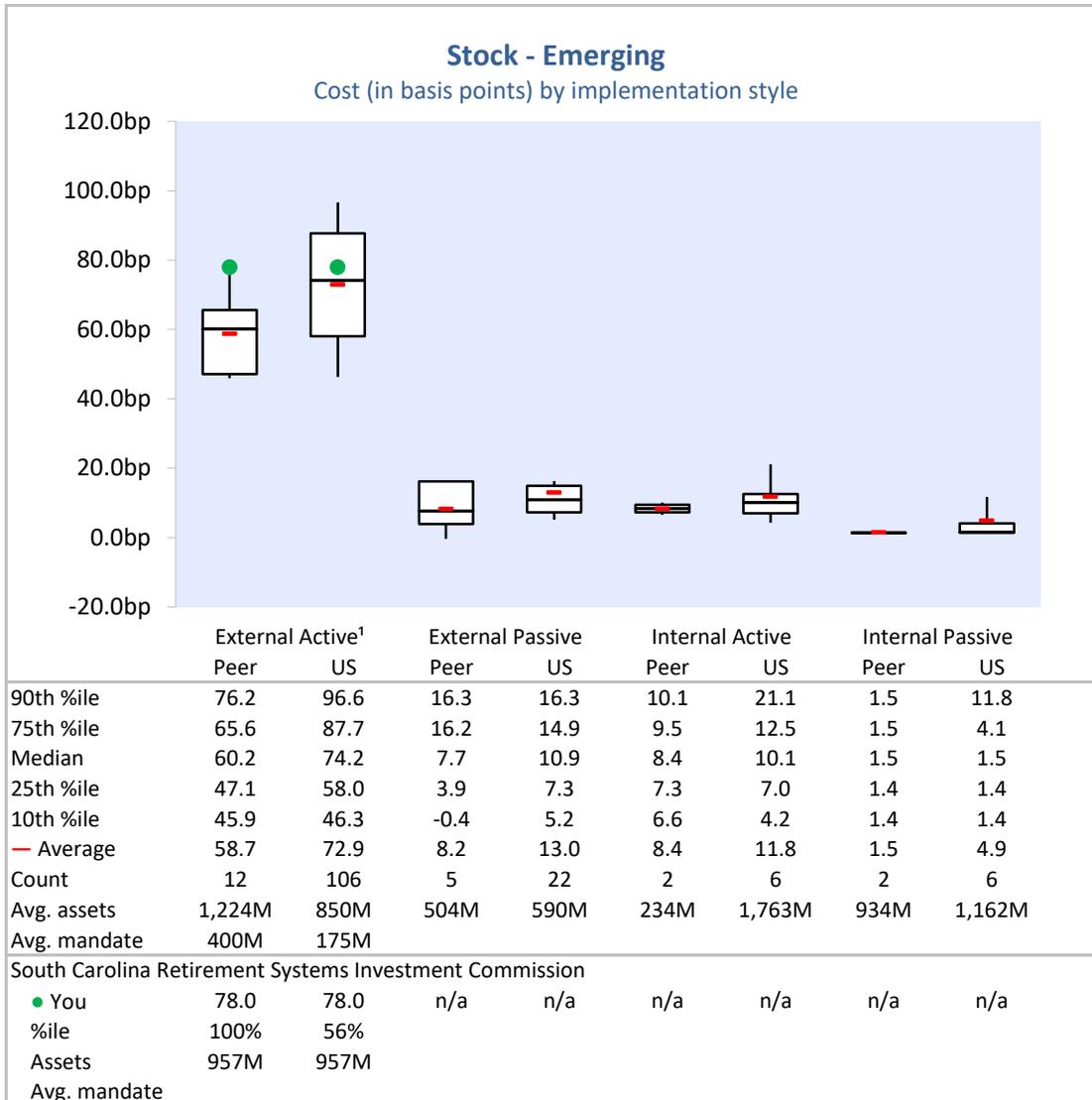
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 3.5 bps for peers (5 funds) and 11.5 bps for US participants (18 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|-----------------|---------------|
| Base fees | n/a | 42.5 | 48.7 |
| Performance fees* | n/a | 0.7 | 3.3 |
| Internal and other | <u>n/a</u> | <u>0.6</u> | <u>0.2</u> |
| Total | n/a | 43.7 | 52.2 |

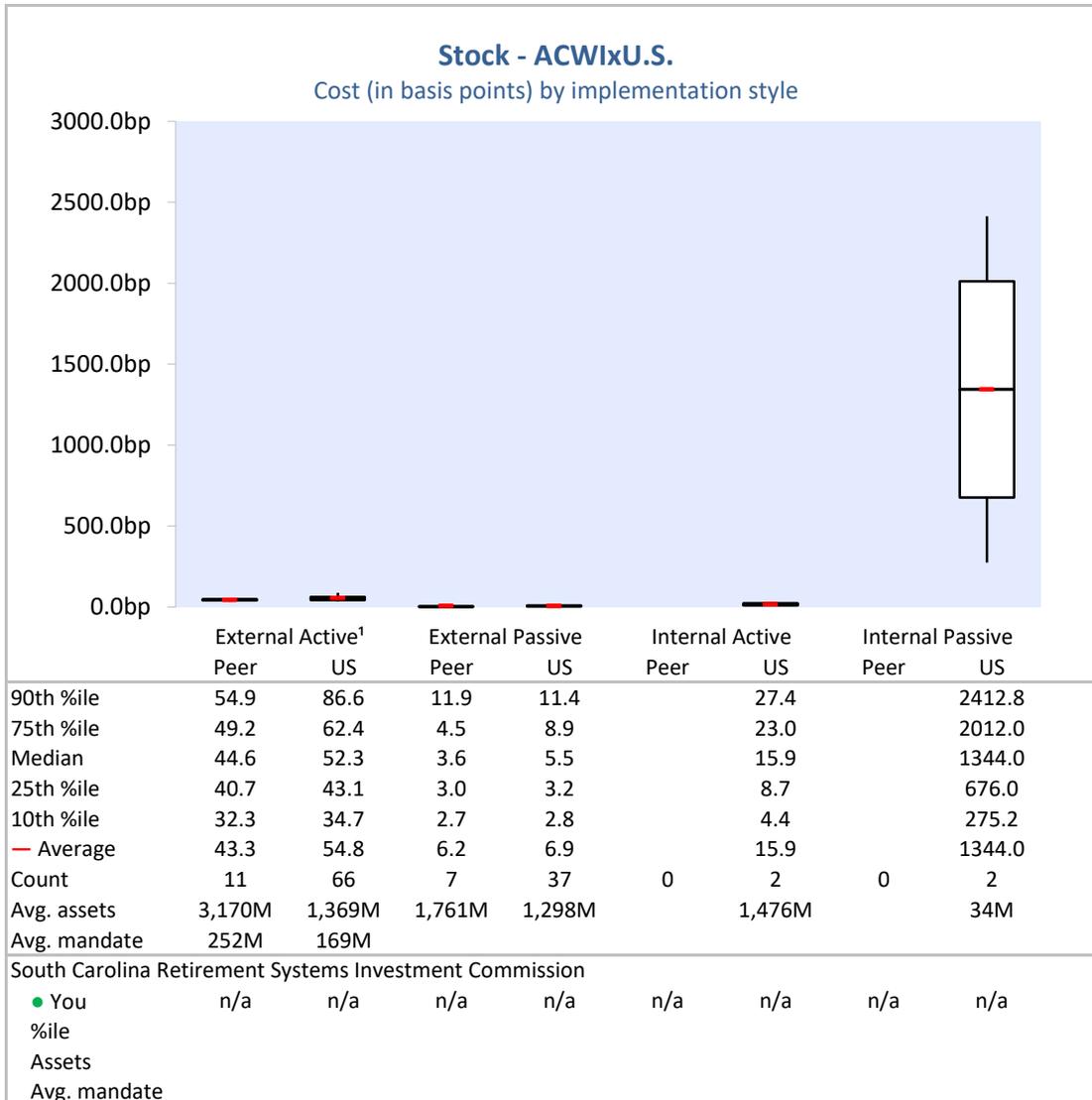
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 4.8 bps for peers (1 fund) and 13.4 bps for US participants (22 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|--------------|------------|
| Base fees | 75.1 | 57.9 | 70.8 |
| Performance fees* | 0.0 | 0.0 | 1.8 |
| Internal and other | <u>2.8</u> | <u>0.9</u> | <u>0.3</u> |
| Total | 78.0 | 58.7 | 72.9 |

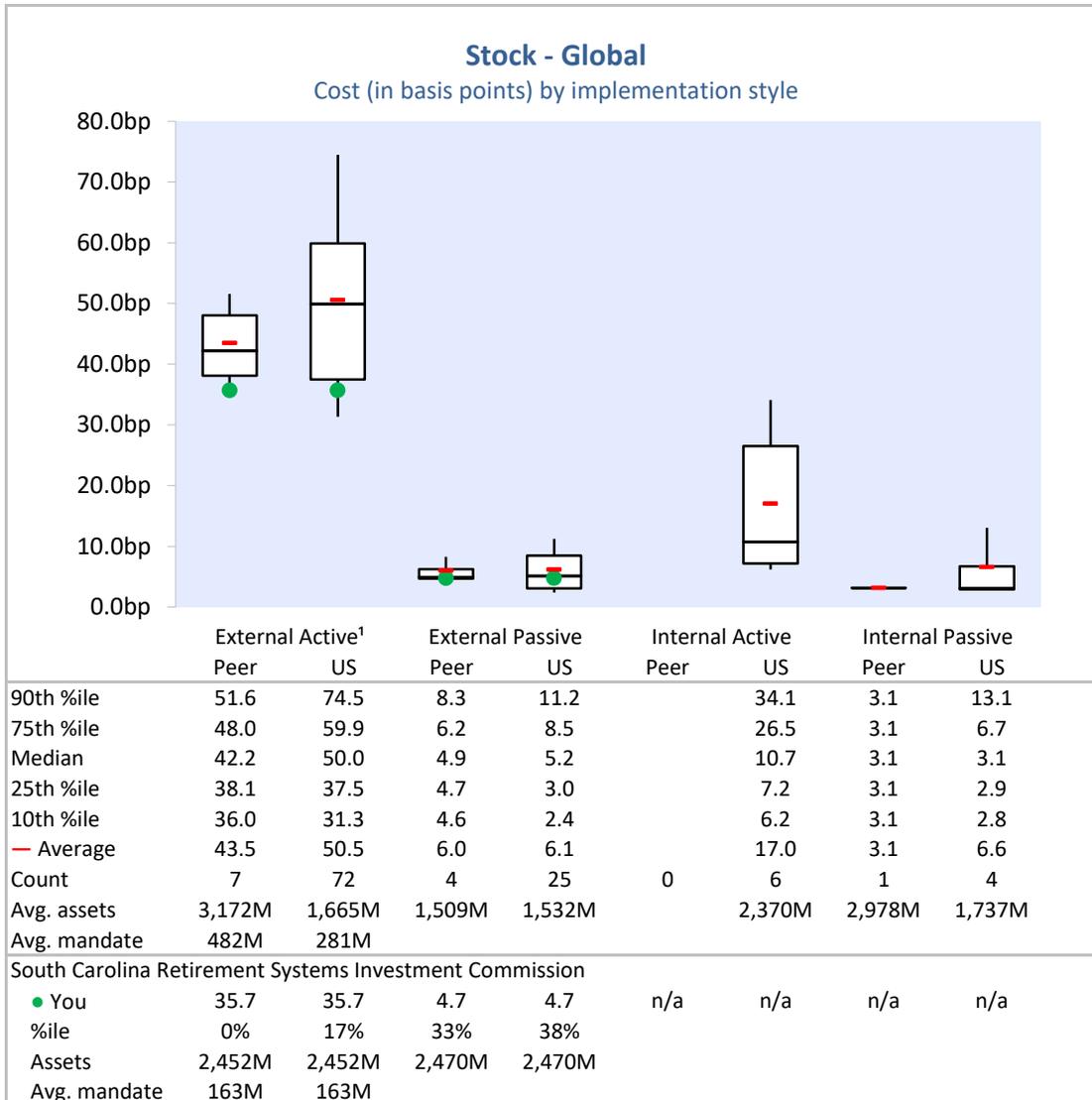
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 0.0 bps for peers (4 funds) and 8.0 bps for US participants (24 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|-----------------|---------------|
| Base fees | n/a | 38.2 | 53.6 |
| Performance fees* | n/a | 5.1 | 1.0 |
| Internal and other | <u>n/a</u> | <u>0.1</u> | <u>0.3</u> |
| Total | n/a | 43.3 | 54.8 |

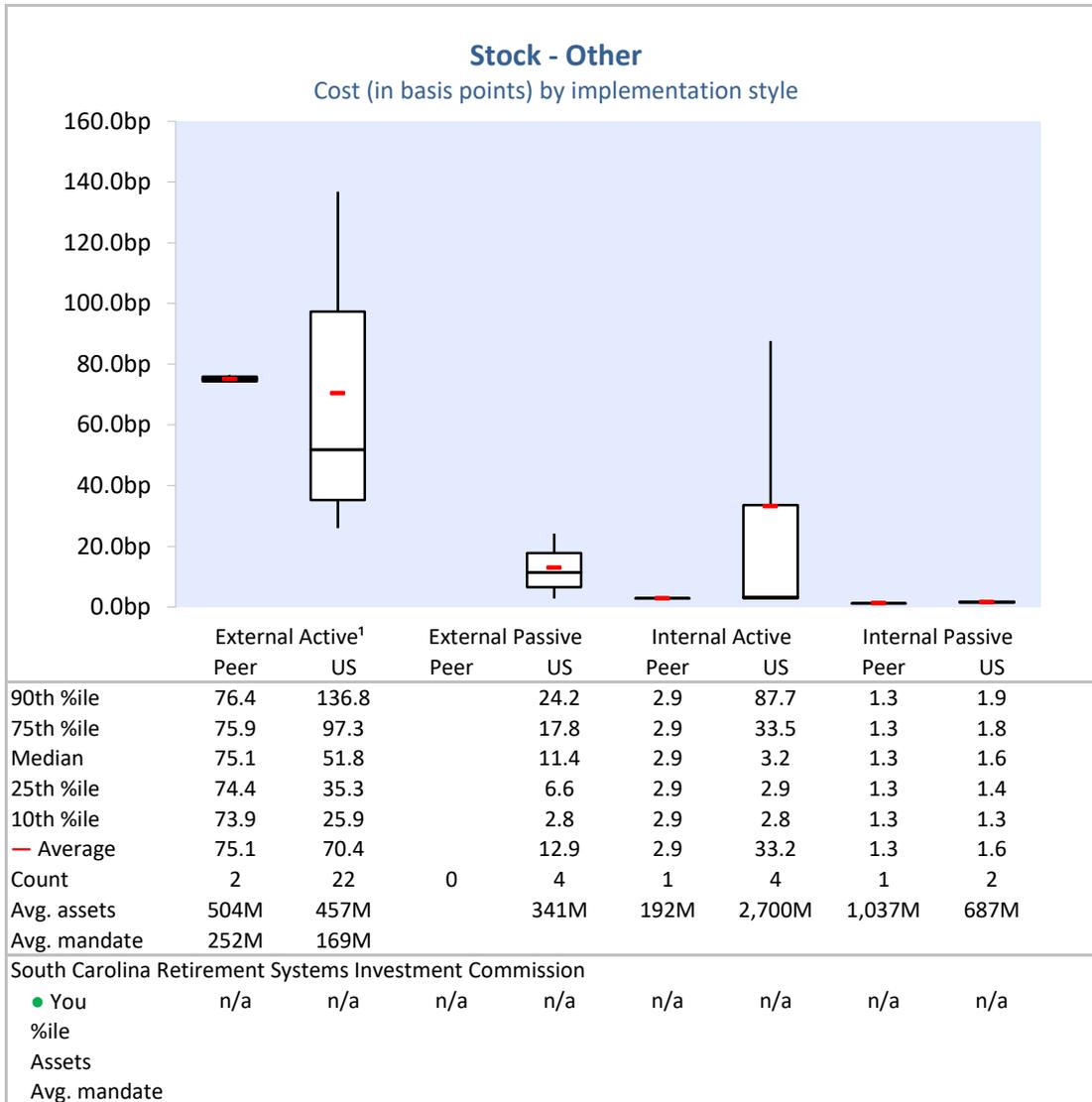
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 11.1 bps for peers (5 funds) and 3.7 bps for US participants (17 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|-----------------|---------------|
| Base fees | 32.8 | 40.8 | 48.2 |
| Performance fees* | 0.0 | 2.0 | 2.1 |
| Internal and other | <u>2.8</u> | <u>0.7</u> | <u>0.3</u> |
| Total | 35.7 | 43.5 | 50.5 |

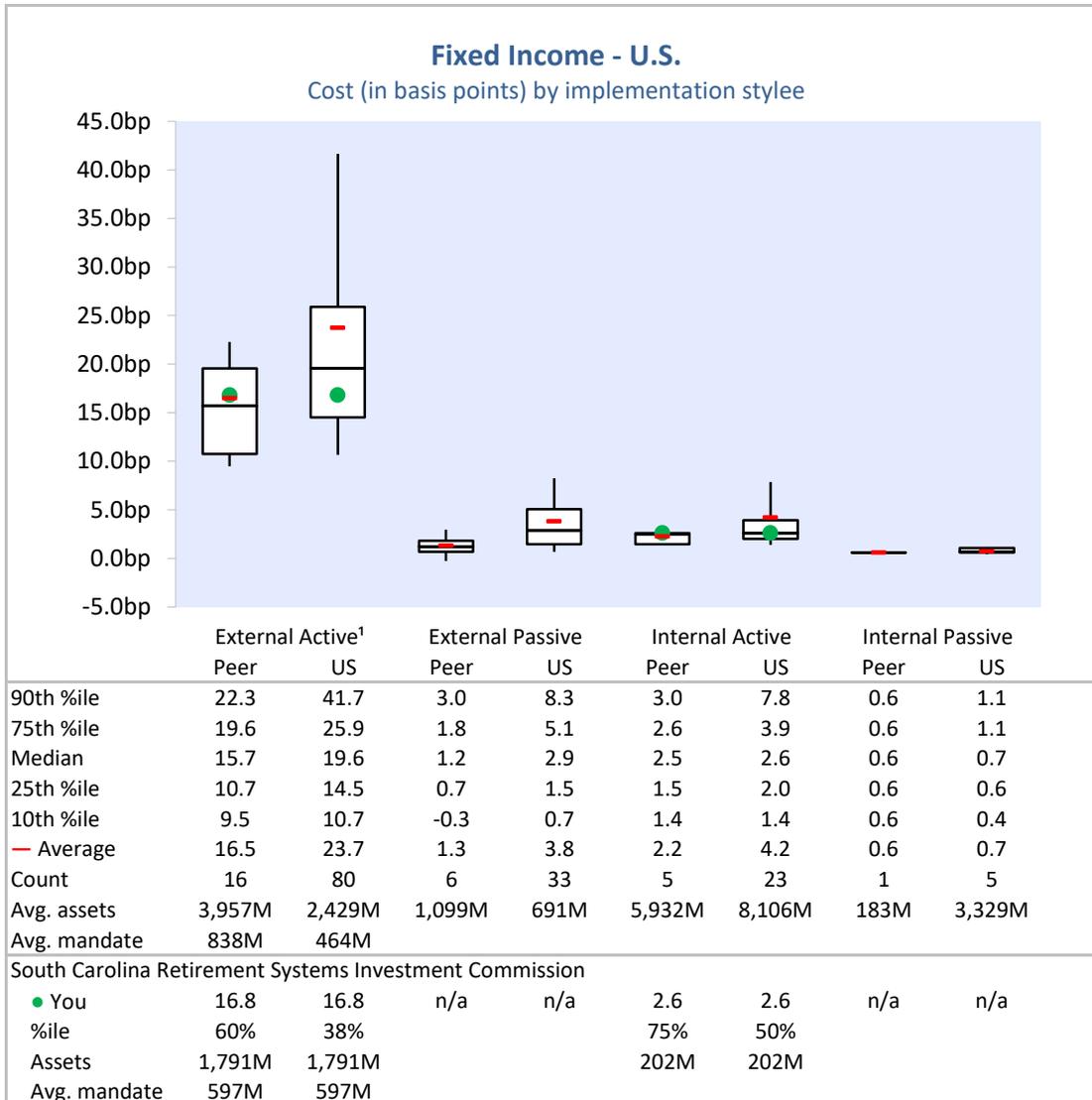
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 3.4 bps for peers (4 funds) and 8.3 bps for US participants (18 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|--------------|------------|
| Base fees | n/a | 75.1 | 66.3 |
| Performance fees* | n/a | 0.0 | 4.0 |
| Internal and other | <u>n/a</u> | <u>0.0</u> | <u>0.1</u> |
| Total | n/a | 75.1 | 70.4 |

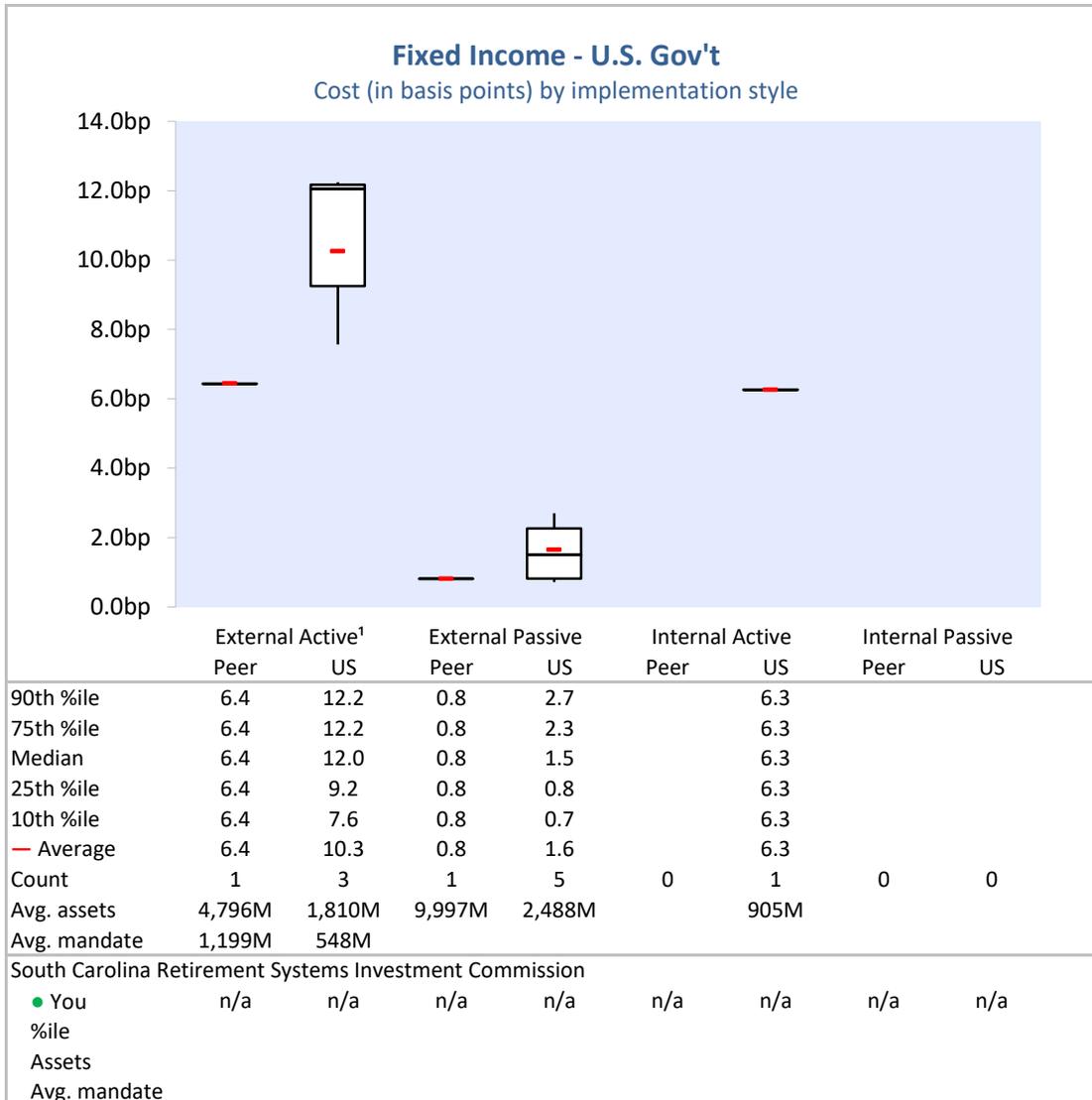
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 17.7 bps for US participants (5 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|--------------|------------|
| Base fees | 14.0 | 15.5 | 23.0 |
| Performance fees* | 0.0 | 0.3 | 0.4 |
| Internal and other | <u>2.8</u> | <u>0.7</u> | <u>0.3</u> |
| Total | 16.8 | 16.5 | 23.7 |

