

**Investment
Benchmarking Analysis**
(for the 5-year period ending December 31, 2023)

South Carolina Retirement System Investment Commission



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Prepared December 19, 2024. Although the information in this report has been based upon and obtained from sources we believe to be reliable, CEM Benchmarking Inc. ("CEM") does not guarantee its accuracy or completeness. The information contained herein is proprietary and confidential and may not be disclosed to third parties without the express written mutual consent of both CEM and South Carolina Retirement System Investment Commission.

Key Takeaways

2023 Calendar Year

- Your 1-year net total return was 11.6%. This was above both the U.S. Public median of 11.3% and the peer median of 10.6%.
- Your investment cost of 101.2 bps was below your benchmark cost of 109.9 bps. This suggests that your fund was slightly low cost compared to your peers.
- Your fund was below benchmark cost because it had a lower cost implementation style.
- You placed in the low cost, positive net value added quadrant for 2023. This contributed to maintaining the same low cost, positive net value added position you achieved over the most recent 5- and 10-year periods.

5-year Returns

- Your 5-year net total return was 9.2%. This was above the U.S. Public median of 8.7% and equal to the peer median of 9.2%.
- Your 5-year policy return was 6.9%. This was below both the U.S. Public median of 7.5% and the peer median of 7.5%.

5-year Value added

- Your 5-year net value added was 2.3%. This was above both the U.S. Public median of 1.3% and the peer median of 1.3%.
- Your 2.3% 5-year value added translates into approximately \$4.0 billion of cumulative value added over 5 years.

5-Year Cost

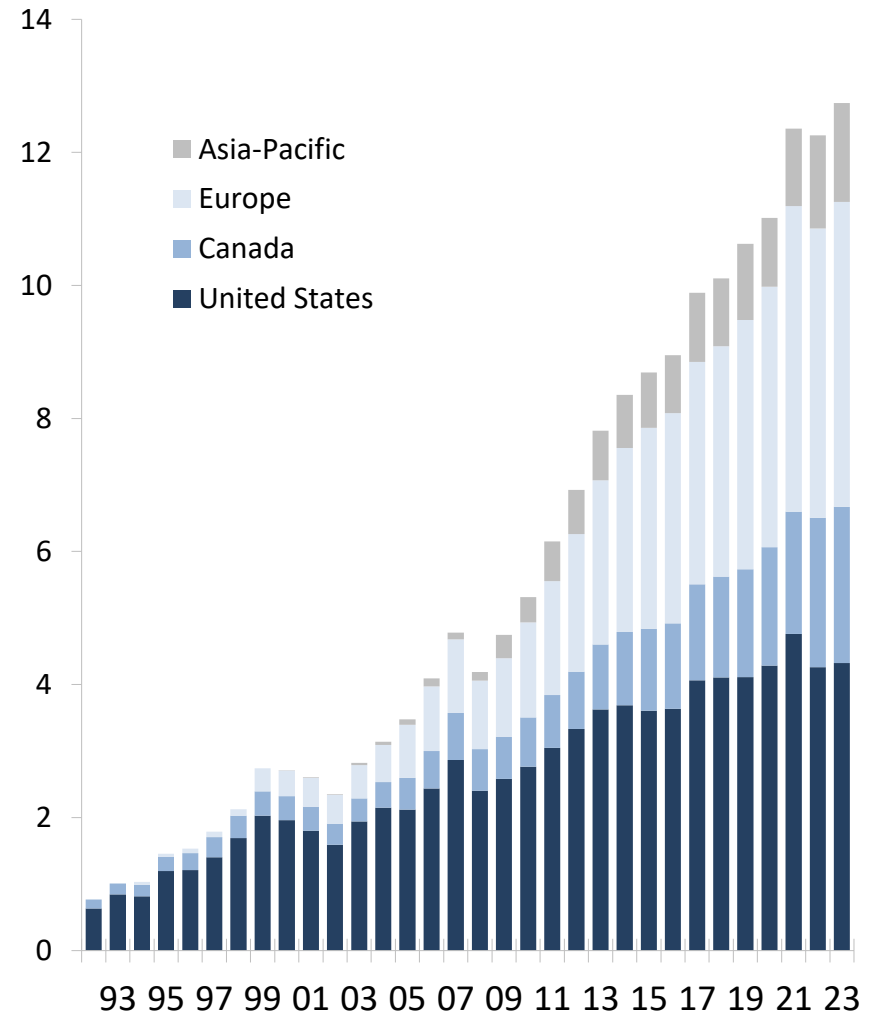
- Your 5-year average costs were 117.1 bps. This was below your benchmark over the period, providing an average annual savings of 12 bps.
- Your costs decreased by 2.6 bps, from 103.8 bps in 2019 to 101.2 bps in 2023, because you had a lower cost asset mix and had a lower cost implementation style. This was partly offset by paying more in performance fees for better returning assets.

This benchmarking report compares your cost and performance to the 293 funds in CEM's extensive pension database.

- 149 U.S. pension funds participate. The median U.S. fund had assets of \$10.3 billion and the average U.S. fund had assets of \$29.0 billion. Total participating U.S. assets were \$4.3 trillion.
- 66 Canadian funds participate with assets totaling \$2.3 trillion.
- 64 European funds participate with aggregate assets of \$4.6 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Ireland, Denmark and the UK.
- 10 Asia-Pacific funds participate with aggregate assets of \$1.5 trillion. Included are funds from Australia, New Zealand and South Korea.
- 4 funds from other regions participate.

The most meaningful comparisons for your returns and value added are to the U.S. Public universe, which consists of 46 funds. The U.S. Public universe assets totaled \$3.0 trillion and the median fund had assets of \$26.2 billion.

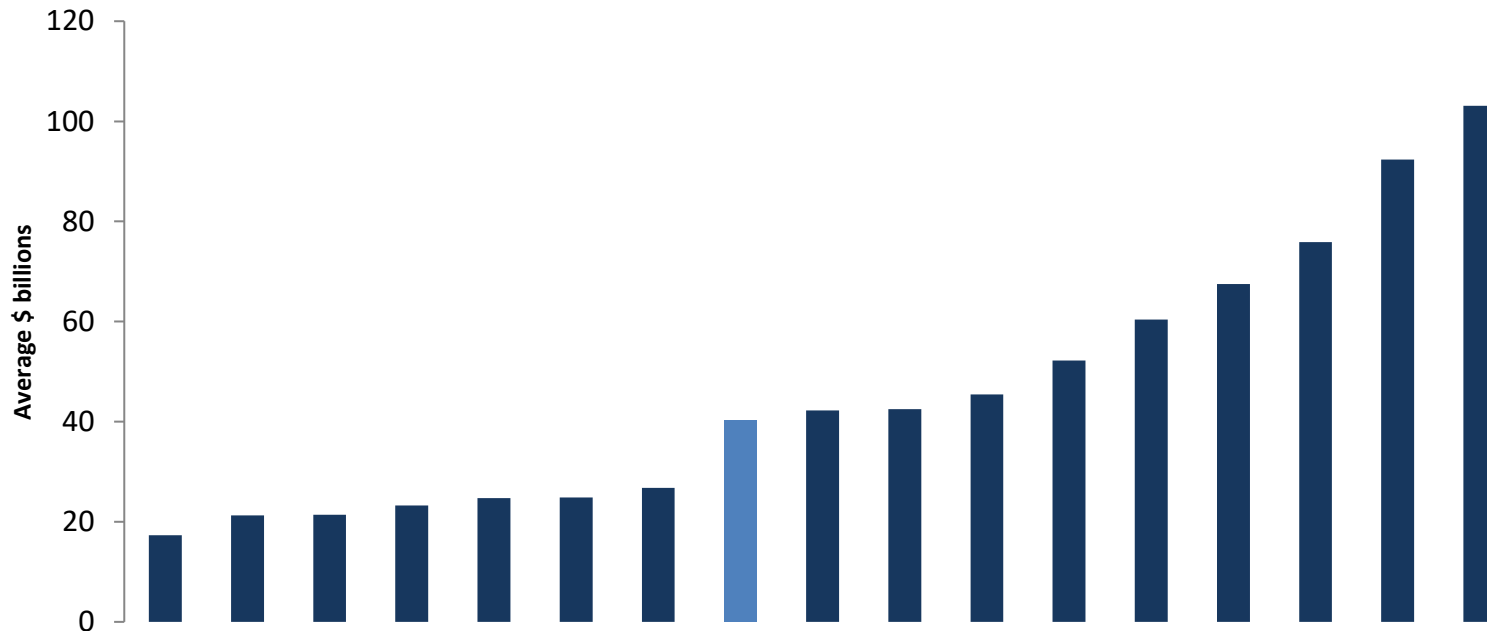
Participating assets (\$ trillions)



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

Peer group for South Carolina Retirement System Investment Commission

- 17 U.S. sponsors from \$17.3 billion to \$103.1 billion
- Median size of \$42.2 billion versus your \$40.2 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?

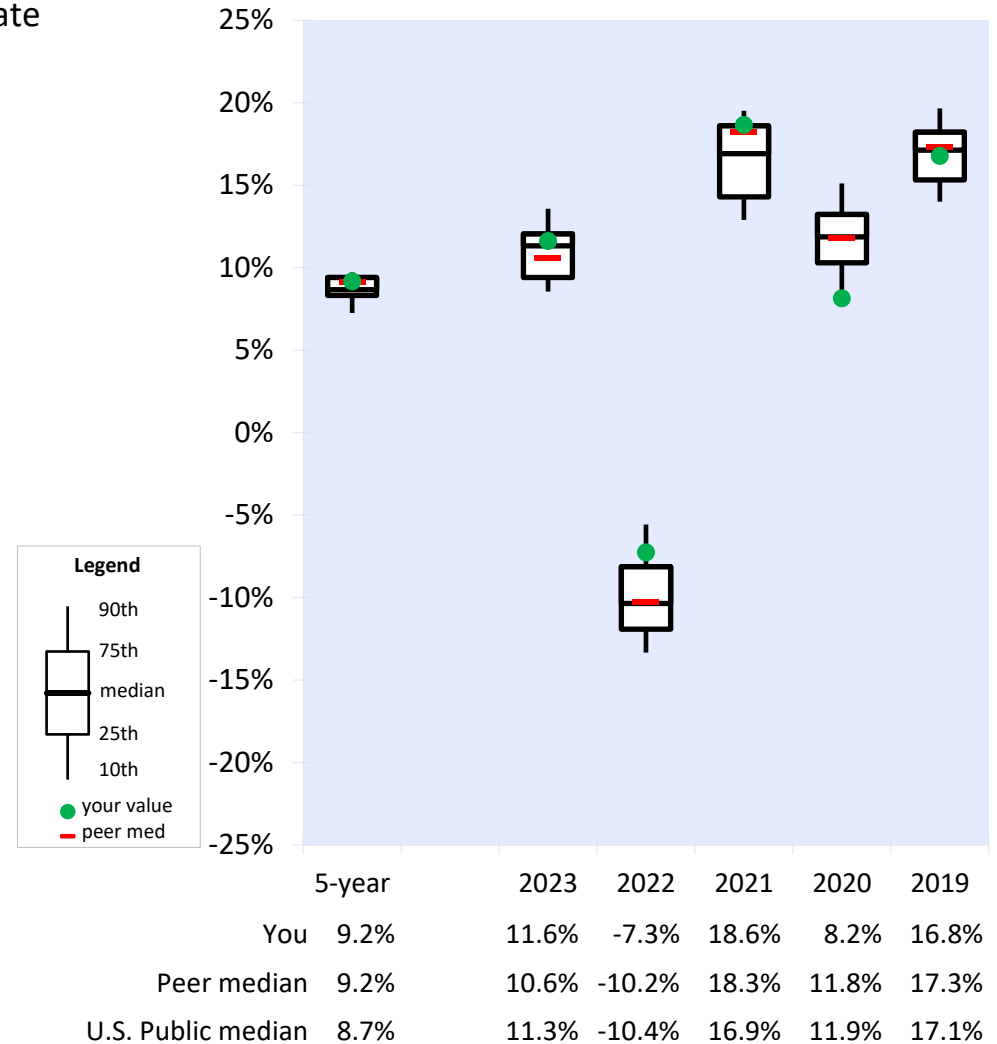
Your 5-year net total return of 9.2% was above the U.S. Public median of 8.7% and equal to the peer median of 9.2%

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	9.2%
- Policy return	6.9%
= Net value added	2.3%

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).

U.S. Public net total returns - quartile rankings



Your 5-year policy return of 6.9% was below both the U.S. Public median of 7.5% and the peer median of 7.5%.

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

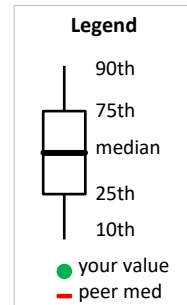
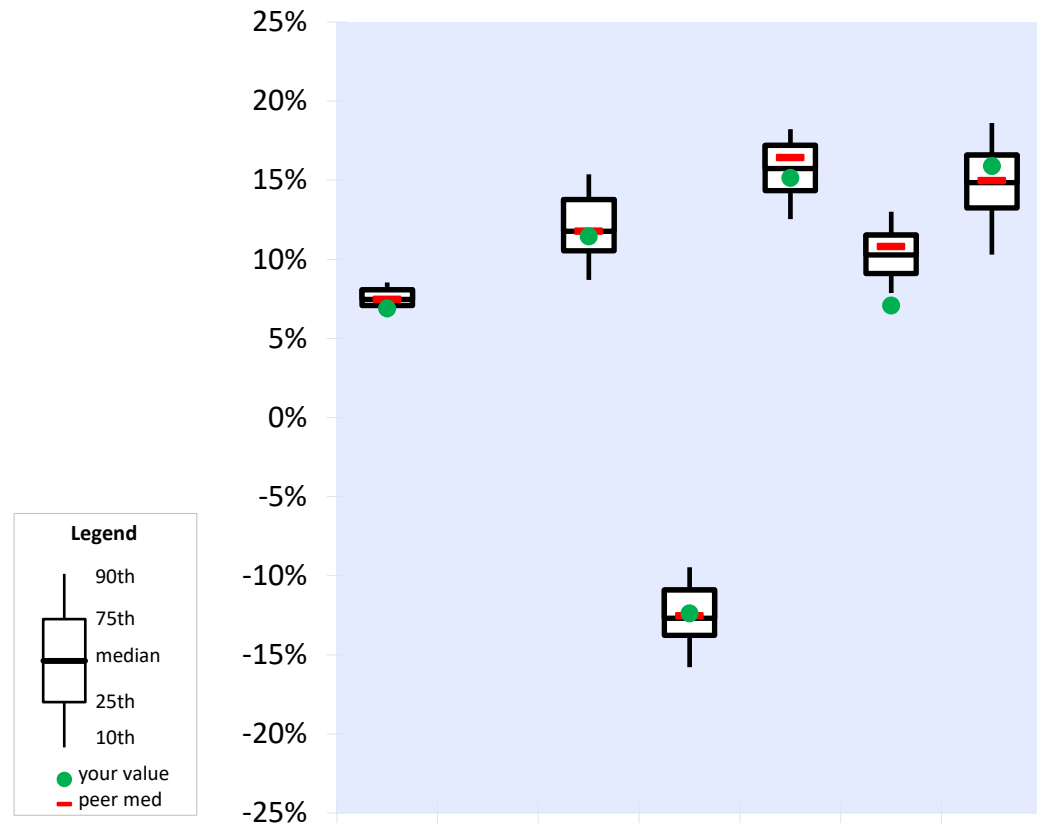
Having a higher or lower relative policy return is not necessarily good or bad. Your policy return reflects your investment policy, which should reflect your:

- 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, including your fund, were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. Prior to this adjustment, your 5-year policy return was 7.5%, 0.6% higher than your adjusted 5-year policy return of 6.9%. Mirroring this, your 5-year total fund net value added would be 0.6% lower.

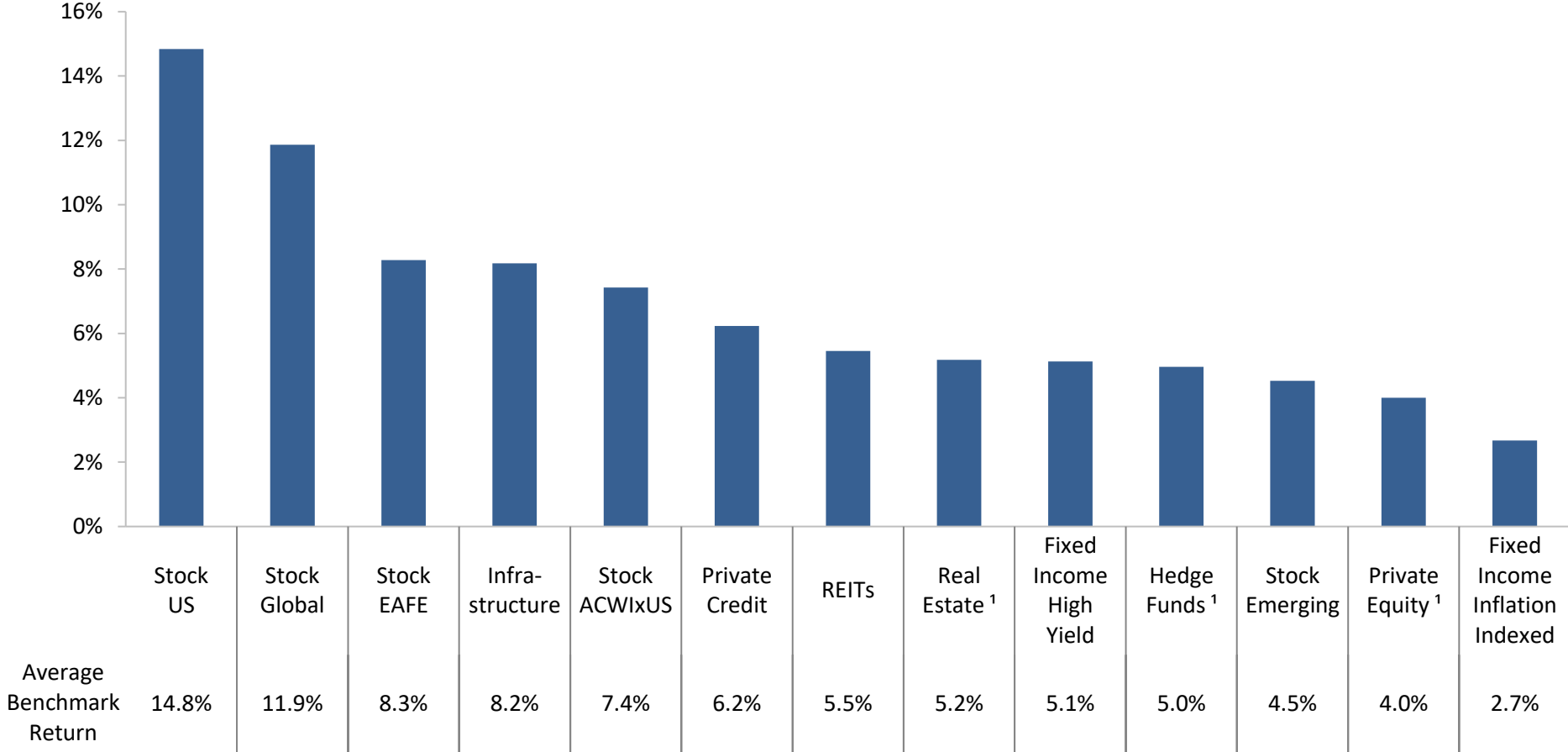
U.S. Public policy returns - quartile rankings



	5-year	2023	2022	2021	2020	2019
You	6.9%	11.4%	-12.4%	15.2%	7.1%	15.9%
Peer median	7.5%	11.8%	-12.5%	16.4%	10.8%	15.0%
U.S. Public median	7.5%	11.8%	-12.7%	15.7%	10.3%	14.9%

Differences in policy returns are caused by differences in benchmarks and policy mix. The two best performing asset classes for the 5 years ending 2023 were Stock - U.S. and Stock - Global.

Average reported benchmark returns for common asset classes - 5-year returns



1. The private equity benchmark is the average of the standardized private equity benchmark returns applied to U.S. Public participants based on a blend of listed small cap proxies. The hedge fund and real estate benchmarks are the averages of benchmark returns reported by U.S. Public participants.

Your 5-year policy return of 6.9% was below the U.S. Public median of 7.5% primarily because of:

- The negative impact of lower benchmark returns in Infrastructure and Real estate than the U.S. Public average.
- Offset by the positive impact of a slightly higher benchmark return in Total Stock than the U.S. Public average.

	5-year average policy mix ¹			5-year benchmark return	
	Your Fund	U.S. Publ Avg.	More/ Less	Your Fund	U.S. Publ Avg.
Stock - U.S.	12%	17%	-5%	12.4%	14.8%
Stock - EAFE	2%	4%	-2%	n/a ³	8.3%
Stock - Emerging	4%	2%	2%	8.1%	4.5%
Stock - ACWI x U.S.	1%	6%	-5%	n/a ³	7.4%
Stock - Global	27%	14%	13%	12.2%	11.9%
Other Stock	0%	2%	-2%	n/a ³	n/a ³
Total Stock	46%	45%	1%	12.2%	11.6%
Fixed Income - U.S.	22%	16%	6%	1.1%	1.3%
Fixed Inc. - Inflation indexed	0%	3%	-3%	n/a ³	2.7%
Cash	1%	-1%	2%	2.7%	1.9%
Other Fixed Income ²	3%	6%	-3%	n/a ³	n/a ³
Total Fixed Income	25%	24%	1%	1.5%	1.6%
Global TAA	1%	1%	1%	6.8%	6.6%
Hedge funds	0%	3%	-3%	6.8%	5.0%
Infrastructure	3%	1%	2%	7.0%	8.2%
REITs	1%	1%	0%	7.4%	5.5%
Real estate ex-REITs	8%	9%	-1%	3.5%	5.2%
Other Real Assets ²	0%	2%	-2%	n/a ³	n/a ³
Private equity	8%	11%	-3%	4.0%	4.0%
Private debt	7%	2%	4%	6.0%	6.2%
Total	100%	100%			

1. 5-year weights are based only on plans with 5 years of continuous data.

2. Other fixed income includes: Fixed income - Long bonds, Fixed income - High yield and Fixed income - Emerging. Other real assets include: Commodities and Natural resources.

3. A value of 'n/a' is shown if asset class returns are not available for the full 5 years or if they are broad and incomparable.

Net value added is the component of total return from active management. Your 5-year net value added was 2.3%.

Net value added equals total net return minus policy return.

Value added for South Carolina Retirement System Investment Commission

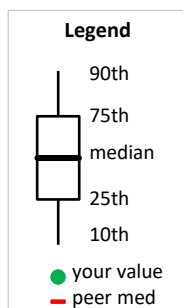
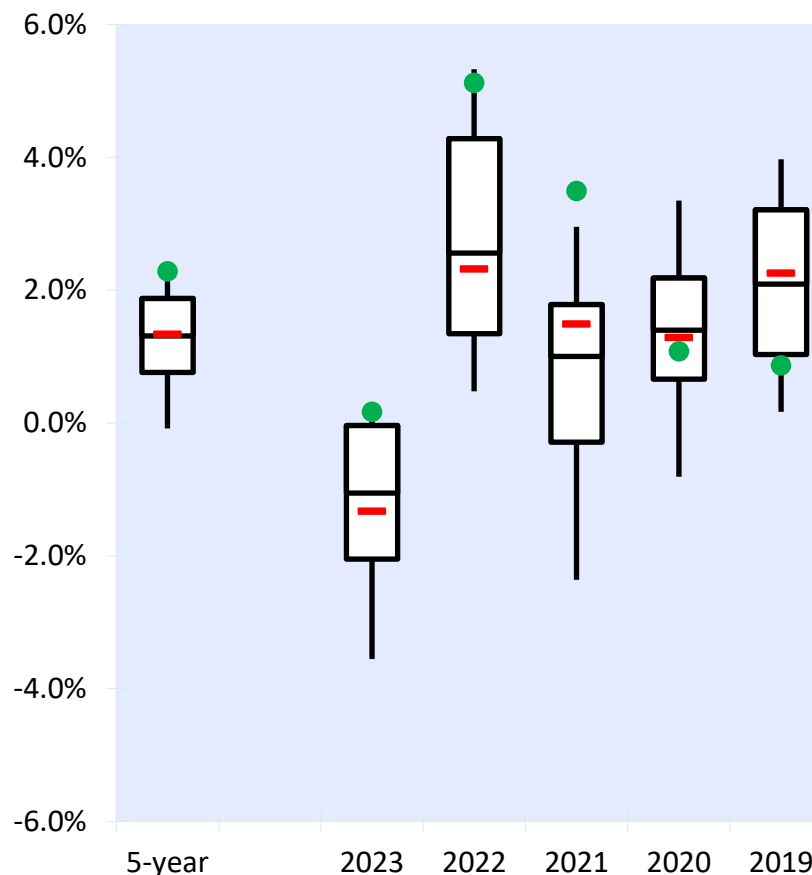
Year	Net return	Policy return	Net value added
2023	11.6%	11.4%	0.2%
2022	-7.3%	-12.4%	5.1%
2021	18.6%	15.2%	3.5%
2020	8.2%	7.1%	1.1%
2019	16.8%	15.9%	0.9%
5-Year	9.2%	6.9%	2.3%

Your 5-year net value added of 2.3% compares to a median of 1.3% for your peers and 1.3% for the U.S. Public universe.