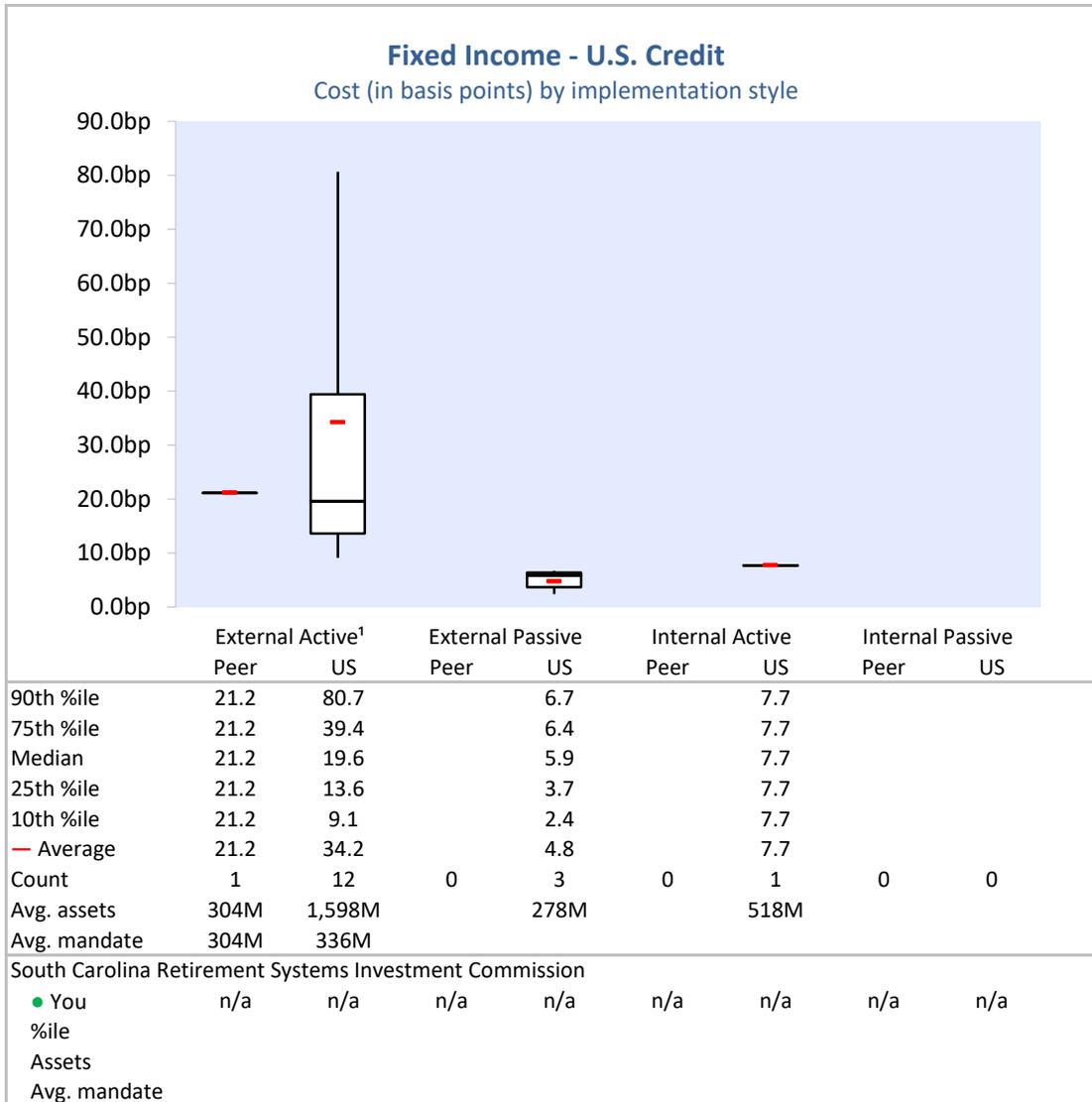
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 0.6 bps for peers (8 funds) and 2.1 bps for US participants (16 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|--------------|------------|
| Base fees | n/a | 6.1 | 10.2 |
| Performance fees* | n/a | 0.0 | 0.0 |
| Internal and other | <u>n/a</u> | <u>0.3</u> | <u>0.1</u> |
| Total | n/a | 6.4 | 10.3 |

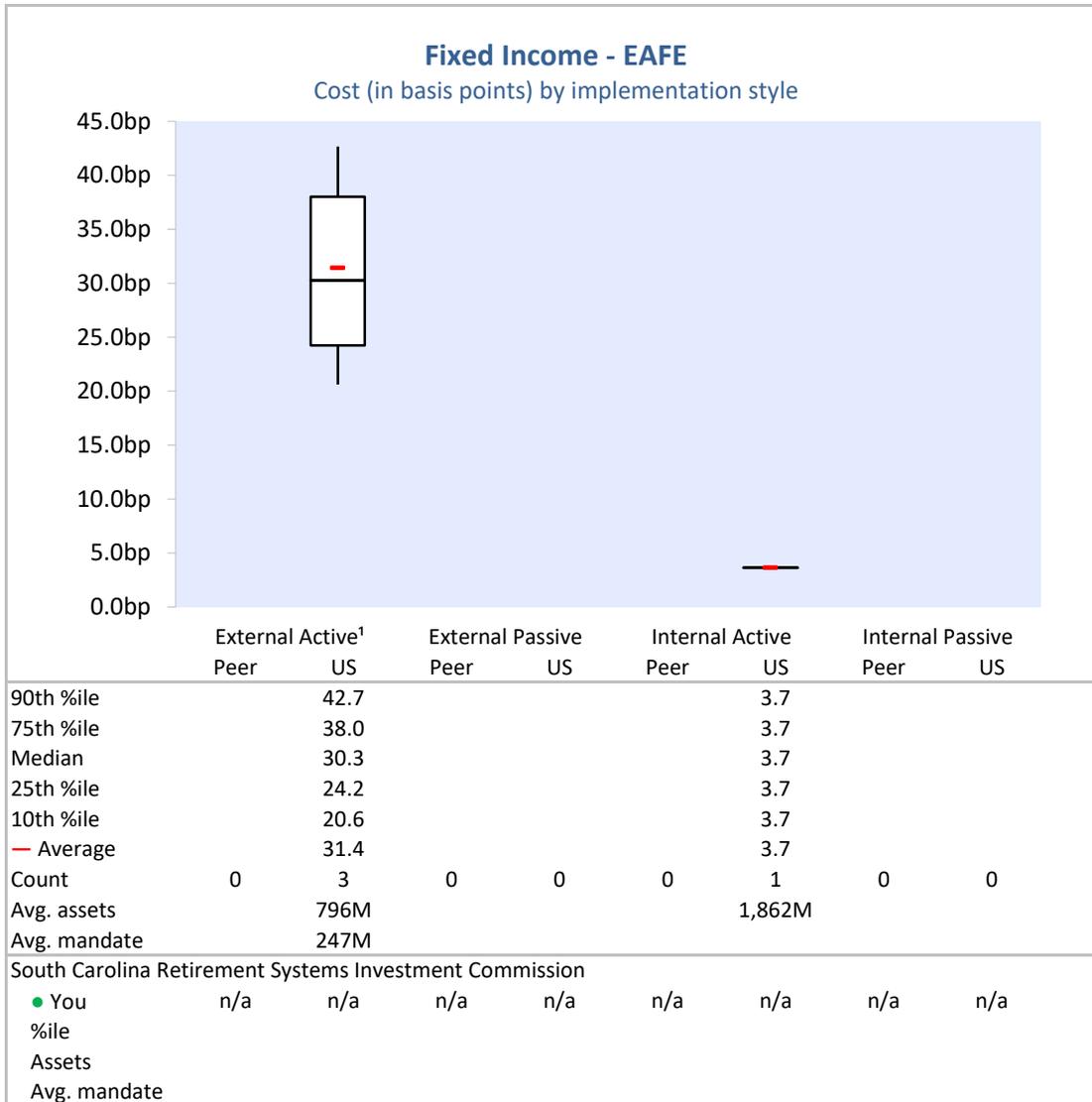
* For funds that did not report a performance fee, a value of 'zero' was used. No funds reported a performance fee.



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|-----------------|---------------|
| Base fees | n/a | 21.0 | 28.4 |
| Performance fees* | n/a | 0.0 | 5.8 |
| Internal and other | <u>n/a</u> | <u>0.2</u> | <u>0.0</u> |
| Total | n/a | 21.2 | 34.2 |

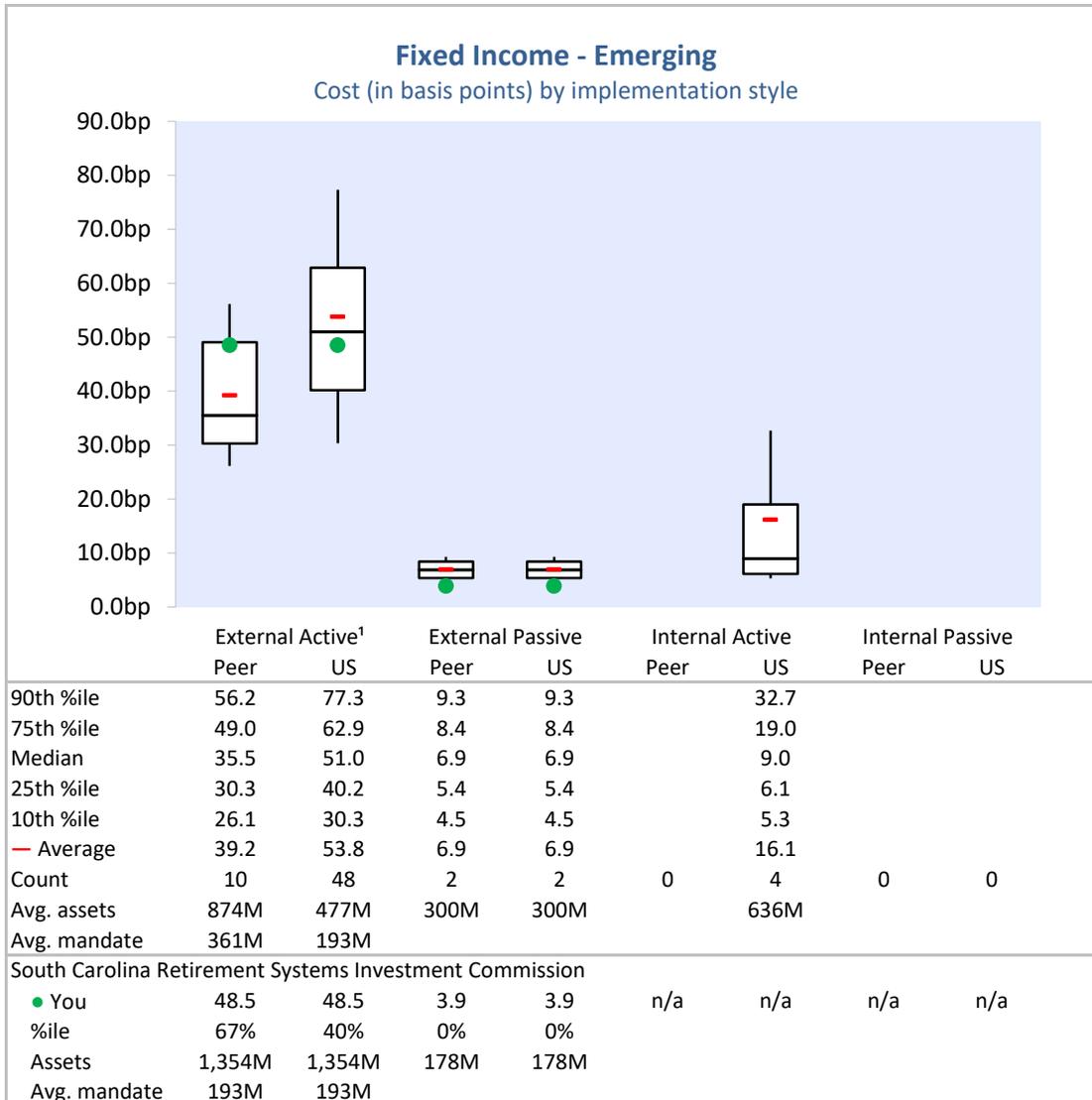
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 0.0 bps for peers (1 fund) and 23.1 bps for US participants (3 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|-----------------|---------------|
| Base fees | n/a | n/a | 27.2 |
| Performance fees* | n/a | n/a | 3.7 |
| Internal and other | <u>n/a</u> | <u>n/a</u> | <u>0.5</u> |
| Total | n/a | n/a | 31.4 |

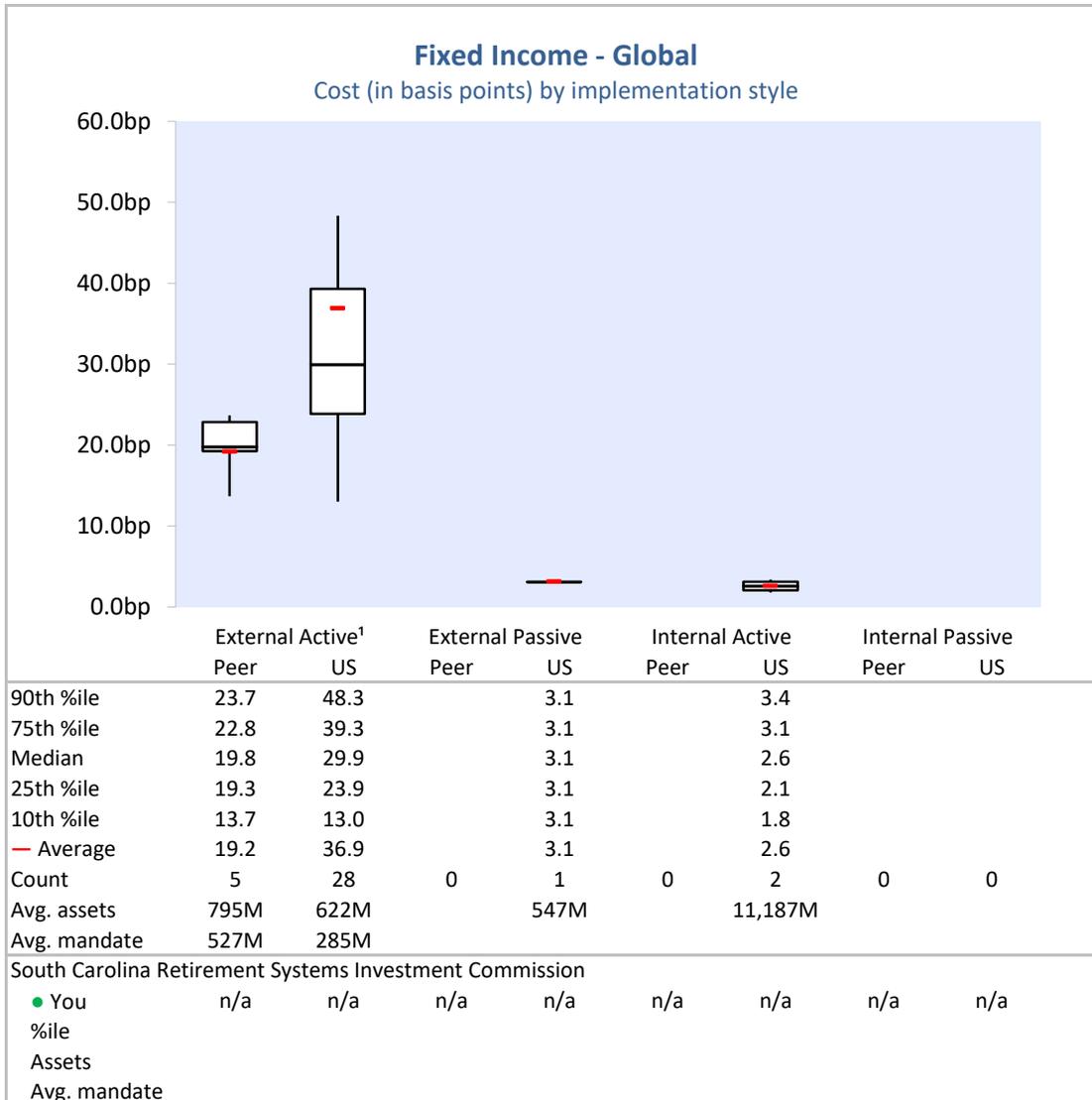
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 5.6 bps for US participants (2 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|-----------------|---------------|
| Base fees | 45.7 | 38.6 | 50.3 |
| Performance fees* | 0.0 | 0.0 | 2.5 |
| Internal and other | <u>2.8</u> | <u>0.6</u> | <u>1.0</u> |
| Total | 48.5 | 39.2 | 53.8 |

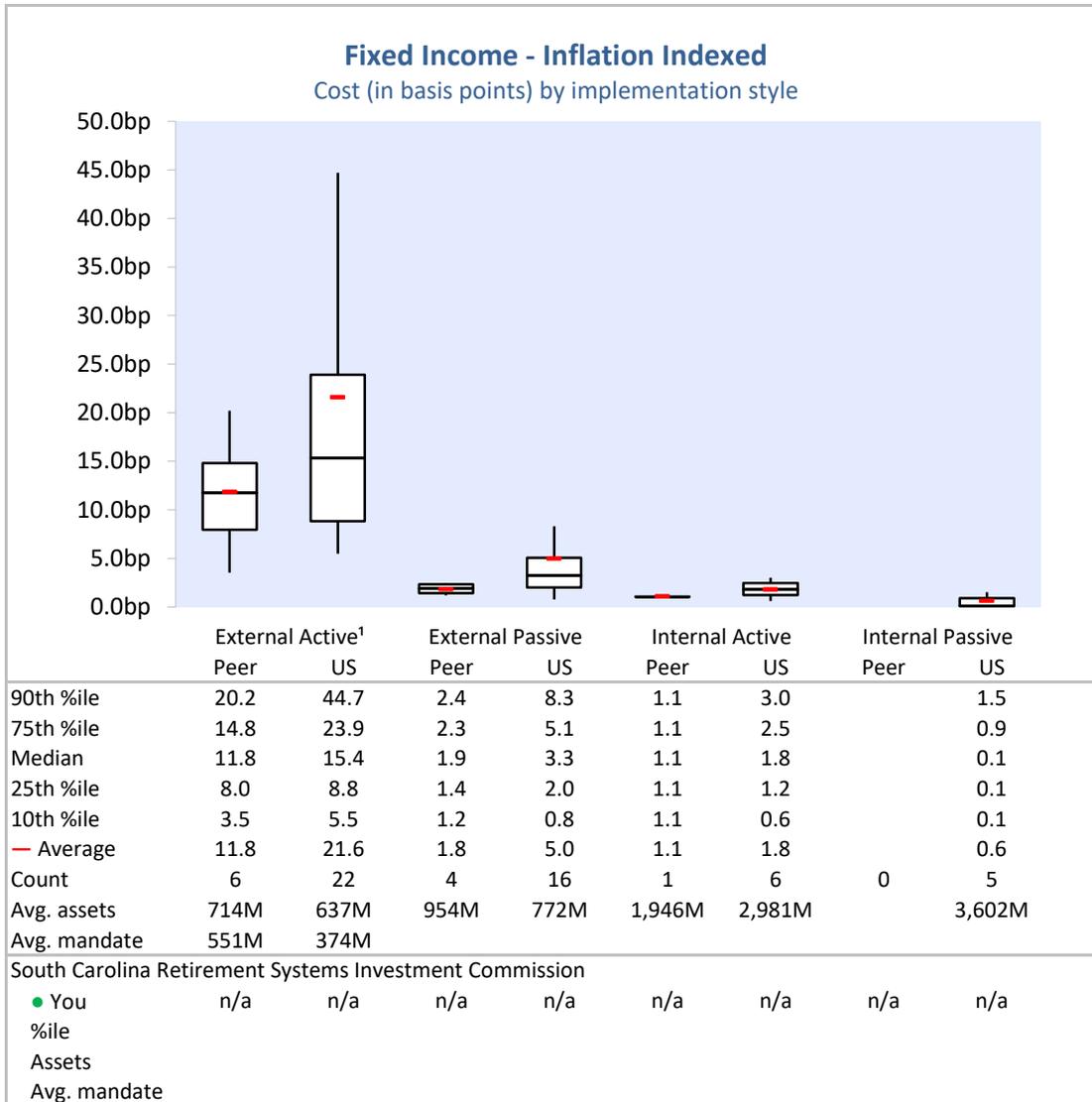
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 0.0 bps for peers (6 funds) and 10.0 bps for US participants (12 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|-----------------|---------------|
| Base fees | n/a | 19.2 | 36.8 |
| Performance fees* | n/a | 0.0 | 0.0 |
| Internal and other | <u>n/a</u> | <u>0.1</u> | <u>0.1</u> |
| Total | n/a | 19.2 | 36.9 |

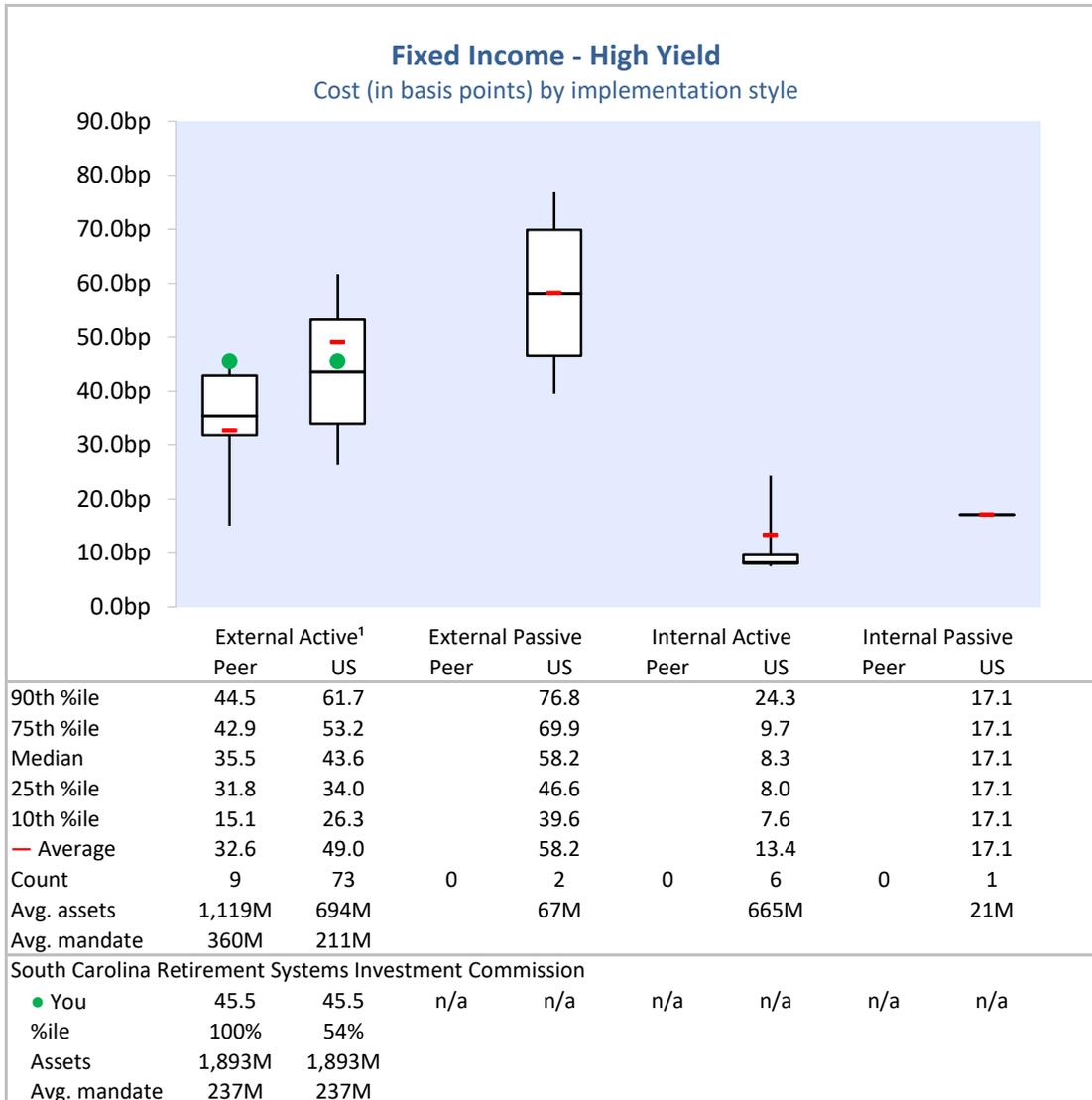
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 0.0 bps for peers (3 funds) and 0.0 bps for US participants (5 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|--------------|------------|
| Base fees | n/a | 11.8 | 20.7 |
| Performance fees* | n/a | 0.0 | 0.7 |
| Internal and other | <u>n/a</u> | <u>0.0</u> | <u>0.3</u> |
| Total | n/a | 11.8 | 21.6 |

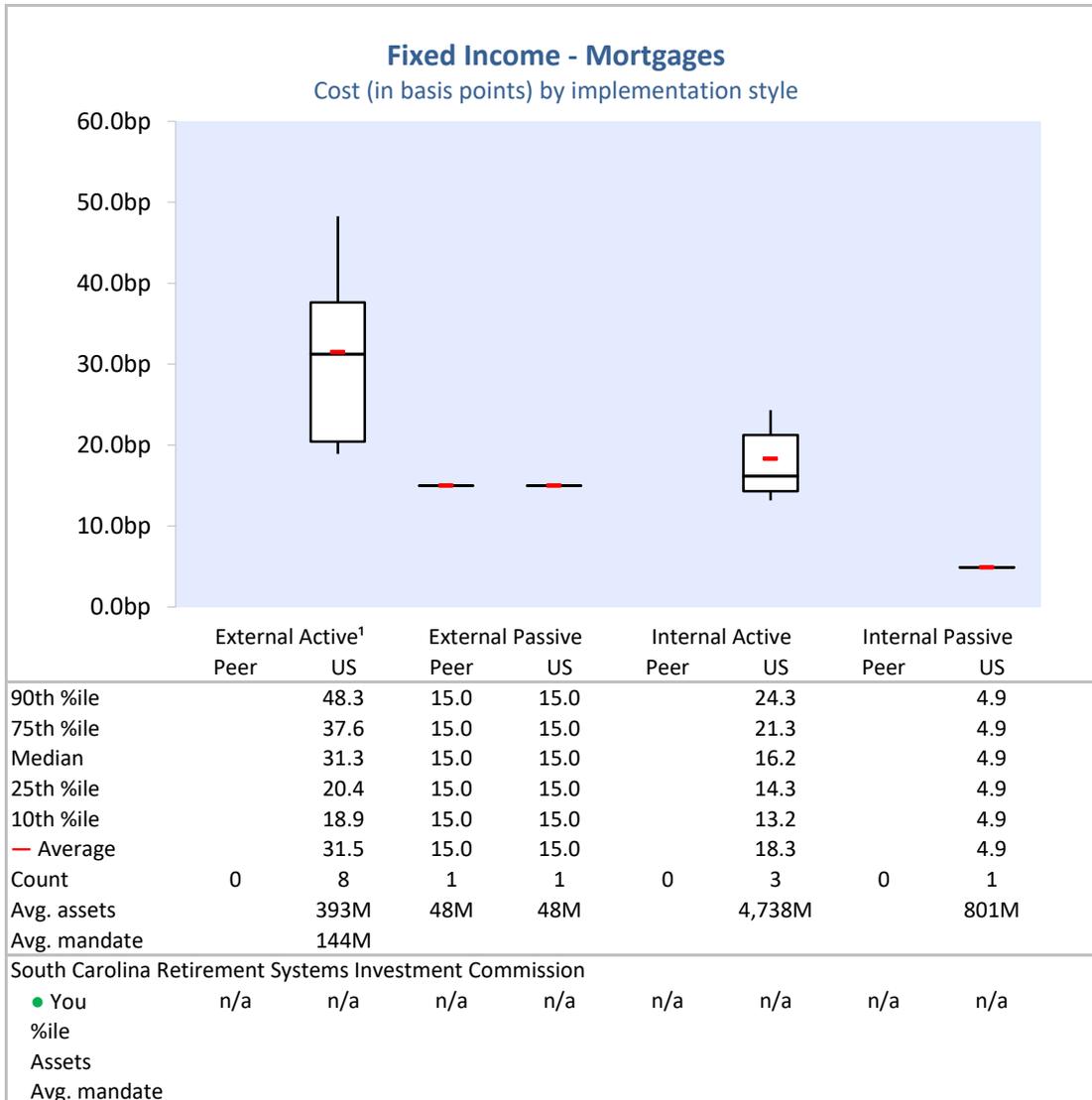
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 0.0 bps for peers (4 funds) and 2.1 bps for US participants (7 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|-----------------|---------------|
| Base fees | 42.7 | 31.3 | 45.5 |
| Performance fees* | 0.0 | 0.7 | 3.0 |
| Internal and other | <u>2.8</u> | <u>0.7</u> | <u>0.5</u> |
| Total | 45.5 | 32.6 | 49.0 |

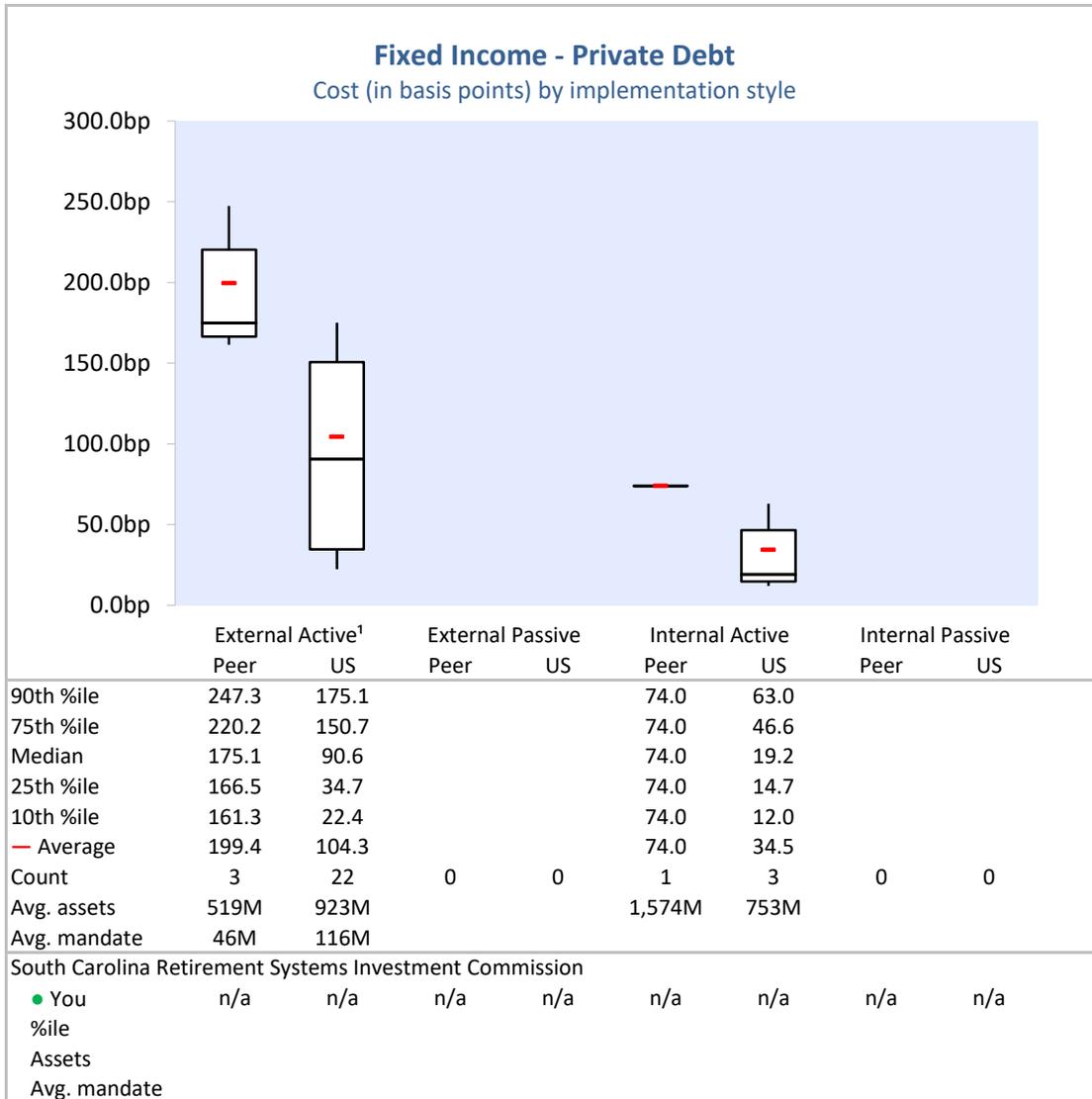
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 1.3 bps for peers (5 funds) and 13.1 bps for US participants (17 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|--------------|------------|
| Base fees | n/a | n/a | 30.0 |
| Performance fees* | n/a | n/a | 1.4 |
| Internal and other | <u>n/a</u> | <u>n/a</u> | <u>0.0</u> |
| Total | n/a | n/a | 31.5 |

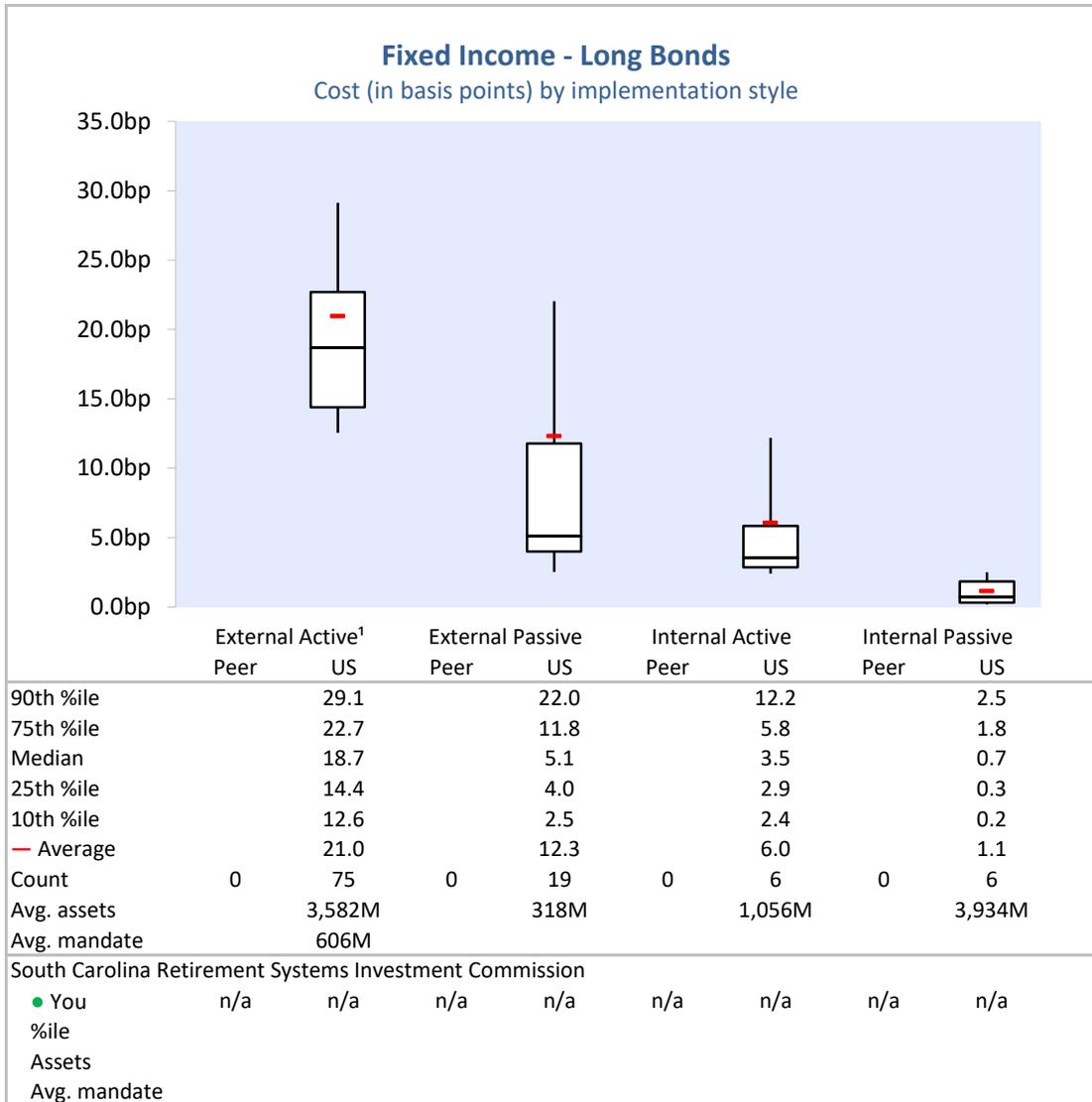
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 11.1 bps for US participants (1 fund).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|--------------|------------|
| Base fees | n/a | 198.3 | 97.5 |
| Performance fees* | n/a | 0.0 | 6.3 |
| Internal and other | <u>n/a</u> | <u>1.2</u> | <u>0.5</u> |
| Total | n/a | 199.4 | 104.3 |

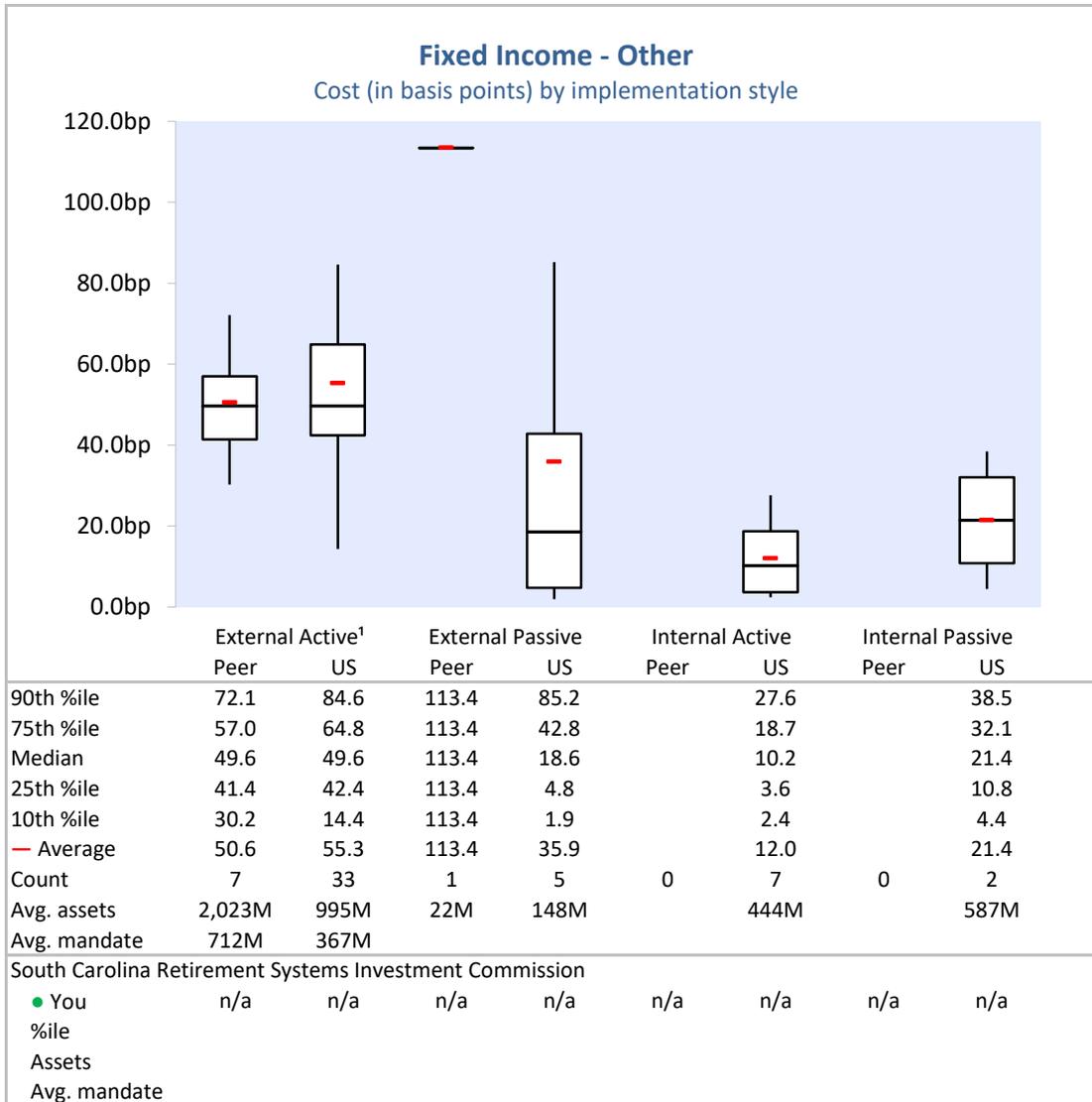
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 0.0 bps for peers (1 fund) and 27.5 bps for US participants (5 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|-----------------|---------------|
| Base fees | n/a | n/a | 20.1 |
| Performance fees* | n/a | n/a | 0.7 |
| Internal and other | <u>n/a</u> | <u>n/a</u> | <u>0.1</u> |
| Total | n/a | n/a | 21.0 |

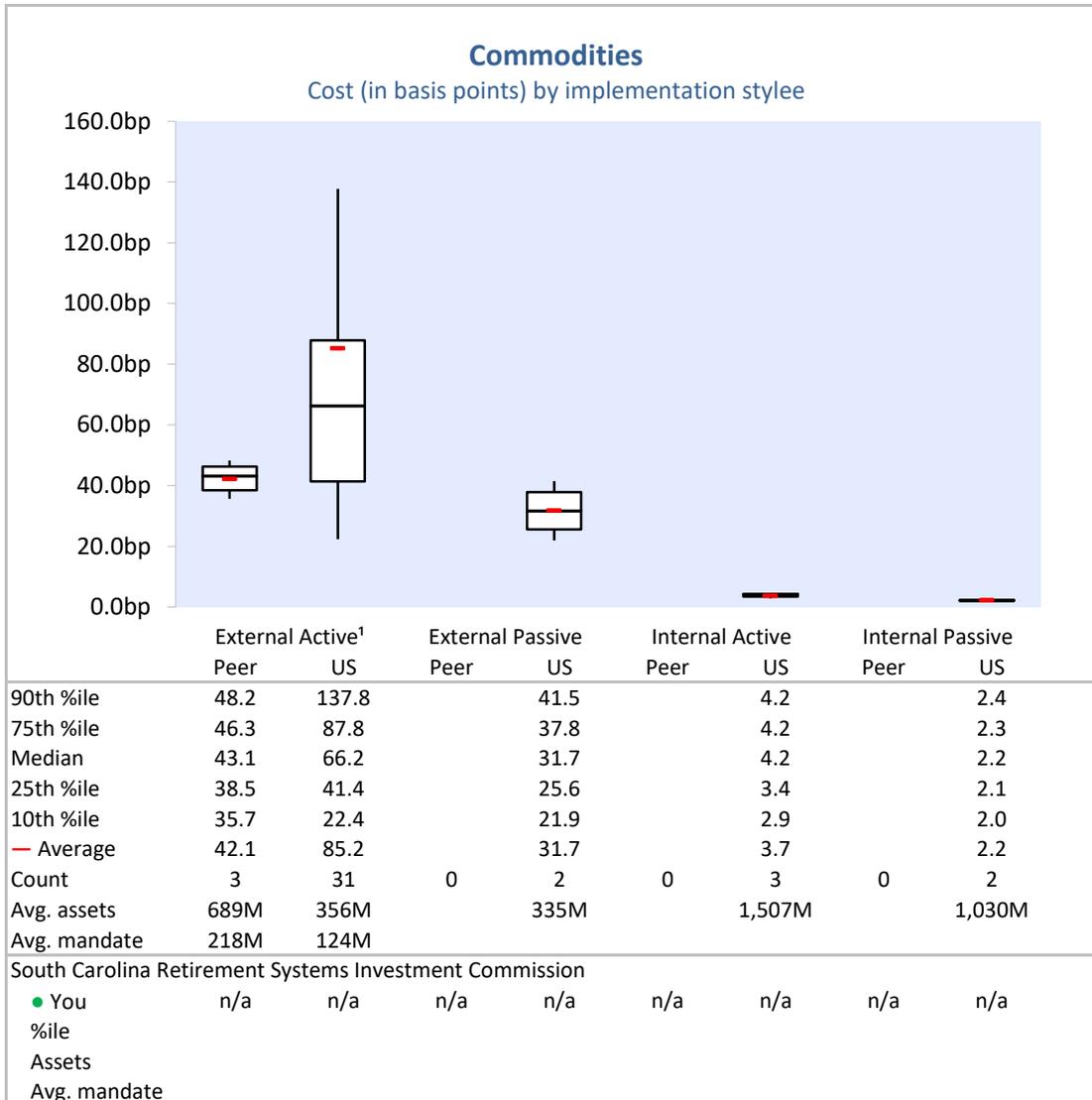
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 5.9 bps for US participants (9 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|-----------------|---------------|
| Base fees | n/a | 48.5 | 51.7 |
| Performance fees* | n/a | 1.7 | 2.2 |
| Internal and other | <u>n/a</u> | <u>0.4</u> | <u>1.4</u> |
| Total | n/a | 50.6 | 55.3 |

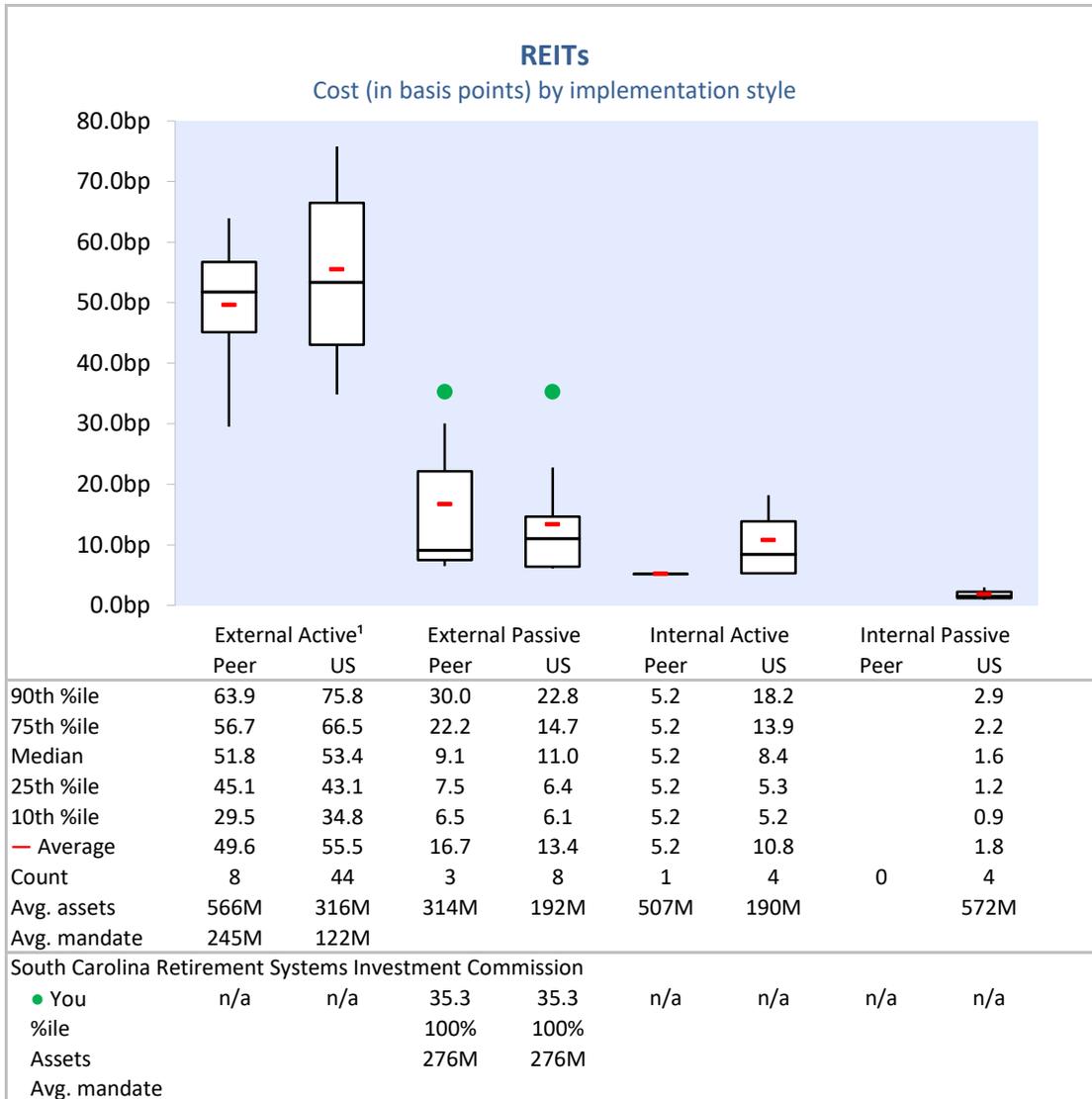
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 6.0 bps for peers (2 funds) and 14.5 bps for US participants (5 funds).



1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|-----------------|---------------|
| Base fees | n/a | 37.9 | 70.5 |
| Performance fees* | n/a | 3.4 | 13.2 |
| Internal and other | <u>n/a</u> | <u>0.8</u> | <u>1.4</u> |
| Total | n/a | 42.1 | 85.2 |

* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 10.2 bps for peers (1 fund) and 41.0 bps for US participants (10 funds).