Your 2.3% 5-year value added translates into approximately \$4.0 billion of cumulative value added over 5 years.

To enable fairer comparisons, the value added for each participant including your fund was adjusted to reflect private equity benchmarks based on lagged, investable public market indices. Prior to this adjustment, your fund's 5-year total fund net value added was 1.7%.

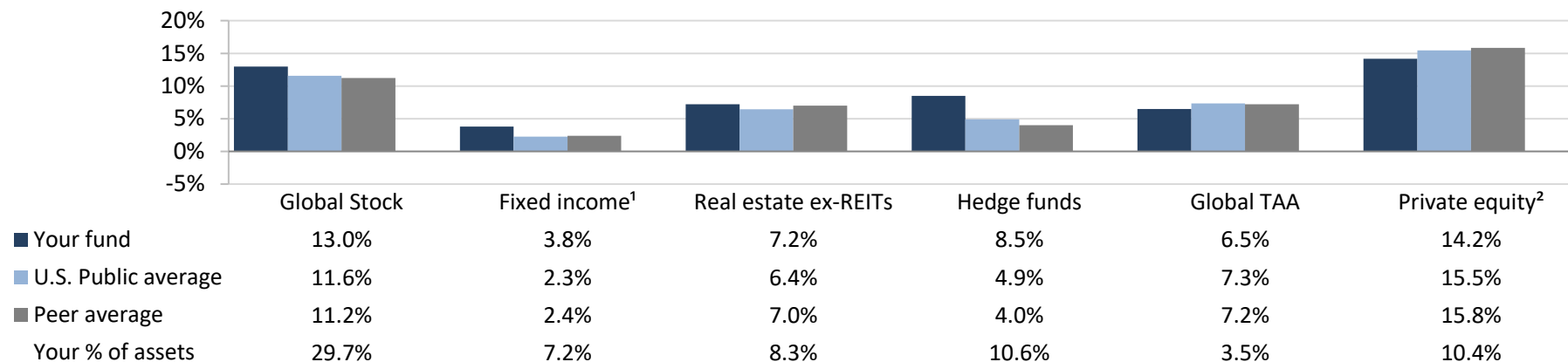
U.S. Public net value added - quartile rankings



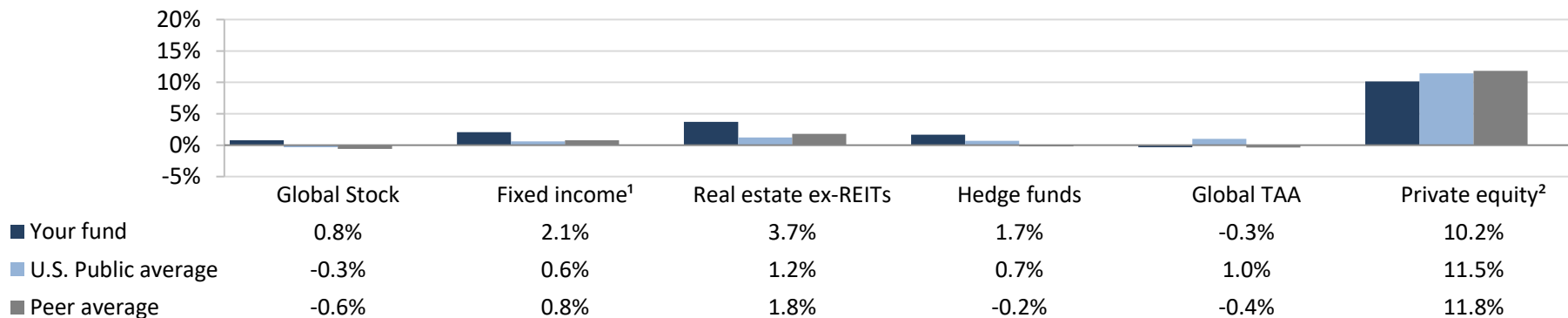
You	2.3%	0.2%	5.1%	3.5%	1.1%	0.9%
Peer median	1.3%	-1.3%	2.3%	1.5%	1.3%	2.3%
U.S. Public median	1.3%	-1.1%	2.6%	1.0%	1.4%	2.1%

Comparisons of your 5-year net return and net value added by major asset class:

5-year average net return by major asset class



5-year average net value added by major asset class



1. Excludes cash and leverage.

2. To enable fairer comparisons, the private equity benchmarks of all participants, including your fund were adjusted to reflect lagged, investable, public-market indices. Prior to this adjustment, your fund's 5-year private equity net value added was 1.0%.

Your investment costs were \$406.8 million or 101.2 basis points in 2023.

Asset management costs by asset class and style (\$000s)	Internal Overseeing of external	External Management			Total
		Passive fees	Active base fees	Perform. fees ⁵	
Public Stock and REITs	5,312	3,485	1,025		9,822
Fixed Income	652		6,861		7,917
Infrastructure	180		4,223	2,880	7,283
Infrastructure - LP/Value add	183		7,339	10,143	17,665
Infrastructure - Co-invest.	65		370		435
Real estate ex-REITs	743		18,478	-2,630	16,591
Real estate ex-REITs - LP/Value add	324		17,614	-26,049	-8,112
Real estate ex-REITs - Co-invest.	35		380	-755	-339
Global TAA	229		8,134	1,753	10,116
Hedge funds - External active	1,387		78,314	80,275	159,976
Hedge funds - FoFs ^{3 4}	4		145	125	273
Private equity - Diversified - LP/Value add	41		2,464	-209	2,296
Private equity - Diversified - Co-invest.	66				66
Private equity - Diversified - FoFs ^{3 4}	69		4,491	2,393	6,952
LBO - LP/Value add ^{1 2}	475		19,660	32,859	52,994
LBO - Co-invest.	621		3,937	8,021	12,579
LBO - FoFs ^{3 4}	44		2,983	2,487	5,514
Venture capital - LP/Value add	58		4,646	1,939	6,643
Venture capital - Co-invest.	15				15
Venture capital - FoFs ^{3 4}	164		10,645	1,552	12,361
Private credit - LP/Value add	1,083		28,281	37,071	66,434
Private credit - Co-invest.	69		1,264	-3,349	-2,016
Private equity - Other ^{2 3}	197		7,453	6,932	7,649
Derivatives/Overlays	257	1,028			1,286
Total					401,332
					99.9bp
Oversight, custodial and other costs⁶					
Oversight of the fund					1,841
Trustee & custodial					1,151
Consulting and performance measurement					1,809
Audit					285
Other					359
Total oversight, custodial & other costs					5,445
					1.4bp
Total investment costs (excl. transaction costs)					406,777
					101.2bp

Footnotes

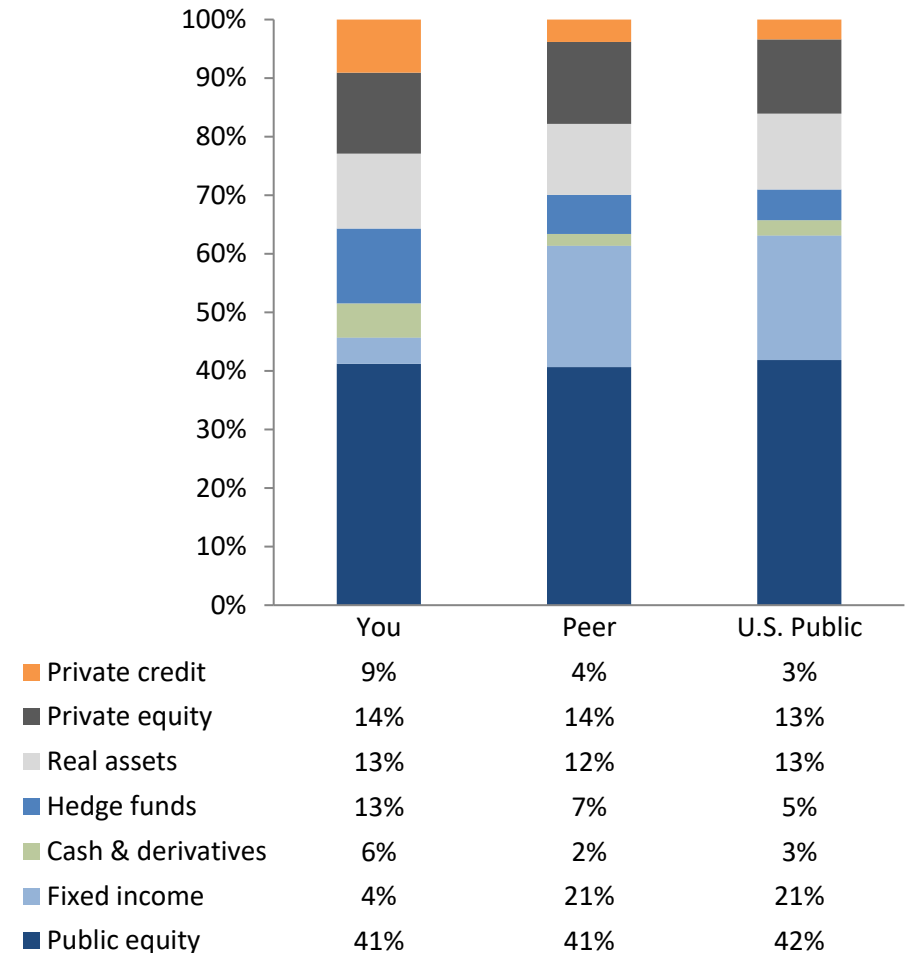
- CEM-imputed costs were applied to the manager base fees for one or more mandates were added: LBO - LP/Value add 150 bp.
- CEM-imputed costs were applied to the following manager performance fees for one or more mandates were added: LBO - LP/Value add 130 bps.
- CEM-imputed costs were applied to the underlying manager base fees for one or more mandates were added: Hedge funds - FoFs 125 bps, LBO - FoFs 150 bps, Private equity - Other - FoFs 120 bps, Venture capital - FoFs 160 bps, Private equity - Diversified - FoFs 150 bps.
- CEM-imputed costs were applied to the underlying performance fees for one or more mandates were added: Hedge funds - FoFs 105 bps, LBO - FoFs 130 bps, Private equity - Other - FoFs 60 bps, Venture capital - FoFs 70 bps, Private equity - Diversified - FoFs 105 bps. Refer to Appendix A for full details regarding the different forms of cost completion.
- Total cost includes carry/performance fees for all asset classes.
- Excludes non-investment costs, such as benefit insurance premiums and preparing cheques for retirees.

High-cost assets equaled 48% of your assets at the end of 2023 versus a peer average of 37%.

Alternative asset classes, such as, real estate (excl. REITs), infrastructure, hedge funds, private equity and private credit are typically higher cost asset classes than public asset classes such as public equity and fixed income. You had a combined public market allocation of 48% at the end of 2023 versus a peer average of 63%.

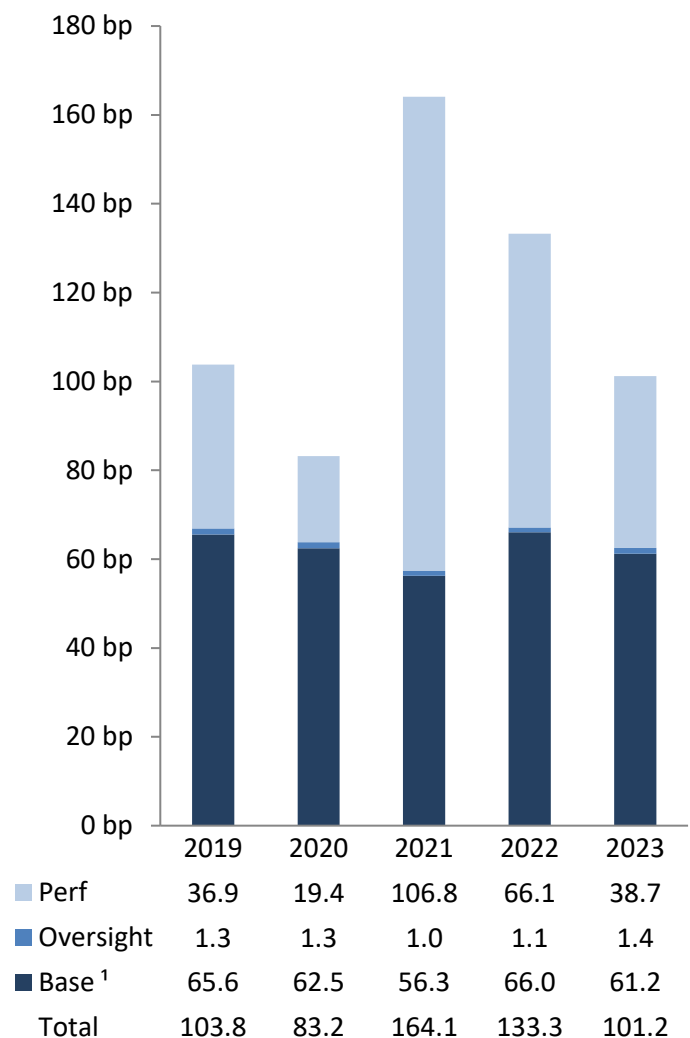
Your alternative asset classes represent 48% of your assets, but 94% of your total costs.

2023 Actual asset allocation



Your costs decreased by 2.6 bps, from 103.8 bps in 2019 to 101.2 bps in 2023, because you had a lower cost asset mix and had a lower cost implementation style. This was partly offset by paying more in performance fees for better returning assets.

Trend in cost



Reasons why your costs decreased by 2.6 bps

			Impact in bps
1. Lower cost asset mix			
• Mix of Stock			(4.1)
• Less Fixed income: 2019 10% vs 2023 4%			(2.6)
• More Real estate ex-REITs: 2019 9% vs 2023 9%			1.1
• Mix of Private equity			(2.5)
• All other mix changes			(0.7)
			<hr/>
			(8.9)
2. Lower cost implementation style			
• More passive, less active			(3.4)
• More core/evergreen, less value-added LP & FoF within privates			(0.8)
• Within value-added privates, less LP, more FoF			4.3
• More co-investment as a % of LP/Co			(2.2)
			<hr/>
			(2.1)
3. Paid more in total for similar investment styles	<u>2019 cost</u>	<u>2023 cost</u>	
• Higher external active Funded Taa costs	19.3 bp	139.3 bp	2.2
• Higher Hedge Funds base fees	176.1 bp	181.2 bp	0.6
• Lower Private Equity LP/Value add base fees	157.1 bp	89.0 bp	(0.5)
• Higher Infrastructure base fees	38.9 bp	68.6 bp	0.5
• Higher Hedge Funds performance fees	85.9 bp	182.5 bp	10.6
• Lower Real Estate ex-REITs performance fees	66.5 bp	(253.8 bp)	(8.2)
• Higher Private Credit performance fees	46.9 bp	108.0 bp	5.2
• Lower Private Equity LP/Value add performance fees	415.5 bp	(16.0 bp)	(1.4)
• Similar internal investment management costs			0.0
• All other differences			(0.6)
			<hr/>
			8.4
Total decrease			<hr/>
			(2.6)

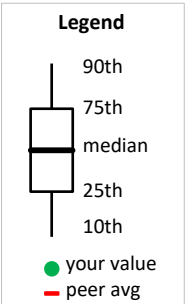
1. Includes fees for managing internal assets and internal costs of monitoring external programs, where allocated.

Before adjusting for asset mix differences, your total investment cost of 101.2 bps was above the peer median of 90.5 bps.

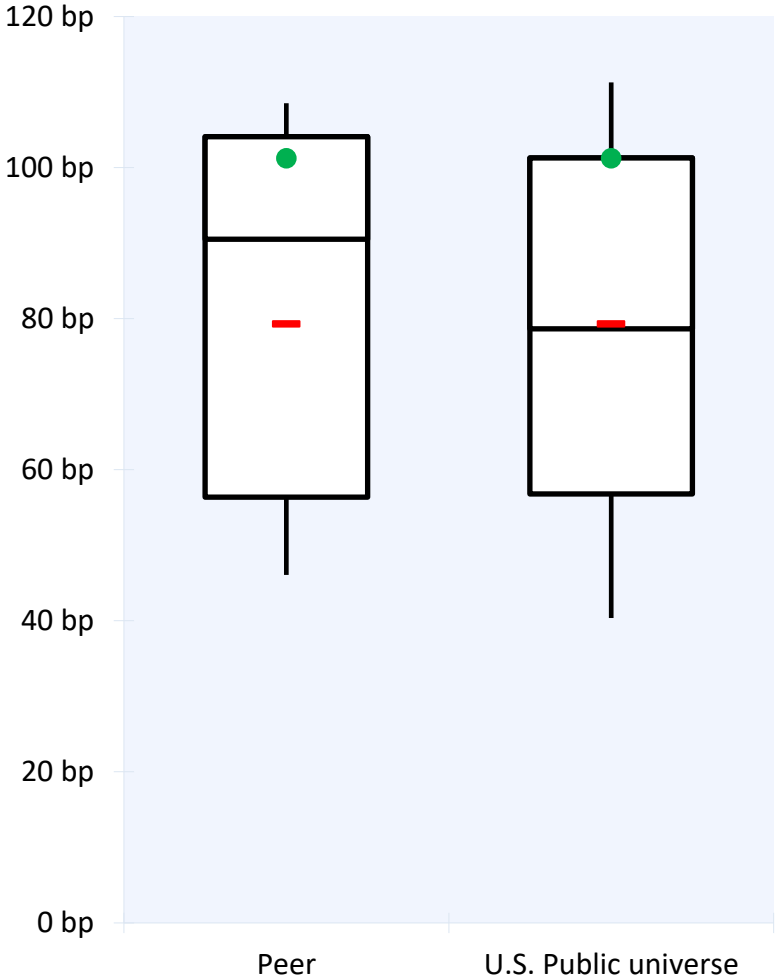
Differences in total investment cost are often caused by two factors that are often outside of management's control:

- Asset mix - private asset classes are generally more expensive than public asset classes.
- 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.



Total investment cost
excluding transaction costs



Benchmark cost analysis suggests that, after adjusting for fund size and asset mix, your fund was below benchmark cost by 8.7 basis points in 2023.

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 101.2 bp was slightly below your benchmark cost of 109.9 bp. Thus, your cost savings were 8.7 bp.

Your cost versus benchmark

	\$000s	basis points
Your total investment cost	406,777	101.2 bp
Your benchmark cost	441,867	109.9 bp
Your excess cost	(35,090)	(8.7) bp

Your fund was below benchmark cost because it had a lower cost implementation style.

Reasons for your low cost status

	Excess Cost/ (Savings)	
	\$000s	bps
1. Lower cost implementation style		
• Less active management, more lower cost passive	(27,825)	(6.9)
• More external management, less lower cost internal	2,168	0.5
• More LPs as a percentage of external	16,148	4.0
• Use of fund of funds	852	0.2
• More co-investment as a percentage of LP/Co	(51,221)	(12.7)
• Less overlays	(496)	(0.1)
	<u>(60,374)</u>	<u>(15.0)</u>
2. Paying more than peers for some services		
• External investment management costs	26,698	6.6
• Internal investment management costs	(1)	(0.0)
• Oversight, custodial & other costs	(1,413)	(0.4)
	<u>25,284</u>	<u>6.3</u>
Total savings	(35,090)	(8.7)
Neutralized differences due to performance fees specific to 2023:		
• Paying more for hedge fund performance fees	34,098	8.5

Your implementation style was 15.0 bps lower cost than the peer average.

Implementation style is the way in which your fund implements asset allocation. Each implementation choice has a cost. Your first choice is how much to implement passively or actively. The table below summarizes your aggregate choices versus peers and their cost impact.

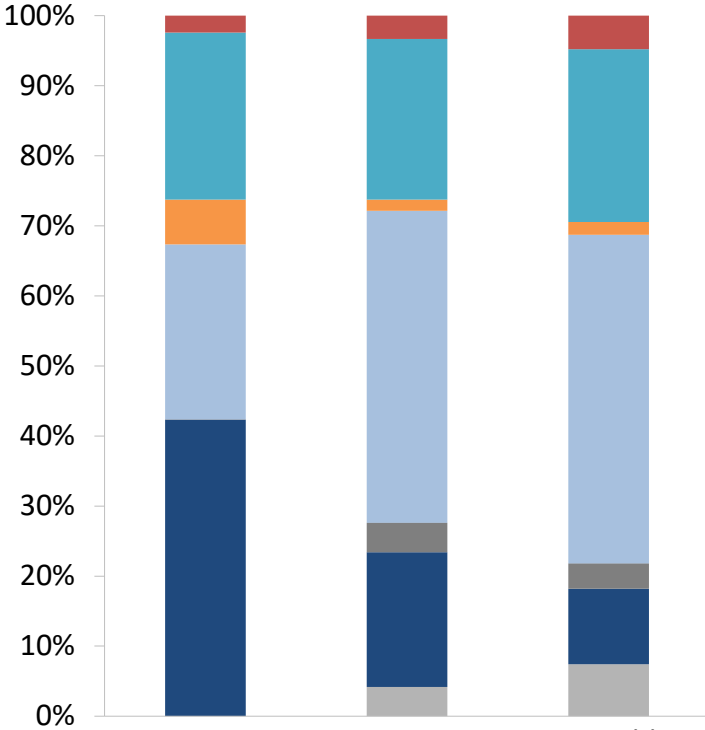
Implementation choices	Impact
Less active, more passive	(6.9) bp
Less internal as a % of passive	0.0 bp
Less internal as a % of active	0.5 bp
More LPs as a % of external	4.0 bp
Less fund of funds	0.2 bp ²
More co-investment as a percentage of LP/Co	(12.7) bp
Less overlays	(0.1) bp
Total impact	(15.0) bp

The peer and universe style was adjusted to match your asset mix. It equals their average style for each asset class weighted by your fee basis for the asset class. It shows how the average peer would implement your asset mix.

1. Implementation style is shown as a % of total fund fee basis because the fee basis is the primary driver of cost for private assets (e.g., new private equity LP commitments increase costs before LP NAV increases). Style weights are based on average holdings. Cash and derivatives are excluded.

2. Typically, less fund of funds as a % of LP/Co/FoF is lower cost. But your mix of fund of funds increased your cost.

Implementation style¹



Fund of funds	2.4%	3.3%	4.8%
LP/Value add	23.8%	22.9%	24.6%
Co-investment	6.4%	1.6%	1.9%
External active	25.0%	44.5%	46.9%
Internal active	0.0%	4.2%	3.6%
External passive	42.3%	19.2%	10.8%
Internal passive	0.0%	4.2%	7.4%

The table below summarizes why your fund is high/low cost relative to the peer-median by asset class.

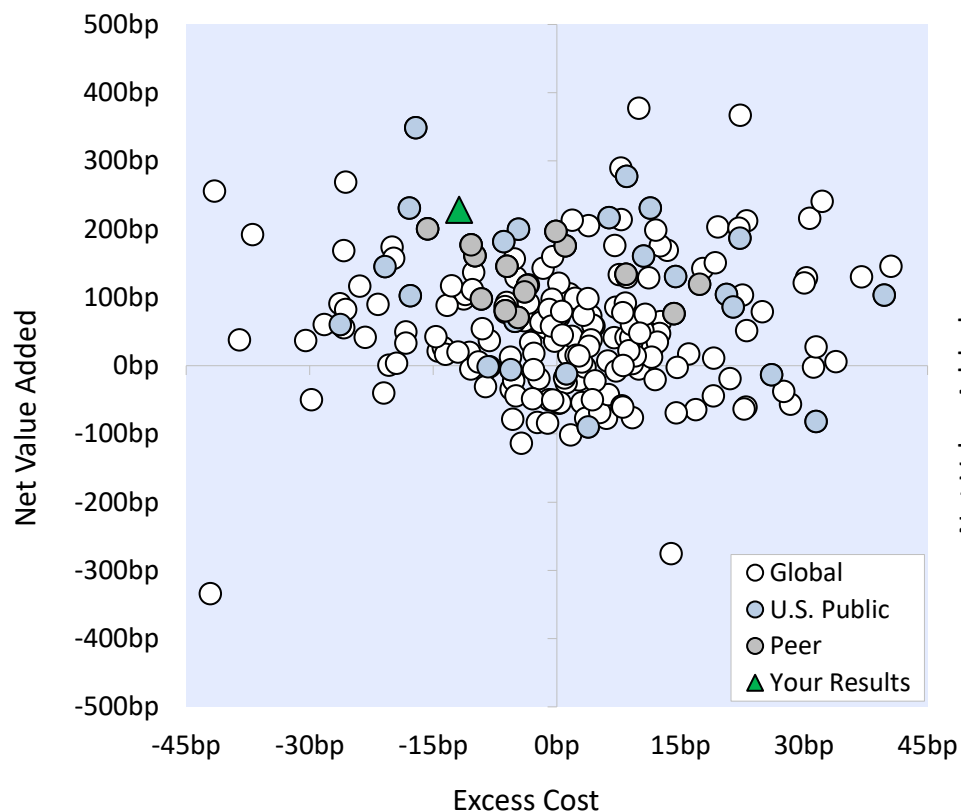
Why are you high/(low) cost by asset class?

Asset class/category	Impl. style \$000s	Paying more/(less) \$000s	Total \$000s	Total bps	Holding %	Net value added
Stock - U.S. small cap	(3,572)	715	(2,857)	(27.3) bp	3%	0.6%
Stock - EAFE	(2,217)	187	(2,030)	(28.7) bp	2%	-2.5%
Stock - Emerging	(894)	53	(841)	(31.9) bp	1%	12.2%
Stock - Global	(21,092)	2,159	(18,933)	(13.0) bp	36%	-1.1%
Fixed income - U.S.	114	1,334	1,448	35.5 bp	1%	-3.7%
Fixed income - Emerging	0	(7)	(7)	(14.5) bp	0%	-96.6%
Fixed income - High yield	111	1,534	1,645	13.6 bp	3%	-1.9%
Fixed income - Other	55	(17)	38	2.1 bp	0%	--
REITs	36	1	37	1.3 bp	1%	1.3%
Real estate ex-REITs	2,781	(27,630)	(24,849)	(72.2) bp	9%	5.8%
Infrastructure	(2,608)	4,099	1,491	14.2 bp	3%	7.8%
Hedge funds	(1,870)	24,682	22,812	51.7 bp	11%	-8.3%
Global TAA	39	7,622	7,661	105.5 bp	2%	-6.1%
Private equity - Diversified	(3,213)	(3,921)	(7,135)	(113.6) bp	1%	-1.7%
Venture capital	3,651	(2,003)	1,647	11.4 bp	2%	-15.7%
LBO	(46,688)	17,061	(29,627)	(82.0) bp	9%	1.0%
Private credit	15,489	829	16,318	46.4 bp	9%	-4.0%
Derivatives and overlays	(496)	0	(496)	(0.1) bp	2%	--
Oversight, custodial & other	n/a	(1,413)	(1,413)	(0.4) bp	--	--
Total	(60,374)	25,284	(35,090)	(8.7) bp	100%	0.2%

Your 10-year performance placed in the positive value added, low cost quadrant of the cost effectiveness chart.

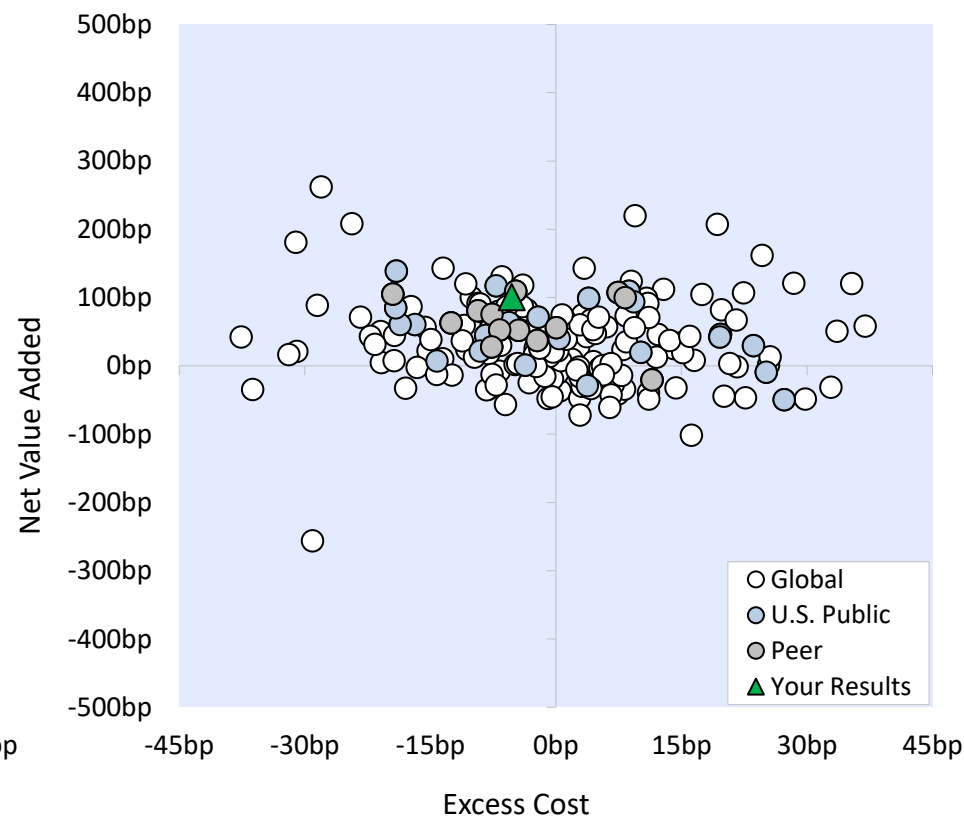
5-Year net value added versus excess cost

(Your 5-year: net value added 228 bps, cost savings 12 bps¹)



10-year net value added versus excess cost

(Your 10-year: net value added 101 bps, cost savings 5 bps)



1. Your 10-year cost savings of 5 basis points is the average of your cost savings for the past 10 years. Prior years' cost savings are calculated using a simplified benchmark model.

	10-year	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Net value added	100.7 bp	16.9 bp	512.3 bp	349.2 bp	107.7 bp	86.6 bp	(177.6) bp	55.2 bp	(56.1) bp	57.9 bp	21.2 bp
Excess cost	(5.3) bp	(8.7) bp	(12.4) bp	(8.7) bp	(18.5) bp	(11.0) bp	(9.6) bp	(1.5) bp	(1.0) bp	5.1 bp	13.8 bp

Summary of key takeaways

Returns

- Your 5-year net total return was 9.2%. This was above the U.S. Public median of 8.7% and equal to the peer median of 9.2%.
- Your 5-year policy return was 6.9%. This was below both the U.S. Public median of 7.5% and the peer median of 7.5%.

Value added

- Your 5-year net value added was 2.3%. This was above both the U.S. Public median of 1.3% and the peer median of 1.3%.
- Your 2.3% 5-year value added translates into approximately \$4.0 billion of cumulative value added over 5 years.

Cost and cost effectiveness

- Your investment cost of 101.2 bps was below your benchmark cost of 109.9 bps. This suggests that your fund was slightly low cost compared to your peers.
- Your fund was below benchmark cost because it had a lower cost implementation style.
- Your costs decreased by 2.6 bps, from 103.8 bps in 2019 to 101.2 bps in 2023, because you had a lower cost asset mix and had a lower cost implementation style. This was partly offset by paying more in performance fees for better returning assets.

2

Description of peer group and universe

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Peer group

Your peer group is comprised of 17 global funds, with assets ranging from \$17.3 billion to \$103.1 billion versus your \$40.2 billion. The median size is \$42.2 billion.

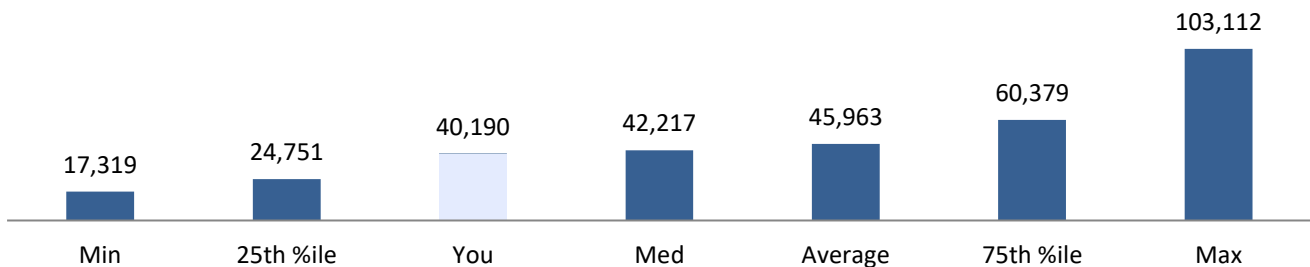
In order to preserve client confidentiality, we do not disclose your peers' names in this document due to the Freedom of Information Act. Your peer group consist of plans with the following characteristics:

Peer Group Characteristics - 2023

	You	Peers	U.S. Public average
<u>Plan Assets (\$ billions)</u>			
Range	40.2	17.3 - 103.1	0.7 - 446.4
Median		42.2	26.2
<u># of Plans</u>			
Corporate		0	0
Public	1	16	46
Other		1	0
Total		17	46
<u>Implementation style</u>			
% External active	53.6	67.2	63.7
% External passive	43.2	23.8	21.6
% Internal active	3.2	5.3	7.8
% Internal passive	0.0	3.8	6.9
<u>Asset mix</u>			
% Stock	41.2	40.6	41.9
% Fixed Income	8.3	21.3	23.0
% Real Assets	12.8	12.1	12.9
% Private Equity	13.8	14.0	12.7
% Private Credit	9.1	3.8	3.4
% Hedge Funds & Other	14.8	8.1	6.1

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).

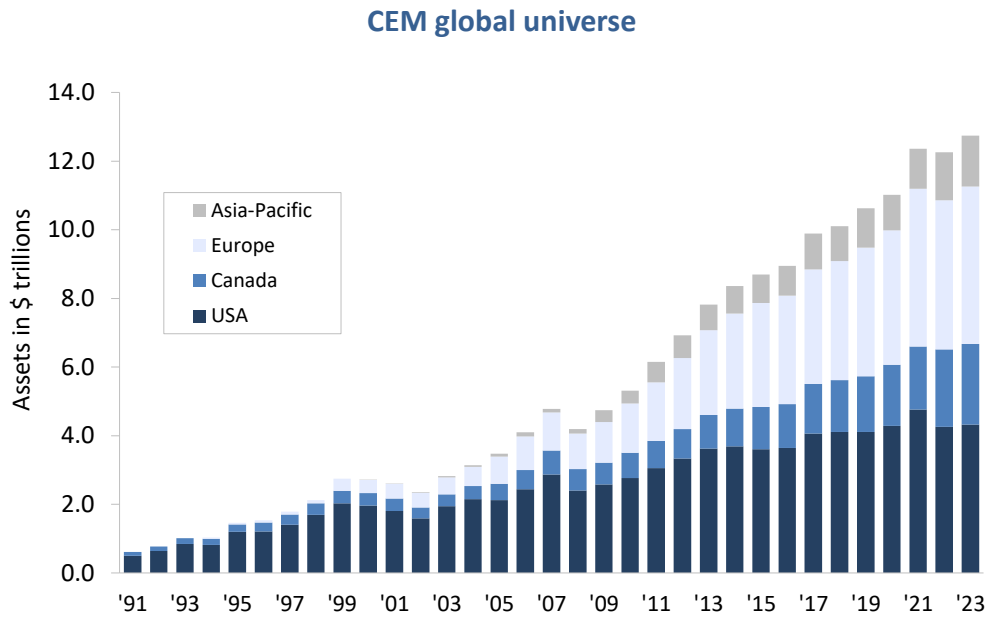
Total fund assets (\$ millions) - you versus peers



CEM global universe

CEM has been providing investment benchmarking solutions since 1991. The 2023 survey universe is comprised of 293 funds representing \$12.9 trillion in assets. The breakdown by region is as follows:

- 149 U.S. pension funds with aggregate assets of \$4.3 trillion.
- 66 Canadian pension funds with aggregate assets of \$2.3 trillion.
- 64 European pension funds with aggregate assets of \$4.6 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Denmark, UK, and Ireland.
- 10 Asia-Pacific pension funds with aggregate assets of \$1.5 trillion.
- 4 funds from other regions participate.



Universe subsets

CEM's global survey universe is comprised of 293 funds with total assets of \$12.9 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 17 funds ranging in size from \$17.3 - \$103.1 billion. The peer median of \$42.2 billion compares to your \$40.2 billion.
- U.S. Public - The U.S. Public universe is comprised of 46 funds ranging in size from \$0.7 - \$446.4 billion. The median fund is \$26.2 billion.

Universe subsets by number of funds and assets

	Peer group ¹	Global by type				Global by Country				
		Corp.	Public	Other	Total	U.S.	Canada	Europe	Asia-Pacific	Total
# of funds										
2023	17	120	123	50	293	149	66	64	14	293
2022	16	130	118	55	303	148	72	66	17	303
2021	16	131	119	45	295	146	70	67	12	295
2020	18	136	135	43	314	160	70	73	11	314
2019	17	136	136	45	317	155	71	75	16	317
# of funds with uninterrupted data for:										
1 yr	17	120	123	50	293	149	66	64	14	293
2 yrs	16	116	112	47	275	138	64	61	12	275
3 yrs	15	106	103	38	247	126	59	53	9	247
4 yrs	15	102	102	36	240	121	58	53	8	240
5 yrs	15	96	98	34	228	115	56	49	8	228
Total assets (\$ billions)										
2023	781	1,205	8,736	2,963	12,904	4,325	2,346	4,584	1,649	12,904
2022	720	1,379	7,834	3,162	12,375	4,258	2,250	4,347	1,520	12,375
2021	772	1,901	8,000	2,659	12,560	4,762	1,837	4,592	1,369	12,560
2020	704	1,730	7,173	2,265	11,168	4,287	1,779	3,914	1,188	11,168
2019	642	1,655	6,937	2,202	10,794	4,111	1,622	3,748	1,314	10,794
2023 asset distribution (\$ billions)										
Avg	46.0	10.0	71.0	59.3	44.0	29.0	35.6	71.6	117.8	44.0
Max	103.1	59.7	1,941.8	707.6	1,941.8	446.4	498.4	1,941.8	805.6	1,941.8
75th %ile	60.4	13.3	55.1	79.6	30.1	24.8	16.9	45.2	96.5	30.1
Median	42.2	5.3	15.8	25.7	10.4	10.3	6.2	14.2	54.7	10.4
25th %ile	24.8	2.0	6.2	3.9	3.6	2.9	2.5	5.6	28.7	3.6
Min	17.3	0.3	0.3	0.1	0.1	0.3	0.1	0.8	3.4	0.1

1. Peer group statistics are for your 2023 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 - 2023 (as a % of year-end assets)

	Your fund ¹	Peer group	Global by type				Global by Country				
			Corp.	Public	Other	Total	U.S.	Canada	Europe	Asia-Pacific	Total
Implementation style											
External active	51.4	64.8	74.0	56.3	59.4	64.1	73.2	59.2	50.0	54.4	64.1
Fund of funds	2.2	2.4	3.3	3.2	1.9	3.0	2.8	2.3	4.4	1.8	3.0
External passive	43.2	23.8	15.1	15.5	18.9	15.9	16.8	12.0	18.6	13.0	15.9
Internal active	3.2	5.3	5.4	18.8	15.7	12.8	4.1	21.3	21.8	24.2	12.8
Internal passive	<u>0.0</u>	<u>3.8</u>	<u>2.1</u>	<u>6.1</u>	<u>4.2</u>	<u>4.2</u>	<u>3.1</u>	<u>5.1</u>	<u>5.1</u>	<u>6.6</u>	<u>4.2</u>
Total	100	100	100	100	100	100	100	100	100	100	100
Actual asset mix											
Stock	41.2	40.6	22.1	42.3	39.1	33.5	29.7	31.5	42.1	44.5	33.5
Fixed income	4.5	20.8	53.0	22.8	31.7	36.7	42.5	33.9	29.2	22.1	36.7
Cash & derivatives ²	5.9	2.0	2.8	0.7	2.2	1.8	2.7	-0.4	1.0	6.9	1.8
Global TAA	1.8	0.2	0.3	0.4	0.5	0.4	0.4	0.4	0.3	0.3	0.4
Real assets	12.8	12.1	7.9	16.7	14.4	12.7	8.2	20.3	15.5	13.1	12.7
Hedge funds	11.0	5.3	4.0	2.6	2.0	3.1	4.5	1.9	1.2	2.2	3.1
Balanced funds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Risk parity	0.0	1.1	0.3	0.3	0.0	0.3	0.5	0.0	0.0	0.0	0.3
Private debt	9.1	3.8	2.8	4.1	4.9	3.7	2.6	5.3	4.9	2.0	3.7
Private equity	<u>13.8</u>	<u>14.0</u>	<u>6.7</u>	<u>10.0</u>	<u>5.2</u>	<u>7.8</u>	<u>8.9</u>	<u>7.1</u>	<u>5.8</u>	<u>8.9</u>	<u>7.8</u>
Total	100	100	100	100	100	100	100	100	100	100	100
Policy asset mix											
Stock	46.0	42.5	23.5	42.9	39.6	34.4	31.2	32.9	39.9	50.7	34.4
Fixed income	26.0	23.4	56.9	25.0	32.6	39.4	45.9	36.1	30.7	24.1	39.4
Cash ²	0.0	0.9	0.2	-0.5	2.1	0.2	0.2	-1.9	1.5	4.3	0.2
Global TAA	0.0	0.1	0.3	0.3	0.5	0.4	0.4	0.4	0.2	0.3	0.4
Real assets	12.0	12.7	7.3	16.9	14.1	12.5	8.2	19.3	15.7	11.3	12.5
Hedge funds	0.0	3.4	3.2	1.7	1.5	2.3	3.4	1.2	1.1	1.5	2.3
Balanced funds	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0
Risk parity	0.0	1.2	0.3	0.3	0.0	0.3	0.5	0.0	0.0	0.1	0.3
Private debt	7.0	3.6	2.4	4.5	4.7	3.7	2.0	6.2	5.4	2.2	3.7
Private equity	<u>9.0</u>	<u>12.1</u>	<u>5.8</u>	<u>8.7</u>	<u>4.8</u>	<u>6.9</u>	<u>8.1</u>	<u>5.8</u>	<u>5.3</u>	<u>5.5</u>	<u>6.9</u>
Total	100	100	100	100	100	100	100	100	100	100	100

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

2. Negative allocations indicate use of leverage.

Implementation style, actual mix and policy mix trends

Implementation style, actual mix and policy mix - 2019 to 2023 (as a % of year-end assets)

	Your fund ¹					Peer average ²					U.S. Public average ²				
	2023	2022	2021	2020	2019	2023	2022	2021	2020	2019	2023	2022	2021	2020	2019
Implementation style															
External active	51.4	50.2	48.0	59.8	78.1	65.6	66.7	62.9	62.4	63.7	59.3	59.0	56.1	55.6	57.7
Fund of funds	2.2	7.4	7.6	5.6	5.2	2.2	2.6	2.5	2.1	2.2	2.6	2.9	2.6	1.9	2.0
External passive	43.2	40.9	44.4	30.9	10.6	23.7	23.0	25.5	26.2	24.7	21.5	21.2	23.3	24.0	22.6
Internal active	3.2	1.5	0.0	3.8	6.1	5.3	4.9	6.0	6.1	6.1	9.2	9.3	9.9	10.7	10.5
Internal passive	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>3.2</u>	<u>2.7</u>	<u>3.1</u>	<u>3.2</u>	<u>3.2</u>	<u>7.5</u>	<u>7.7</u>	<u>8.1</u>	<u>7.7</u>	<u>7.2</u>
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Actual asset mix															
Stock	41.2	40.2	46.9	40.0	35.7	38.1	37.4	42.7	43.9	43.7	40.0	39.7	44.5	44.7	44.6
Fixed income	4.5	4.8	7.1	9.6	10.2	20.7	21.3	20.8	22.3	23.7	21.2	21.4	21.6	23.0	23.4
Cash & derivatives	5.9	4.0	4.1	9.6	10.2	2.2	1.9	3.4	3.7	3.2	2.9	3.1	3.3	3.7	3.5
Global TAA	1.8	1.7	1.6	4.1	8.4	0.2	0.2	0.2	0.4	0.6	0.5	0.5	0.6	1.0	1.3
Real assets	12.8	14.1	11.6	11.9	11.7	12.6	13.3	10.2	10.6	11.2	13.3	13.5	10.8	10.8	11.0
Hedge funds	11.0	11.2	10.6	10.1	10.2	6.0	6.1	5.5	4.6	4.7	4.6	4.9	4.5	3.9	4.3
Balanced Funds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Risk Parity	0.0	0.0	0.0	0.0	0.0	1.3	1.4	1.2	1.1	0.8	1.0	1.1	1.1	1.2	1.0
Private credit	9.1	9.7	8.2	7.9	6.4	3.9	3.2	2.5	2.2	1.7	3.2	2.7	2.1	2.0	1.9
Private equity	<u>13.8</u>	<u>14.3</u>	<u>10.0</u>	<u>6.7</u>	<u>7.3</u>	<u>14.9</u>	<u>15.1</u>	<u>13.4</u>	<u>11.3</u>	<u>10.2</u>	<u>13.3</u>	<u>13.1</u>	<u>11.5</u>	<u>9.6</u>	<u>9.1</u>
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Policy asset mix															
Stock	46.0	46.0	46.0	47.4	44.8	40.6	42.2	43.1	43.1	44.0	42.7	43.7	44.9	44.6	44.7
Fixed income	26.0	26.0	26.0	26.0	19.4	23.5	23.3	24.7	25.8	26.0	25.1	25.1	25.5	26.3	26.4
Cash ³	0.0	0.0	0.0	0.0	3.0	0.9	0.8	0.8	0.8	0.9	-1.2	-1.2	-1.3	-1.3	-1.6
Global TAA	0.0	0.0	0.0	0.0	7.0	0.1	0.1	0.1	0.0	0.5	0.6	0.6	0.7	0.9	1.1
Real assets	12.0	12.0	12.0	12.0	12.0	13.1	12.8	11.8	12.6	12.9	13.8	13.6	12.9	12.9	12.9
Hedge funds	0.0	0.0	0.0	0.0	1.0	3.8	4.1	3.9	3.9	2.8	2.9	3.0	3.0	3.3	3.4
Balanced Funds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Risk Parity	0.0	0.0	0.0	0.0	0.0	1.3	1.5	1.5	1.0	0.8	1.1	1.2	1.2	1.0	0.9
Private credit	7.0	7.0	7.0	7.0	6.6	3.8	3.0	2.6	2.7	2.3	2.9	2.5	2.4	2.3	2.4
Private equity	<u>9.0</u>	<u>9.0</u>	<u>9.0</u>	<u>7.6</u>	<u>6.2</u>	<u>12.7</u>	<u>12.1</u>	<u>11.5</u>	<u>10.2</u>	<u>9.7</u>	<u>12.1</u>	<u>11.6</u>	<u>10.7</u>	<u>10.0</u>	<u>9.7</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 37 U.S. Public and 15 peer funds with 5 or more consecutive years of data ending 2023.