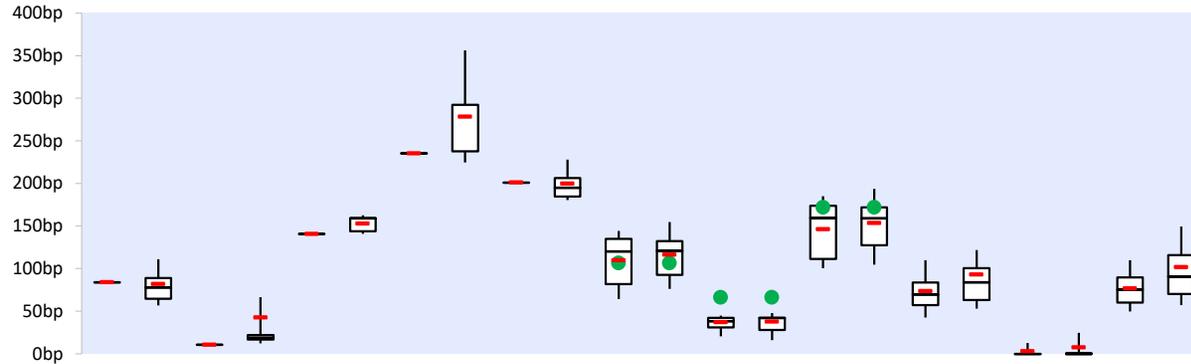
1. Breakdown of external active fees

| | You | Peer Average | US Average |
|--------------------|------------|--------------|------------|
| Base fees | n/a | 45.3 | 53.4 |
| Performance fees* | n/a | 4.1 | 1.9 |
| Internal and other | <u>n/a</u> | <u>0.2</u> | <u>0.2</u> |
| Total | n/a | 49.6 | 55.5 |

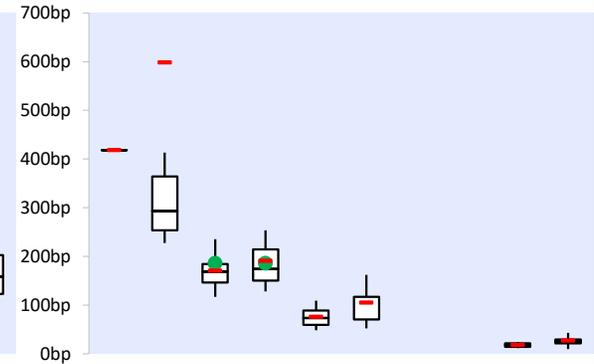
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 33.1 bps for peers (1 fund) and 11.7 bps for US participants (7 funds).

Real Estate ex-REITs

Cost as a % of the amount fees are based on¹



Cost as a % of NAV

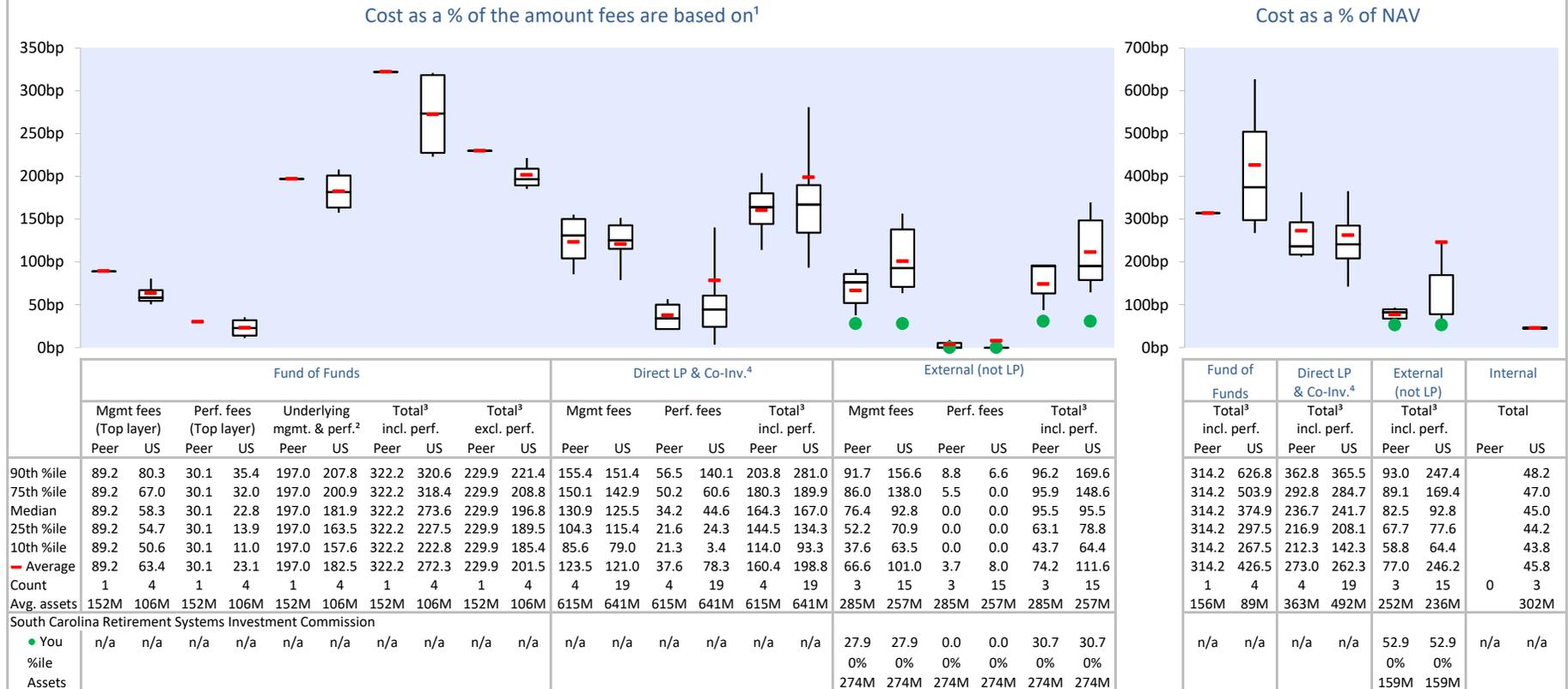


| | Fund of Funds | | | | | | | | | | Direct LP & Co-Inv. ⁴ | | | | | | External (not LP) | | | | | | Fund of Funds | | Direct LP & Co-Inv. ⁴ | | External (not LP) | | Oper. Sub. | | Internal | |
|---|-----------------------|-------|------------------------|------|---------------------------------------|-------|--------------------------------|-------|--------------------------------|-------|----------------------------------|--------|------------|--------|--------------------------------|--------|-------------------|--------|------------|--------|--------------------------------|--------|--------------------------------|-------|----------------------------------|--------|-------------------|--------|------------|-----|----------|--------|
| | Mgmt fees (Top layer) | | Perf. fees (Top layer) | | Underlying mgmt. & perf. ² | | Total ³ incl. perf. | | Total ³ excl. perf. | | Mgmt fees | | Perf. fees | | Total ³ incl. perf. | | Mgmt fees | | Perf. fees | | Total ³ incl. perf. | | Total ³ incl. perf. | | Total | | Total | | Total | | Total | |
| | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US |
| 90th %ile | 84.0 | 110.9 | 10.7 | 66.3 | 140.6 | 162.6 | 235.3 | 356.0 | 201.1 | 227.9 | 144.2 | 154.7 | 44.6 | 47.6 | 184.8 | 193.6 | 109.8 | 121.7 | 12.6 | 24.4 | 109.8 | 149.4 | 418.3 | 413.3 | 235.6 | 253.5 | 109.3 | 162.0 | | | 23.9 | 42.6 |
| 75th %ile | 84.0 | 88.9 | 10.7 | 22.0 | 140.6 | 159.0 | 235.3 | 292.2 | 201.1 | 206.2 | 135.0 | 132.2 | 41.9 | 41.9 | 173.8 | 172.0 | 83.5 | 100.6 | 0.0 | 0.7 | 89.7 | 115.7 | 418.3 | 364.2 | 184.2 | 214.6 | 89.0 | 117.1 | | | 21.6 | 29.3 |
| Median | 84.0 | 78.1 | 10.7 | 19.0 | 140.6 | 159.0 | 235.3 | 251.7 | 201.1 | 195.2 | 120.3 | 121.2 | 38.5 | 41.9 | 159.6 | 159.0 | 69.9 | 83.8 | 0.0 | 0.0 | 75.3 | 90.9 | 418.3 | 293.2 | 168.6 | 174.5 | 73.4 | 88.4 | | | 17.8 | 25.4 |
| 25th %ile | 84.0 | 64.5 | 10.7 | 16.5 | 140.6 | 144.0 | 235.3 | 237.6 | 201.1 | 184.5 | 81.9 | 92.5 | 30.7 | 27.8 | 111.2 | 127.4 | 57.0 | 62.9 | 0.0 | 0.0 | 60.2 | 70.0 | 418.3 | 253.3 | 146.5 | 150.4 | 59.2 | 70.2 | | | 14.0 | 21.5 |
| 10th %ile | 84.0 | 56.6 | 10.7 | 12.2 | 140.6 | 140.9 | 235.3 | 224.5 | 201.1 | 180.4 | 64.3 | 76.2 | 20.2 | 15.8 | 100.5 | 104.4 | 42.4 | 52.9 | 0.0 | 0.0 | 49.7 | 57.2 | 418.3 | 227.6 | 117.2 | 127.7 | 48.4 | 51.8 | | | 11.7 | 9.4 |
| — Average | 84.0 | 81.7 | 10.7 | 42.7 | 140.6 | 152.8 | 235.3 | 278.3 | 201.1 | 199.9 | 109.8 | 116.2 | 37.0 | 37.6 | 146.3 | 153.5 | 73.4 | 92.9 | 2.8 | 7.6 | 76.5 | 101.8 | 418.3 | 598.6 | 170.7 | 190.7 | 75.7 | 104.8 | | | 17.8 | 27.0 |
| Count | 1 | 12 | 1 | 12 | 1 | 12 | 1 | 12 | 1 | 12 | 15 | 78 | 15 | 78 | 15 | 78 | 15 | 87 | 15 | 87 | 15 | 87 | 1 | 12 | 15 | 78 | 15 | 87 | 0 | 0 | 2 | 9 |
| Avg. assets | 380M | 246M | 380M | 246M | 380M | 246M | 380M | 246M | 380M | 246M | 1,976M | 2,188M | 1,976M | 2,188M | 1,976M | 2,188M | 1,996M | 1,397M | 1,996M | 1,397M | 1,996M | 1,397M | 214M | 214M | 1,782M | 1,820M | 2,004M | 1,359M | | | 205M | 1,542M |
| South Carolina Retirement Systems Investment Commission | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ● You | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 106.4 | 106.4 | 66.3 | 66.3 | 172.0 | 172.0 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 186.0 | 186.0 | n/a | n/a | n/a | n/a | n/a | n/a |
| %ile | | | | | | | | | | | 36% | 35% | 100% | 96% | 71% | 75% | | | | | | | | | 79% | 60% | | | | | | |
| Assets | | | | | | | | | | | 1,614M | 1,614M | 1,614M | 1,614M | 1,614M | 1,614M | | | | | | | | | 1,493M | 1,493M | | | | | | |

- The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.
- The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 117 bps (on amount fees are based on) for underlying management fees and 42 bps (on NAV) for underlying performance fees were used.
- The total cost also includes the internal cost of monitoring and selecting real estate investments. Your cost of monitoring and selecting was 2.6 bps for LPs. The peer average cost of monitoring and selecting was 0.0 bps for fund of funds, 2.1 bps for LPs and 0.3 bps for external (not LPs).
- Co-investment is included with direct LPs because it can only be done alongside direct LPs. CEM uses this combined style in its benchmark cost analysis to ensure funds that reduce their costs by using co-investment receive benchmark credit. Co-investment is done by 2 of your peers and 4 of the U.S. funds.

Real Estate Limited Partnerships: Fees are the weighted average management fee of 105 bps per the partnership level detail provided by you. This replaces the cost you provided on the main survey of 123 bps (20 million).

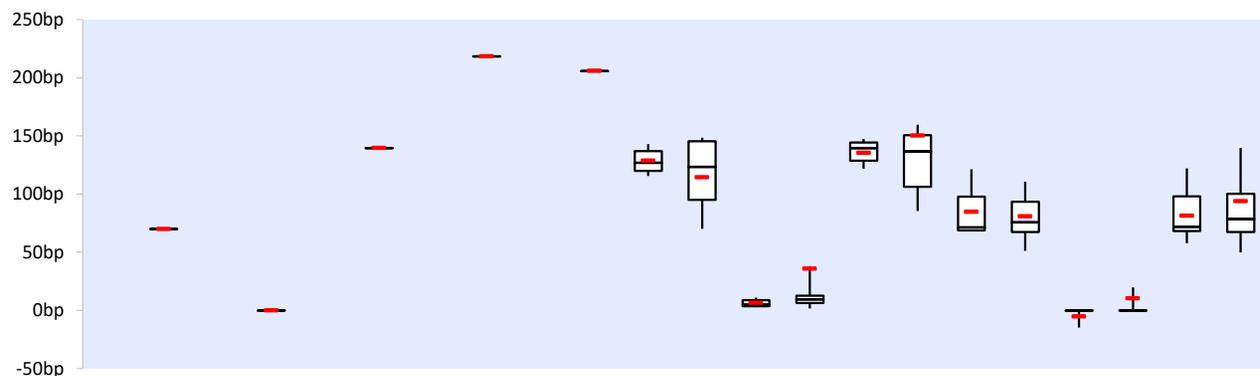
Infrastructure



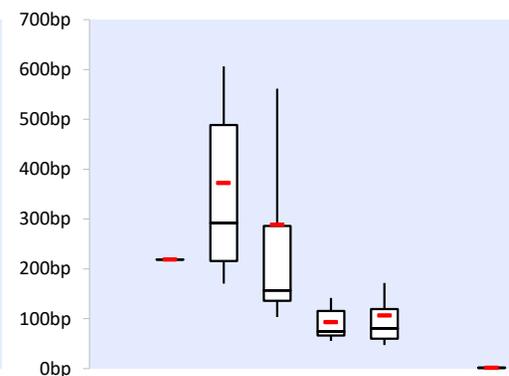
- The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.
- The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 135 bps (on amount fees are based on) for underlying management fees and 61 bps (on NAV) for underlying performance fees were used.
- The total cost also includes the internal cost of monitoring and selecting infrastructure investments. Your cost of monitoring and selecting was 2.8 bps for external (not LPs). The peer average cost of monitoring and selecting was 5.9 bps for fund of funds, 2.2 bps for LPs and 3.9 bps for external (not LPs).
- Co-investment is included with direct LPs because it can only be done alongside direct LPs. CEM uses this combined style in its benchmark cost analysis to ensure funds that reduce their costs by using co-investment receive benchmark credit. Co-investment is done by none of your peers and 1 of the U.S. funds.

Natural Resources

Cost as a % of the amount fees are based on¹

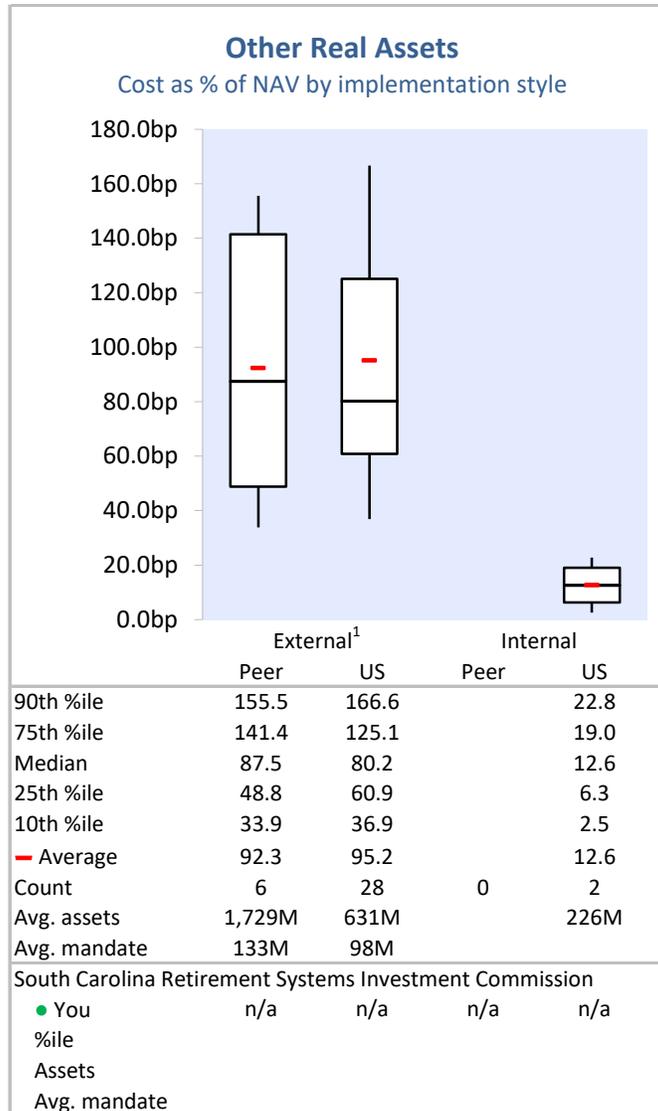


Cost as a % of NAV



| | Fund of Funds | | | | | | | | | | Direct LP & Co-Inv. ⁴ | | | | | | External (not LP) | | | | | | Fund of Funds | | Direct LP & Co-Inv. ⁴ | | External (not LP) | | Internal | |
|---|-----------------------|------|------------------------|------|---------------------------------------|-------|--------------------------------|-------|--------------------------------|-------|----------------------------------|--------|------------|--------|--------------------------------|--------|-------------------|-------|------------|-------|--------------------------------|-------|--------------------------------|------|----------------------------------|------|--------------------------------|------|--------------------------------|----|
| | Mgmt fees (Top layer) | | Perf. fees (Top layer) | | Underlying mgmt. & perf. ² | | Total ³ incl. perf. | | Total ³ excl. perf. | | Mgmt fees | | Perf. fees | | Total ³ incl. perf. | | Mgmt fees | | Perf. fees | | Total ³ incl. perf. | | Total ³ incl. perf. | | Total ³ incl. perf. | | Total ³ incl. perf. | | Total ³ incl. perf. | |
| | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US |
| 90th %ile | | 70.0 | | 0.0 | | 139.7 | | 218.6 | | 206.0 | | 143.0 | 148.3 | 11.1 | 38.0 | 147.3 | 159.7 | 121.4 | 110.7 | 0.2 | 19.7 | 122.1 | 139.6 | | | | | | | |
| 75th %ile | | 70.0 | | 0.0 | | 139.7 | | 218.6 | | 206.0 | | 137.0 | 145.4 | 8.8 | 12.6 | 144.4 | 150.6 | 97.9 | 93.3 | 0.0 | 0.0 | 98.2 | 100.1 | | | | | | | |
| Median | | 70.0 | | 0.0 | | 139.7 | | 218.6 | | 206.0 | | 127.1 | 123.6 | 5.0 | 9.5 | 139.7 | 137.1 | 71.5 | 75.9 | 0.0 | 0.0 | 72.0 | 78.6 | | | | | | | |
| 25th %ile | | 70.0 | | 0.0 | | 139.7 | | 218.6 | | 206.0 | | 119.9 | 95.0 | 3.6 | 6.3 | 128.6 | 106.2 | 68.7 | 67.4 | 0.0 | 0.0 | 68.3 | 67.4 | | | | | | | |
| 10th %ile | | 70.0 | | 0.0 | | 139.7 | | 218.6 | | 206.0 | | 115.5 | 70.3 | 2.8 | 1.6 | 122.0 | 85.5 | 67.8 | 51.4 | -14.9 | 0.0 | 57.7 | 49.9 | | | | | | | |
| Average | | 70.0 | | 0.0 | | 139.7 | | 218.6 | | 206.0 | | 128.9 | 114.6 | 6.6 | 35.9 | 135.5 | 150.4 | 84.8 | 81.0 | -5.2 | 10.4 | 81.6 | 94.0 | | | | | | | |
| Count | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 3 | 18 | 3 | 18 | 3 | 18 | 7 | 26 | 7 | 26 | 7 | 26 | 0 | 1 | 0 | 1 | 0 | 2 | | |
| Avg. assets | | 351M | | 351M | | 351M | | 351M | | 351M | 448M | 1,094M | 448M | 1,094M | 448M | 1,094M | 656M | 314M | 656M | 314M | 656M | 314M | 351M | 351M | 513M | 254M | 268M | 268M | | |
| South Carolina Retirement Systems Investment Commission | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ● You %ile Assets | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | |

- The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.
- The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 127 bps (on amount fees are based on) for underlying management fees and 13 bps (on NAV) for underlying performance fees were used.
- The total cost also includes the internal cost of monitoring and selecting natural resources investments. The peer average cost of monitoring and selecting was 1.2 bps for LPs and 2.0 bps for external (not LPs).
- Co-investment is included with direct LPs because it can only be done alongside direct LPs. CEM uses this combined style in its benchmark cost analysis to ensure funds that reduce their costs by using co-investment receive benchmark credit. Co-investment is done by none of your peers and 1 of the U.S. funds.



1. Breakdown of external fees

| | Your Plan | Peer Average | US Average |
|--------------------|------------|--------------|------------|
| Base fees | n/a | 90.4 | 93.0 |
| Internal and other | <u>n/a</u> | <u>1.9</u> | <u>2.1</u> |
| Total† | n/a | 92.3 | 95.2 |
| Performance fees* | n/a | 0.0 | 6.3 |

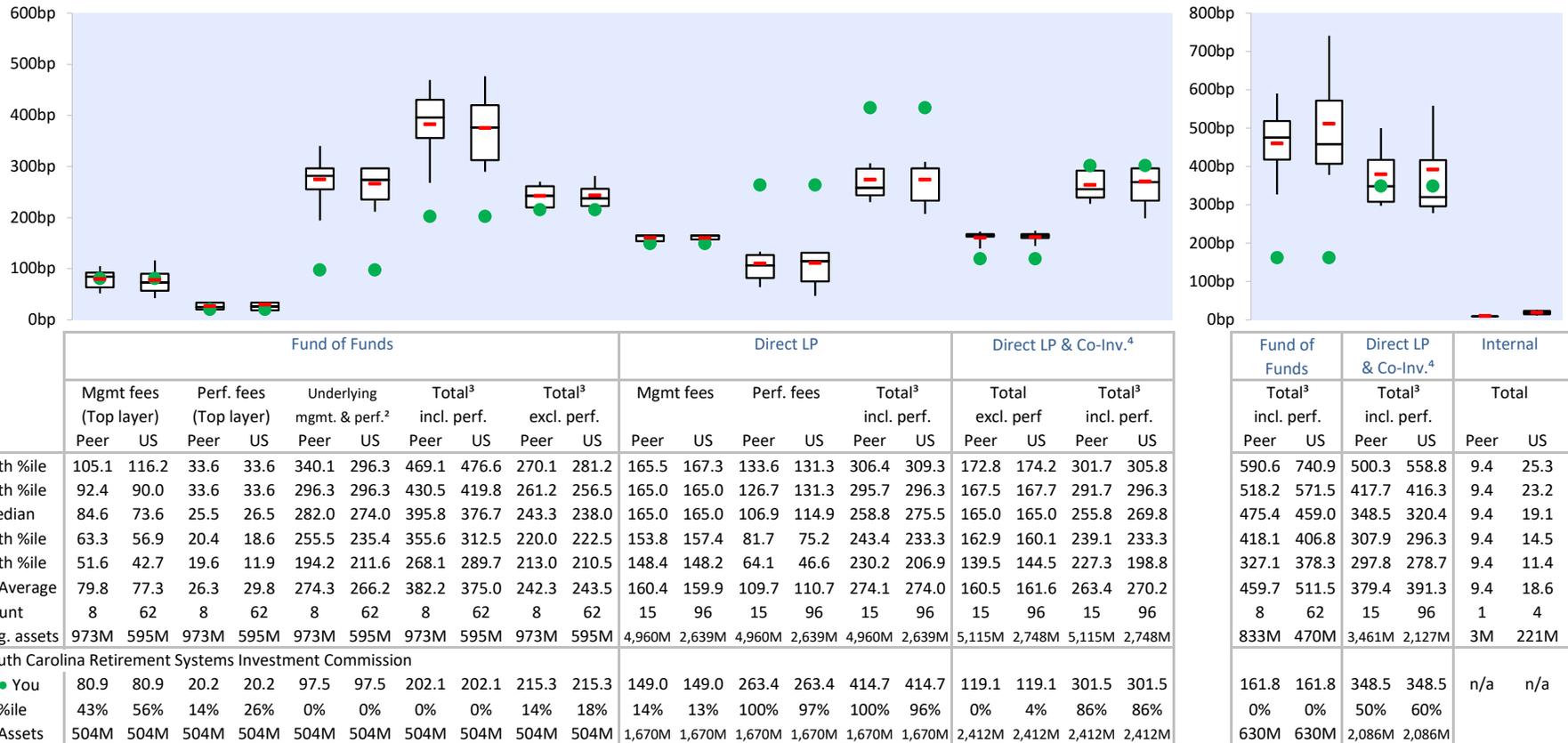
† Total cost excludes performance fees because most participants did not provide performance fees for other real assets.

* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 0.0 bps for peers (6 funds) and 6.3 bps for US participants (28 funds).