3. Negative allocations indicate use of leverage.

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 - 2023 (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	FOFs	Index	Active	Index		
Stock - U.S. broad/all					16.8		77.5	0.0	5.8	20.0		61.3	2.0	16.8	
Stock - U.S. large cap					28.1		49.6	10.8	11.6	18.9		55.4	6.2	19.5	
Stock - U.S. mid cap					27.1		11.1	21.3	40.5	49.7		3.3	9.9	37.1	
Stock - U.S. small cap	0.0		100.0	0.0	0.0	62.2		23.0	5.4	9.5	75.8		13.2	6.5	4.4
Stock - EAFE	0.0		100.0	0.0	0.0	67.4		28.4	4.2	0.0	66.2		23.4	4.9	5.6
Stock - Global	0.0		100.0	0.0	0.0	34.5		45.9	7.0	12.6	51.8		23.9	4.1	20.1
Stock - Other					32.4		0.0	59.5	8.1	62.6		11.1	22.9	3.4	
Stock - Emerging	0.0		100.0	0.0	0.0	61.9		21.3	3.8	13.0	74.7		14.3	6.2	4.8
Stock - ACWI x U.S.					73.2		25.9	0.0	0.9	57.5		38.1	1.7	2.7	
Stock - Aggregate	0.0		100.0	0.0	0.0	42.1		43.6	6.4	7.9	43.0		38.8	4.9	13.3
Fixed income - U.S.	97.2		0.0	2.8	0.0	63.7		17.3	18.7	0.3	56.4		18.3	23.4	1.8
Fixed income - U.S. gov't					0.0		76.8	0.0	23.2	1.6		72.7	5.6	20.1	
Fixed income - U.S. credits					100.0		0.0	0.0	0.0	57.2		8.3	34.5	0.0	
Fixed income - EAFE					100.0		0.0	0.0	0.0	100.0		0.0	0.0	0.0	
Fixed income - Global					88.8		11.2	0.0	0.0	43.9		18.3	37.8	0.0	
Fixed income - Other	100.0		0.0	0.0	0.0	100.0		0.0	0.0	0.0	100.0		0.0	0.0	0.0
Fixed income - Long bonds					2.8		97.2	0.0	0.0	4.2		28.9	7.3	59.7	
Fixed income - Emerging	100.0		0.0	0.0	0.0	97.3		0.0	2.7	0.0	88.5		0.0	9.6	1.9
Fixed income - Inflation indexed					48.9		51.1	0.0	0.0	33.8		47.8	6.8	11.6	
Fixed income - High yield	100.0		0.0	0.0	0.0	96.3		0.0	3.7	0.0	87.9		2.2	9.9	0.0
Fixed income - Absolute return bonds					0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Fixed income - Bundled LDI					0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	
Fixed income - Convertibles					100.0		0.0	0.0	0.0	100.0		0.0	0.0	0.0	
Public mortgages					100.0		0.0	0.0	0.0	28.6		0.0	71.4	0.0	
Cash	17.8			82.2		196.7			-96.7	50.8			49.2		
Fixed income - Aggregate	61.7		0.0	38.3	0.0	63.7		25.6	8.2	2.5	54.7		19.2	21.1	5.0
Commodities					100.0		0.0	0.0	0.0	52.1		14.5	33.4	0.0	
Infrastructure	100.0	0.0		0.0		98.9	1.1		0.0	99.2	0.4		0.4		
Natural resources					100.0		0.0		0.0	98.7	1.1		0.1		
REITs	100.0		0.0	0.0	0.0	95.3		0.0	4.7	0.0	47.0		42.4	9.1	1.5
Real estate ex-REITs	100.0	0.0		0.0		90.7	0.2		9.1		91.5	1.4		7.1	
Other real assets					100.0		0.0		0.0		99.1	0.0		0.9	
Other listed real assets					100.0		0.0	0.0	0.0	39.5		17.1	0.0	43.4	
Real assets - Aggregate	100.0	0.0	0.0	0.0	0.0	93.1	0.3	0.0	6.6	0.0	89.5	1.1	2.5	5.9	1.0
Hedge funds	99.7	0.3				90.4	9.6				80.3	19.7			
Global TAA	100.0			0.0		96.4			3.6		81.8			18.2	
Risk parity					100.0				0.0		86.2			13.8	
Private credit	100.0	0.0		0.0		100.0	0.0		0.0		97.4	2.1		0.5	
Private mortgages					100.0				0.0		99.3			0.7	
Private equity - Diversified	60.9	39.1		0.0		85.9	14.1		0.0		81.8	18.2		0.0	
Venture capital	30.7	69.3		0.0		32.0	68.0		0.0		68.6	31.4		0.0	
LBO	96.1	3.9		0.0		98.2	1.8		0.0		97.0	3.0		0.0	
Private equity - Other	98.7	1.3		0.0		99.6	0.4		0.0		99.9	0.1		0.0	
Private equity - Aggregate	84.0	16.0		0.0		87.1	12.9		0.0		85.3	14.7		0.0	
Total Fund - Avg. Holdings	51.4	2.2	43.2	3.2	0.0	64.8	2.4	23.8	5.3	3.8	60.8	2.9	21.6	7.8	6.9

Actual mix

Actual asset mix - 2019 to 2023 (as a % of total average assets)

	Your fund ¹					Peer average %					U.S. Public average %				
	2023	2022	2021	2020	2019	2023	2022	2021	2020	2019	2023	2022	2021	2020	2019
Stock - U.S. broad/all			2.1	5.6	8.8	7.1	6.6	7.8	9.4	8.6	6.0	6.3	7.1	7.2	6.5
Stock - U.S. large cap						10.1	9.1	9.5	10.7	11.6	12.1	10.4	11.0	10.6	11.9
Stock - U.S. mid cap						0.5	0.5	0.4	0.6	0.5	0.6	0.9	0.5	0.6	0.7
Stock - U.S. small cap	2.6	2.7	3.1	2.0		1.2	1.2	1.4	1.4	1.4	1.6	2.1	1.8	1.9	1.9
Stock - EAFE	1.8	1.8	3.2	2.0		2.2	2.5	2.8	2.8	3.1	5.4	5.9	6.3	6.4	6.5
Stock - Global	36.2	35.1	36.9	23.3	17.3	7.6	7.5	8.7	7.0	5.6	6.4	6.1	8.4	8.1	6.2
Stock - Other						1.1	1.1	0.9	0.8	1.0	1.1	1.1	1.1	1.0	0.9
Stock - Emerging	0.7	0.6	1.7	6.2	6.2	1.6	1.3	2.0	2.3	2.3	2.5	2.6	3.1	3.5	3.5
Stock - ACWI x U.S.			0.0	1.0	3.4	9.2	9.0	9.2	11.4	11.2	6.2	5.6	5.6	6.6	6.3
Stock - Aggregate	41.2	40.2	46.9	40.0	35.7	40.6	38.7	42.7	46.4	45.4	41.9	41.0	44.8	45.9	44.5
Fixed income - U.S.	1.0	1.5	2.3	2.4	2.4	11.6	10.7	10.5	12.3	12.6	11.6	11.3	11.7	12.1	13.0
Fixed income - U.S. gov't						2.1	2.1	2.1	1.7	2.1	1.3	1.3	1.5	1.7	1.5
Fixed income - U.S. credits						0.1	0.4	0.2	0.1		0.7	0.7	0.6	0.6	0.3
Fixed income - EAFE						0.1	0.1	0.2	0.2	0.2	0.0	0.1	0.0	0.0	0.0
Fixed income - Global						0.5	0.5	0.7	0.9	1.0	0.9	0.8	0.9	1.3	1.6
Fixed income - Other	0.5					0.7	0.7	0.6	0.7	0.8	0.8	0.8	0.8	0.7	0.7
Fixed income - Long bonds						0.4	0.7	0.7	0.7	0.7	0.7	0.9	1.0	1.5	1.0
Fixed income - Emerging	0.0	0.1	0.8	2.9	3.7	0.8	0.8	1.0	0.9	1.0	0.9	1.0	1.2	1.3	1.3
Fixed income - Inflation indexed						2.7	3.3	2.7	2.0	2.4	1.9	2.3	2.1	1.5	1.7
Fixed income - High yield	3.0	3.2	4.0	4.4	4.1	1.7	1.9	1.8	1.9	1.7	2.3	2.0	2.0	2.0	1.9
Fixed income - Absolute return bonds															
Fixed income - Bundled LDI						0.0		0.1	0.0	0.2	0.0	0.0	0.1	0.1	0.1
Fixed income - Convertibles						0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.1	0.1
Public mortgages						0.5	0.4	1.8	2.1	1.9	1.8	1.9	2.2	2.5	1.7
Cash	3.8	2.6	2.8	6.8	7.6	0.5	0.4	1.8	2.1	1.9	1.8	1.9	2.2	2.5	1.7
Fixed income - Aggregate	8.3	7.4	9.8	16.4	17.7	21.3	21.6	22.2	23.6	24.7	23.0	23.2	24.1	25.4	24.9
Commodities						0.1	0.1	0.1	0.7	0.9	0.2	0.3	0.3	0.4	0.5
Infrastructure	3.4	3.2	2.8	3.0	2.6	1.7	1.3	0.9	0.7	0.7	1.7	1.2	0.9	0.8	0.9
Natural resources						1.2	1.2	0.8	0.8	1.0	1.0	1.0	0.8	0.7	1.0
REITs	0.7	0.9	1.1	1.5	1.6	0.4	0.5	0.6	0.5	0.7	0.6	0.6	0.9	0.7	0.7
Real estate ex-REITs	8.7	10.0	7.7	7.4	7.5	8.6	9.5	7.5	7.1	7.4	8.9	9.6	7.3	7.3	7.8
Other real assets						0.1	0.1	0.0	0.0	0.1	0.3	0.2	0.2	0.5	0.5
Other listed real assets						0.2	0.5	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.1
Real assets - Aggregate	12.8	14.1	11.6	11.9	11.7	12.1	13.1	10.2	10.1	10.9	12.9	13.3	10.7	10.7	11.5
Hedge funds	11.0	11.2	10.6	10.1	10.2	5.3	5.8	6.2	4.6	4.7	4.0	4.5	4.5	4.3	4.5
Global TAA	1.8	1.7	1.6	4.1	8.4	0.2	0.2	0.2	0.3	0.6	0.4	0.4	0.6	0.9	1.4
Risk parity						1.1	1.3	1.1	0.9	0.7	0.8	0.9	0.9	0.9	0.9
Private mortgages						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Private credit	9.1	9.7	8.2	7.9	6.4	3.8	3.2	2.5	2.2	2.0	3.4	2.6	2.1	2.0	2.0
Private equity - Diversified	1.4	14.3	10.0	6.7	7.3	11.9	13.7	12.1	9.6	8.8	8.8	10.4	8.5	7.1	7.2
Venture capital	1.9					0.1	0.0	0.2	0.2	0.2	0.5	0.5	0.6	0.5	0.5
LBO	9.0					1.6	0.7	1.0	0.9	0.9	3.0	2.1	2.2	1.7	1.6
Private equity - Other	1.6					0.3	0.2	0.1	0.1	0.1	0.3	0.2	0.1	0.1	0.1
Private equity - Aggregate	13.8	14.3	10.0	6.7	7.3	14.0	14.6	13.4	10.8	10.0	12.7	13.2	11.5	9.3	9.4
Derivatives/Overlays Mkt Value	2.0	1.3	1.3	2.9	2.6	1.5	1.4	1.4	1.2	1.0	0.9	0.9	0.7	0.6	0.7
Total Fund	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Count	1	1	1	1	1	17	16	16	18	17	46	44	45	52	51
Median Assets (\$ billions)	40.2	39.1	39.0	31.5	31.6	42.2	39.6	43.8	32.9	31.9	26.2	31.7	27.0	21.3	21.1

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

Policy mix

Policy asset mix - 2019 to 2023 (as a % of total assets)

	Your fund %					Peer average %					U.S. Public average %				
	2023	2022	2021	2020	2019	2023	2022	2021	2020	2019	2023	2022	2021	2020	2019
Stock - U.S. broad/all				23.9	16.3	8.5	9.8	10.0	12.0	10.7	6.6	8.7	7.0	8.4	8.0
Stock - U.S. large cap						7.8	8.6	6.5	7.6	8.0	9.2	8.4	8.2	8.0	9.2
Stock - U.S. mid cap						0.3	0.4	0.2	0.4	0.4	0.2	0.3	0.1	0.3	0.4
Stock - U.S. small cap	6.1	6.1	3.0	2.9		0.8	0.8	0.5	0.5	0.4	1.0	1.3	1.2	1.2	1.2
Stock - EAFE	3.8	3.8	2.0			2.0	2.2	2.1	1.8	2.0	4.4	4.2	4.8	4.9	5.0
Stock - Global	34.6	34.6	35.8	12.2	18.3	11.7	10.7	11.1	8.9	8.8	13.6	12.6	14.6	12.2	10.3
Stock - Other						0.4	0.4	4.2	3.9	4.4	0.8	0.8	2.3	2.1	1.9
Stock - Emerging	1.5	1.5	5.2	6.2	6.6	0.8	0.9	1.1	1.0	1.1	1.8	1.9	2.2	2.4	2.7
Stock - ACWI x U.S.				2.2	3.6	10.2	9.5	8.4	10.0	10.3	6.1	6.4	4.9	5.9	5.8
Stock - Aggregate	46.0	46.0	46.0	47.4	44.8	42.5	43.5	44.2	46.1	46.0	43.7	44.6	45.4	45.5	44.6
Fixed income - U.S.	24.0	24.0	24.0	26.0	11.0	14.7	13.5	15.7	17.2	17.7	14.1	13.7	14.4	14.2	14.7
Fixed income - U.S. gov't						1.6	1.8	1.9	1.6	1.6	1.1	1.2	1.4	1.7	1.3
Fixed income - U.S. credits							0.4	0.3	0.2		0.6	0.7	0.6	0.5	0.3
Fixed income - EAFE						0.2	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.0	0.0
Fixed income - Global						0.9	0.6	1.0	1.0	0.5	1.1	1.0	0.9	1.0	1.2
Fixed income - Other						0.6	0.5	0.3	0.4	0.2	0.7	0.7	0.7	0.9	0.6
Fixed income - Long bonds						0.6	0.7	0.8	0.7	0.7	1.3	1.5	1.7	2.0	1.6
Fixed income - Emerging	1.0	1.0	1.0		4.0	0.8	0.8	0.9	0.8	0.9	0.9	1.1	1.1	1.2	1.3
Fixed income - Inflation indexed						2.6	3.0	3.0	2.3	2.6	2.7	3.1	3.1	2.4	2.8
Fixed income - High yield	1.0	1.0	1.0		4.4	1.5	1.5	1.6	1.8	1.9	1.7	1.6	1.8	1.9	1.7
Fixed income - Absolute return bonds															
Fixed income - Bundled LDI										0.2	0.0	0.0	0.1	0.1	0.1
Fixed income - Convertibles															
Public mortgages						0.0	0.0				0.2	0.1	0.1	0.1	0.1
Cash					3.0	0.9	0.9	0.8	0.8	0.9	-0.7	-1.0	-0.9	-0.6	-1.5
Fixed income - Aggregate	26.0	26.0	26.0	26.0	22.4	24.3	24.0	26.4	26.9	27.5	23.7	23.7	25.1	25.3	24.2
Commodities						0.3	0.2	0.3	1.0	1.0	0.5	0.6	0.6	0.8	0.9
Infrastructure	3.0	3.0	3.0	3.0	3.0	1.5	1.5	1.3	1.0	0.9	1.6	1.5	1.4	1.2	1.2
Natural resources						0.8	0.8	0.7	0.6	1.0	1.0	0.8	0.8	0.7	0.9
REITs	1.0	1.0	1.0		1.5	0.5	0.5	0.5	0.3	0.6	0.7	0.6	0.7	0.5	0.6
Real estate ex-REITs	8.0	8.0	8.0	9.0	7.5	9.4	9.1	8.1	8.4	8.5	9.4	9.4	8.3	8.3	8.8
Other real assets						0.2	0.2	0.1		0.0	0.5	0.5	0.3	0.7	0.7
Other listed real assets						0.1	0.2				0.3	0.2	0.3	0.1	
Real assets - Aggregate	12.0	12.0	12.0	12.0	12.0	12.7	12.5	11.0	11.4	11.9	14.0	13.5	12.4	12.3	13.1
Hedge funds					1.0	3.4	3.8	3.6	3.3	2.5	2.5	2.8	2.8	3.9	3.9
Global TAA					7.0	0.1	0.1	0.1		0.4	0.5	0.5	0.8	0.8	1.3
Risk parity						1.2	1.4	1.4	0.8	0.7	0.9	1.0	1.0	0.7	0.8
Private mortgages									0.1	0.1	0.0	0.0	0.0	0.1	0.2
Private credit	7.0	7.0	7.0	7.0	6.6	3.6	2.8	2.4	2.2	2.0	3.0	2.2	2.2	2.1	2.2
Private equity - Diversified	9.0	9.0	9.0	7.6	6.2	11.4	11.0	10.2	8.3	8.5	9.0	9.7	8.3	7.5	7.9
Venture capital						0.1	0.1	0.1	0.1	0.3	0.3	0.2	0.2	0.2	0.3
LBO						0.4	0.5	0.5	0.8	0.2	1.9	1.4	1.6	1.5	1.4
Private equity - Other						0.3	0.3				0.4	0.3	0.1	0.0	0.1
Private equity - Aggregate	9.0	9.0	9.0	7.6	6.2	12.1	11.8	10.7	9.2	9.0	11.6	11.6	10.2	9.3	9.8
Total Fund	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Count	1	1	1	1	1	17	16	16	18	17	46	44	45	52	51

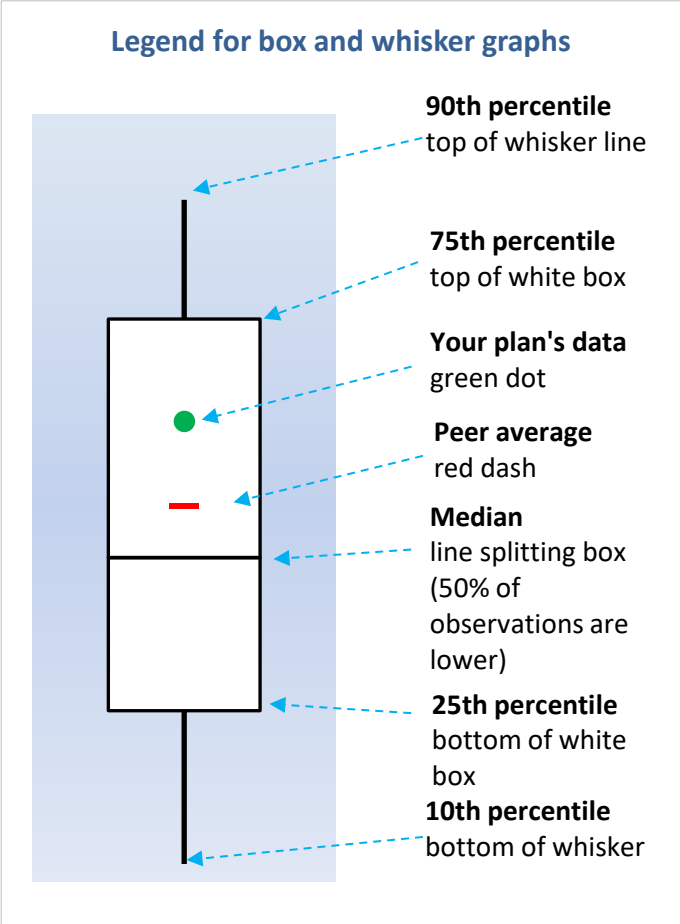
3

Returns, Benchmarks and Value Added

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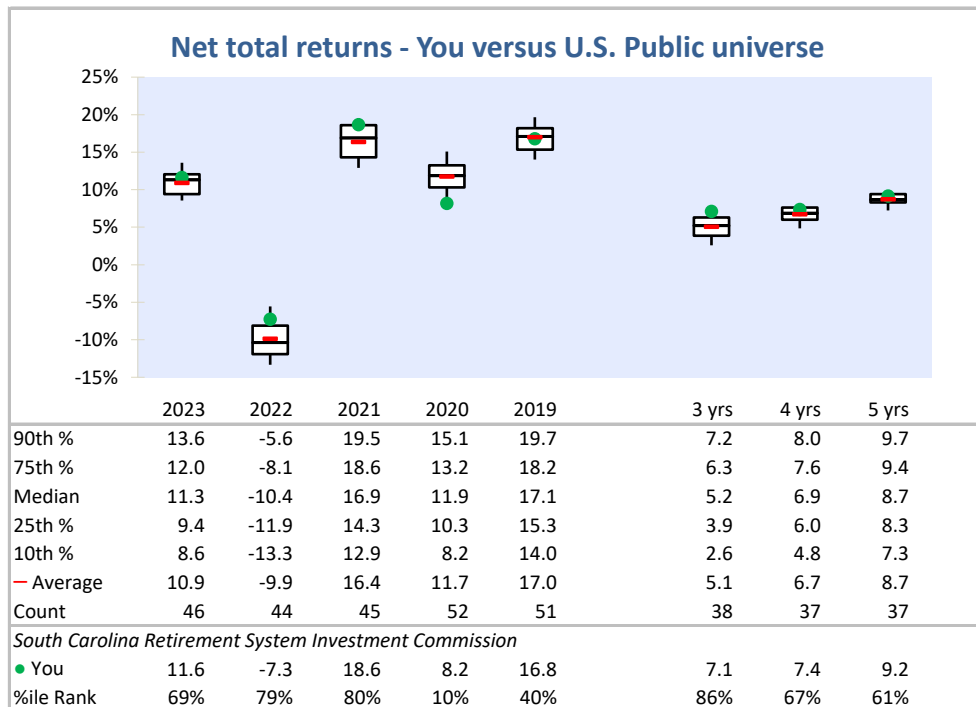
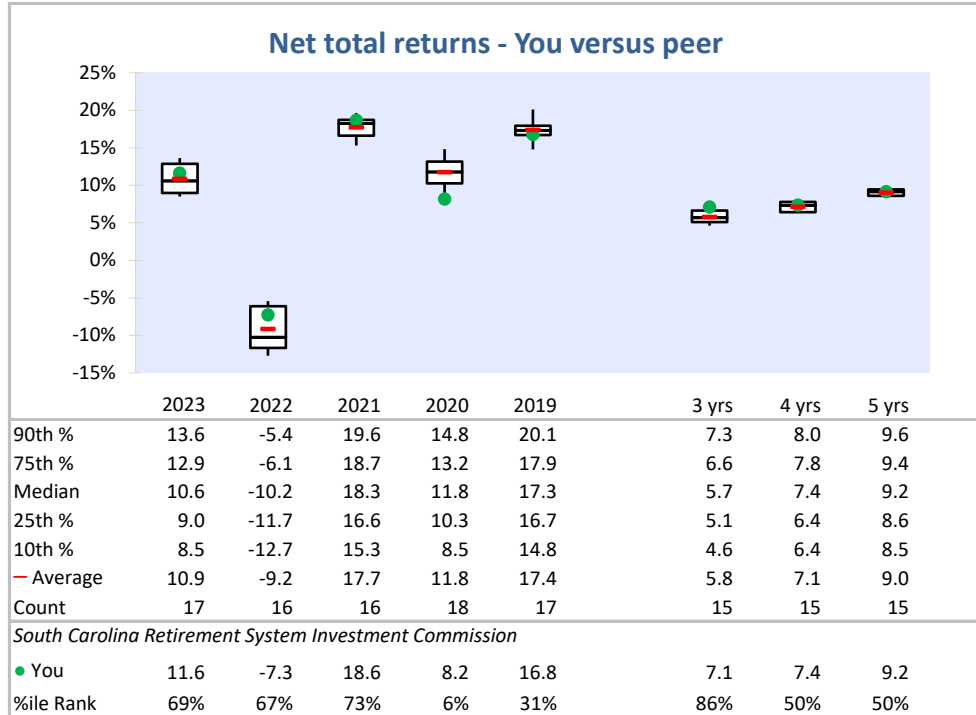
Interpreting box and whisker graphs

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.



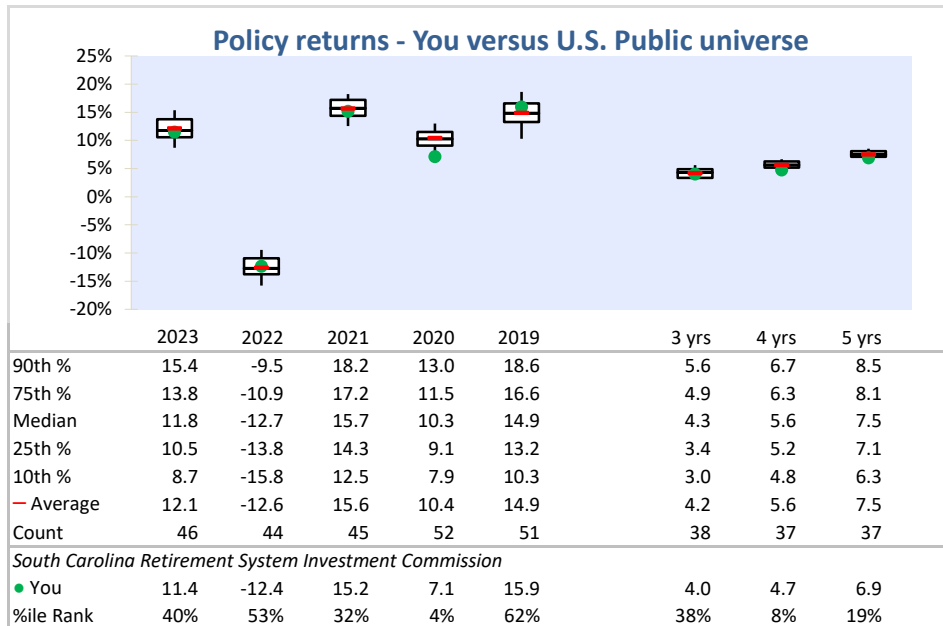
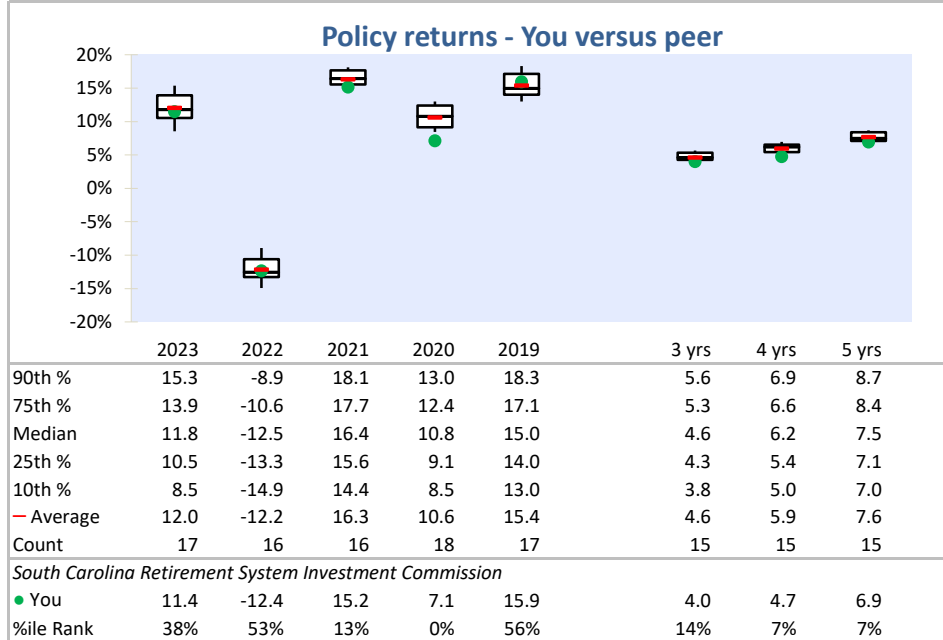
Net total returns

Your 5-year net total return of 9.2% was close to the peer median and above 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

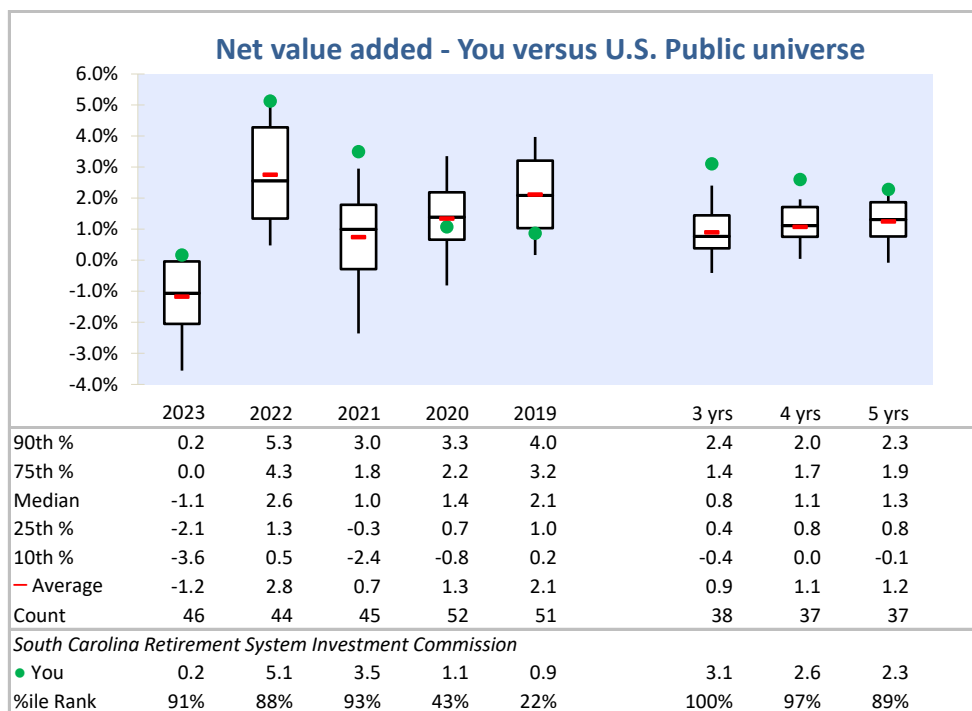
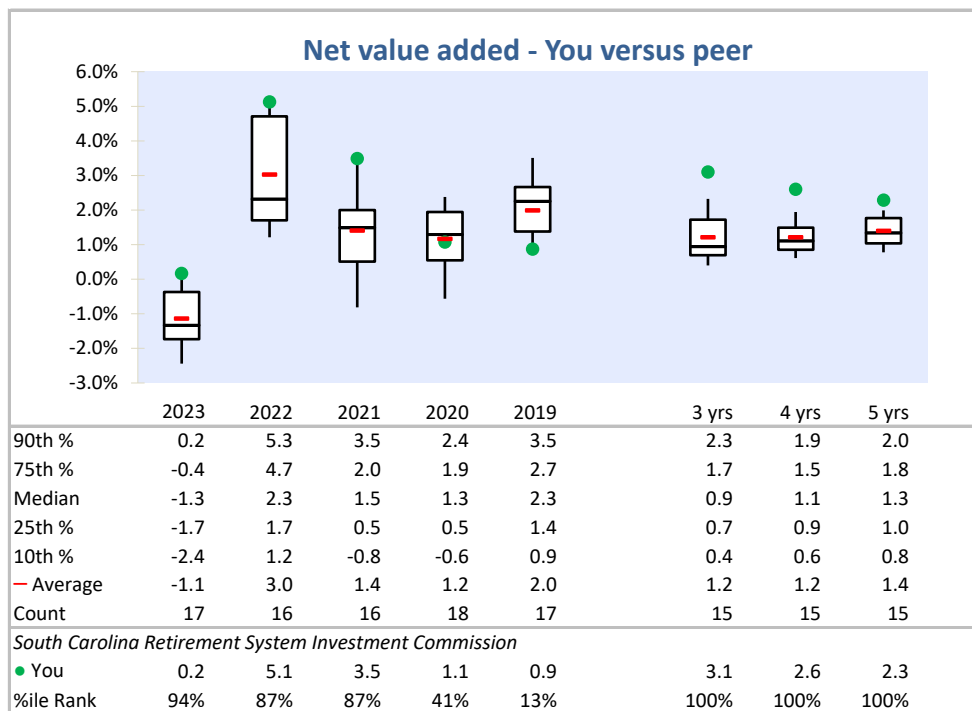
Your 5-year policy return of 6.9% was below the peer median and below the median of the U.S. Public universe. Policy return is the return you would have earned had you passively implemented your policy asset mix decision through your benchmark portfolios.



To enable fairer comparisons, the policy returns of all participants with policy weight in private equity were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. Refer to the appendix of this section for details.

Net value added

Your 5-year net value added of 2.3% 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 %					
	2023	2022	2021	2020	2019	5-yr ¹	2023	2022	2021	2020	2019	5-yr ¹	2023	2022	2021	2020	2019	5-yr ¹
Stock - U.S. broad/all				-11.7	19.6		23.3	-17.6	25.7	13.5	28.9	14.0	25.4	-19.3	25.3	17.8	29.6	14.6
Stock - U.S. large cap							32.4	-16.7	28.0	18.2	34.3	16.5	27.5	-18.2	26.4	20.0	31.3	15.3
Stock - U.S. mid cap							20.5	-18.2	23.6	18.4	32.3	14.1	20.7	-18.3	23.0	20.3	31.2	13.2
Stock - U.S. small cap	18.5	-17.2	19.4				17.7	-16.7	22.7	17.3	26.1	12.0	17.4	-16.9	20.9	17.2	26.8	11.8
Stock - EAFE	13.2	-20.0	11.5				16.0	-15.8	13.5	9.4	22.7	8.7	17.6	-15.9	11.6	11.8	22.7	8.8
Stock - Global	22.7	-18.1	18.9	21.6	26.7	13.0	21.8	-15.1	18.4	15.4	20.9	11.2	20.6	-16.7	18.6	16.9	25.1	11.6
Stock - Other							17.5	0.8	32.0	3.9	19.2	11.8	11.6	-10.7	12.3	-0.1	15.3	9.8
Stock - Emerging	22.5	-18.0	18.0	11.5	18.8	9.4	15.4	-20.1	2.5	19.5	20.2	6.4	13.9	-21.6	1.8	19.5	20.2	5.6
Stock - ACWI x U.S.				-9.5	-28.2	23.4	17.6	-16.3	8.7	9.0	23.0	8.5	17.0	-18.4	8.5	11.9	22.2	8.2
Stock - Aggregate	22.0	-18.1	18.4	15.5	23.3	11.0	22.8	-16.8	19.2	15.2	26.0	12.0	21.5	-17.4	18.5	16.1	26.1	11.8
Fixed income - U.S.	1.9	-12.1	4.0	10.2	8.6	2.2	5.6	-13.2	-0.7	8.9	9.4	1.5	5.9	-12.6	-0.7	8.2	9.0	1.6
Fixed income - U.S. gov't							4.0	-9.3	-1.5	8.4	6.9	1.5	4.1	-12.6	-2.8	10.3	8.4	0.8
Fixed income - U.S. credits							7.0	-6.8	23.4	11.5			7.8	-8.8	3.8	9.0	15.8	4.0
Fixed income - EAFE							6.5	-13.7	-5.4	10.2	10.0	1.1	5.8	-8.0	-7.1	11.5	6.1	-0.9
Fixed income - Global							9.8	-10.7	-1.7	6.2	8.4	1.7	9.3	-9.8	-2.6	1.5	7.4	1.9
Fixed income - Other	5.7						10.6	-1.0	7.5	-1.2	7.2	6.5	8.4	-4.6	3.7	1.0	7.4	5.1
Fixed income - Long bonds							-2.4	-32.1	-3.3	17.1	-3.5	-4.7	0.4	-31.1	-3.6	14.7	12.9	-2.4
Fixed income - Emerging	-85.5	-9.6	-3.8	1.1	13.2	-32.1	1.3	-14.5	-3.2	5.0	14.9	-6.2	6.0	-14.6	-4.6	5.3	13.5	-1.1
Fixed income - Inflation indexed							3.3	-14.9	7.2	13.2	8.9	3.0	4.0	-11.0	6.3	11.1	8.3	3.1
Fixed income - High yield	11.5	-4.4	5.3	4.0	7.3	4.6	15.0	-9.5	5.6	5.7	13.7	5.8	13.7	-8.4	5.7	6.0	12.6	5.7
Fixed income - Absolute return bonds																		
Fixed income - Bundled LDI																		
Public mortgages							1.8	-1.6	5.0	-0.7	5.5	2.0	4.9	-9.0	2.5	3.3	8.4	2.3
Fixed income - Convertibles							8.4		-9.1	56.3	22.1		8.2	-12.1	-0.9	21.4	19.2	5.2
Cash	7.9	0.8	-0.1	-0.5	2.7	2.1	5.4	1.6	0.1	1.2	3.5	2.3	3.6	-0.6	-2.3	-0.5	0.3	-1.9
Fixed income - Aggregate	8.2	-4.2	2.7	2.5	6.8	3.1	6.6	-11.4	0.8	8.5	9.5	2.4	6.5	-11.4	0.2	8.2	11.5	2.2
Commodities							-7.7	16.5	12.2	-4.8	10.0	7.8	-2.7	13.2	18.4	-0.2	3.8	5.5
Infrastructure	12.3	2.9	12.5	0.5	26.5	10.6	8.8	7.5	9.1	4.3	12.5	9.2	8.8	10.8	15.2	4.3	9.3	9.7
Natural resources							6.1	11.6	11.0	-2.5	-0.2	5.2	7.7	15.8	17.5	-7.3	1.0	5.6
REITs	15.0	-22.5	44.1	-1.3	27.0	10.0	10.9	-17.2	38.4	-2.1	25.7	7.8	11.7	-20.2	36.2	-3.8	25.1	6.7
Real estate ex-REITs	-6.9	15.5	24.3	0.4	5.6	7.2	-8.0	15.1	21.4	1.1	6.7	7.0	-8.4	15.0	22.2	0.3	5.8	6.4
Other real assets							7.6	9.3	10.9	15.0	5.1	6.2	5.9	10.3	13.4	-2.6	6.3	7.2
Real assets - Aggregate	-0.6	10.2	23.2	0.2	13.3	8.9	-3.7	12.2	21.7	0.1	7.9	7.4	-3.5	11.4	22.4	-0.5	6.9	6.8
Hedge funds	6.1	10.5	12.8	8.9	4.4	8.5	0.1	5.4	8.6	4.5	5.2	4.0	1.8	5.0	9.9	4.2	5.2	4.9
Global TAA	8.4	12.3	1.2	-7.5	20.3	6.5	11.8	-1.7	6.2	2.3	20.4	7.2	9.7	-4.1	8.5	5.3	15.3	7.3
Risk parity							8.9	-23.9	12.8	13.8	21.2	4.8	9.9	-20.0	11.3	6.8	15.7	4.6
Private mortgages							3.5	9.0	10.2	9.1	10.1		5.4	3.3	6.2	7.3	7.7	3.8
Private credit	10.6	4.0	19.6	-0.4	6.4	7.8	9.4	1.2	12.8	16.2	6.8	7.7	10.1	2.5	13.8	9.3	6.8	7.6
Private equity - Diversified	8.8	5.9	49.0	6.9	7.7	14.6	5.8	0.6	51.0	17.1	11.3	15.4	5.9	0.2	48.7	16.9	10.4	14.4
Venture capital	-5.3						-5.3	-20.0	61.4	20.9	18.1	12.1	-8.1	-11.5	63.2	31.7	14.1	14.7
LBO	11.4						7.7	2.8	49.6	10.5	9.9	16.2	7.6	4.7	44.1	13.6	13.0	15.8
Private equity - Other	-7.0						3.0	0.4	22.9	10.1	6.1	10.2	11.2	-0.3	31.0	10.4	22.9	11.1
Private equity - Aggregate	6.8	5.9	49.0	6.9	7.7	14.2	5.6	0.1	51.7	18.0	11.2	15.8	6.0	0.3	50.0	18.3	11.4	15.5
Total Fund Return	11.6	-7.3	18.6	8.2	16.8	9.2	10.9	-9.2	17.7	11.8	17.4	9.0	10.9	-9.9	16.4	11.7	17.0	8.7

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 composite calculation only uses those components with a full year return.

1. The 5-year return number only includes funds with continuous data over the last 5 years.

Benchmark returns by asset class

Asset class	Your fund %						Peer average %						U.S. Public average %					
	2023	2022	2021	2020	2019	5-yr ¹	2023	2022	2021	2020	2019	5-yr ¹	2023	2022	2021	2020	2019	5-yr ¹
Stock - U.S. broad/all				20.7	26.6		23.2	-19.1	25.6	19.8	30.4	14.3	26.0	-19.9	25.9	21.0	30.7	14.9
Stock - U.S. large cap							25.8	-18.5	27.8	19.3	28.9	15.7	26.9	-19.6	27.2	20.7	30.9	15.8
Stock - U.S. mid cap							17.9	-16.5	22.9	17.3	29.5	13.0	17.3	-16.4	23.3	19.3	27.1	12.8
Stock - U.S. small cap	17.9	-17.6	19.1	35.8			17.1	-19.1	17.7	20.4	26.3	10.4	16.8	-19.6	17.9	19.0	26.2	10.3
Stock - EAFE	15.6	-14.3	11.1	10.7			17.0	-13.9	10.9	8.6	22.6	8.2	17.4	-15.0	11.4	8.5	22.4	8.3
Stock - Global	23.8	-18.1	18.5	15.9	27.7	12.2	22.3	-18.3	18.4	16.3	26.8	11.8	21.4	-18.0	18.3	16.1	26.6	11.9
Stock - Other							14.6	4.5	27.9	-3.4	23.0	12.0	14.6	-11.2	19.9	-2.2	21.1	10.4
Stock - Emerging	10.3	-19.8	18.8	18.3	18.9	8.1	13.1	-19.6	1.2	18.2	18.1	5.5	11.6	-19.4	-0.9	18.4	18.3	4.5
Stock - ACWI x U.S.			11.1	10.7	21.5		16.1	-16.0	8.9	10.9	21.7	7.4	16.1	-16.0	8.8	10.8	21.7	7.4
Stock - Aggregate	21.9	-17.8	18.3	19.6	25.5	12.2	21.0	-16.5	19.1	16.2	25.9	11.9	20.9	-17.3	18.4	15.9	26.1	11.6
Fixed income - U.S.	5.5	-13.0	-1.5	7.5	8.7	1.1	5.7	-13.4	-1.6	7.8	8.6	1.1	5.7	-12.9	-1.6	7.8	8.7	1.2
Fixed income - U.S. gov't							4.1	-9.5	-1.5	8.4	6.9	1.4	4.5	-13.6	-2.6	9.9	8.1	0.7
Fixed income - U.S. credits							7.3	-7.3	5.3	10.0			8.3	-10.0	0.4	8.4	14.7	2.8
Fixed income - EAFE							5.7	-16.3	-4.7	10.1	5.1	-0.5	5.7	-17.6	-7.1	10.1	5.1	-1.6
Fixed income - Global							10.9	-11.5	-1.6	5.7	9.0	2.0	9.5	-9.3	-1.9	5.4	9.8	1.9
Fixed income - Other							11.9	-5.7	3.1	3.5	10.0	4.8	10.8	-6.9	3.3	4.4	8.9	4.1
Fixed income - Long bonds							3.1	-29.2	-4.6	16.7	7.8	-2.7	2.9	-29.6	-3.8	13.3	12.6	-2.0
Fixed income - Emerging	11.1	-6.9	-1.8	5.3	14.3	4.1	10.7	-14.7	-3.9	4.8	15.0	1.9	10.7	-14.8	-4.5	5.1	13.9	1.8
Fixed income - Inflation indexed							3.6	-18.5	6.6	13.8	8.9	2.3	3.6	-12.2	5.9	10.9	8.2	2.7
Fixed income - High yield	13.4	-6.0	5.2	5.1	11.5	5.6	13.3	-10.2	5.2	4.9	14.2	5.0	12.8	-9.7	4.8	5.4	13.6	5.1
Fixed income - Absolute return bonds																		
Fixed income - Bundled LDI																		
Public mortgages													3.3	-12.5	1.7	2.5	8.5	0.3
Fixed income - Convertibles							8.9			7.7	23.2		10.7	-17.7	10.0	24.6	23.0	12.2
Cash	5.4	4.9	0.2	0.7	2.3	2.7	5.3	1.6	0.1	0.8	2.3	2.0	5.2	1.3	0.0	0.8	2.3	1.9
Fixed income - Aggregate	6.0	-12.5	-1.3	7.5	9.4	1.5	6.3	-12.9	-0.1	8.2	9.2	1.7	6.4	-14.7	-0.3	9.2	11.3	1.6
Commodities							-5.4	10.9	21.9	-4.9	9.4	4.7	-5.1	11.1	24.6	-4.8	8.5	6.3
Infrastructure	4.5	-6.6	19.9	-7.0	28.7	7.0	4.6	3.6	13.7	1.6	13.2	7.6	5.7	4.8	14.5	2.5	11.8	8.2
Natural resources							6.9	11.2	13.4	4.8	7.8	8.4	4.7	11.4	19.2	-3.2	5.7	5.9
REITs	13.7	-24.4	43.2	-8.0	26.0	7.4	11.2	-21.5	29.8	-5.9	23.9	6.9	11.2	-22.3	33.6	-7.7	22.6	5.5
Real estate ex-REITs	-12.7	6.5	21.1	0.3	5.4	3.5	-10.7	15.4	17.1	1.4	5.4	5.4	-8.7	11.4	18.2	0.3	6.2	5.2
Other real assets							3.4	6.0	5.7	7.8	12.3	9.2	6.3	6.0	12.9	1.8	9.7	8.8
Real assets - Aggregate	-6.2	0.7	22.6	-1.5	13.8	5.3	-7.1	10.8	17.7	0.7	7.5	5.8	-4.9	8.7	18.9	-0.2	7.9	5.7
Hedge funds	14.4	-15.3	8.5	11.9	18.2	6.8	6.6	-1.3	7.0	7.4	13.0	5.8	5.5	-0.6	6.2	6.5	7.9	5.0
Global TAA	14.4	-15.3	8.5	11.9	18.2	6.8	15.5	-15.8	9.7	12.7	19.7	7.6	10.9	-10.2	8.6	7.6	14.6	6.6
Risk parity							8.9	-22.3	15.1	22.9	21.2	4.8	9.2	-20.1	12.2	10.8	15.6	4.4
Private mortgages								-5.5	2.5	6.7	8.3		5.7	-9.9	0.1	7.0	7.9	1.3
Private credit	14.6	-1.0	9.9	2.6	4.6	6.0	14.4	-1.3	9.0	3.3	7.7	6.7	12.7	-2.5	7.0	4.8	9.4	6.2
Private equity - Diversified	10.4	-16.3	51.5	0.3	-13.4	4.0	10.4	-16.3	51.5	0.3	-13.4	4.0	10.4	-16.3	51.5	0.3	-13.4	4.0
Venture capital	10.4						10.4	-16.3	51.5	0.3	-13.4	4.0	10.4	-16.3	51.5	0.3	-13.4	4.0
LBO	10.4						10.4	-16.3	51.5	0.3	-13.4	4.0	10.4	-16.3	51.5	0.3	-13.4	4.0
Private equity - Other	10.4						10.4	-16.3	51.5	0.3	-13.4	4.0	10.4	-16.3	51.5	0.3	-13.4	4.0
Private equity - Aggregate	10.4	-16.3	51.5	0.3	-13.4	4.0	10.4	-16.3	51.5	0.3	-13.4	4.0	10.4	-16.3	51.5	0.3	-13.4	4.0
Total Policy Return	11.4	-12.4	15.2	7.1	15.9	6.9	12.0	-12.2	16.3	10.6	15.4	7.6	12.1	-12.6	15.6	10.4	14.9	7.5

1. The 5-year return number only includes funds with continuous data over the last 5 years.

2. To enable fairer comparisons, the policy returns of all participants with policy weight in private equity were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. Refer to the appendix of this section for details.