Diversified Private Equity

Cost as a % of the amount fees are based on¹

Cost as a % of NAV

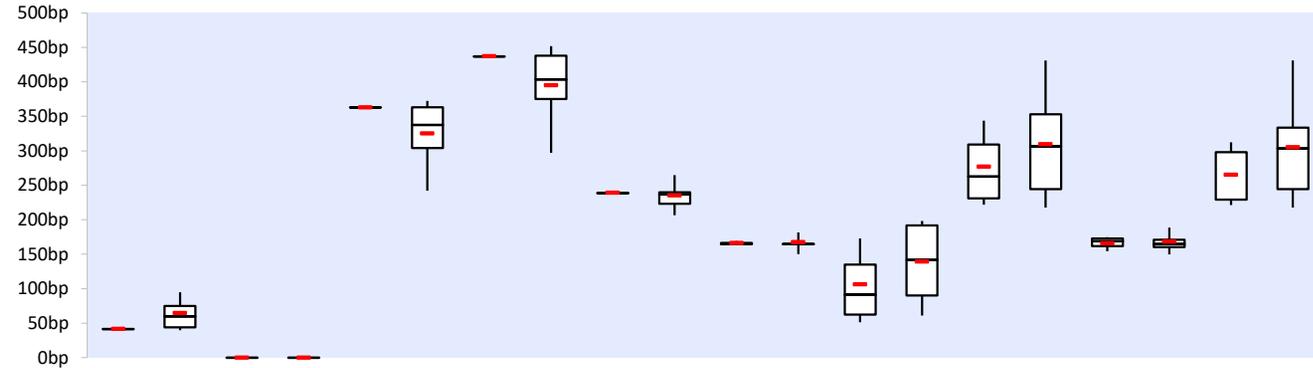


- The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.
- The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 165 bps (on amount fees are based on) for underlying management fees and 131 bps (on NAV) for underlying performance fees were used.
- The total cost also includes the internal cost of monitoring and selecting private equity investments. Your cost of monitoring and selecting was 3.5 bps for fund of funds and 2.3 bps for LPs. The peer average cost of monitoring and selecting was 1.7 bps for fund of funds and 4.0 bps for LPs.
- Co-investment is included with direct LPs because it can only be done alongside direct LPs. CEM uses this combined style in its benchmark cost analysis to ensure funds that reduce their costs by using co-investment receive benchmark credit. Co-investment is done by 3 of your peers and 8 of the U.S. funds.

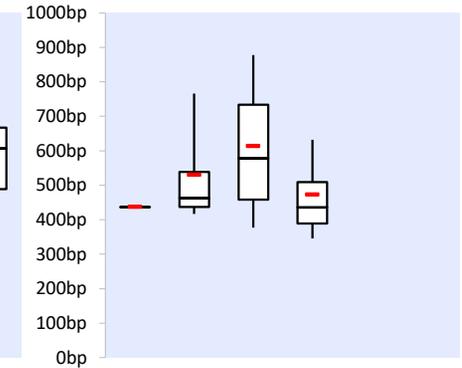
Diversified Private Equity Direct LPs: Fees are the weighted average management fee of 149 bps per the partnership level detail provided by you. This replaces the cost you provided on the main survey of 132 bps (22 million).

LBO

Cost as a % of the amount fees are based on¹



Cost as a % of NAV

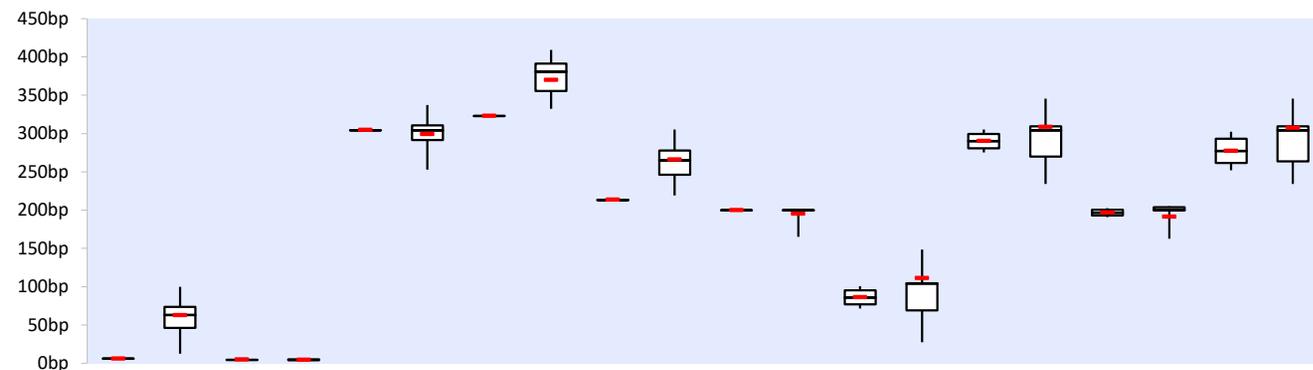


| | Fund of Funds | | | | | | | | | | Direct LP | | | | Direct LP & Co-Inv. ⁴ | | | | Fund of Funds | | Direct LP & Co-Inv. ⁴ | | Internal | | | | |
|---|-----------------------|------|------------------------|------|---------------------------------------|-------|--------------------------------|-------|--------------------------------|-------|-----------|--------|------------|--------|----------------------------------|--------|-------------------|--------|--------------------------------|--------|----------------------------------|-------|----------|--------|-----|-----|-----|
| | Mgmt fees (Top layer) | | Perf. fees (Top layer) | | Underlying mgmt. & perf. ² | | Total ³ incl. perf. | | Total ³ excl. perf. | | Mgmt fees | | Perf. fees | | Total ³ incl. perf. | | Total excl. perf. | | Total ³ incl. perf. | | Total ³ incl. perf. | | Total | | | | |
| | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | | | |
| | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | | | |
| 90th %ile | 41.8 | 94.8 | 0.0 | 0.0 | 363.1 | 372.2 | 437.1 | 452.0 | 239.0 | 264.6 | 168.9 | 181.6 | 172.8 | 198.1 | 343.8 | 430.9 | 174.6 | 188.4 | 312.5 | 430.9 | 437.1 | 765.5 | 877.6 | 631.9 | | | |
| 75th %ile | 41.8 | 75.0 | 0.0 | 0.0 | 363.1 | 363.1 | 437.1 | 438.1 | 239.0 | 240.0 | 166.4 | 165.0 | 134.9 | 191.8 | 308.9 | 352.7 | 172.8 | 171.1 | 297.8 | 333.4 | 437.1 | 539.1 | 733.3 | 509.4 | | | |
| Median | 41.8 | 59.9 | 0.0 | 0.0 | 363.1 | 337.7 | 437.1 | 403.6 | 239.0 | 237.0 | 165.0 | 165.0 | 91.3 | 141.9 | 262.7 | 306.9 | 169.0 | 165.0 | 261.7 | 303.4 | 437.1 | 463.0 | 578.6 | 436.5 | | | |
| 25th %ile | 41.8 | 44.1 | 0.0 | 0.0 | 363.1 | 304.2 | 437.1 | 375.2 | 239.0 | 223.0 | 165.0 | 165.0 | 62.6 | 89.9 | 230.8 | 244.2 | 161.9 | 160.2 | 229.3 | 244.2 | 437.1 | 437.1 | 458.7 | 388.9 | | | |
| 10th %ile | 41.8 | 39.9 | 0.0 | 0.0 | 363.1 | 241.9 | 437.1 | 297.1 | 239.0 | 206.8 | 165.0 | 150.3 | 51.4 | 60.8 | 221.7 | 217.7 | 154.3 | 149.7 | 221.1 | 217.7 | 437.1 | 416.6 | 376.9 | 345.4 | | | |
| — Average | 41.8 | 64.4 | 0.0 | 0.0 | 363.1 | 325.1 | 437.1 | 395.1 | 239.0 | 235.0 | 166.4 | 167.6 | 106.2 | 139.2 | 277.0 | 309.6 | 165.7 | 168.4 | 265.4 | 305.3 | 437.1 | 530.7 | 613.4 | 473.2 | | | |
| Count | 1 | 9 | 1 | 9 | 1 | 9 | 1 | 9 | 1 | 9 | 4 | 26 | 4 | 26 | 4 | 26 | 4 | 26 | 4 | 26 | 1 | 9 | 4 | 26 | 0 | 0 | |
| Avg. assets | 18M | 305M | 18M | 305M | 18M | 305M | 18M | 305M | 18M | 305M | 2,547M | 2,479M | 2,547M | 2,479M | 2,547M | 2,479M | 2,709M | 2,523M | 2,709M | 2,523M | 18M | 213M | 1,710M | 1,803M | | | |
| South Carolina Retirement Systems Investment Commission | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ● You | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| %ile | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Assets | | | | | | | | | | | | | | | | | | | | | | | | | | | |

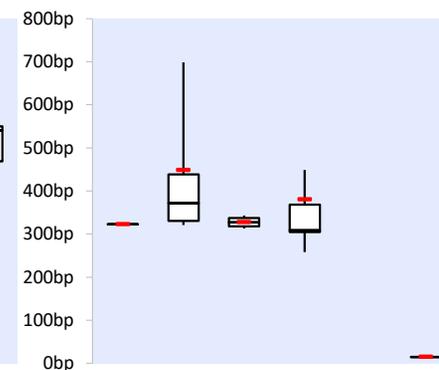
1. The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.
 2. The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 165 bps (on amount fees are based on) for underlying management fees and 198 bps (on NAV) for underlying performance fees were used.
 3. The total cost also includes the internal cost of monitoring and selecting private equity investments. The peer average cost of monitoring and selecting was 32.2 bps for fund of funds and 4.5 bps for LPs.
 4. Co-investment is included with direct LPs because it can only be done alongside direct LPs. CEM uses this combined style in its benchmark cost analysis to ensure funds that reduce their costs by using co-investment receive benchmark credit. Co-investment is done by 2 of your peers and 3 of the U.S. funds.

Venture Capital

Cost as a % of the amount fees are based on¹



Cost as a % of NAV



| | Fund of Funds | | | | | | | | | | Direct LP | | | | Direct LP & Co-Inv. ⁴ | | | | Fund of Funds | | Direct LP & Co-Inv. ⁴ | | Internal | | | | | |
|---|-----------------------|------|------------------------|------|---------------------------------------|-------|--------------------------------|-------|--------------------------------|-------|-----------|-------|------------|-------|----------------------------------|-------|--------------------------------|-------|--------------------------------|-------|----------------------------------|-------|----------|-------|-----|-----|------|-----|
| | Mgmt fees (Top layer) | | Perf. fees (Top layer) | | Underlying mgmt. & perf. ² | | Total ³ incl. perf. | | Total ³ excl. perf. | | Mgmt fees | | Perf. fees | | Total ³ incl. perf. | | Total ³ excl. perf. | | Total ³ incl. perf. | | Total | | | | | | | |
| | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | | | | | | |
| 90th %ile | 6.3 | 99.9 | 4.9 | 6.4 | 304.6 | 337.2 | 323.0 | 409.4 | 213.5 | 305.2 | 200.0 | 200.0 | 100.9 | 148.7 | 305.1 | 345.7 | 202.8 | 205.0 | 302.5 | 345.7 | 323.0 | 698.6 | 342.9 | 448.5 | | | 14.8 | |
| 75th %ile | 6.3 | 73.8 | 4.9 | 5.1 | 304.6 | 310.5 | 323.0 | 391.4 | 213.5 | 277.8 | 200.0 | 200.0 | 95.5 | 104.6 | 299.5 | 309.3 | 200.5 | 204.0 | 293.1 | 309.3 | 323.0 | 438.7 | 337.2 | 368.7 | | | 14.8 | |
| Median | 6.3 | 63.1 | 4.9 | 4.9 | 304.6 | 304.6 | 323.0 | 380.8 | 213.5 | 265.4 | 200.0 | 200.0 | 86.3 | 104.6 | 290.2 | 304.6 | 196.8 | 200.0 | 277.4 | 304.6 | 323.0 | 371.7 | 327.7 | 309.3 | | | 14.8 | |
| 25th %ile | 6.3 | 46.3 | 4.9 | 4.3 | 304.6 | 291.4 | 323.0 | 355.4 | 213.5 | 246.3 | 200.0 | 200.0 | 77.2 | 69.1 | 280.9 | 269.8 | 193.1 | 200.0 | 261.7 | 263.8 | 323.0 | 330.8 | 318.3 | 304.6 | | | 14.8 | |
| 10th %ile | 6.3 | 12.4 | 4.9 | 2.5 | 304.6 | 252.9 | 323.0 | 332.2 | 213.5 | 219.1 | 200.0 | 165.0 | 71.7 | 27.6 | 275.3 | 234.1 | 190.8 | 162.5 | 252.2 | 234.1 | 323.0 | 320.7 | 312.6 | 258.3 | | | 14.8 | |
| — Average | 6.3 | 63.0 | 4.9 | 4.5 | 304.6 | 299.4 | 323.0 | 370.1 | 213.5 | 266.2 | 200.0 | 195.3 | 86.3 | 111.5 | 290.2 | 308.4 | 196.8 | 191.5 | 277.4 | 307.5 | 323.0 | 448.4 | 327.7 | 380.5 | | | 14.8 | |
| Count | 1 | 14 | 1 | 14 | 1 | 14 | 1 | 14 | 1 | 14 | 2 | 30 | 2 | 30 | 2 | 30 | 2 | 31 | 2 | 30 | 1 | 14 | 2 | 30 | 0 | 1 | | |
| Avg. assets | 179M | 346M | 179M | 346M | 179M | 346M | 179M | 346M | 179M | 346M | 460M | 401M | 460M | 401M | 460M | 401M | 493M | 396M | 493M | 396M | 179M | 373M | 436M | 377M | | | 374M | |
| South Carolina Retirement Systems Investment Commission | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ● You | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| %ile | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Assets | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

1. The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.

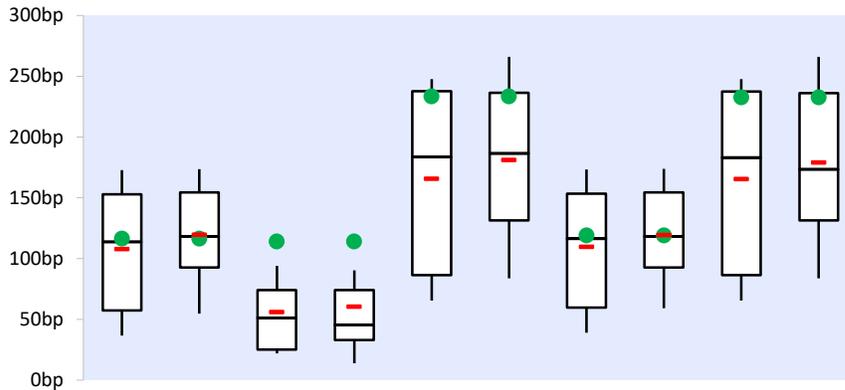
2. The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 200 bps (on amount fees are based on) for underlying management fees and 105 bps (on NAV) for underlying performance fees were used.

3. The total cost also includes the internal cost of monitoring and selecting private equity investments. The peer average cost of monitoring and selecting was 7.3 bps for fund of funds and 3.9 bps for LPs.

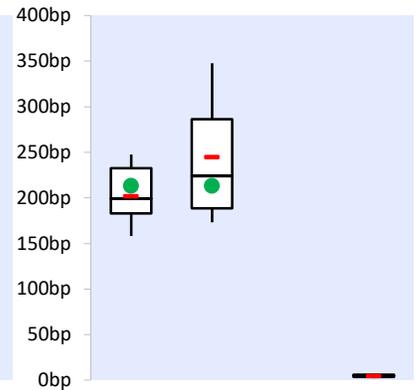
4. Co-investment is included with direct LPs because it can only be done alongside direct LPs. CEM uses this combined style in its benchmark cost analysis to ensure funds that reduce their costs by using co-investment receive benchmark credit. Co-investment is done by 1 of your peers and 3 of the U.S. funds.

Other Private Equity

Cost as a % of the amount fees are based on¹



Cost as a % of NAV



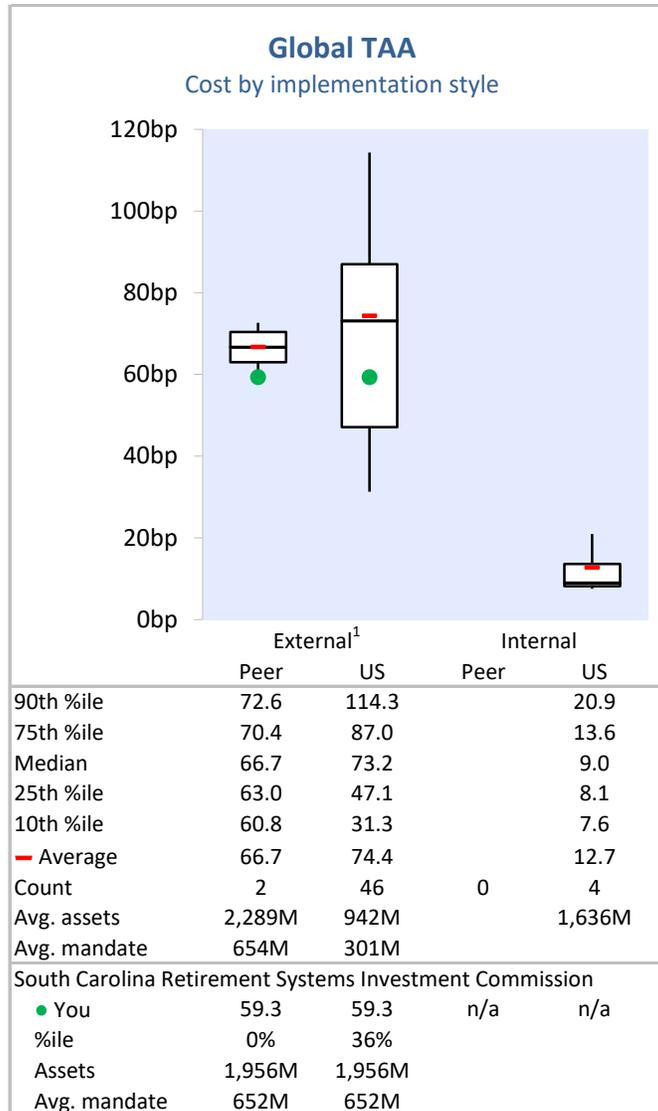
| | Direct LP | | | | | | Direct LP & Co-Inv. ³ | | | | Direct LP & Co-Inv. ³ | | Internal | |
|---|-----------|--------|------------|--------|-----------------------------------|--------|----------------------------------|-------|-----------------------------------|-------|-----------------------------------|-------|----------|------|
| | Mgmt fees | | Perf. fees | | Total ² incl. perf. | | Total excl. perf | | Total ² incl. perf. | | Total ² incl. perf. | | Total | |
| | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US |
| 90th %ile | 172.8 | 173.5 | 94.1 | 90.4 | 247.6 | 266.1 | 173.4 | 174.0 | 247.6 | 266.1 | 247.6 | 347.9 | | 6.1 |
| 75th %ile | 152.8 | 154.5 | 74.2 | 74.2 | 237.8 | 236.4 | 153.5 | 154.5 | 237.6 | 236.2 | 232.7 | 286.2 | | 5.9 |
| Median | 114.0 | 118.4 | 51.5 | 45.7 | 183.8 | 186.8 | 116.5 | 118.4 | 183.4 | 173.5 | 199.3 | 224.1 | | 5.5 |
| 25th %ile | 57.4 | 92.8 | 25.3 | 33.0 | 86.4 | 131.4 | 59.8 | 92.8 | 86.4 | 131.4 | 182.9 | 188.6 | | 3.5 |
| 10th %ile | 36.7 | 54.8 | 22.2 | 14.1 | 65.5 | 83.8 | 39.0 | 59.1 | 65.5 | 83.8 | 158.0 | 173.3 | | 2.3 |
| — Average | 107.8 | 119.6 | 55.9 | 60.4 | 165.6 | 181.2 | 109.6 | 119.4 | 165.5 | 179.1 | 201.6 | 244.5 | | 4.4 |
| Count | 6 | 27 | 6 | 27 | 6 | 27 | 6 | 27 | 6 | 27 | 6 | 27 | 0 | 3 |
| Avg. assets | 1,415M | 1,017M | 1,415M | 1,017M | 1,415M | 1,017M | | | | | | | | 102M |
| South Carolina Retirement Systems Investment Commission | | | | | | | | | | | | | | |
| ● You | 116.4 | 116.4 | 114.1 | 114.1 | 233.6 | 233.6 | 119.1 | 119.1 | 232.7 | 232.7 | 213.2 | 213.2 | n/a | n/a |
| %ile | 60% | 46% | 100% | 92% | 60% | 73% | 60% | 54% | 60% | 69% | 60% | 35% | | |
| Assets | 1,472M | 1,472M | 1,472M | 1,472M | 1,472M | 1,472M | | | | | | | | |

1. The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.

2. The total cost also includes the internal cost of monitoring and selecting private equity investments. Your cost of monitoring and selecting was 3.1 bps for LPs. The peer average cost of monitoring and selecting was 1.9 bps for LPs.

3. Co-investment is included with direct LPs in CEM's benchmark cost analysis because it reduces the cost of investing in direct LPs. Co-investment is done by 1 of your peers and 2 of the U.S. funds.

Other Private Equity: Fees are the weighted average management fee of 116 bps per the partnership level detail provided by you. This replaces the cost you



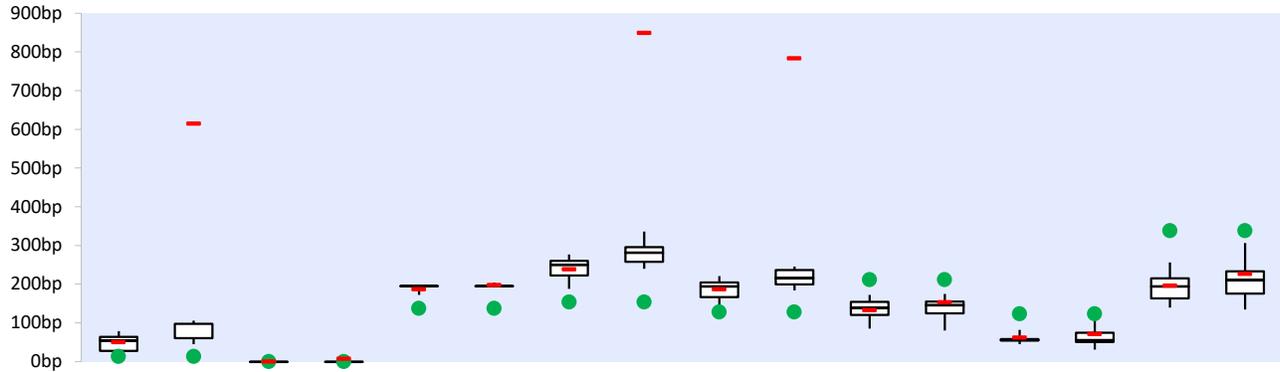
1. Breakdown of External fees

| | Your Plan | Peer Average | US Average |
|--------------------|------------|--------------|------------|
| Base fees | 52.3 | 53.7 | 68.3 |
| Performance fees* | 4.1 | 11.0 | 5.0 |
| Internal and other | <u>2.8</u> | <u>2.0</u> | <u>1.1</u> |
| Total | 59.3 | 66.7 | 74.4 |

* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 11.0 bps for peers (2 funds) and 8.0 bps for US participants (29 funds).