Net value added by asset class

Asset class	Your fund %						Peer average %						U.S. Public average %					
	2023	2022	2021	2020	2019	5-yr ¹	2023	2022	2021	2020	2019	5-yr ¹	2023	2022	2021	2020	2019	5-yr ¹
Stock - U.S. broad/all				-32.4	-7.0		0.7	1.7	0.5	-6.4	-1.4	0.0	0.0	1.0	-0.3	-3.5	-1.3	-0.3
Stock - U.S. large cap							7.6	2.3	0.2	-1.1	5.4	1.2	0.7	1.4	-0.8	-0.1	0.4	-0.6
Stock - U.S. mid cap							5.2	-2.8	0.6	1.1	2.8	3.5	4.2	-2.4	-0.4	1.8	4.1	1.1
Stock - U.S. small cap	0.6	0.4	0.3				0.4	2.3	4.9	-1.4	-0.2	1.4	0.7	2.7	3.3	-1.5	0.6	1.5
Stock - EAFE	-2.5	-5.7	0.3				-0.9	-1.9	2.6	1.1	0.1	0.8	0.0	-1.3	0.1	3.4	0.3	0.6
Stock - Global	-1.1	0.0	0.3	5.7	-0.9	0.8	-0.5	3.2	0.0	-1.0	-5.9	-0.6	-1.0	1.2	0.3	0.8	-1.5	-0.3
Stock - Other							2.1	4.2	1.0	11.5	-1.6	0.4	0.9	0.6	-6.1	3.8	-4.6	1.5
Stock - Emerging	12.2	1.8	-0.8	-6.9	-0.1	1.3	1.9	-0.5	1.0	1.3	2.2	0.7	2.5	-2.1	2.7	1.1	1.9	1.1
Stock - ACWI x U.S.				-20.6	-38.9	1.9	1.5	-0.2	-0.2	-1.8	1.3	1.1	0.9	-2.4	-0.3	1.1	0.5	0.8
Stock - Aggregate	0.1	-0.4	0.1	-4.2	-2.2	-1.3	1.8	-0.2	0.2	-1.0	0.1	0.1	0.6	0.0	0.0	0.2	0.0	0.1
Fixed income - U.S.	-3.7	0.9	5.6	2.7	-0.1	1.1	0.0	0.0	0.9	1.1	0.8	0.4	0.3	0.3	0.9	0.4	0.4	0.3
Fixed income - U.S. gov't							-0.1	0.2	0.0	0.0	0.0	0.0	-0.4	1.3	-0.2	0.4	0.1	0.0
Fixed income - U.S. credits							-0.2	0.5	18.1	1.5			0.0	1.2	3.4	0.6	0.7	1.0
Fixed income - EAFE							0.8	2.6	-0.7	0.1	4.9	1.5	0.1	9.6	0.0	1.4	1.0	0.7
Fixed income - Global							-1.1	0.7	0.2	0.5	-0.6	0.0	0.9	1.0	0.0	-4.3	-1.9	0.2
Fixed income - Other							0.8	4.7	3.5	-4.8	-2.7	1.7	-0.3	3.3	0.6	-3.4	-1.5	0.9
Fixed income - Long bonds							-5.5	-2.9	1.3	0.3	0.0	-0.1	-2.7	-1.6	0.2	0.4	1.4	-0.2
Fixed income - Emerging	-96.6	-2.7	-2.0	-4.2	-1.0	-36.2	-9.4	0.2	0.4	0.1	-0.1	-8.4	-4.7	0.2	-0.1	0.8	-0.4	-3.0
Fixed income - Inflation indexed							-0.3	3.6	0.7	-0.6	0.1	0.8	0.2	1.4	0.3	-0.2	0.1	0.4
Fixed income - High yield	-1.9	1.6	0.0	-1.1	-4.2	-1.0	1.9	0.5	0.4	0.8	-0.5	0.7	1.0	0.9	0.8	0.5	-0.9	0.4
Fixed income - Absolute return bonds																		
Fixed income - Bundled LDI																		
Public mortgages													2.7	-0.2	-0.5	2.8	0.5	2.4
Fixed income - Convertibles							-0.5			48.6	-1.1		-2.5	5.6	-6.8	-3.2	-3.8	-7.1
Cash	2.5	-4.1	-0.3	-1.2	0.5	-0.5	0.0	0.0	0.0	0.4	1.2	0.3	-1.6	-2.0	-2.3	-1.3	-1.9	-3.8
Fixed income - Aggregate	2.2	8.3	4.0	-5.0	-2.6	1.6	0.3	1.4	0.9	0.2	0.3	0.7	0.1	3.3	0.5	-1.0	0.2	0.6
Commodities							0.2	0.4	-14.9	1.2	0.6	0.5	1.8	1.8	-7.2	5.2	-4.9	-1.5
Infrastructure	7.8	9.5	-7.4	7.4	-2.2	3.6	4.2	5.7	-4.9	1.4	2.1	1.8	2.9	6.7	0.3	1.5	-1.2	1.4
Natural resources							-0.6	2.5	-1.8	-7.6	-6.5	-2.1	2.2	4.8	0.5	-5.3	-4.2	-0.5
REITs	1.3	1.9	0.9	6.7	1.0	2.6	-0.3	3.1	7.2	3.8	1.9	0.9	0.5	2.6	2.1	3.9	2.1	1.2
Real estate ex-REITs	5.8	9.0	3.2	0.1	0.3	3.7	2.6	0.1	4.3	-0.3	1.3	1.8	0.2	3.5	3.9	0.0	-0.4	1.2
Other real assets							-0.2	-9.4	0.0	7.2	-7.2	-2.6	-1.9	-4.9	-3.0	-3.4	-5.3	-1.2
Real assets - Aggregate	5.6	9.6	0.6	1.7	-0.5	3.6	3.0	1.8	4.1	-0.7	0.4	2.0	1.2	2.8	3.5	-0.3	-1.1	1.1
Hedge funds	-8.3	25.8	4.3	-3.0	-13.8	1.7	-2.5	10.8	2.1	-3.5	-8.3	-0.2	-2.4	6.0	4.1	-2.3	-2.9	0.7
Global TAA	-6.1	27.6	-7.3	-19.3	2.1	-0.3	-3.7	14.1	-3.5	-10.4	0.8	-0.4	-0.5	5.5	0.3	-2.3	0.4	1.0
Risk parity							0.0	-1.6	-2.3	0.0	0.0	0.0	0.7	0.0	-0.9	-0.5	-0.6	0.2
Private mortgages								16.6	7.4	-0.8	2.3		0.7	12.0	4.7	-1.3	0.0	4.6
Private credit	-4.0	5.0	9.7	-3.0	1.8	1.8	-3.8	4.9	3.5	14.0	-0.6	1.0	-1.9	5.4	6.3	4.9	-2.6	1.5
Private equity - Diversified	-1.7	22.1	-2.5	6.6	21.1	10.6	-4.6	16.9	-0.5	16.8	24.7	11.4	-4.5	16.4	-2.8	16.6	23.8	10.3
Venture capital	-15.7						-15.8	-3.7	9.9	20.6	31.5	8.1	-18.6	4.8	11.8	31.4	27.5	10.7
LBO	1.0						-2.8	19.0	-1.9	10.1	23.3	12.2	-2.8	20.9	-7.4	13.3	26.4	11.8
Private equity - Other	-17.4						-7.4	16.6	-28.6	9.7	19.5	6.2	0.8	16.0	-20.5	10.1	36.3	7.1
Private equity - Aggregate	-3.6	22.1	-2.5	6.6	21.1	10.2	-4.8	16.3	0.2	17.7	24.6	11.8	-4.4	16.6	-1.5	18.0	24.8	11.5
Total Net Value Added	0.2	5.1	3.5	1.1	0.9	2.3	-1.1	3.0	1.4	1.2	2.0	1.4	-1.2	2.8	0.7	1.3	2.1	1.2

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 composite calculation only uses those components with a full year return.

1. The 5-year return number only includes funds with continuous data over the last 5 years.
2. To enable fairer comparisons, the policy returns of all participants with policy weight in private equity were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. Refer to the appendix of this section for details.

Your policy return and value added calculation - 2023

2023 Policy Return and Value Added

Asset class	Policy weight	Benchmark Description	Return	Net return	Value added
Stock - U.S. small cap	6.1%	MSCI US Small Cap Net Index	17.9%	18.5%	0.6%
Stock - EAFE	3.8%	MSCI World Ex US Net Index	15.6%	13.2%	-2.5%
Stock - Global	34.6%	MSCI World Net Dividend	23.8%	22.7%	-1.1%
Stock - Emerging	1.5%	MSCI Emerging Market IMI Net	10.3%	22.5%	12.2%
Fixed income - U.S.	24.0%	Barclays US Aggregate	5.5%	1.9%	-3.7%
Fixed income - Other				5.7%	
Fixed income - Emerging	1.0%	JP Morgan EMBI GD	11.1%	-85.5%	-96.6%
Fixed income - High yield	1.0%	50%Bar U.S. High Yield 2% / 50%S&P LSTA Lever:	13.4%	11.5%	-1.9%
Cash		ICE LIBOR USD 3 Month Index	5.4%	7.9%	2.5%
Infrastructure	3.0%	Dow Jones Brookfield Global Infrastructure Net I	4.5%	12.3%	7.8%
REITs	1.0%	Your REIT benchmark	13.7%	15.0%	1.3%
Real estate ex-REITs	8.0%	NCREIF ODCE Index	-12.7%	-6.9%	5.8%
Hedge funds		50% MSCI World Net/50% Barclays US Aggregate	14.4%	6.1%	-8.3%
Global TAA		50% MSCI World Net/50% Barclays US Aggregate	14.4%	8.4%	-6.1%
Private credit	7.0%	S&P/LSTA + 150 Bps 3 Month Lag	14.6%	10.6%	-4.0%
Private equity - Diversified	9.0%	Custom lagged small-cap equity	10.4%	8.8%	-1.7%
Venture capital		Custom lagged small-cap equity	10.4%	-5.3%	-15.7%
LBO		Custom lagged small-cap equity	10.4%	11.4%	1.0%
Private equity - Other		Custom lagged small-cap equity	10.4%	-7.0%	-17.4%
Total	100.0%				
Net Actual Return (reported by you)					11.6%
Calculated Policy Return = sum of (policy weights X benchmark returns)				12.9%	
Adjustment to reflect rebalancing and overlay impacts				-1.4%	
Policy Return (reported by you)					<u>11.4%</u>
Net Value Added (Net Return - Policy Return)					0.2%

Your policy return and value added calculations - 2019 to 2022

2022 Policy Return and Value Added

Asset class	Policy weight	Benchmark Description	Benchmark Return	Net return	Value added
Stock - U.S. broad/all					
Stock - U.S. small cap	6.1%	MSCI US Small C	-17.6%	-17.2%	0.4%
Stock - EAFE	3.8%	MSCI World Ex l	-14.3%	-20.0%	-5.7%
Stock - Global	34.6%	MSCI World Net	-18.1%	-18.1%	0.0%
Stock - Emerging	1.5%	MSCI Emerging I	-19.8%	-18.0%	1.8%
Stock - ACWI x U.S.					
Fixed income - U.S.	24.0%	Barclays US Agg	-13.0%	-12.1%	0.9%
Fixed income - Emerging	1.0%	JP Morgan EMB	-6.9%	-9.6%	-2.7%
Fixed income - High yield	1.0%	50%Bar U.S. Hig	-6.0%	-4.4%	1.6%
Cash		ICE LIBOR USD 3	4.9%	0.8%	-4.1%
Infrastructure	3.0%	Dow Jones Broo	-6.6%	2.9%	9.5%
REITs	1.0%	Your REIT bench	-24.4%	-22.5%	1.9%
Real estate ex-REITs	8.0%	NCREIF ODCE In	6.5%	15.5%	9.0%
Hedge funds		50% MSCI Work	-15.3%	10.5%	25.8%
Global TAA		50% MSCI Work	-15.3%	12.3%	27.6%
Private credit	7.0%	S&P/LSTA + 150	-1.0%	4.0%	5.0%
Private equity - Diversified	9.0%	Custom lagged s	-16.3%	5.9%	22.1%
Total	100.0%				
Net Return (reported by you)					-7.3%
Calculated policy return (sum: Policy weights x benchmarks)				-12.9%	
Adjustment to reflect rebalancing and overlay impacts				<u>0.5%</u>	
Policy return (reported by you)					<u>-12.4%</u>
Net Value Added (Net Return - Policy Return)					5.1%

2020 Policy Return and Value Added

Asset class	Policy weight	Benchmark Description	Benchmark Return	Net return	Value added
Stock - U.S. broad/all	23.9%	MSCI US IMI Ne	20.7%	-11.7%	-32.4%
Stock - U.S. small cap	2.9%	MSCI US Small C	35.8%		
Stock - EAFE		MSCI World Ex l	10.7%		
Stock - Global	12.2%	MSCI World Net	15.9%	21.6%	5.7%
Stock - Emerging	6.2%	MSCI Emerging I	18.3%	11.5%	-6.9%
Stock - ACWI x U.S.	2.2%	MSCI ACWI x/U!	10.7%	-28.2%	-38.9%
Fixed income - U.S.	26.0%	Barclays US Agg	7.5%	10.2%	2.7%
Fixed income - Emerging		50% JPM EMBI C	5.3%	1.1%	-4.2%
Fixed income - High yield		50%Bar U.S. Hig	5.1%	4.0%	-1.1%
Cash		BofA Merrill Lyn	0.7%	-0.5%	-1.2%
Infrastructure	3.0%	Dow Jones Broo	-7.0%	0.5%	7.4%
REITs		Your REIT bench	-8.0%	-1.3%	6.7%
Real estate ex-REITs	9.0%	NCREIF ODCE In	0.3%	0.4%	0.1%
Hedge funds		50% MSCI Work	11.9%	8.9%	-3.0%
Global TAA		50% MSCI Work	11.9%	-7.5%	-19.3%
Private credit	7.0%	S&P/LSTA + 150	2.6%	-0.4%	-3.0%
Private equity - Diversified	7.6%	Custom lagged s	0.3%	6.9%	6.6%
Total	100.0%				
Net Return (reported by you)					8.2%
Calculated policy return (sum: Policy weights x benchmarks)				11.3%	
Adjustment to reflect rebalancing and overlay impacts				<u>-4.2%</u>	
Policy return (reported by you)					<u>7.1%</u>
Net Value Added (Net Return - Policy Return)					1.1%

2021 Policy Return and Value Added

Asset class	Policy weight	Benchmark Description	Benchmark Return	Net return	Value added
Stock - U.S. broad/all		MSCI US IMI Ne			
Stock - U.S. small cap	3.0%	MSCI US Small C	19.1%	19.4%	0.3%
Stock - EAFE	2.0%	MSCI World Ex l	11.1%	11.5%	0.3%
Stock - Global	35.8%	MSCI World Net	18.5%	18.9%	0.3%
Stock - Emerging	5.2%	MSCI Emerging I	18.8%	18.0%	-0.8%
Stock - ACWI x U.S.		MSCI ACWI x/U!	11.1%	-9.5%	-20.6%
Fixed income - U.S.	24.0%	Barclays US Agg	-1.5%	4.0%	5.6%
Fixed income - Emerging	1.0%	JP Morgan EMB	-1.8%	-3.8%	-2.0%
Fixed income - High yield	1.0%	50%Bar U.S. Hig	5.2%	5.3%	0.0%
Cash		ICE LIBOR USD 3	0.2%	-0.1%	-0.3%
Infrastructure	3.0%	Dow Jones Broo	19.9%	12.5%	-7.4%
REITs	1.0%	Your REIT bench	43.2%	44.1%	0.9%
Real estate ex-REITs	8.0%	NCREIF ODCE In	21.1%	24.3%	3.2%
Hedge funds		50% MSCI Work	8.5%	12.8%	4.3%
Global TAA		50% MSCI Work	8.5%	1.2%	-7.3%
Private credit	7.0%	S&P/LSTA + 150	9.9%	19.6%	9.7%
Private equity - Diversified	9.0%	Custom lagged s	51.5%	49.0%	-2.5%
Total	100.0%				
Net Return (reported by you)					18.6%
Calculated policy return (sum: Policy weights x benchmarks)				16.1%	
Adjustment to reflect rebalancing and overlay impacts				<u>-1.0%</u>	
Policy return (reported by you)					<u>15.2%</u>
Net Value Added (Net Return - Policy Return)					3.5%

2019 Policy Return and Value Added

Asset class	Policy weight	Benchmark Description	Benchmark Return	Net return	Value added
Stock - U.S. broad/all	16.3%	MSCI US IMI Ne	26.6%	19.6%	-7.0%
Stock - U.S. small cap					
Stock - EAFE					
Stock - Global	18.3%	MSCI World Net	27.7%	26.7%	-0.9%
Stock - Emerging	6.6%	MSCI Emerging I	18.9%	18.8%	-0.1%
Stock - ACWI x U.S.	3.6%	MSCI ACWI x/U!	21.5%	23.4%	1.9%
Fixed income - U.S.	11.0%	Barclays US Agg	8.7%	8.6%	-0.1%
Fixed income - Emerging	4.0%	50% JPM EMBI C	14.3%	13.2%	-1.0%
Fixed income - High yield	4.4%	50%Bar U.S. Hig	11.5%	7.3%	-4.2%
Cash	3.0%	BofA Merrill Lyn	2.3%	2.7%	0.5%
Infrastructure	3.0%	Dow Jones Broo	28.7%	26.5%	-2.2%
REITs	1.5%	Your REIT bench	26.0%	27.0%	1.0%
Real estate ex-REITs	7.5%	NCREIF ODCE In	5.4%	5.6%	0.3%
Hedge funds	1.0%	50% MSCI Work	18.2%	4.4%	-13.8%
Global TAA	7.0%	50% MSCI Work	18.2%	20.3%	2.1%
Private credit	6.6%	S&P/LSTA + 150	4.6%	6.4%	1.8%
Private equity - Diversified	6.2%	Custom lagged s	-13.4%	7.7%	21.1%
Total	100.0%				
Net Return (reported by you)					16.8%
Calculated policy return (sum: Policy weights x benchmarks)				16.1%	
Adjustment to reflect rebalancing and overlay impacts				<u>-0.2%</u>	
Policy return (reported by you)					<u>15.9%</u>
Net Value Added (Net Return - Policy Return)					0.9%

Profit/Loss on overlay programs

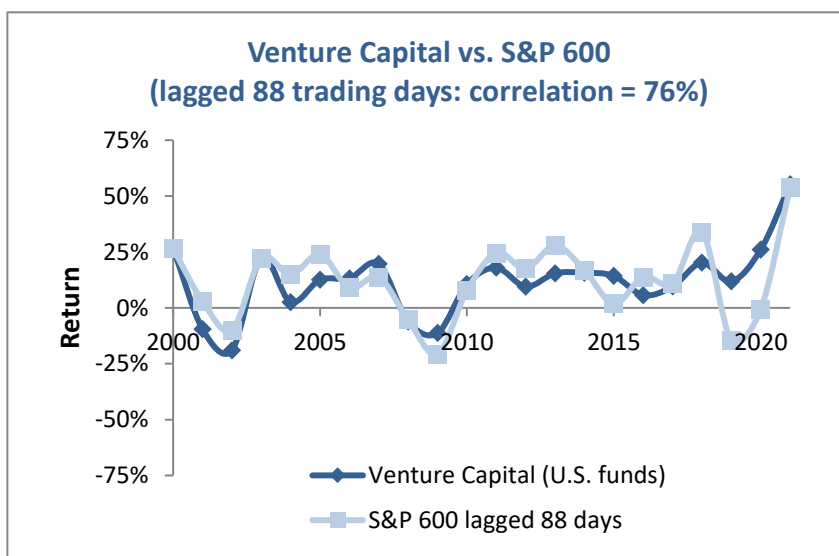
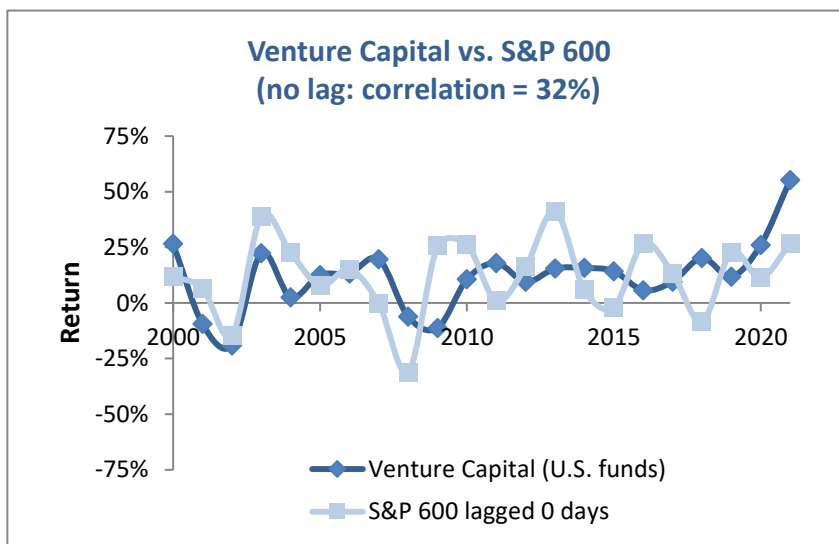
Overlay type	Your fund		Peer median				U.S. Public median			
	2023	2022	2023		2022		2023		2022	
	bps	bps	bps	#	bps	#	bps	#	bps	#
Int. Discretionary Currency							22.1	1	-15.2	1
Ext. Discretionary Currency			18.7	1	-9.4	1	10.6	2	-1.7	3
Internal Global TAA										
External Global TAA										
Internal PolicyTilt TAA										
External PolicyTilt TAA										
Internal Commodities										
External Commodities			3.0	1	4.2	2	3.0	1	8.4	3
Internal Long/Short										
External Long/Short										
Internal Other										
External Other							7.7	2	-24.0	1

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.

Appendix - 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 S&P 600 index return was -31.1% versus -5.4% if lagged 88 trading days. Thus if a fund earned the average reported venture capital return for 2008 of -6.1%, they would have mistakenly believed that their value added from venture capital was 25.0% using the un-lagged benchmarks versus -0.7% 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 standardized 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 reported private equity benchmarks with a standardized benchmark. The standard benchmark is:

- Investable. They are comprised of a blend of small cap indices that are investable.
- Lagged. Your standardized benchmark had a lag of 85 trading days. 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 85 days (i.e., approximately 119 calendar days or 3.9 calendar months), the correlation between the two series is maximized for most plans.
- Regional mix adjusted based on the average estimated mix of regions in private equity portfolios for a given country. The region mix of your standardized benchmark was 20% Europe ex-UK, 10% Global, 70% U.S.
- The result is the standardized benchmarks are superior to most self-reported benchmarks. Correlations improve to a median of 82% for the standardized benchmarks versus 44% for self-reported benchmarks. Other statistics such as volatility were also much better.

4

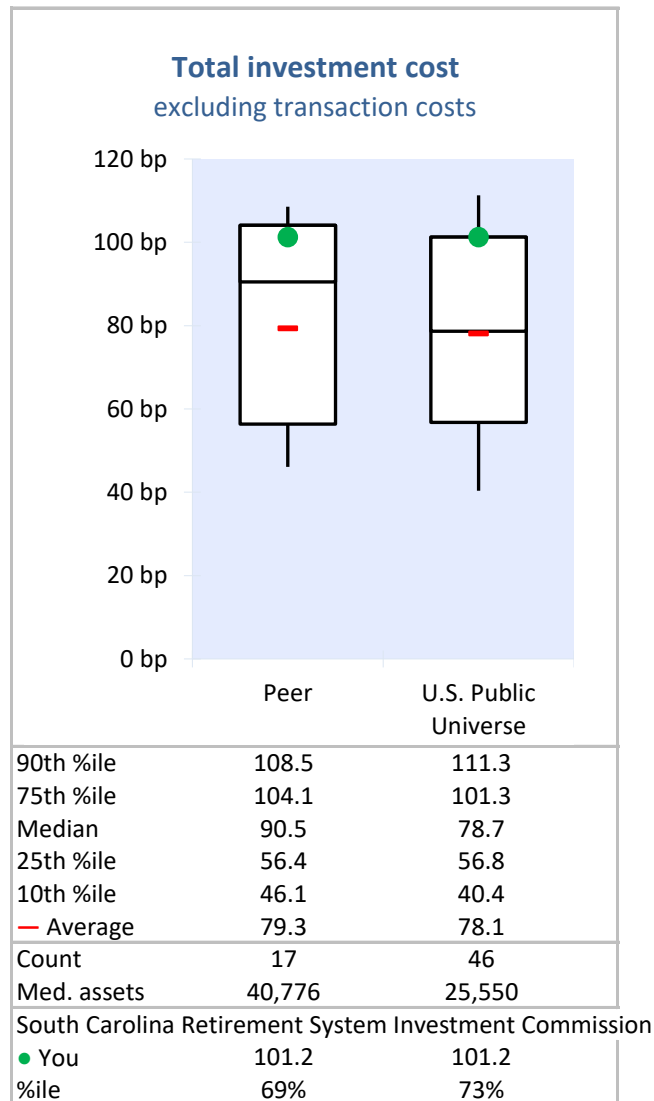
Cost: total, benchmark, trend

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Comparisons of total investment cost

Your total investment cost, excluding transaction costs, of 101.2 bps was above the peer median of 90.5 bps.