Hedge Funds

Cost by implementation style

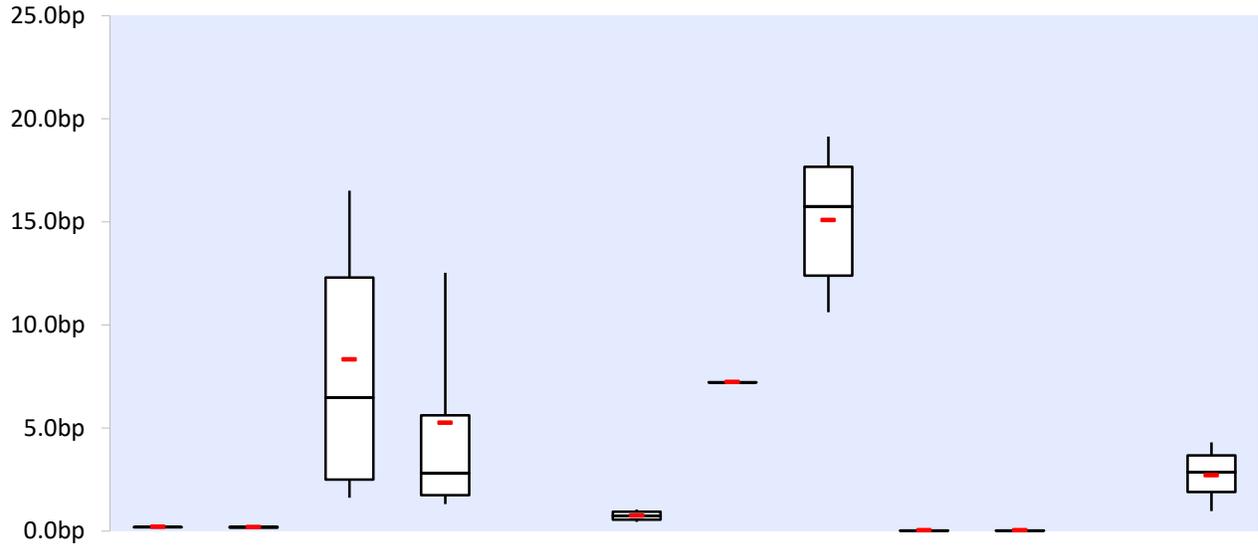


| | Fund of Funds | | | | | | | | | | External direct | | | | | |
|---|-----------------------|--------|------------------------|--------|---------------------------------------|--------|--------------------------------|--------|--------------------------------|--------|-----------------|--------|------------|--------|--------------------------------|--------|
| | Mgmt fees (Top layer) | | Perf. fees (Top layer) | | Underlying mgmt. & perf. ¹ | | Total ² incl. perf. | | Total ² excl. perf. | | Mgmt fees | | Perf. fees | | Total ² incl. perf. | |
| | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US |
| 90th %ile | 79.1 | 105.9 | 0.0 | 14.6 | 195.2 | 204.1 | 276.9 | 335.7 | 220.9 | 245.1 | 172.1 | 174.6 | 82.3 | 112.8 | 256.1 | 305.9 |
| 75th %ile | 63.7 | 97.4 | 0.0 | 0.0 | 195.2 | 195.2 | 260.3 | 295.2 | 204.3 | 236.6 | 154.1 | 155.4 | 58.2 | 74.8 | 215.4 | 233.1 |
| Median | 55.0 | 73.3 | 0.0 | 0.0 | 195.2 | 195.2 | 250.2 | 282.0 | 194.3 | 215.7 | 139.3 | 146.3 | 56.0 | 56.0 | 194.2 | 211.0 |
| 25th %ile | 27.7 | 60.5 | 0.0 | 0.0 | 195.2 | 195.2 | 222.9 | 257.5 | 166.9 | 199.7 | 120.7 | 124.3 | 54.8 | 51.0 | 163.3 | 175.9 |
| 10th %ile | 14.4 | 44.9 | 0.0 | 0.0 | 172.2 | 195.2 | 187.8 | 240.1 | 144.1 | 184.1 | 85.5 | 80.2 | 45.2 | 31.3 | 139.1 | 135.0 |
| — Average | 50.1 | 614.5 | 0.0 | 7.3 | 187.0 | 197.7 | 238.3 | 849.1 | 186.7 | 782.8 | 132.5 | 153.1 | 61.8 | 71.3 | 196.5 | 226.8 |
| Count | 7 | 59 | 7 | 59 | 7 | 59 | 7 | 59 | 7 | 59 | 8 | 73 | 8 | 73 | 8 | 73 |
| Avg. assets | 1,486M | 554M | 1,486M | 554M | 1,486M | 554M | 1,486M | 554M | 1,486M | 554M | 2,982M | 1,813M | 2,982M | 1,813M | 2,982M | 1,813M |
| South Carolina Retirement Systems Investment Commission | | | | | | | | | | | | | | | | |
| ● You | 13.1 | 13.1 | 0.0 | 0.0 | 137.7 | 137.7 | 153.6 | 153.6 | 128.5 | 128.5 | 212.0 | 212.0 | 123.6 | 123.6 | 338.5 | 338.5 |
| %ile | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 94% | 100% | 93% | 100% | 94% |
| Assets | 1,985M | 1,985M | 1,985M | 1,985M | 1,985M | 1,985M | 1,985M | 1,985M | 1,985M | 1,985M | 1,232M | 1,232M | 1,232M | 1,232M | 1,232M | 1,232M |

1. The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 139 bps (on NAV) for underlying management fees and 56 bps (on NAV) for underlying performance fees were used.

2. The total cost also includes the internal cost of monitoring and selecting hedge fund investments. Your cost of monitoring and selecting was 2.8 bps for fund of funds and 2.8 bps for external direct. The peer average cost of monitoring and selecting was 1.2 bps for fund of funds and 2.2 bps for external direct.

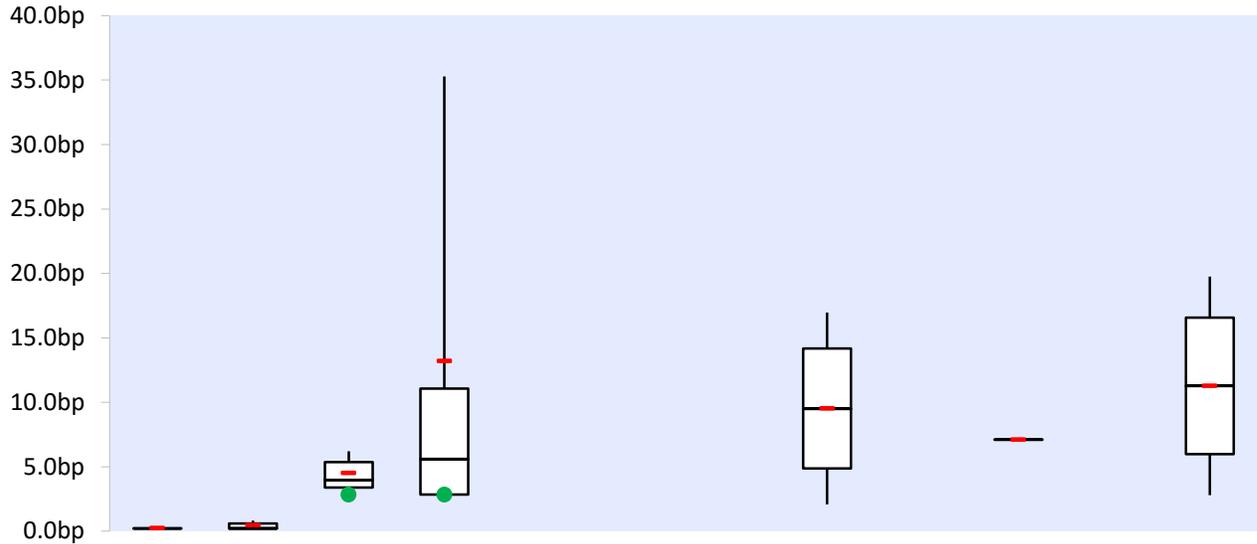
Overlays: currency, duration
Cost by implementation style



| | Currency Hedge | | | | Discretionary Currency | | | | Duration Management | | | |
|---|----------------|--------|---------------|--------|------------------------|---------|---------------|--------|---------------------|--------|---------------|--------|
| | Internal | | External | | Internal | | External | | Internal | | External | |
| | % of notional | | % of notional | | % of notional | | % of notional | | % of notional | | % of notional | |
| | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US |
| 90th %ile | 0.2 | 0.2 | 16.5 | 12.5 | 1.1 | 7.2 | 19.1 | 0.0 | 0.0 | 0.0 | 4.3 | |
| 75th %ile | 0.2 | 0.2 | 12.3 | 5.6 | 0.9 | 7.2 | 17.7 | 0.0 | 0.0 | 0.0 | 3.7 | |
| Median | 0.2 | 0.2 | 6.5 | 2.8 | 0.8 | 7.2 | 15.8 | 0.0 | 0.0 | 0.0 | 2.9 | |
| 25th %ile | 0.2 | 0.2 | 2.5 | 1.7 | 0.6 | 7.2 | 12.4 | 0.0 | 0.0 | 0.0 | 1.9 | |
| 10th %ile | 0.2 | 0.2 | 1.6 | 1.3 | 0.4 | 7.2 | 10.6 | 0.0 | 0.0 | 0.0 | 1.0 | |
| — Average | 0.2 | 0.2 | 8.3 | 5.3 | 0.8 | 7.2 | 15.1 | 0.0 | 0.0 | 0.0 | 2.7 | |
| Count | 1 | 3 | 4 | 18 | 0 | 2 | 1 | 8 | 1 | 1 | 0 | 4 |
| Avg. notional | 117M | 2,245M | 2,696M | 1,585M | | 14,973M | 3,086M | 2,509M | 1,828M | 1,828M | | 1,551M |
| South Carolina Retirement Systems Investment Commission | | | | | | | | | | | | |
| ● You | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| %ile | | | | | | | | | | | | |
| Notional | | | | | | | | | | | | |

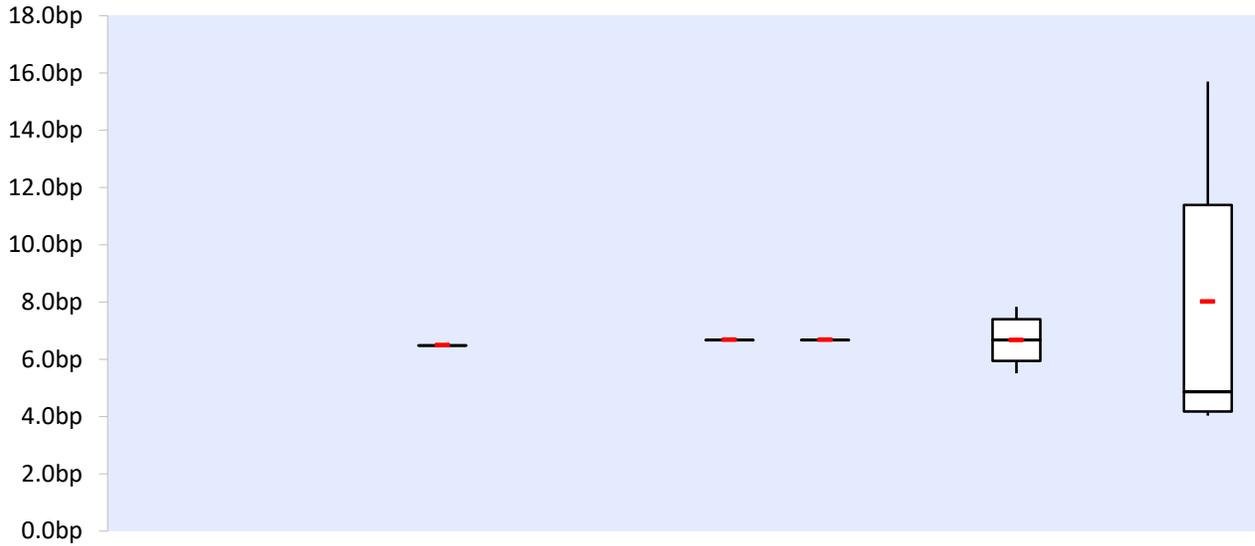
Overlays: passive beta/rebalancing, global TAA, policy tilt TAA

Cost by implementation style



| | Passive Beta/Rebalancing | | | | Global TAA | | | | Policy Tilt TAA | | | |
|---|--------------------------|--------|---------------|--------|---------------|-----|---------------|--------|-----------------|------|---------------|--------|
| | Internal | | External | | Internal | | External | | Internal | | External | |
| | % of notional | | % of notional | | % of notional | | % of notional | | % of notional | | % of notional | |
| | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US |
| 90th %ile | 0.2 | 0.8 | 6.2 | 35.3 | | | | 17.0 | | 7.1 | | 19.8 |
| 75th %ile | 0.2 | 0.6 | 5.4 | 11.1 | | | | 14.2 | | 7.1 | | 16.6 |
| Median | 0.2 | 0.2 | 4.0 | 5.6 | | | | 9.5 | | 7.1 | | 11.3 |
| 25th %ile | 0.2 | 0.2 | 3.4 | 2.8 | | | | 4.9 | | 7.1 | | 6.0 |
| 10th %ile | 0.2 | 0.2 | 3.1 | 2.4 | | | | 2.1 | | 7.1 | | 2.8 |
| — Average | 0.2 | 0.5 | 4.5 | 13.2 | | | | 9.5 | | 7.1 | | 11.3 |
| Count | 1 | 3 | 3 | 26 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 2 |
| Avg. notional | 759M | 3,328M | 2,206M | 1,364M | | | | 1,005M | | 323M | | 3,859M |
| South Carolina Retirement Systems Investment Commission | | | | | | | | | | | | |
| ● You | n/a | n/a | 2.8 | 2.8 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| %ile | | | 0% | 24% | | | | | | | | |
| Notional | | | 4,627M | 4,627M | | | | | | | | |

Overlays: commodity, long/short, other
 Cost by implementation style



| | Commodity | | | | Long/ Short | | | | Other | | | |
|---|---------------|-----|---------------|--------|---------------|-----|---------------|------|---------------|------|---------------|------|
| | Internal | | External | | Internal | | External | | Internal | | External | |
| | % of notional | | % of notional | | % of notional | | % of notional | | % of notional | | % of notional | |
| | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US | Peer | US |
| 90th %ile | | | | 6.5 | | | 6.7 | 6.7 | | 7.8 | | 15.7 |
| 75th %ile | | | | 6.5 | | | 6.7 | 6.7 | | 7.4 | | 11.4 |
| Median | | | | 6.5 | | | 6.7 | 6.7 | | 6.7 | | 4.9 |
| 25th %ile | | | | 6.5 | | | 6.7 | 6.7 | | 5.9 | | 4.2 |
| 10th %ile | | | | 6.5 | | | 6.7 | 6.7 | | 5.5 | | 4.0 |
| — Average | | | | 6.5 | | | 6.7 | 6.7 | | 6.7 | | 8.0 |
| Count | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 11 |
| Avg. notional | | | | 1,234M | | | 521M | 521M | | 629M | | 776M |
| South Carolina Retirement Systems Investment Commission | | | | | | | | | | | | |
| ● You | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| %ile | | | | | | | | | | | | |
| Notional | | | | | | | | | | | | |

7

Risk

| | |
|--|----|
| Comparison of your risk levels to the U.S. Public universe | 2 |
| Calculation of asset risk | 3 |
| Reduction in asset risk due to diversification | 4 |
| Asset-liability risk | 5 |
| Liability proxy portfolio | 6 |
| Liability risk | 7 |
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| Historic worst case scenarios during the past 5 years | 9 |
| Risk Trends - 2012 to 2016 | 10 |
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Comparison of your risk levels to the U.S. Public universe



1 Asset risk is the expected volatility of your policy return. It is based on the historical variance of, and covariance between, the asset classes in your asset mix policy. It is expressed as an annual standard deviation.

2 Asset-liability risk is the expected volatility of surplus returns. Surplus returns are the changes in a plan's marked-to-market funded status caused by market factors. Asset liability risk is a function of the volatility of policy returns (asset risk), the volatility of surplus returns (surplus risk) and the correlation between policy returns and surplus returns.

Calculation of asset risk

Before considering the benefit of diversification, the weighted average risk of the asset classes in your asset mix policy was 13.2%.

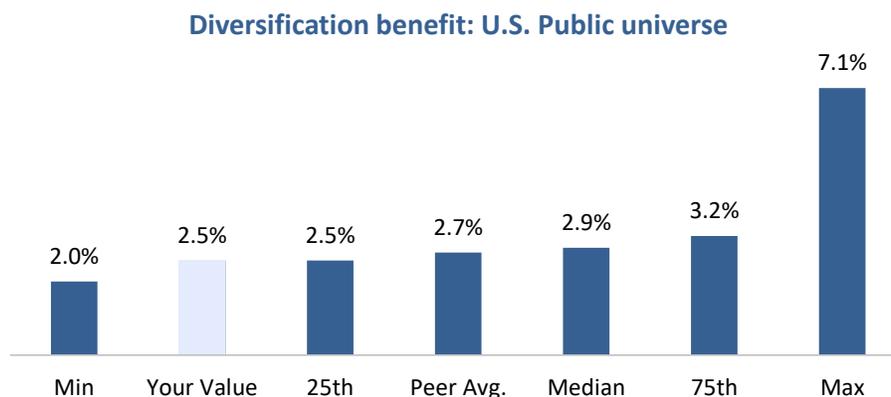
Calculation of your weighted asset class risk

| Asset Class | Policy weight (A) | Risk ¹ (B) | Weighted risk (A X B) |
|------------------------------------|----------------------|--------------------------|--------------------------|
| Stock: Global | 36.1% | 15% | 5.3% |
| Bonds: U.S. | 10.0% | 6% | 0.6% |
| Bonds: Emerging | 5.0% | 13% | 0.7% |
| Bonds: High Yield | 6.6% | 9% | 0.6% |
| Bonds: Cash | 2.0% | 1% | 0.0% |
| Commodities | 3.0% | 19% | 0.6% |
| Infrastructure | 1.0% | 17% | 0.2% |
| REITs | 0.7% | 21% | 0.1% |
| Real Estate | 6.3% | 12% | 0.8% |
| Hedge Fund | 4.0% | 7% | 0.3% |
| Funded Global TAA/Risk Parity | 10.0% | 7% | 0.7% |
| Private Equity: Diversified or All | 8.9% | 23% | 2.0% |
| Private Equity: Other Non-Listed | 6.4% | 23% | 1.5% |
| Weighted Total | | | 13.2% |

1. Risk is the standard deviation of returns for the asset class based on standard benchmarks used by CEM. See page 15 of this section for benchmark details.

Reduction in asset risk due to diversification

Your asset risk is less than your weighted asset risk because of the benefit of diversification. Diversification reduces risk because when one asset class has a negative return, it might be offset by another asset class with a positive return. The lower the correlation between your policy asset classes, the greater the diversification benefit. The correlation between your policy asset classes is shown on page 17 of this section.



The benefit of diversification equals weighted asset risk minus asset risk.

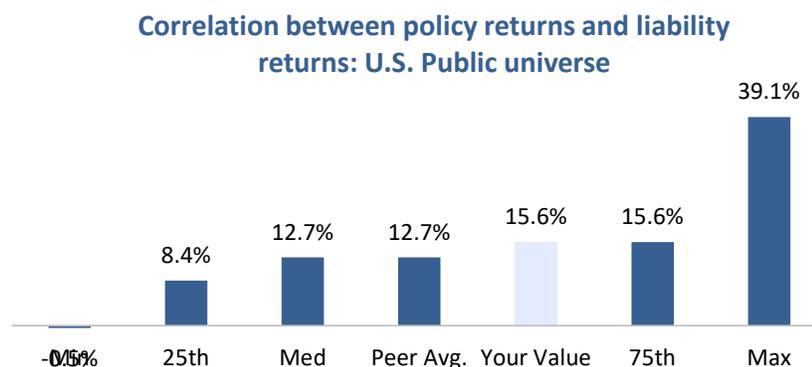
Components of asset risk

| | You | Peer median* | Peer average | U.S. Public median* | U.S. Public average |
|----------------------------|-------|--------------|--------------|---------------------|---------------------|
| Weighted asset risk | 13.2% | 12.7% | 12.7% | 12.8% | 12.9% |
| Benefit of diversification | 2.5% | 2.7% | 2.7% | 2.9% | 3.0% |
| Asset risk | 10.6% | 9.7% | 10.0% | 9.9% | 10.0% |

* Comparisons of components of asset risk should be interpreted with caution because it is not always possible to separate the diversification benefit from the weighted asset risk. For example, global stock as an asset class includes the diversification benefit of its geographic components within its asset risk.

Asset-liability risk

Your plan would not have any asset-liability risk if your assets perfectly matched your liabilities. If they matched, then the correlation between asset returns and liability returns would be 100%. If liabilities increased, assets would increase by a like amount (and vice versa). Thus higher correlation between your asset returns and liability returns reduces your asset-liability risk.



In addition to the correlation between asset returns and liability returns, asset-liability risk is also a function of the volatility of asset returns (asset risk) and the volatility of liability returns¹ (liability risk = $\sqrt{R_A^2 + R_L^2 - 2\rho_{AL}R_AR_L}$).

Components of asset-liability risk

| | You | Peer median | Peer average | U.S. Public median | U.S. Public average |
|--|-------|-------------|--------------|--------------------|---------------------|
| Asset risk (R_A) | 10.6% | 9.7% | 10.0% | 9.9% | 10.0% |
| Liability risk (R_L) | 11.5% | 11.1% | 10.8% | 11.1% | 11.0% |
| Correlation between policy returns and liability returns (ρ_{AL}) | 15.6% | 14.4% | 12.7% | 12.7% | 12.7% |
| Asset-liability risk | 14.4% | 13.9% | 13.9% | 14.0% | 13.9% |

1. Liability returns equal the changes in your marked-to-market liabilities caused by market factors. These are assumed to equal the return on your liability proxy portfolio (see next page).

Liability proxy portfolio

Your liability proxy portfolio is the portfolio of nominal and inflation-indexed bonds that best matches the sensitivity of your liabilities to changes in real and nominal interest rates.

Comparisons of liability proxy portfolio

| | Your fund | | Peer average | | U.S. Public | |
|-------------------------|-----------|-------------|--------------|-------------|-------------|-------------|
| | Duration | % of Assets | Duration | % of Assets | Duration | % of Assets |
| Inflation Indexed Bonds | 13.2 | 95% | 12.0 | 66% | 12.5 | 67% |
| Nominal Bonds | 10.0 | 5% | 12.4 | 34% | 13.7 | 33% |
| Total | | 100% | | 100% | | 100% |

Your liability proxy portfolio is a tool that:

- a) Helps you understand how the unsmoothed market value of your liabilities responds to changes in real and nominal interest rates.
- b) Helps you make better asset mix policy decisions by providing an understanding of which assets will decrease your asset-liability risk (i.e., assets that behave similarly to the neutral asset mix) and which assets will increase your risk.
- c) Helps you understand how your liabilities are different from your peers. Differences in liabilities mean that the same asset will have different risk / reward characteristics for different funds. For example, the risk of a nominal bond for a fund with 100% inflation sensitivity is much higher than it is for a fund with less than 100% inflation sensitivity.

Asset-liability risk could theoretically be eliminated if your actual asset mix matched the liability proxy portfolio. However, we recognize that this is neither an option nor a goal for most funds because:

- The supply of inflation-indexed assets is limited. These assets are required to match the obligations of pension liabilities.
- This low-risk strategy also has a lower expected return, implying either higher future funding costs or lower future benefits.

The methodology and formula used to determine your liability proxy portfolio are provided on pages 11-13 of this section.

Liability risk

Differences in liability risk are due to differences in inflation sensitivity and member demographics.

A plan's inflation sensitivity depends on:

a) The type of plan

Final and highest average plans have more inflation sensitivity than career average plans. Conversely, career average plans have more inflation sensitivity than flat benefit plans. Your plan type is final average.

| Plan type | # of plans | % of Total |
|------------------------|------------|------------|
| Flat Benefit | - | 0% |
| Career Average | - | 0% |
| Final/Highest/Best Avg | 52 | 95% |
| Other | 3 | 5% |
| Total | 55 | 100% |

b) Contractual inflation protection for retired members

Your retired members get 100% contractual inflation protection. Your retiree inflation protection is subject to a cap of For SCRS and PORS, eligible retirees and surviving annuitants will receive an annual increase in their pension benefit equal to the lesser of 1% of their retirement allowance or \$500 per

| Retiree inflation protection | # of plans | | |
|------------------------------|------------|--------|-------|
| | Corporate | Public | Other |
| 0% | 115 | 25 | 6 |
| >0% and <50% | 5 | 0 | 0 |
| 50% | 0 | 2 | 0 |
| >50% and <100% | 2 | 8 | 0 |
| 100% | 95 | 55 | 3 |
| Total | 217 | 90 | 9 |

c) Member demographics

Member demographics impacts both inflation sensitivity and the duration of plan liabilities. The survey asks for your plan's percentage of liabilities that relate to retired members from your actuarial reports. If you did not provide this number, then it is estimated (see page 12 of this section). Your percentage of liabilities that relate to retired members was 65%.

| Membership Breakdown | Your fund | Peer Average | U.S. Average |
|----------------------|----------------|--------------|--------------|
| | Active Members | 61% | 57% |
| Retired Members | 39% | 43% | 44% |
| Total | 100% | 100% | 100% |

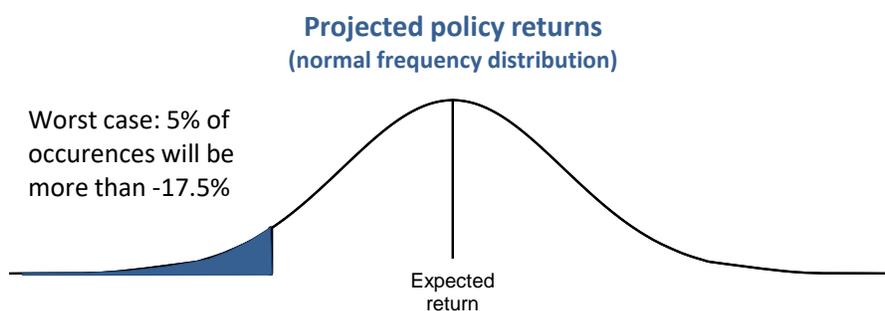
Projected worst case scenarios

We can convert your asset risk and asset-liability risk into worst case outcomes for policy returns and funded status if we make the following simplifying assumptions:

- a) Returns are normally distributed.
- b) Historic return volatility and correlations will continue in the future.
- c) No change in your policy asset mix or liabilities.