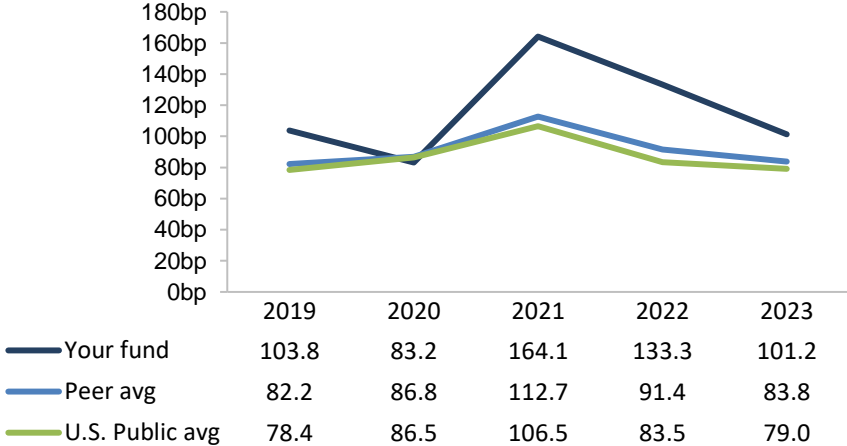
Differences in total investment cost are often caused by two factors that are usually outside of management's control: asset mix and fund size. Therefore, to assess whether your fund's total investment cost is high or low given your unique asset mix and size, CEM calculates a benchmark cost for your fund. Benchmark cost analysis begins on page 9 of this section.



Trend in total investment cost, you versus peers and universe

Your total investment cost, excluding transaction costs, decreased from 103.8 bps in 2019 to 101.2 bps in 2023.

Trend in total investment cost
(excluding transaction costs)



Trend analysis is based on 37 U.S. Public funds and 15 peer funds with 5 or more consecutive years of data.

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 real assets</u> (Infrastructure, natural resources, real estate ex-REITs, other real assets)	✓	✗	✓	✓	✓	✗
<u>Private equity</u> (Diversified private equity, venture capital, LBO, other private equity)	✓	✗	✓*	✓	✓	✗

*External manager base fees represent gross contractual management fees.

- ✓ indicates cost is included.
- ✗ indicates cost is excluded.
- CEM currently excludes 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 2023 total investment cost, excluding transaction costs, was 101.2 bp or \$406.8 million.

	Internal		External passive		External active			Total ¹		
	Passive	Active	Fees	Monitoring & Other	Base Fees	Perform. Fees	Monitor. & Other	\$000s	bps	% of Total
Asset management										
Stock - U.S. broad/all										
Stock - U.S. small cap			578	330				908		0%
Stock - EAFE			247	223				470		0%
Stock - Emerging			178	83				261		0%
Stock - Global	0		2,481	4,585				7,066		2%
Stock - ACWI x U.S.										
Fixed income - U.S.		4			1,667	0	125	1,795		0%
Fixed income - Emerging					10		1	12		0%
Fixed income - High yield					5,048	0	380	5,429		1%
Fixed income - Other					136	0	58	194		0%
Cash		401			0	0	87	487		0%
REITs					1,025		91	1,116		0%
Real estate ex-REITs					18,478	-2,630	743	16,591		4%
Real estate ex-REITs - LP/Value add					17,614	-26,049	324	-8,112		-2%
Real estate ex-REITs - Co-invest.					380	-755	35	-339		0%
Infrastructure					4,223	2,880	180	7,283		2%
Infrastructure - LP/Value add					7,339	10,143	183	17,665		4%
Infrastructure - Co-invest.					370	0	65	435		0%
Hedge funds ²					78,314	80,275	1,387	159,976		39%
Hedge funds - FoFs					0	4	4	7		0%
Underlying FoF fees ²					145	121		266		0%
Global TAA					8,134	1,753	229	10,116		2%
Private equity - Diversified - LP/Value add					2,464	-209	41	2,296		1%
Private equity - Diversified - FoFs					1,116	96	69	1,281		0%
Underlying FoF fees ²					3,375	2,297		5,671		1%
Private equity - Diversified - Co-invest.					0	0	66	66		0%
LBO - LP/Value add					19,660	32,859	475	52,994		13%
LBO - FoFs					906	666	44	1,616		0%
Underlying FoF fees ²					2,076	1,822		3,898		1%
LBO - Co-invest.					3,937	8,021	621	12,579		3%
Venture capital - LP/Value add					4,646	1,939	58	6,643		2%
Venture capital - FoFs					2,100	-2,085	164	179		0%
Underlying FoF fees ²					8,545	3,637		12,182		3%
Venture capital - Co-invest.					0	0	15	15		0%
Private equity - Other - LP/Value add					6,331	7,378	149	14,733		4%
Private equity - Other - Co-invest.					300	-497	45	-152		0%
Private credit - LP/Value add					28,281	37,071	1,083	66,434		16%
Private credit - Co-invest.					1,264	-3,349	69	-2,016		0%
Derivatives/Overlays			1,028	257				1,286		0%
Total asset management costs	0	404	4,513	5,478	227,886	155,386	6,790	401,332	99.9bp	99%
Oversight, custodial & other asset related costs										
Oversight of the fund								1,841		0%
Trustee & custodial								1,151		0%
Consulting and performance measurement								1,809		0%
Audit								285		0%
Other								359		0%
Total oversight, custodial & other costs								5,445	1.4bp	1%
Total investment costs excluding transaction costs								406,777	101.2bp	100%

1. Total cost includes carry/performance fees for all asset classes.

2. CEM-imputed costs are applied. Refer to Appendix A.

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 (2023 - 2019)

	Investment costs (\$000s)					Change (\$000s)				Change (%)			
	2023	2022	2021	2020	2019	2023	2022	2021	2020	2023	2022	2021	2020
Asset management													
Stock - U.S. broad/all			179	3,439	12,637			-3,260	-9,198			-95%	-73%
Stock - U.S. small cap	908	826	746	490		83	80	257		10%	11%	52%	
Stock - EAFE	470	404	481	357		66	-77	124		16%	-16%	35%	
Stock - Emerging	261	206	271	4,641	6,073	55	-65	-4,370	-1,432	27%	-24%	-94%	-24%
Stock - Global	7,066	5,311	5,162	5,577	7,480	1,756	148	-415	-1,903	33%	3%	-7%	-25%
Stock - ACWI x U.S.			0	1,468	4,181			-1,468	-2,713			-100%	-65%
Fixed income - U.S.	1,795	1,383	1,252	1,774	2,032	413	130	-522	-258	30%	10%	-29%	-13%
Fixed income - Emerging	12	148	242	3,630	5,404	-136	-94	-3,388	-1,774	-92%	-39%	-93%	-33%
Fixed income - High yield	5,429	5,486	5,163	5,965	6,158	-57	323	-802	-193	-1%	6%	-13%	-3%
Fixed income - Other	194												
Cash	487	320	288	781	621	167	32	-493	160	52%	11%	-63%	26%
REITs	1,116	1,286	1,021	1,651	2,002	-170	265	-630	-350	-13%	26%	-38%	-18%
Real estate ex-REITs	16,591	0	0	0	0	16,591							
Real estate ex-REITs - LP/Value add	-8,112	57,624	139,848	35,814	43,342	-65,736	-82,224	104,034	-7,528	-114%	-59%	290%	-17%
Real estate ex-REITs - Co-invest.	-339	2,417	864	518	0	-2,757	1,553	346	518	-114%	180%	67%	120358%
Infrastructure	7,283	5,624	12,741	8,615	4,318	1,659	-7,117	4,126	4,297	29%	-56%	48%	100%
Infrastructure - LP/Value add	17,665	29,116				-11,451				-39%			
Infrastructure - Co-invest.	435	-70	686	90		505	-756	596		-718%	-110%	664%	
Hedge funds ²	159,976	166,606	107,340	36,305	51,668	-6,629	59,265	71,035	-15,363	-4%	55%	196%	-30%
Hedge funds - FoFs	7	8,175	9,651	8,072	7,032	-8,168	-1,476	1,579	1,040	-100%	-15%	20%	15%
Underlying FoF fees ²	266	40,424	65,862	14,623	13,799	-40,158	-25,438	51,239	824	-99%	-39%	350%	6%
Global TAA	10,116	42,826	13,186	2,974	5,148	-32,710	29,640	10,212	-2,174	-76%	225%	343%	-42%
Private equity - Diversified - LP/Value add	2,296	55,610	156,854	58,281	89,545	-53,314	-101,244	98,572	-31,264	-96%	-65%	169%	-35%
Private equity - Diversified - FoFs	1,281	-4,213	26,553	14,387	4,193	5,494	-30,766	12,166	10,194	-130%	-116%	85%	243%
Underlying FoF fees ²	5,671	24,159	20,180	14,286	11,265	-18,488	3,980	5,893	3,021	-77%	20%	41%	27%
Private equity - Diversified - Co-invest.	66	23,302	17,778	2,082	6,723	-23,235	5,523	15,696	-4,641	-100%	31%	754%	-69%
LBO - LP/Value add	52,994												
LBO - FoFs	1,616												
Underlying FoF fees ²	3,898												
LBO - Co-invest.	12,579												
Venture capital - LP/Value add	6,643												
Venture capital - FoFs	179												
Underlying FoF fees ²	12,182												
Venture capital - Co-invest.	15												
Private equity - Other - LP/Value add	14,733												
Private equity - Other - Co-invest.	-152												
Private credit - LP/Value add	66,434	39,571	48,453	28,403	39,505	26,863	-8,882	20,050	-11,102	68%	-18%	71%	-28%
Private credit - Co-invest.	-2,016	9,294	113	2,952	13	-11,310	9,181	-2,839	2,939	-122%	8131%	-96%	22368%
Derivatives/Overlays	1,286	1,104	768	237	800	182	336	530	-563	16%	44%	223%	-70%
Total asset management costs	401,332	516,937	635,684	257,413	323,939	-115,605	-118,747	378,271	-66,526	-22%	-19%	147%	-21%
Oversight, custodial & other asset related costs													
Oversight of the fund	1,841	1,349	1,238	1,198	1,237	492	111	39	-38	37%	9%	3%	-3%
Trustee & custodial	1,151	1,187	1,394	1,394	1,670	-37	-207		-276	-3%	-15%	0%	-17%
Consulting and performance measurement	1,809	1,253	835	786	825	556	418	49	-39	44%	50%	6%	-5%
Audit	285	278	238	409	120	7	40	-172	290	3%	17%	-42%	242%
Other	359	357	382	373	357	1	-25	9	16	0%	-6%	2%	4%
Total oversight, custodial & other	5,445	4,424	4,087	4,161	4,209	1,021	337	-74	-48	23%	8%	-2%	-1%
Total investment costs¹	406,777	521,361	639,771	261,574	328,148	-114,584	-118,410	378,197	-66,574	-22%	-19%	145%	-20%
Total in basis points	101.2bp	133.3bp	164.1bp	83.2bp	103.8bp								

1. Total cost includes carry/performance fees for all asset classes.

2. CEM-imputed costs are applied. Refer to Appendix A.

Asset management costs by asset class and mandate*

Asset class / Mandate description	Style/SubStyle ²	Internal	External					Total ¹		
			Monit	Base	Perf	FoF underlying		\$000s	bps	% of ³
						Base	Perf	All/Asset		
Stock - U.S. small cap	External passive		330	578				908	8.7	0.3
Blackrock US Sm Cap			330	578				908	8.7	100
Pyramis Global Advisors - Pyramis Small Cap			0	0				0	3.2	0
Stock - EAFE	External passive		223	247				470	6.6	0.1
Blackrock World Ex-US Sm Cap			223	247				470	6.6	100
Stock - Emerging	External passive		83	178				261	9.9	0.1
Blackrock EME SM Cap			83	178				261	9.9	100
Stock - Global	Internal passive	0						0	3.2	0.0
D.E. Shaw - DE Shaw World Enhanc		0						0	3.2	100
Stock - Global	External passive		4,585	2,481				7,066	4.9	2.2
BlackRock MSCI ACWI			3,105	1,783				4,888	5.0	69
State Street Global Advisors - State Street M			1,480	699				2,178	4.6	31
Fixed income - U.S.	Internal active	4						4	3.2	0.0
Internal - SCRS Fixed Inc.		4						4	3.2	100
Fixed income - U.S.	External active		125	1,667	0			1,792	45.1	0.5
Barings - Thompson River LLC			17	1,031				1,048	199.0	58
PIMCO Core			109	636	0			744	21.6	42
Fixed income - Emerging	External active		1	10				12	25.7	0.0
EnTrust Capital - Entrust EMD			1	10				12	25.7	100
Fixed income - High yield	External active		380	5,048	0			5,429	45.0	1.7
Barings Multi Sector			1	12	0			13	48.2	0
GoldenTree Asset - GoldenTree Credit			180	2,697	0			2,877	50.3	53
Guggenheim Partners - Guggenheim Multi			199	2,340	0			2,539	40.2	47
Fixed income - Other	External active		58	136	0			194	10.6	0.1
Blackrock Short Duration			50	50				100	6.3	52
Penn Capital - Penn LTD Term HY			7	86	0			93	40.2	48
Fixed income - Cash	Internal active	401						401	3.2	0.1
SCRS - Internal Cash		400						400	3.2	100
Internal - SCRS- Residual Assets		1						1	3.2	0
Fixed income - Cash	External active		87	0	0			87	3.2	0.0
Algert GI International			0	0	0			0	3.2	0
Apollo - Cash and Other			5	0	0			5	3.2	5
Apollo Offshore-Cash and Other			3	0	0			3	3.2	4
AQR Global Enhanced			0	0				0	3.2	1
Barings High Yield			0	0	0			0	3.2	0
Blackrock Core			0	0				0	3.2	0
GMO Partners, LLC - GMO Emerging Countr			7	0	0			7	3.2	9
INTECH LLC - Intech Global Enhanc			0	0				0	3.2	0
Internal - ENT - Cash & Other			0	0	0			0	3.2	0
Internal - Gen . Assembly 2%			2	0	0			2	3.2	2
Internal - Gen. Assembly Cash- NIB			0	0	0			0	3.2	0
Internal - GSO Cash & Other			4	0	0			4	3.2	4
Internal - Judges 2%			5	0	0			5	3.2	6
Internal - Judges Cash - NIB			0	0	0			0	3.2	0
Internal - LH - Cash & Other			1	0	0			1	3.2	1
Internal - MS - Cash and Other			1	0	0			1	3.2	1
Internal - Nat. Guards Cash - NIB			0	0	0			0	3.2	0
Internal - National Guards 2%			3	0	0			3	3.2	3
Internal - Police- 2%			14	0	0			14	3.2	16
Internal - Police Cash - NIB			2	0	0			2	3.2	2
Internal - RAN - Cash & Other			0	0	0			0	3.2	0
Internal - Retirement - 2%			27	0	0			27	3.2	31
Internal - Retirement Cash - NIB			12	0	0			12	3.2	14
Morgan Stanley GTAAN			0	0				0	3.2	0
Numeric Investor LLC - Man Numeric SM			0	0				0	3.2	0

Asset management costs by asset class and mandate*

Asset class / Mandate description	Style/SubStyle ²	Internal	External			Total ¹				
			Monit	Base	Perf	FoF underlying Base Perf	\$000s	bps	% of ³ All/Asset	
PineBridge Loans			0	0			0	3.2	0	
Russell Global Transition			0	0			0	3.2	0	
Russell Infrastructure Trans			0	0	0		0	3.2	0	
Russell Intl Sm Cap Transition			0	0	0		0	3.2	0	
Russell Other Opportunistic			0	0	0		0	3.2	0	
Russell Sm Cap Pass Trans			0	0	0		0	3.2	0	
Russell Sm/Mid Cap Transition			0	0	0		0	3.2	0	
REITs	External active		91	1,025			1,116	38.7	0.3	
CenterSquare US REIT Focused			91	1,025			1,116	38.7	100	
Real estate ex-REITs	Core/Evergreen		743	18,478	-2,630		16,591	85.7	5.1	
Blackstone Property			136	3,518	-5,410		-1,756	-55.7	-11	
CBRE Global Investors - CBRE US Core Partn			85	1,882	249		2,216	88.6	13	
Morgan Stanley Prime Property			300	8,097	2,532		10,929	117.4	66	
TA Realty Fund of One			222	4,981	0		5,203	118.2	31	
Real estate ex-REITs	Co-investment		35	380	-755		-339	-43.2	-0.1	
Apollo Granite Co-Inv			8	75	315		398	328.0	-117	
Apollo MHC Co-Inv			4	40	128		171	262.9	-50	
Centersquare Co-Invest			13	142	-499		-344	-114.8	101	
Centersquare Co-Invest II			11	124	-699		-564	-188.0	166	
Real estate ex-REITs	LP/Value add		324	17,614	-26,049		-8,112	-48.2	-2.5	
Apollo AGRE Real Estate			0	0	0		0	0.0	0	
Asana Partners - Asana Equity Partners II			20	711	-2,891		-2,159	-373.2	27	
Asana Partners - Asana Equity Partners III			4	675	0		679	135.8	-8	
Blackstone REP IX			37	1,235	-1,881		-609	-67.4	8	
Blackstone REP VII			8	0	-1,999		-1,990	-426.0	25	
Blackstone Rep X			1	1,658	0		1,659	165.9	-20	
Brookfield REF IV			0	27	-242		-215	-430.1	3	
Brookfield REF V			11	531	-1,198		-656	-155.7	8	
Brookfield SREP I			5	257	-795		-532	-330.9	7	
Brookfield SREP II			16	569	-211		374	65.7	-5	
Brookfield SREP III B LP			32	1,064	1,975		3,070	329.2	-38	
Brookfield SREP IV B			15	1,218	-643		591	59.1	-7	
Brookfield SREP V			0	387	0		387	38.7	-5	
Carlyle VI			3	38	-78		-37	-21.0	0	
Crow HRP IX			26	726	-2,866		-2,114	-211.4	26	
Crow HRP VII			1	120	-403		-282	-317.0	3	
EQT Exeter VI			0	1,400	0		1,400	140.0	-17	
Equus - Equus XII			15	1,125	0		1,140	151.9	-14	
Greystar Real Estate Partners - Greystar Equ			1	0	-2		-1	-1.4	0	
Greystar Real Estate Partners - Greystar Equ			47	1,489	-10,942		-9,407	-724.3	116	
Total asset management costs					-54,995	0	0	401,332	99.9	100

* Not all assets and mandates will appear in this table if the mandate count is too large.

1. Total cost includes carry/performance fees for all asset classes.

2. Style names are for the full asset classes and substyle names are for the mandates.

3. It is a ratio of an asset's total cost to the total asset management cost for the full asset class. It is a ratio of a mandate's total cost to the total cost of the full asset class that includes those mandates. Sum of the mandate to asset cost ratios will not add up to 100 when the full asset class was aggregated from other full asset classes and not all of them were generated using mandate level data.

Total cost versus benchmark cost

Your fund's total investment cost, excluding transaction costs, was 8.7 bps below your benchmark cost of 109.9 bps. This implies that your fund was low cost by 8.7 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 costs excluding transaction costs	406,777	101.2 bp
- Your fund's benchmark	441,867	109.9 bp
= Your fund's cost savings	-35,090	-8.7 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 11 to 13.

Reasons why your fund was low cost

	Cost/-Savings impact	
	\$000s	bps
<u>Differences in implementation style:</u>		
More passive	-27,825	-6.9 bp
Less int. pass, % of total passive	122	0.0 bp
Less int. active % of total active	2,046	0.5 bp
Less evergreen % of external	16,148	4.0 bp
More fund of funds	852	0.2 bp
More co-investment	-51,221	-12.7 bp
Less overlays and unfunded strategies	-496	-0.1 bp
Total style impact	-60,374	-15.0 bp
<u>Paying more/-less for similar services:</u>		
External investment management	10,225	2.5 bp
Internal investment management	-1	0.0 bp
Oversight, custodial and other	-1,413	-0.4 bp
Total impact of paying more /-less	8,811	2.2 bp
Total savings	-51,563	-12.8 bp

Benchmark cost calculation

Your 2023 benchmark cost was 109.9 basis points or 441.9 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).

Asset class	Your average assets	Weighted peer median cost ¹	Benchmark \$000s
	(A)	(B)	(A X B)
Asset management costs			
Stock - U.S. small cap	1,046	36.0 bp	3,765
Stock - EAFE	707	35.4 bp	2,500
Stock - Emerging	264	41.8 bp	1,103
Stock - Global	14,539	17.9 bp	25,999
Fixed income - U.S.	408	8.5 bp	347
Fixed income - Emerging	5	40.2 bp	19
Fixed income - High yield	1,206	31.4 bp	3,784
Fixed income - Other ⁴	183	8.5 bp	156
Cash	1,545	3.2 bp	487
REITs	289	37.4 bp	1,080
Real estate ex-REITs	3,699	83.6 bp	30,935
Perf. fees (on NAV)	3,494	5.9 bp	2,053
Infrastructure	1,524	106.7 bp	16,253
Perf. fees (on NAV)	1,355	56.4 bp	7,638
Hedge funds	4,409	128.9 bp	56,830
Perf. fees *	4,409	182.8 bp	80,608
Global TAA	726	33.8 bp	2,455
Private equity - Diversified	710	152.1 bp	10,805
Perf. fees (on NAV)	560	100.9 bp	5,645
Venture capital	999	123.5 bp	12,344
Perf. fees (on NAV)	750	67.0 bp	5,028
LBO	3,614	141.9 bp	51,302
Perf. fees (on NAV)	3,614	136.7 bp	49,413
Private equity - Other	735	104.1 bp	7,649
Perf. fees (on NAV)	624	111.1 bp	6,932
Private credit	4,065	90.6 bp	36,837
Perf. fees (on NAV)	3,651	30.8 bp	11,262
Overlay Programs ²	40,190	0.4 bp	1,782
Benchmark for asset management	40,190	108.2 bp	435,009
Oversight, custody and other costs³			
Oversight	40,190	0.9 bp	
Trustee & custodial	40,190	0.2 bp	
Consulting	40,190	0.2 bp	
Audit	40,190	0.0 bp	
Other	40,190	0.1 bp	
Benchmark for oversight, custody, other	40,190	1.7 bp	6,858
Total benchmark cost		109.9 bp	441,867

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). The style weights by asset class for your fund and the peers are shown on page 22 of this section.

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

3. Benchmarks for oversight total and individual lines are based on peer medians. Sum of the lines may be different from the total.

4. A different asset was used as a proxy to determine the benchmarks and style percentages: 'Fixed income - U.S.' for 'Fixed income - Other'.

* The benchmark was adjusted to neutralize paying more/less impact of the styles where your costs were not reported on the same basis as the peers. See 'Cost impact of paying more/-less for similar services', page 13, for styles that were neutralized.

Cost impact of differences in implementation style

Differences in implementation style (passive vs. active, internal vs. external, etc.) relative to your peers saved you 15.0 bps.