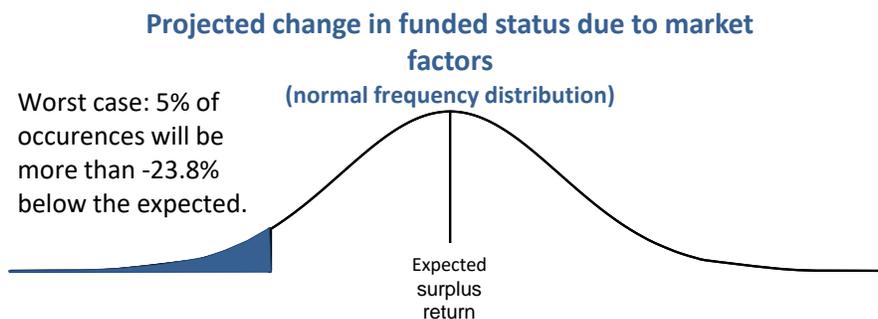
a) Worst case policy returns

Every year there is a 5% probability that your policy return will be worse than your expected policy return by more than -17.5% (-17.5% equals $-1.65 \times$ your asset risk of 10.6%). -17.5% is the starting point of worst case outcomes. They could be much worse.



b) Worst case impact on funded status

Every year, there is a 5% probability that changes in your mark-to-market funded status caused by market factors ("Surplus Returns") will be worse than expected by more than -23.8%. (-23.8% equals $-1.65 \times$ your asset-liability risk of 14.4%). -23.8% is the starting point of worst case outcomes. They could be much worse.



Historic worst case scenarios during the past 5 years

a) Historic worst case policy returns

During the past 5 years, your lowest policy return was -1.1% in 2015.

Historic policy returns - U.S. Public universe

| | 2016 | 2015 | 2014 | 2013 | 2012 |
|------------|------|-------|------|-------|-------|
| 90th % | 9.1% | 1.6% | 8.8% | 18.4% | 13.7% |
| 75th % | 8.5% | 0.9% | 7.5% | 17.1% | 13.1% |
| Median | 7.5% | 0.0% | 6.4% | 15.5% | 12.7% |
| 25th % | 6.9% | -0.7% | 5.6% | 13.6% | 11.8% |
| 10th % | 6.2% | -1.5% | 4.9% | 11.4% | 10.8% |
| Average | 7.6% | 0.1% | 6.6% | 15.1% | 12.4% |
| Count | 59 | 63 | 66 | 65 | 68 |
| Peer Avg | 7.6% | 0.6% | 6.9% | 15.0% | 11.9% |
| Your Value | 8.4% | -1.1% | 4.8% | 10.2% | 10.7% |

b) Historic worst case changes in funded status

During the past 5 years, your worst change in marked-to-market funded status caused by market factors ("Surplus Returns") was -6.7% in 2014.

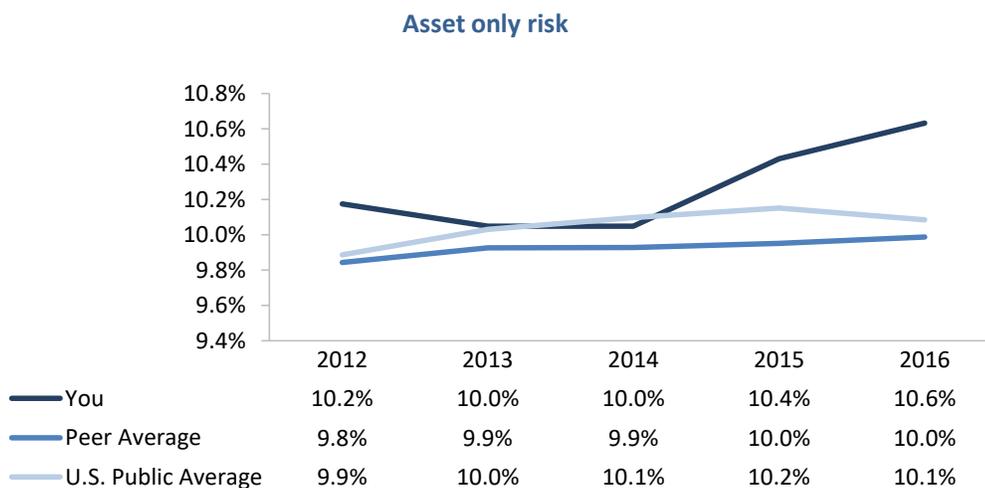
Historic changes in funded status caused by market factors - U.S. Public universe

| | 2016 | 2015 | 2014 | 2013 | 2012 |
|------------|------|-------|--------|-------|-------|
| 90th % | 4.9% | 4.6% | -4.9% | 36.8% | 10.5% |
| 75th % | 4.4% | 3.4% | -6.2% | 33.3% | 9.8% |
| Median | 2.7% | 2.2% | -7.9% | 30.8% | 7.9% |
| 25th % | 1.4% | 0.8% | -9.6% | 27.3% | 5.9% |
| 10th % | 0.1% | -0.3% | -11.2% | 25.7% | 5.0% |
| Average | 2.8% | 2.1% | -8.0% | 30.6% | 7.9% |
| Count | 51 | 56 | 56 | 54 | 59 |
| Peer Avg | 2.7% | 2.7% | -7.2% | 31.3% | 7.6% |
| Your Value | 1.1% | 2.6% | -6.7% | 28.2% | 5.5% |

Risk Trends - 2012 to 2016

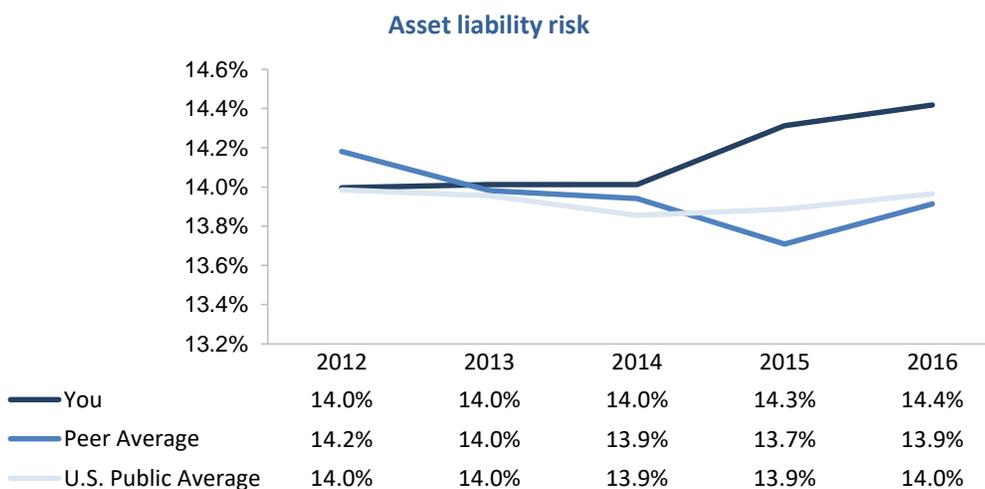
a) Asset risk trends

Asset risk will only change if policy asset mix changes. Between 2012 and 2016 the asset risk for your fund increased from 10.2% to 10.6%.



b) Asset-liability risk trends

Asset-liability risk will change if policy asset mix changes, or if the nature of your liabilities changes. Between 2012 and 2016 the asset-liability risk for your fund increased from 14.0% to 14.4%.



Appendix A - Methodology and formula used to calculate liability return and liability proxy portfolio

Risk calculation descriptions

CEM would like to recognize and thank Malcolm Hamilton previously of Mercer for providing the key formulas used to calculate liability returns. We would also like to thank Stijn Oude Brunink previously of ORTEC Consultants in the Netherlands who provided the proofs and made adjustments to Mr. Hamilton's formulas. These formulas and this section use several simplifying assumptions that could cause your fund's individual results to differ from actual. We encourage you to pursue more precise calculations of your liability returns.

Step 1 - Inflation sensitivity

The first step in estimating your liability return is to determine your liabilities' inflation sensitivity. The degree of total inflation sensitivity determines the proportion of inflation-indexed bonds versus nominal bonds that belong in your liability proxy portfolio.

Total inflation sensitivity

- = Inflation protection retirees X % liabilities relating to retirees
- + Inflation protection for active members X (1 - % liabilities relating to retirees)

Inflation protection for retirees

On the survey we asked for the amount of contractual inflation protection provided to retirees.

Your response was 100% which compares to an average of 50% for your peers and 23% for U.S. funds.

Ad hoc inflation protection is not considered because it is not a contractual liability. However, many funds are managed to maintain historic levels of ad hoc increases. If this is the case with your fund, then your inflation protection may have been understated. Please ask for CEM to make that adjustment for you.

Inflation protection for active members

We inferred inflation protection for your active members to be 86% based on your plan type of Final Average.

Final and highest average plans have less than 100% inflation protection because during the averaging period, inflation protection is only 50%, not 100%. This is a natural function of taking an average of more than one year's earnings. Thus the weighted average inflation protection for active members in a 5-year final average plan is around 86% and in a 3-year average plan, 93%. These weighted averages are lower than intuition might suggest because the active members associated with the largest liabilities (i.e., the highest weights) are the ones closest to retirement.

Flat Benefit and Career Average plans are assumed to have 77% inflation protection. Contractually, flat benefit plans have zero inflation protection but negotiated increases tend to closely track inflation. However, just as with Final Average plans, inflation protection between negotiated increases is less than full inflation.

Step 2 - Proportion of liabilities relating to retirees

The second step is to determine how much of your liabilities relate to your retirees versus your active members. This number is used to weight the liability proxy portfolio's obligations to retirees and active members.

This ratio depends on several factors including the ratio of retired and active members, member demographics and the inflation sensitivity of the promise made to these two member groups. Deferred (also known as inactive) members are ignored because even if they are large in number they tend to represent only a very small fraction of the future liability.

Equivalency Table

| Retirees as a % of Active + Retirees | % Liabilities Relating to Retirees |
|--------------------------------------|------------------------------------|
| 0 | 0 |
| 0.1 | 0.218776162 |
| 0.2 | 0.345684413 |
| 0.3 | 0.451751942 |
| 0.4 | 0.546209934 |
| 0.5 | 0.632878297 |
| 0.6 | 0.713805394 |
| 0.7 | 0.790250367 |
| 0.8 | 0.863056825 |
| 0.9 | 0.932824741 |
| 1 | 1 |

Most funds have provided the actual ratio from their actuarial reports (as requested on the survey). If the ratio is not provided, it is estimated based on the "Equivalency" table above.

Your percentage of liabilities that relates to retirees was 65%. The percentage of liability that relates to retirees is higher than the retirees as a percentage of active and retired members because retirees have accrued a higher benefit.

Step 3 - Determining your duration relative to real and nominal yields

Duration enables you to determine the change in value of a cash flow, such as your pension liabilities, caused by a change in interest rates. The relationship between duration and cost of your pension liability is as follows.

Percentage change in pension liability cost

$$= (- \text{Modified duration relative to change in real yields} \times \text{change in real yields}) \\ + (- \text{Modified duration relative to change in nominal yields} \times \text{change in nominal yields})$$

The modified duration of your liabilities with respect to changes in real and nominal yields is determined by the following two formulas.

Modified duration relative to changes in real yields

$$= 10 \times [\text{Inflation protection for active members} \times (1 - \% \text{ of liabilities relating to retirees}) \\ + \text{Inflation protection for retirees} \times (1 - \% \text{ of liabilities relating to retirees}/4) \\ + (\text{Inflation protection for retirees}/10) \times (1.5 - 0.5 \times \% \text{ liabilities relating to retirees})]$$

Modified duration relative to changes in nominal yields

$$= 10 \times [(2 - 5 \times \% \text{ Liabilities relating to retirees}/4 - \text{inflation protection for actives} \times \\ (1 - \% \text{ liabilities relating to retirees}) \\ - (\text{Inflation protection for retirees}/10) \times (8.5 - 2 \times \% \text{ liabilities relating to retirees}) \\ - (\text{Inflation protection for retirees}/10) \times (1.5 - 0.5 \times \% \text{ liabilities relating to retirees})]$$

Step 4 - Determining the liability proxy portfolio

Knowing the sensitivity of your pension liabilities to real and nominal interest rates enables you to construct a liability proxy portfolio using a combination of nominal bonds and inflation-indexed bonds.

Duration of inflation-indexed bonds in your liability proxy portfolio =
 Modified Duration Relative to Change in Real yields ÷ Proportion of inflation-indexed bonds in your liability proxy portfolio (this is the total inflation sensitivity)

Duration of nominal bonds in your liability proxy portfolio =
 Modified Duration Relative to Change in Nominal Yields ÷ Proportion of nominal bonds in your liability proxy portfolio (this is 1 minus the total inflation sensitivity)

Proportion of inflation-indexed bonds in your liability proxy portfolio = total inflation sensitivity

Proportion of nominal bonds in your liability proxy portfolio = 1 - total inflation sensitivity

Step 5 - Liability returns

The return earned on your liability proxy portfolio is the liability return and matches the change in your plan's liabilities in response to changes in market factors. It uses a true market valuation rather than a smoothed actuarial valuation. See page 17 for benchmark details.

Liability Return

- = Proportion indexed bonds in liability proxy portfolio X (CPI + average real yield)
- + Proportion nominal bonds in liability proxy portfolio X average long bond yield
- Modified duration relative to change in real yields X change in real yields
- Modified duration relative to change in nominal yields X change long yields

| | Long Nominal Bonds | | Inflation Indexed Bonds | | CPI |
|------|--------------------|-----------------|-------------------------|-----------------|------|
| | Year end yield | Change in yield | Year end yield | Change in yield | |
| 2016 | 3.06 | 0.08 | 1.02 | -0.26 | 2.10 |
| 2015 | 2.98 | 0.15 | 1.28 | 0.39 | 0.70 |
| 2014 | 2.83 | -1.06 | 0.89 | -0.72 | 0.80 |
| 2013 | 3.89 | 0.94 | 1.61 | 1.46 | 1.50 |
| 2012 | 2.95 | 0.06 | 0.15 | -0.38 | 1.70 |
| 2011 | 2.89 | -1.45 | 0.53 | -1.06 | 3.00 |

Appendix B - Methodology used to calculate asset and asset-liability risk

Asset mix

Your asset only mix is a function of your policy asset mix, your currency hedging policy and the presence of any duration overlays.

CEM does not use your specific policy benchmarks. Standard asset class proxies (shown on the next page) are used for each given asset class. Monthly, historical data is used to construct an asset class variance/covariance table. Your specific policy weights are then used to calculate an expected monthly volatility for your policy mix using the following formula, which takes current asset class variances and covariances as expected future variances and covariances.

$$\begin{aligned}\text{Expected monthly variance of policy mix} &= \sum \sum w_x w_y \text{Cov}(X, Y) \\ &= \sum \sum w_x w_y \sigma_x \sigma_y \rho_{x,y}\end{aligned}$$

where

w_x = policy weight of asset class X

σ_x = standard deviation of monthly returns for asset class X

w_y = policy weight of asset class Y

σ_y = standard deviation of monthly returns for asset class Y

$\text{Cov}(X, Y)$ = covariance of X and Y

$\rho_{x,y}$ = Pearson's correlation of the returns for X and Y

Each sum is over all asset classes. Assuming normal distribution of returns, we then solve for expected annual standard deviation as:

$$\begin{aligned}\text{Expected annual standard deviation of policy mix} &= \\ &= (\text{Expected monthly variance of policy mix})^{1/2} \times (12)^{1/2}\end{aligned}$$

Hedged and unhedged asset classes are treated as separate asset classes in the model. Funds with hedging policies between 0% and 100% have their policy weight allocated between the hedged and unhedged asset classes according to the proportion hedged.

Duration overlays are also treated as a separate asset class. Their weight is taken as notional value divided by total plan assets. For funds with duration overlays, the sum of weights will be greater than 100%. Rather than calculating a return for every possible duration, CEM's total variance/covariance matrix includes bonds with a continual duration of each whole number. A given fund's duration overlay is then represented by the two constant duration bonds closest to the duration of the overlay, with the total weight divided proportionately between them.

Asset-liability risk

Asset-liability risk is calculated in exactly the same way as asset risk with the addition of a short position in the liability proxy portfolio. This portfolio will typically be represented by up to four bonds with continual duration whose summed weights will equal -100%, and whose real and nominal duration match the liability proxy portfolio.

Appendix C - Asset class benchmarks used

CEM uses the same asset class proxy benchmarks for all participants in calculating risk. The benchmarks used for asset classes in your policy mix and liability proxy portfolio are shown below, along with the annualized standard deviation of monthly returns. Different asset classes have different histories - the start date after which monthly data was used for the given asset class is also shown.

| Asset Class | Proxy Benchmark | Start Date | Standard deviation of monthly return - annualized (σ) |
|---|--|------------|--|
| Stock: Global | MSCI ACWI | Jan 1988 | 14.5% |
| Bonds: U.S. | Barclays US Aggregate | Feb 1976 | 5.6% |
| Bonds: Emerging | J.P. Morgan Emerging Markets Bond Index Global | Jan 1994 | 13.5% |
| Bonds: High Yield | Barclays High Yield | Apr 1990 | 8.5% |
| Bonds: Cash | BofA ML U.S. T-BILL 3M | Feb 1978 | 0.5% |
| Commodities | Goldman Sachs Commodity | Jan 1970 | 19.2% |
| Infrastructure | UBS Global Infrastructure (\$US) | Feb 1990 | 17.1% |
| REITs | MSCI US REIT | Feb 1997 | 21.1% |
| Real Estate | CEM U.S. Real Estate Index Deleveraged | Jan 1983 | 12.5% |
| Hedge Fund | HFRI Fund Weighted Hedge Fund | Jan 1990 | 6.8% |
| Funded Global TAA/Risk Parity | HFRI Fund Weighted Hedge Fund | Jan 1990 | 6.8% |
| Private Equity: Diversified or All | S&P Listed Private Equity | Dec 2003 | 22.7% |
| Private Equity: Other Non-Listed | S&P Listed Private Equity | Dec 2003 | 22.7% |
| Liability: Real Return Bond Duration 13 | Real Bond Duration 13 | Dec 1985 | 12.0% |
| Liability: Real Return Bond Duration 14 | Real Bond Duration 14 | Jan 1989 | 12.1% |
| Liability: Nominal Bond Duration 9 | Nominal Bond Duration 9 | Aug 1985 | 8.1% |
| Liability: Nominal Bond Duration 10 | Nominal Bond Duration 10 | Dec 1985 | 9.2% |

See page 17 of this section for benchmark details.

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Real Estate is proxied by the MSCI US REIT deleveraged by adding back in a return to debtholders of the Barclays CMBS Inv. Grade Commercial index. Average debt/total assets of REIT index before deleveraging is estimated to be 40%.

Common asset class benchmarks used in United States

CEM uses the same asset class proxy benchmarks for all participants in calculating risk. Common benchmarks used for asset classes in your universe are shown below, along with the annualized standard deviation of monthly returns. Different asset classes have different histories - the start date after which monthly data was used for the given asset class is also shown.

| Asset Class | Proxy Benchmark | Start Date | Standard deviation of monthly return - annualized (σ) |
|---|---|------------|--|
| Stock: U.S. Broad/All | Russell 3000 | Jan 1979 | 15.1% |
| Stock: U.S. Large Cap | S&P 500 | Feb 1988 | 13.7% |
| Stock: U.S. Small Cap | Russell 2000 | Jan 1979 | 18.8% |
| Stock: EAFE (Currency Hedged) | MSCI EAFE Hedged Exposure to Euro + Japan in (\$US) | Jan 1971 | 12.1% |
| Stock: EAFE | MSCI EAFE | Jan 1970 | 16.5% |
| Stock: Emerging | MSCI Emerging | Jan 1988 | 21.9% |
| Stock: Global | MSCI ACWI | Jan 1988 | 14.5% |
| Stock: ACWI x U.S. | MSCI ACWI ex US | Jan 1988 | 14.0% |
| Bonds: U.S. | Barclays US Aggregate | Feb 1976 | 5.6% |
| Bonds: High Yield | Barclays High Yield | Apr 1990 | 8.5% |
| Bonds: Long Bonds | Barclays U.S. Aggregate Long Government/Credit | Feb 1973 | 10.0% |
| Bonds: Cash | BofA ML U.S. T-BILL 3M | Feb 1978 | 0.5% |
| REITs | MSCI US REIT | Feb 1997 | 21.1% |
| Real Estate | CEM U.S. Real Estate Index Deleveraged | Jan 1983 | 12.5% |
| Hedge Fund | HFRI Fund Weighted Hedge Fund | Jan 1990 | 6.8% |
| Private Equity: Diversified or All | S&P Listed Private Equity | Dec 2003 | 22.7% |
| Liability: Real Return Bond Duration 10 | Real Bond Duration 10 | Aug 1984 | 9.4% |
| Liability: Real Return Bond Duration 11 | Real Bond Duration 11 | May 1985 | 10.3% |
| Liability: Nominal Bond Duration 10 | Nominal Bond Duration 10 | Dec 1985 | 9.2% |
| Liability: Nominal Bond Duration 14 | Nominal US Bond Duration 14 | Feb 1988 | 12.3% |

Source: Datastream

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Real Estate is proxied by the MSCI US REIT deleveraged by adding back in a return to debtholders of the Barclays CMBS Inv. Grade Commercial index. Average debt/total assets of REIT index before deleveraging is estimated to be 40%.

Appendix D - Correlation Matrix

| | Stock: Global | Bonds: U.S. | Bonds: Emerging | Bonds: High Yield | Bonds: Cash | Real Assets: Commodities | Real Assets: Infrastructure | Real Assets: REITs | Real Assets: Real Estate | Hedge Fund | Funded Global TAA/Risk Parity | Private Equity: Diversified or All | Private Equity: Other Non-Listed | Nominal Bond: Duration 9 | Nominal Bond: Duration 10 | Real Return Bond: Duration 13 | Real Return Bond: Duration 14 |
|------------------------------------|---------------|-------------|-----------------|-------------------|-------------|--------------------------|-----------------------------|--------------------|--------------------------|------------|-------------------------------|------------------------------------|----------------------------------|--------------------------|---------------------------|-------------------------------|-------------------------------|
| Stock: Global | 1.00 | 0.14 | 0.54 | 0.59 | 0.01 | 0.20 | 0.68 | 0.08 | 0.51 | 0.68 | 0.68 | 0.76 | 0.76 | -0.06 | -0.05 | 0.09 | 0.08 |
| Bonds: U.S. | 0.14 | 1.00 | 0.30 | 0.19 | 0.38 | -0.03 | 0.23 | -0.16 | 0.25 | 0.07 | 0.07 | 0.14 | 0.14 | 0.85 | 0.88 | 0.58 | 0.58 |
| Bonds: Emerging | 0.54 | 0.30 | 1.00 | 0.48 | -0.03 | 0.21 | 0.45 | -0.02 | 0.40 | 0.60 | 0.60 | 0.46 | 0.46 | 0.13 | 0.12 | 0.25 | 0.25 |
| Bonds: High Yield | 0.59 | 0.19 | 0.48 | 1.00 | -0.06 | 0.15 | 0.46 | 0.16 | 0.55 | 0.56 | 0.56 | 0.65 | 0.65 | -0.08 | -0.06 | 0.18 | 0.18 |
| Bonds: Cash | 0.01 | 0.38 | -0.03 | -0.06 | 1.00 | 0.00 | -0.01 | 0.02 | -0.05 | -0.04 | -0.04 | -0.03 | -0.03 | 0.17 | 0.17 | 0.08 | 0.01 |
| Real Assets: Commodities | 0.20 | -0.03 | 0.21 | 0.15 | 0.00 | 1.00 | 0.14 | 0.12 | 0.11 | 0.27 | 0.27 | 0.39 | 0.39 | -0.05 | -0.06 | 0.06 | 0.07 |
| Real Assets: Infrastructure | 0.68 | 0.23 | 0.45 | 0.46 | -0.01 | 0.14 | 1.00 | 0.03 | 0.46 | 0.52 | 0.52 | 0.71 | 0.71 | 0.09 | 0.10 | 0.17 | 0.17 |
| Real Assets: REITs | 0.08 | -0.16 | -0.02 | 0.16 | 0.02 | 0.12 | 0.03 | 1.00 | 0.10 | 0.17 | 0.17 | 0.11 | 0.11 | -0.25 | -0.25 | -0.06 | -0.06 |
| Real Assets: Real Estate | 0.51 | 0.25 | 0.40 | 0.55 | -0.05 | 0.11 | 0.46 | 0.10 | 1.00 | 0.42 | 0.42 | 0.66 | 0.66 | 0.07 | 0.06 | 0.21 | 0.20 |
| Hedge Fund | 0.68 | 0.07 | 0.60 | 0.56 | -0.04 | 0.27 | 0.52 | 0.17 | 0.42 | 1.00 | 1.00 | 0.55 | 0.55 | -0.08 | -0.07 | 0.09 | 0.09 |
| Funded Global TAA/Risk Parity | 0.68 | 0.07 | 0.60 | 0.56 | -0.04 | 0.27 | 0.52 | 0.17 | 0.42 | 1.00 | 1.00 | 0.55 | 0.55 | -0.08 | -0.07 | 0.09 | 0.09 |
| Private Equity: Diversified or All | 0.76 | 0.14 | 0.46 | 0.65 | -0.03 | 0.39 | 0.71 | 0.11 | 0.66 | 0.55 | 0.55 | 1.00 | 1.00 | -0.11 | -0.11 | 0.12 | 0.13 |
| Private Equity: Other Non-Listed | 0.76 | 0.14 | 0.46 | 0.65 | -0.03 | 0.39 | 0.71 | 0.11 | 0.66 | 0.55 | 0.55 | 1.00 | 1.00 | -0.11 | -0.11 | 0.12 | 0.13 |
| Nominal Bond: Duration 9 | -0.06 | 0.85 | 0.13 | -0.08 | 0.17 | -0.05 | 0.09 | -0.25 | 0.07 | -0.08 | -0.08 | -0.11 | -0.11 | 1.00 | 0.98 | 0.50 | 0.50 |
| Nominal Bond: Duration 10 | -0.05 | 0.88 | 0.12 | -0.06 | 0.17 | -0.06 | 0.10 | -0.25 | 0.06 | -0.07 | -0.07 | -0.11 | -0.11 | 0.98 | 1.00 | 0.51 | 0.51 |
| Real Return Bond: Duration 13 | 0.09 | 0.58 | 0.25 | 0.18 | 0.08 | 0.06 | 0.17 | -0.06 | 0.21 | 0.09 | 0.09 | 0.12 | 0.12 | 0.50 | 0.51 | 1.00 | 0.99 |
| Real Return Bond: Duration 14 | 0.08 | 0.58 | 0.25 | 0.18 | 0.01 | 0.07 | 0.17 | -0.06 | 0.20 | 0.09 | 0.09 | 0.13 | 0.13 | 0.50 | 0.51 | 0.99 | 1.00 |

Correlation Matrix of Common Asset Classes in United States

| | Stock: U.S. Broad/All | Stock: U.S. Large Cap | Stock: U.S. Small Cap | Stock: EAFE (Currency Hedged) | Stock: EAFE | Stock: Emerging | Stock: Global | Bonds: U.S. | Bonds: High Yield | Bonds: Cash | Real Assets: Commodities | Real Assets: REITs | Real Assets: Real Estate | Hedge Fund | Private Equity: Diversified or All | Stock: ACWI x U.S. | Bonds: Long Bonds | Real Return Bond: Duration 10 | Real Return Bond: Duration 11 | Nominal Bond: Duration 10 | Nominal Bond: Duration 14 |
|------------------------------------|-----------------------|-----------------------|-----------------------|-------------------------------|-------------|-----------------|---------------|-------------|-------------------|-------------|--------------------------|--------------------|--------------------------|------------|------------------------------------|--------------------|-------------------|-------------------------------|-------------------------------|---------------------------|---------------------------|
| Stock: U.S. Broad/All | 1.00 | 0.91 | 0.87 | 0.19 | 0.64 | 0.68 | 0.81 | 0.21 | 0.59 | -0.02 | 0.17 | 0.01 | 0.53 | 0.70 | 0.76 | 0.77 | 0.13 | 0.10 | 0.09 | -0.03 | 0.02 |
| Stock: U.S. Large Cap | 0.91 | 1.00 | 0.74 | 0.12 | 0.70 | 0.63 | 0.79 | 0.18 | 0.55 | 0.06 | 0.09 | 0.08 | 0.49 | 0.64 | 0.76 | 0.74 | 0.13 | 0.07 | 0.07 | 0.02 | 0.07 |
| Stock: U.S. Small Cap | 0.87 | 0.74 | 1.00 | 0.14 | 0.58 | 0.67 | 0.71 | 0.13 | 0.60 | -0.09 | 0.19 | 0.03 | 0.62 | 0.76 | 0.78 | 0.70 | 0.11 | 0.06 | 0.04 | -0.09 | -0.06 |
| Stock: EAFE (Currency Hedged) | 0.19 | 0.12 | 0.14 | 1.00 | 0.16 | 0.13 | 0.20 | 0.09 | 0.08 | 0.03 | 0.13 | -0.06 | 0.12 | 0.18 | 0.29 | 0.18 | 0.02 | -0.02 | 0.01 | -0.09 | -0.07 |
| Stock: EAFE | 0.64 | 0.70 | 0.58 | 0.16 | 1.00 | 0.68 | 0.88 | 0.16 | 0.53 | -0.08 | 0.13 | 0.03 | 0.42 | 0.53 | 0.78 | 0.85 | 0.15 | 0.13 | 0.12 | -0.01 | 0.00 |
| Stock: Emerging | 0.68 | 0.63 | 0.67 | 0.13 | 0.68 | 1.00 | 0.74 | 0.01 | 0.61 | -0.07 | 0.24 | 0.03 | 0.43 | 0.70 | 0.73 | 0.75 | 0.00 | 0.09 | 0.09 | -0.12 | -0.11 |
| Stock: Global | 0.81 | 0.79 | 0.71 | 0.20 | 0.88 | 0.74 | 1.00 | 0.14 | 0.59 | 0.01 | 0.20 | 0.08 | 0.51 | 0.68 | 0.76 | 0.88 | 0.11 | 0.09 | 0.09 | -0.05 | -0.02 |
| Bonds: U.S. | 0.21 | 0.18 | 0.13 | 0.09 | 0.16 | 0.01 | 0.14 | 1.00 | 0.19 | 0.38 | -0.03 | -0.16 | 0.25 | 0.07 | 0.14 | 0.04 | 0.95 | 0.59 | 0.60 | 0.88 | 0.88 |
| Bonds: High Yield | 0.59 | 0.55 | 0.60 | 0.08 | 0.53 | 0.61 | 0.59 | 0.19 | 1.00 | -0.06 | 0.15 | 0.16 | 0.55 | 0.56 | 0.65 | 0.58 | 0.15 | 0.18 | 0.18 | -0.06 | -0.05 |
| Bonds: Cash | -0.02 | 0.06 | -0.09 | 0.03 | -0.08 | -0.07 | 0.01 | 0.38 | -0.06 | 1.00 | 0.00 | 0.02 | -0.05 | -0.04 | -0.03 | -0.04 | 0.25 | 0.07 | 0.09 | 0.17 | 0.09 |
| Real Assets: Commodities | 0.17 | 0.09 | 0.19 | 0.13 | 0.13 | 0.24 | 0.20 | -0.03 | 0.15 | 0.00 | 1.00 | 0.12 | 0.11 | 0.27 | 0.39 | 0.16 | -0.08 | 0.04 | 0.05 | -0.06 | -0.07 |
| Real Assets: REITs | 0.01 | 0.08 | 0.03 | -0.06 | 0.03 | 0.03 | 0.08 | -0.16 | 0.16 | 0.02 | 0.12 | 1.00 | 0.10 | 0.17 | 0.11 | 0.05 | -0.11 | -0.08 | -0.08 | -0.25 | -0.24 |
| Real Assets: Real Estate | 0.53 | 0.49 | 0.62 | 0.12 | 0.42 | 0.43 | 0.51 | 0.25 | 0.55 | -0.05 | 0.11 | 0.10 | 1.00 | 0.42 | 0.66 | 0.43 | 0.28 | 0.22 | 0.21 | 0.06 | 0.05 |
| Hedge Fund | 0.70 | 0.64 | 0.76 | 0.18 | 0.53 | 0.70 | 0.68 | 0.07 | 0.56 | -0.04 | 0.27 | 0.17 | 0.42 | 1.00 | 0.55 | 0.70 | 0.02 | 0.08 | 0.08 | -0.07 | -0.05 |
| Private Equity: Diversified or All | 0.76 | 0.76 | 0.78 | 0.29 | 0.78 | 0.73 | 0.76 | 0.14 | 0.65 | -0.03 | 0.39 | 0.11 | 0.66 | 0.55 | 1.00 | 0.73 | 0.03 | 0.12 | 0.11 | -0.11 | -0.13 |
| Stock: ACWI x U.S. | 0.77 | 0.74 | 0.70 | 0.18 | 0.85 | 0.75 | 0.88 | 0.04 | 0.58 | -0.04 | 0.16 | 0.05 | 0.43 | 0.70 | 0.73 | 1.00 | 0.03 | 0.03 | 0.03 | -0.11 | -0.07 |
| Bonds: Long Bonds | 0.13 | 0.13 | 0.11 | 0.02 | 0.15 | 0.00 | 0.11 | 0.95 | 0.15 | 0.25 | -0.08 | -0.11 | 0.28 | 0.02 | 0.03 | 0.03 | 1.00 | 0.54 | 0.55 | 0.87 | 0.88 |
| Real Return Bond: Duration 10 | 0.10 | 0.07 | 0.06 | -0.02 | 0.13 | 0.09 | 0.09 | 0.59 | 0.18 | 0.07 | 0.04 | -0.08 | 0.22 | 0.08 | 0.12 | 0.03 | 0.54 | 1.00 | 1.00 | 0.53 | 0.53 |
| Real Return Bond: Duration 11 | 0.09 | 0.07 | 0.04 | 0.01 | 0.12 | 0.09 | 0.09 | 0.60 | 0.18 | 0.09 | 0.05 | -0.08 | 0.21 | 0.08 | 0.11 | 0.03 | 0.55 | 1.00 | 1.00 | 0.52 | 0.52 |
| Nominal Bond: Duration 10 | -0.03 | 0.02 | -0.09 | -0.09 | -0.01 | -0.12 | -0.05 | 0.88 | -0.06 | 0.17 | -0.06 | -0.25 | 0.06 | -0.07 | -0.11 | -0.11 | 0.87 | 0.53 | 0.52 | 1.00 | 0.96 |
| Nominal Bond: Duration 14 | 0.02 | 0.07 | -0.06 | -0.07 | 0.00 | -0.11 | -0.02 | 0.88 | -0.05 | 0.09 | -0.07 | -0.24 | 0.05 | -0.05 | -0.13 | -0.07 | 0.88 | 0.53 | 0.52 | 0.96 | 1.00 |

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Appendices

Appendix A - Data Summary

Appendix B - Data quality

Appendix C - Glossary of terms

Appendix A - Data Summary

South Carolina Retirement Systems Investment Commission

| Plan Info | 2016 | 2015 | 2014 |
|---|-----------------------------|-----------------------------|-----------------------------|
| Contact | Jon Rychener | Jon Rychener | Jon Rychener |
| Type of fund (corporate, public, other) | Public | Public | Public |
| Total fund size (mils) as at December 31 | 28,771.1 | 27,797.3 | 29,053.6 |
| Asset-class level holdings provided on survey are: year end or average? | Average | Average | Average |
| Total return for year ended | 7.61% | -0.56% | 5.10% |
| Is the return net or gross? | Net of all investment costs | Net of all investment costs | Net of all investment costs |
| Total fund policy or benchmark return | 8.40% | -1.08% | 4.77% |

| Ancillary Data | 2016 | 2015 | 2014 |
|---|-----------------|-----------------|-----------------|
| What is your hedging policy for: Foreign Holdings | 75% | 75% | 75% |
| What were your actuarial fees in 000s? | 277 | 277 | 229 |
| How many plan members/beneficiaries do you have: | | | |
| Active? | 252,494 | 248,446 | 226,378 |
| Active (no-accrual)? | | | |
| Retired? | 158,492 | 154,639 | 156,660 |
| Other? | 183,796 | 178,086 | 175,089 |
| What type of plan(s) do you have? | Final Average | Final Average | Final Average |
| To what extent are your retired members' benefits indexed to inflation? | | | |
| Contractual % | 100 | 100 | 100 |
| Ad hoc % | | | |
| If the indexation is subject to a cap, describe the cap | For SCRS and PO | For SCRS and PO | For SCRS and PO |
| What % of the plan's liabilities pertain to retired members? | 65 | 65 | 64 |
| Actuarial valuation assumptions for funding purposes: | | | |
| Liability discount rate | 7.5 | 7.5 | 7.5 |
| Salary progression rate | 3.3 | 3.5 | 3.5 |
| What was your actuarial assumption for expected rate of return? | 7.5 | 7.5 | 7.5 |

Appendix A - Data Summary: Policy Weights and Benchmarks

South Carolina Retirement Systems Investment Commission

| Asset Class | | Policy Weight | Benchmark | |
|----------------------------|------|---------------|--|--------|
| | | | Description | Return |
| U.S. Stock - Broad/All | 2016 | | MSCI US Net & MSCI US IMI Net Mid-year Blend | 11.8 |
| | 2015 | | Russell 3000 | 0.5 |
| | 2014 | | Russell 3000 (default) | 12.6 |
| Stock - EAFE | 2016 | | | |
| | 2015 | | | |
| | 2014 | | MSCI EAFE net (default) | -4.9 |
| Stock - Emerging | 2016 | | MSCI Emerging Market Net | 11.2 |
| | 2015 | | MSCI Emerging Market Net | -14.9 |
| | 2014 | | MSCI Emerging Market net (default) | -2.2 |
| Stock - Global | 2016 | 36.1 | MSCI ACWI Net & MSCI ACWI IMI Net Mid-year Blend | 8.2 |
| | 2015 | 34.0 | MSCI All Country World Net Index | -2.4 |
| | 2014 | 31.0 | MSCI ACWI Net | 4.2 |
| Fixed Income - U.S. | 2016 | 10.0 | Barclays US Aggregate | 2.7 |
| | 2015 | 10.0 | Barclays US Aggregate | 0.6 |
| | 2014 | 7.0 | Barclays US Aggregate | 6.0 |
| Fixed Income - Emerging | 2016 | 5.0 | 50% JPM EMBI Global Diversified/50% JPM-GBI-EM Global | 10.2 |
| | 2015 | 5.0 | 50% JPM EMBI Global Diversified/50% JPM-GBI-EM Global | -7.1 |
| | 2014 | 6.0 | 50% JPM EMBI Global Diversified/50% JPM-GBI-EM Global | 0.7 |
| Fixed Income - Global | 2016 | | | |
| | 2015 | | Barclays Global Aggregate (USDH) | 1.0 |
| | 2014 | 3.0 | Barclays Global Aggregate Hedged | 7.6 |
| Fixed Income - High Yield | 2016 | 6.6 | 50%Bar U.S. High Yield 2% / 50%S&P LSTA Leveraged Loan | 12.3 |
| | 2015 | 5.0 | 33%Bar U.S. High Yield 2% / 33%S&P LSTA Leveraged Loan / 33%Bar Mortgage-Backed Securities | -1.2 |
| | 2014 | 6.0 | 33%BarCapUS Corp High Yield 2% / 33%S&P LSTA Leveraged Loan Index/33% BarCap MBS | 3.4 |
| Cash | 2016 | 2.0 | BofA Merrill Lynch 3 Month US Treasury Bill G001 | 0.3 |
| | 2015 | 2.0 | BofA Merrill Lynch 3 Month US Treasury Bill G001 | 0.1 |
| | 2014 | 5.0 | 90 D T-Bill / BarCap 1-3 Gov Credit | 0.5 |
| Global TAA | 2016 | 10.0 | 50% MSCI World Net/50% Citi WGBI & 50% MSCI World Net/50% Barclays US Aggregate Mid-year Blend | 7.9 |
| | 2015 | 10.0 | 50% MSCI World Net / 50% Citi WGBI | -2.0 |
| | 2014 | 10.0 | 50% MSCI World / 50% Citi WGBI | 2.3 |
| Hedge Funds | 2016 | 4.0 | HFRI Fund Weighted Composite Index & 50% MSCI World Net/50% Barclays US Aggregate Mid-year Blend | 3.3 |
| | 2015 | 10.0 | HFRI Fund Weighted Composite Index | -1.1 |
| | 2014 | 8.0 | HFRI Fund Weighted Composite Index | 3.0 |
| Commodities | 2016 | 3.0 | Bloomberg Commodity Total Return Index & 50% MSCI World Net/50% Barclays US Aggregate Mid-year Blend | 15.6 |
| | 2015 | 3.0 | Bloomberg Commodity Index Total Return | -24.7 |
| | 2014 | 3.0 | Bloomberg Commodity Index | -17.0 |
| REITs | 2016 | 0.7 | Your REIT benchmark | 8.5 |
| | 2015 | | | |
| | 2014 | | | |
| Infrastructure | 2016 | 1.0 | Dow Jones Brookfield Global Infrastructure Net Index | 12.5 |
| | 2015 | | | |
| | 2014 | | | |
| Real Estate ex-REITs | 2016 | 6.3 | NCREIF ODCE Index + 75 bps | 10.8 |
| | 2015 | 5.0 | NCREIF ODCE Index + 75 bps | 15.7 |
| | 2014 | 5.0 | NCREIF ODCE Index + 75 bps | 13.2 |
| Diversified Private Equity | 2016 | 8.9 | 80% Russell 3000 / 20% MSCI EAFE Lagged + 300 Bps | 16.3 |
| | 2015 | 9.0 | 80% Russell 3000 / 20% MSCI EAFE Lagged + 300 Bps | 0.9 |
| | 2014 | 9.0 | 80% Russell 3000 / 20% MSCI EAFE + 300 Bps Quarter Lag | 18.0 |
| Other Private Equity | 2016 | 6.4 | S&P/LSTA + 150 Bps 3 Month Lag | 7.0 |
| | 2015 | 7.0 | S&P/LSTA + 150 Bps 3 Month Lag | 2.4 |
| | 2014 | 7.0 | S&P/LSTA + 150 Bps 3 Month Lagged | 5.4 |

Appendix A - Data Summary: Oversight, Custodial and Other Costs

South Carolina Retirement Systems Investment Commission

| Oversight, Custodial and Other Costs | | | |
|---|------|---------|-------|
| | | 000s | bps |
| Oversight of the fund assets ¹ | 2016 | 1,056.3 | 0.4bp |
| | 2015 | 1,201.0 | 0.4bp |
| | 2014 | 1,478.1 | 0.5bp |
| Custodial total | 2016 | 925.3 | 0.3bp |
| | 2015 | 765.8 | 0.3bp |
| | 2014 | 425.6 | 0.1bp |
| Custodial foreign (if available) | 2016 | 460.6 | 0.6bp |
| | 2015 | 460.1 | 0.6bp |
| | 2014 | | |
| Custodial domestic (if available) | 2016 | 464.7 | 0.2bp |
| | 2015 | 305.6 | 0.1bp |
| | 2014 | | |
| Consulting / performance measurement | 2016 | 940.0 | 0.3bp |
| | 2015 | 1,029.9 | 0.4bp |
| | 2014 | 998.3 | 0.3bp |
| Audit | 2016 | 99.4 | 0.0bp |
| | 2015 | 201.0 | 0.1bp |
| | 2014 | 816.4 | 0.3bp |
| Other (legal etc) | 2016 | 266.9 | 0.1bp |
| | 2015 | 345.2 | 0.1bp |
| | 2014 | 286.6 | 0.1bp |
| Total | 2016 | 3,288.0 | 1.2bp |
| | 2015 | 3,542.9 | 1.2bp |
| | 2014 | 4,004.9 | 1.4bp |

| Summary of All Asset Management Costs | | | |
|---------------------------------------|------|-----------|--------|
| | | 000s | bps |
| Investment Management Costs | 2016 | 207,020.9 | 73.9bp |
| | 2015 | 235,879.2 | 80.3bp |
| | 2014 | 269,557.2 | 92.3bp |
| Overlay Costs | 2016 | 1,305.2 | 0.5bp |
| | 2015 | 1,037.4 | 0.4bp |
| | 2014 | 1,413.8 | 0.5bp |
| Oversight, Custodial & Other Costs | 2016 | 3,288.0 | 1.2bp |
| | 2015 | 3,542.9 | 1.2bp |
| | 2014 | 4,004.9 | 1.4bp |
| Total | 2016 | 211,614.1 | 75.5bp |
| | 2015 | 240,459.5 | 81.8bp |
| | 2014 | 274,976.0 | 94.1bp |

1. Oversight includes the salaries and benefits of executives and their staff responsible for overseeing the entire fund or multiple asset classes and the fees / salaries of the board or investment committee. All costs associated with the above including fees / salaries, travel, director's insurance and attributed overhead should be included.

Appendix A - Data Summary: Overlays

South Carolina Retirement Systems Investment Commission

| Overlays | | Internal | | | | | | External | | | | | | | |
|------------------------------|------|------------------------|---------------------|--------------------|-------------|--------------------|------------------|------------------------|---------------------|--------------------|------------------|-------------------|-------------------|--------------|--------------------|
| | | Notional amount (mils) | Market value (mils) | Profit/Loss (000s) | Cost (000s) | % of Notion. (bps) | Duration (years) | Notional amount (mils) | Market value (mils) | Profit/Loss (000s) | Base fees (000s) | Perf. fees (000s) | Over-sight (000s) | Total (000s) | % of Notion. (bps) |
| Rebalancing/ Passive Beta | 2016 | | | | | | 4,627.1 | 805.0 | | 1,076.7 | | 228.5 | 1,305.2 | 2.8 | |
| | 2015 | | | | | | 3,394.5 | 656.7 | | 863.2 | | 174.2 | 1,037.4 | 3.1 | |
| | 2014 | | | | | | 3,687.0 | 1,188.5 | | 1,105.8 | | 308.0 | 1,413.8 | 3.8 | |

Appendix A - Data Summary: Comments and defaults

As discussed with you during the data confirmation process, the following defaults and footnotes are applicable to your data:

- Real Estate Limited Partnerships : Fees are the weighted average management fee of 105 bps per the partnership level detail provided by you. This replaces the cost you provided on the main survey of 123 bps (20 million).
- Diversified Private Equity : Fees are the weighted average management fee of 149 bps per the partnership level detail provided by you. This replaces the cost you provided on the main survey of 132 bps (22 million).
- Other Private Equity : Fees are the weighted average management fee of 116 bps per the partnership level detail provided by you. This replaces the cost you provided on the main survey of 116 bps (17 million).

Appendix B - Data quality

The value of the information contained in these reports is only as good as the quality of the data received. CEM's procedures for checking and improving the data include the following.

Improved survey clarity

Twenty years of feedback from survey participants has led to improved definitions and survey clarity. In addition to immediate feedback from participants, CEM has hosted user workshops to solicit additional feedback and to resolve issues, such as trade-offs between more information and effort on the part of participants.

Computer and desktop verification

Survey responses are compared to norms for the survey universe and to each sponsor's prior year data when available. This typically results in questions generated by our online survey engine as well as additional follow-up to clarify responses or with additional questions.

In addition to these procedures, data quality continues to improve for the following reasons:

Learning curve -

This is CEM's 26th year of gathering this data and experience is teaching the firm and the participants how to do a better job.

Growing universe -

As our universe of respondents continues to increase in size, so does our confidence in the results as unbiased errors tend to average themselves out.

Any suggestions on how to further improve data quality are welcome.

Currency Conversions

For reports where either the peer group or report universe includes funds from multiple countries, we have converted the returns back to the base currency of the fund we prepared the report for. For example, for a Euro zone fund with peers from the U.S. we converted U.S. returns to Euro based on the currency return for the year using December 31 spot rates.

Appendix C - Glossary of terms

Average cost

- Calculated by dividing actual annual costs by the average of beginning and end-of-year holdings. If beginning-of-year holdings are not available, they are estimated using end-of-year holdings before the effect of this year's return on investment.

Benchmark return

- Rate of return on a portfolio of investable assets (such as the S&P500) designated as the benchmark portfolio against which the fund measures its own performance for that asset class.

F statistics

- Measure of the statistical significance of the regression coefficients taken as a group. Generally, regression equations with 5 coefficients and sample sizes greater than 20 are statistically significant if its F statistic is greater than 3.

Global TAA

- Fully funded segregated asset pool dedicated to active asset allocation.

Impact coefficient

- Estimate of the impact on the dependent variable in a regression of a change in the value of a given explanatory variable

Level of significance

- Degree to which sample data explains the universe from which they are extracted.

N-year peers

- Subset of peer group that have participated in our study for at least the consecutive n years.

Oversight of the fund

- Resources devoted to the oversight of the fund.

Overlay

- Derivative based program (unfunded other than margin requirements), designed to enhance total portfolio return (such as a tactical asset allocation program) or to achieve some specific mandate such as currency hedging.

Passive proportion

- Proportion of assets managed passively, i.e., indexed to broad capital market benchmarks or dedicated to replicate market benchmarks.

Policy mix

- Reflects long-term policy or target asset weights. Policy asset mix is often established by a fund's investment committee or board and is determined by such long term considerations as liability structure, risk tolerance and long term capital markets prospects.

Policy return

- The return you would have earned if you had passively implemented your policy mix decision through your benchmark portfolios. Your policy return equals the sum of your policy weights multiplied by your asset class benchmarks for each asset class.

R squared (coefficient of determination)

- The percentage of the differences in the dependent variable explained by the regression equation. For example, an R squared of 1 means 100% of the differences are explained and an R squared of 0 means that none of the differences are explained.

Value added

- the difference between your total actual return and your policy return. It is a measure of actual value produced over what could have been earned passively.