Implementation choices	Assets by style	Peer benchmark cost			Style 1 %			Cost/ -Savings \$000s	bps
		Style 1	Style 2	Style 1 -Savings d = b - c	Your	Peer average	More/ -Less e		
<u>Passive vs active</u>	Total	b	c	d = b - c	Passive % of total assets			a x d x e	
Stock - U.S. small cap	1,046	2 bp	52 bp	-50 bp	100%	32%	68%	-3,583	
Stock - EAFE	707	4 bp	48 bp	-44 bp	100%	29%	71%	-2,217	
Stock - Emerging	264	7 bp	60 bp	-54 bp	100%	34%	66%	-928	
Stock - Global	14,539	3 bp	38 bp	-35 bp	100%	58%	42%	-21,169	
Fixed income - U.S.	408	1 bp	10 bp	-9 bp	0%	14%	-14%	50	
Fixed income - Other	183	1 bp	10 bp	-9 bp	0%	14%	-14%	22	
More passive								-27,825	-6.9 bp
<u>Internal passive vs external passive</u>	Passive assets	Internal passive	External passive		Internal passive % of passive				
Stock - U.S. small cap	1,046	1 bp	2 bp	0 bp	0%	28%	-28%	11	
Stock - Emerging	264	4 bp	8 bp	-4 bp	0%	37%	-37%	34	
Stock - Global	14,539	3 bp	3 bp	0 bp	0%	18%	-18%	77	
Less int. pass, % of total passive								122	0.0 bp
<u>Internal active vs external active</u>	Active assets	Internal active	External active		Internal active % of active				
Fixed income - U.S.	408	4 bp	12 bp	-8 bp	3%	23%	-20%	64	
Fixed income - Emerging	5	8 bp	41 bp	-33 bp	0%	3%	-3%	0	
Fixed income - High yield	1,206	7 bp	32 bp	-25 bp	0%	4%	-4%	111	
Fixed income - Other	183	4 bp	12 bp	-8 bp	0%	23%	-23%	33	
Cash	1,545	3 bp	3 bp	0 bp	82%	82%	0%	0	
REITs	289	4 bp	39 bp	-34 bp	0%	4%	-4%	36	
Real estate ex-REITs	3,699	40 bp	88 bp	-48 bp	0%	9%	-9%	1,553	
Perf. fees (on NAV)	3,494	0 bp	6 bp	-6 bp	0%	9%	-9%	210	
Global TAA	726	20 bp	34 bp	-15 bp	0%	4%	-4%	39	
Less int. active % of total active								2,046	0.5 bp
<u>Evergreen vs LP/Co & fund of funds</u>	External assets	Ever-green	LP/Co & FoF		Evergreen fund % of external				
Real estate ex-REITs	3,699	75 bp	110 bp	-35 bp	52%	63%	-11%	1,372	
Perf. fees (on NAV)	3,494	5 bp	10 bp	-5 bp	67%	69%	-2%	33	
Infrastructure	1,524	71 bp	128 bp	-57 bp	42%	37%	5%	-449	
Perf. fees (on NAV)	1,355	25 bp	80 bp	-55 bp	42%	43%	-1%	58	
Hedge funds	4,409	125 bp	167 bp	-42 bp	100%	91%	9%	-1,664	
Perf. fees	4,409	105 bp	110 bp	-5 bp	100%	91%	9%	-205	
Private credit	4,065	70 bp	108 bp	-38 bp	0%	46%	-46%	7,039	
Perf. fees (on NAV)	3,651	0 bp	58 bp	-58 bp	0%	47%	-47%	9,966	
Less evergreen % of external								16,148	4.0 bp
<u>LP/Co vs fund of funds</u>	LP/Co & Fund of F.	LP/Co	Fund of funds		LP/Co % of LP/Co & Fund of F.				
Real estate ex-REITs	1,762	110 bp	130 bp	-21 bp	100%	98%	2%	-63	
Perf. fees (on NAV)	1,138	10 bp	10 bp	0 bp	100%	99%	1%	0	
Infrastructure	882	127 bp	159 bp	-32 bp	100%	98%	2%	-42	
Perf. fees (on NAV)	785	79 bp	129 bp	-50 bp	100%	98%	2%	-76	
Private equity - Diversified	710	142 bp	209 bp	-67 bp	68%	85%	-16%	775	
Perf. fees (on NAV)	560	98 bp	123 bp	-25 bp	61%	87%	-26%	367	
Venture capital	999	109 bp	202 bp	-93 bp	47%	85%	-38%	3,544	
Perf. fees (on NAV)	750	65 bp	80 bp	-15 bp	31%	87%	-56%	631	
LBO	3,614	129 bp	215 bp	-86 bp	96%	85%	12%	-3,594	
Perf. fees (on NAV)	3,614	134 bp	155 bp	-21 bp	96%	87%	9%	-689	
Private equity - Other	735	98 bp	202 bp	-103 bp	94%	94%	0%	0	
Perf. fees (on NAV)	624	112 bp	60 bp	52 bp	99%	99%	0%	0	
More fund of funds								852	0.2 bp
<u>Co-investment vs LP</u>	LP/Co	Co-invest	LP		Co-invest % of LP/Co				
Real estate ex-REITs	1,762	69 bp	110 bp	-41 bp	4%	1%	3%	-231	
Perf. fees (on NAV)	1,138	0 bp	10 bp	-10 bp	10%	2%	8%	-92	
Infrastructure	882	11 bp	144 bp	-132 bp	22%	12%	10%	-1,113	
Perf. fees (on NAV)	785	0 bp	90 bp	-90 bp	26%	12%	14%	-985	
Private equity - Diversified	485	13 bp	150 bp	-137 bp	42%	6%	36%	-2,402	
Perf. fees (on NAV)	341	0 bp	105 bp	-105 bp	62%	7%	55%	-1,953	
Venture capital	465	12 bp	115 bp	-103 bp	12%	6%	6%	-304	
Perf. fees (on NAV)	231	0 bp	70 bp	-70 bp	21%	7%	14%	-219	
LBO	3,476	5 bp	137 bp	-132 bp	44%	6%	38%	-17,542	
Perf. fees (on NAV)	3,474	0 bp	144 bp	-144 bp	57%	7%	50%	-24,863	
Private equity - Other	694	23 bp	119 bp	-96 bp	22%	22%	0%	0	
Perf. fees (on NAV)	615	-35 bp	156 bp	-191 bp	23%	23%	0%	0	
Private credit	4,065	48 bp	110 bp	-62 bp	7%	3%	4%	-885	
Perf. fees (on NAV)	3,651	0 bp	60 bp	-60 bp	6%	3%	3%	-631	
More co-investment								-51,221	-12.7 bp
Less overlays and unfunded strategies								-496	-0.1 bp
Total impact of differences in implementation style								-60,374	-15.0 bp

Cost impact of overlays

As summarized on the previous page, the style impact of overlays saved you 0.1 bps. If you use more overlays than your peers, or more expensive types of overlays, then it increases your relative cost.

	Your average total holdings (mils)	Cost as % of total holdings		Cost/-Savings Impact (000s)
		You	Peer avg.	
	(A)	(B)	(C)	A X (B - C)
Internal Overlays				
Currency - Hedge	40,190	NA	0.00 bp	-7
Rebalancing / Passive beta - Hedge	40,190	NA	0.00 bp	-14
Duration management - Hedge	40,190	NA	0.00 bp	-2
Other overlay - Discretionary	40,190	NA	0.01 bp	-35
External Overlays				
Currency - Hedge	40,190	NA	0.01 bp	-34
Currency - Discretionary	40,190	NA	0.16 bp	-634
Rebalancing / Passive beta - Hedge	40,190	0.32 bp	0.08 bp	983
Commodity futures - Discretionary	40,190	NA	0.12 bp	-475
Other overlay - Discretionary	40,190	NA	0.07 bp	-278
Total impact in 000s				-496
Total impact in basis points				-0.1 bp

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 cost you 2.2 bps.

	Style	Your avg holdings (mls)	Cost in bps			Cost/-Savings	
			Your	Peer median	More/-less	\$000s	bps
External asset management		(A)			(B)	(A X B)	
Stock - U.S. small cap	passive	1,046	8.7	1.8	6.8	715	
Stock - EAFE	passive	707	6.6	4.0	2.6	187	
Stock - Emerging ¹	passive	264	9.9	7.9	2.0	53	
Stock - Global	passive	14,538	4.9	3.4	1.5	2,159	
Fixed income - U.S.	active	397	45.1	11.5	33.6	1,335	
Fixed income - Emerging	active	5	25.7	41.1	-15.4	-7	
Fixed income - High yield	active	1,206	45.0	32.3	12.7	1,534	
Fixed income - Other	active	183	10.6	11.5	-0.9	-17	
Cash ³	active	275	3.2	3.2	0.0	0	
REITs	active	289	38.7	38.7	0.0	1	
Real estate ex-REITs	active	1,937	99.2	74.9	24.4	4,716	
Top layer perf. fees (on NAV)	active	2,355	-11.2	5.0	-16.2	-3,808	
Real estate ex-REITs	CO	79	52.9	69.5	-16.6	-131	
Top layer perf. fees (on NAV) ²	CO	112	-67.3	0.0	-67.3	-755	
Real estate ex-REITs	LP	1,683	106.6	110.0	-3.4	-578	
Top layer perf. fees (on NAV)	LP	1,026	-253.8	10.0	-263.8	-27,075	
Infrastructure	active	642	68.6	70.6	-2.0	-125	
Top layer perf. fees (on NAV)	active	570	50.5	25.0	25.5	1,455	
Infrastructure	CO	194	22.5	11.5	11.0	212	
Top layer perf. fees (on NAV) ²	CO	206	0.0	0.0	0.0	0	
Infrastructure	LP	689	109.2	143.7	-34.5	-2,377	
Top layer perf. fees (on NAV)	LP	579	175.2	90.0	85.2	4,934	
Hedge funds	active	4,398	181.2	125.0	56.2	24,728	
Top layer perf. fees	active	4,398	182.5	--	--	Excluded*	
Hedge funds	FoF	12	3.2	41.5	-38.4	-44	
Top layer perf. fees	FoF	12	3.1	5.1	-2.0	-2	
Underlying base fees ³	FoF	12	125.0	125.0	0.0	0	
Underlying perf. fees ³	FoF	12	105.0	105.0	0.0	0	
Global TAA ¹	active	726	139.3	34.4	105.0	7,622	
Private equity - Diversified	CO	204	3.3	12.7	-9.4	-192	
Top layer perf. fees (on NAV) ²	CO	210	0.0	0.0	0.0	0	
Private equity - Diversified	LP	281	89.0	150.0	-61.0	-1,716	
Top layer perf. fees (on NAV)	LP	131	-16.0	105.0	-121.0	-1,584	
Private equity - Diversified	FoF	225	52.7	58.8	-6.2	-139	
Top layer perf. fees (on NAV)	FoF	219	4.4	17.7	-13.3	-291	
Underlying base fees ³	FoF	225	150.0	150.0	0.0	0	
Underlying perf. fees (on NAV) ³	FoF	219	105.0	105.0	0.0	0	
Venture capital ²	CO	57	2.6	12.4	-9.8	-56	
Top layer perf. fees (on NAV) ²	CO	48	0.0	0.0	0.0	0	
Venture capital	LP	408	115.3	115.3	0.0	0	
Top layer perf. fees (on NAV) ¹	LP	183	105.9	70.0	35.9	657	
Venture capital	FoF	534	42.4	42.4	0.0	0	
Top layer perf. fees (on NAV) ¹	FoF	520	-40.1	10.0	-50.1	-2,605	
Underlying base fees ³	FoF	534	160.0	160.0	0.0	0	
Underlying perf. fees (on NAV) ³	FoF	520	70.0	70.0	0.0	0	
LBO ¹	CO	1,539	29.6	4.9	24.7	3,807	
Top layer perf. fees (on NAV) ²	CO	1,969	40.7	0.0	40.7	8,021	
LBO	LP	1,937	104.0	136.5	-32.6	-6,307	
Top layer perf. fees (on NAV)	LP	1,505	218.4	144.1	74.2	11,170	
LBO ¹	FoF	138	68.7	64.7	4.0	55	
Top layer perf. fees (on NAV) ²	FoF	140	47.5	25.0	22.5	315	
Underlying base fees ³	FoF	138	150.0	150.0	0.0	0	
Underlying perf. fees (on NAV) ³	FoF	140	130.0	130.0	0.0	0	
Private equity - Other ³	CO	151	22.8	22.8	0.0	0	
Top layer perf. fees (on NAV) ³	CO	143	-34.8	-34.8	0.0	0	
Private equity - Other ³	LP	543	119.3	119.3	0.0	0	
Top layer perf. fees (on NAV) ³	LP	473	156.1	156.1	0.0	0	
Private equity - Other ³	FoF	41	81.7	81.7	0.0	0	
Top layer perf. fees (on NAV) ³	FoF	8	0.0	0.0	0.0	0	
Underlying base fees ³	FoF	41	120.0	120.0	0.0	0	
Underlying perf. fees (on NAV) ³	FoF	8	60.0	60.0	0.0	0	
Private credit	CO	278	47.9	47.9	0.0	0	
Top layer perf. fees (on NAV) ²	CO	218	-153.7	0.0	-153.7	-3,349	
Private credit	LP	3,786	77.6	110.0	-32.5	-12,295	
Total for external management						10,225	2.5 bp
Internal asset management		(A)			(B)	(A X B)	
Stock - Global ¹	passive	1	3.2	3.1	0.1	0	
Fixed income - U.S.	active	11	3.2	3.7	-0.5	-1	
Cash ³	active	1,270	3.2	3.2	0.0	0	
Total for internal management						-1	0.0 bp
Oversight, custody and other costs⁴							
Oversight			0.5	0.9	-0.5		
Trustee & custodial			0.3	0.2	0.0		
Consulting			0.5	0.2	0.3		
Audit			0.1	0.0	0.0		
Other			0.1	0.1	0.0		
Benchmark for oversight, custody, other		40,190	1.4	1.7	-0.4	-1,413	-0.4 bp
Total						8,811	2.2 bp

1. Universe median is used because peer data was insufficient.

2. Database median is used because peer and universe data were insufficient.

3. The impact of this line is neutralized by setting the benchmark cost to zero.

4. Benchmarks for oversight total and individual lines are based on peer medians. Sum of the lines may be different from the total.

* Paying more/less impact only is neutralized/excluded because your costs were not reported on the same basis as the peers.

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).

	Your cost	Benchmark = peer weighted median cost ¹	More/-less	Your average assets (or fee basis)	More/-less in \$000s		
					Total More/-less	Due to Impl. style	Due to paying more/less
Asset management costs	(A)	(B)	(C = A - B)	(D)	(C X D)		
Stock - U.S. small cap	8.7 bp	36.0 bp	-27.3 bp	1,046	-2,857	-3,572	715
Stock - EAFE	6.6 bp	35.4 bp	-28.7 bp	707	-2,030	-2,217	187
Stock - Emerging	9.9 bp	41.8 bp	-31.9 bp	264	-841	-894	53
Stock - Global	4.9 bp	17.9 bp	-13.0 bp	14,539	-18,933	-21,092	2,159
Fixed income - U.S.	44.0 bp	8.5 bp	35.5 bp	408	1,448	114	1,334
Fixed income - Emerging	25.7 bp	40.2 bp	-14.5 bp	5	-7	0	-7
Fixed income - High yield	45.0 bp	31.4 bp	13.6 bp	1,206	1,645	111	1,534
Fixed income - Other ⁴	10.6 bp	8.5 bp	2.1 bp	183	38	55	-17
Cash	3.2 bp	3.2 bp	0.0 bp	1,545	0	0	0
REITs	38.7 bp	37.4 bp	1.3 bp	289	37	36	1
Real estate ex-REITs	101.6 bp	83.6 bp	17.9 bp	3,699	6,639	2,631	4,008
Perf. fees (on NAV)	-84.3 bp	5.9 bp	-90.1 bp	3,494	-31,487	151	-31,638
Infrastructure	81.1 bp	106.7 bp	-25.6 bp	1,524	-3,894	-1,604	-2,290
Perf. fees (on NAV)	96.1 bp	56.4 bp	39.7 bp	1,355	5,385	-1,004	6,389
Hedge funds	181.1 bp	128.9 bp	52.2 bp	4,409	23,019	-1,664	24,684
Perf. fees *	182.3 bp	182.8 bp	-0.5 bp	4,409	-208	-205	-2
Global TAA	139.3 bp	33.8 bp	105.5 bp	726	7,661	39	7,622
Private equity - Diversified	100.4 bp	152.1 bp	-51.7 bp	710	-3,673	-1,627	-2,046
Perf. fees (on NAV)	39.0 bp	100.9 bp	-61.8 bp	560	-3,462	-1,587	-1,875
Venture capital	155.4 bp	123.5 bp	31.9 bp	999	3,184	3,240	-56
Perf. fees (on NAV)	46.5 bp	67.0 bp	-20.5 bp	750	-1,536	411	-1,948
LBO	76.7 bp	141.9 bp	-65.2 bp	3,614	-23,581	-21,136	-2,445
Perf. fees (on NAV)	120.0 bp	136.7 bp	-16.7 bp	3,614	-6,046	-25,552	19,506
Private equity - Other	104.1 bp	104.1 bp	0.0 bp	735	0	0	0
Perf. fees (on NAV)	111.1 bp	111.1 bp	0.0 bp	624	0	0	0
Private credit	75.5 bp	90.6 bp	-15.1 bp	4,065	-6,141	6,154	-12,295
Perf. fees (on NAV)	92.4 bp	30.8 bp	61.5 bp	3,651	22,460	9,336	13,124
Overlay Programs ²	0.3 bp	0.4 bp	-0.1 bp	40,190	-496	-496	0
Total asset management	99.9 bp	108.2 bp	-8.4 bp	40,190	-33,677	-60,374	26,697
Oversight, custody and other costs³							
Oversight of the fund	0.5 bp	0.9 bp	-0.5 bp				
Trustee & custodial	0.3 bp	0.2 bp	0.0 bp				
Consulting	0.5 bp	0.2 bp	0.3 bp				
Audit	0.1 bp	0.0 bp	0.0 bp				
Other	0.1 bp	0.1 bp	0.0 bp				
Total oversight, custody & other	1.4 bp	1.7 bp	-0.4 bp	40,190	-1,413	n/a	-1,413
Total	101.2 bp	109.9 bp	-8.7 bp	40,190	-35,090	-60,374	25,284

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). The style weights by asset class for your fund and the peers are shown on page 22 of this section.

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

3. Benchmarks for oversight total and individual lines are based on peer medians. Sum of the lines may be different from the total.

4. A different asset was used as a proxy to determine the benchmarks and style percentages: 'Fixed income - U.S.' for 'Fixed income - Other'.

* The benchmark was adjusted to neutralize paying more/less impact of the styles where your costs were not reported on the same basis as the peers. See 'Cost impact of paying more/-less for similar services', page 13, for styles that were neutralized.

Summary of why you are high or low cost by mandate*

This page provides details on why you are high or low cost by individual mandates. It shows contribution of each mandate to the total asset class including differences due to the implementation style and paying more/less.

Asset [fee type] / Mandate description ¹	Style				Avg. fee basis assets	More/-less in \$000s		
		Your cost	Benchmark cost	More/-less		Total More/-less	Due to impl. style	Due to paying more/less
		(A)	(B)	(C = A - B)	(D)	(C X D)		
Stock - U.S. small cap		8.7 bp	36.0 bp	-27.3 bp	1,046	-2,857	-3,572	715
Blackrock US Sm Cap	EP	8.7 bp	36.0 bp	-27.3 bp	1,046	-2,857	-3,572	715
Pyramis Global Advisors - Pyramis Small Cap	EP	3.2 bp	36.0 bp	-32.8 bp	0	0	0	0
Stock - EAFE		6.6 bp	35.4 bp	-28.7 bp	707	-2,030	-2,217	187
Blackrock World Ex-US Sm Cap	EP	6.6 bp	35.4 bp	-28.7 bp	707	-2,030	-2,217	187
Stock - Emerging		9.9 bp	41.8 bp	-31.9 bp	264	-841	-894	53
Blackrock EME SM Cap	EP	9.9 bp	41.8 bp	-31.9 bp	264	-841	-894	53
Stock - Global		4.9 bp	17.9 bp	-13.0 bp	14,539	-18,933	-21,092	2,159
D.E. Shaw - DE Shaw World Enhanc	IP	3.2 bp	17.9 bp	-14.7 bp	1	-1	-1	0
BlackRock MSCI ACWI	EP	5.0 bp	17.9 bp	-12.9 bp	9,847	-12,720	-14,285	1,564
State Street Global Advisors - State Street MSCI	EP	4.6 bp	17.9 bp	-13.2 bp	4,691	-6,211	-6,806	595
Fixed income - U.S.		44.0 bp	8.5 bp	35.5 bp	408	1,448	114	1,334
Internal - SCRS Fixed Inc.	IA	3.2 bp	8.5 bp	-5.3 bp	11	-6	-5	-1
PIMCO Core	EA	21.6 bp	8.5 bp	13.1 bp	344	451	104	348
Barings - Thompson River LLC	EA	199.0 bp	8.5 bp	190.5 bp	53	1,003	16	987
Fixed income - Emerging		25.7 bp	40.2 bp	-14.5 bp	5	-7	0	-7
EnTrust Capital - Entrust EMD	EA	25.7 bp	40.2 bp	-14.5 bp	5	-7	0	-7
Fixed income - High yield		45.0 bp	31.4 bp	13.6 bp	1,206	1,645	111	1,534
Barings Multi Sector	EA	48.2 bp	31.4 bp	16.8 bp	3	4	0	4
GoldenTree Asset - GoldenTree Credit	EA	50.3 bp	31.4 bp	19.0 bp	572	1,084	52	1,031
Guggenheim Partners - Guggenheim Multi	EA	40.2 bp	31.4 bp	8.8 bp	632	557	58	499
Fixed income - Other		10.6 bp	8.5 bp	2.1 bp	183	38	55	-17
Blackrock Short Duration	EA	6.3 bp	8.5 bp	-2.2 bp	160	-36	48	-84
Penn Capital - Penn LTD Term HY	EA	40.2 bp	8.5 bp	31.7 bp	23	74	7	67
Cash		3.2 bp	3.2 bp	0.0 bp	1,545	0	0	0
SCRS - Internal Cash	IA	3.2 bp	3.2 bp	0.0 bp	1,268	0	0	0
Internal - SCRS- Residual Assets	IA	3.2 bp	3.2 bp	0.0 bp	2	0	0	0
Algert GI International	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Apollo - Cash and Other	EA	3.2 bp	3.2 bp	0.0 bp	14	0	0	0
Apollo Offshore-Cash and Other	EA	3.2 bp	3.2 bp	0.0 bp	10	0	0	0
AQR Global Enhanced	EA	3.2 bp	3.2 bp	0.0 bp	1	0	0	0
Barings High Yield	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Blackrock Core	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Internal - ENT - Cash & Other	EA	3.2 bp	3.2 bp	0.0 bp	1	0	0	0
Internal - Gen . Assembly 2%	EA	3.2 bp	3.2 bp	0.0 bp	6	0	0	0
Internal - Gen. Assembly Cash- NIB	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
GMO Partners, LLC - GMO Emerging Country De	EA	3.2 bp	3.2 bp	0.0 bp	24	0	0	0
Internal - GSO Cash & Other	EA	3.2 bp	3.2 bp	0.0 bp	11	0	0	0
INTECH LLC - Intech Global Enhanc	EA	3.2 bp	3.2 bp	0.0 bp	1	0	0	0
Internal - Judges 2%	EA	3.2 bp	3.2 bp	0.0 bp	17	0	0	0
Internal - Judges Cash - NIB	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Internal - LH - Cash & Other	EA	3.2 bp	3.2 bp	0.0 bp	4	0	0	0
Numeric Investor LLC - Man Numeric SM	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Morgan Stanley GTAAN	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Internal - MS - Cash and Other	EA	3.2 bp	3.2 bp	0.0 bp	2	0	0	0
Internal - Nat. Guards Cash - NIB	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Internal - National Guards 2%	EA	3.2 bp	3.2 bp	0.0 bp	9	0	0	0
PineBridge Loans	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Internal - Police Cash - NIB	EA	3.2 bp	3.2 bp	0.0 bp	5	0	0	0
Internal - Police- 2%	EA	3.2 bp	3.2 bp	0.0 bp	43	0	0	0

Asset [fee type] / Mandate description ¹	Style				Avg. fee basis assets	More/-less in \$000s		
		Your cost	Benchmark cost	More/-less		Total More/-less	Due to impl. style	Due to paying more/less
		(A)	(B)	(C = A - B)	(D)	(C X D)		
Internal - RAN - Cash & Other	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Internal - Retirement - 2%	EA	3.2 bp	3.2 bp	0.0 bp	85	0	0	0
Internal - Retirement Cash - NIB	EA	3.2 bp	3.2 bp	0.0 bp	39	0	0	0
Russell Global Transition	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Russell Infrastructure Trans	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Russell Intl Sm Cap Transition	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Russell Other Opportunistic	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Russell Sm Cap Pass Trans	EA	3.2 bp	3.2 bp	0.0 bp	0	0	0	0
Russell Sm/Mid Cap Transition	EA	3.2 bp	3.2 bp	0.0 bp	1	0	0	0
REITs		38.7 bp	37.4 bp	1.3 bp	289	37	36	1
CenterSquare US REIT Focused	EA	38.7 bp	37.4 bp	1.3 bp	289	37	36	1
Real estate ex-REITs [top layer base]		101.6 bp	83.2 bp	18.4 bp	3,699	6,817	2,809	4,008
Blackstone Property	EA	115.8 bp	83.2 bp	32.6 bp	316	1,030	-261	1,291
CBRE Global Investors - CBRE US Core Partners	EA	78.7 bp	83.2 bp	-4.5 bp	250	-112	-207	95
Morgan Stanley Prime Property	EA	90.2 bp	83.2 bp	7.0 bp	931	653	-770	1,423
TA Realty Fund of One	EA	118.2 bp	83.2 bp	35.1 bp	440	1,544	-364	1,908
Apollo Granite Co-Inv	CO	68.6 bp	83.2 bp	-14.5 bp	12	-18	-17	-1
Apollo MHC Co-Inv	CO	66.6 bp	83.2 bp	-16.6 bp	7	-11	-9	-2
Centersquare Co-Invest	CO	51.5 bp	83.2 bp	-31.6 bp	30	-95	-41	-54
Centersquare Co-Invest II	CO	44.8 bp	83.2 bp	-38.3 bp	30	-115	-41	-74
Apollo AGRE Real Estate	LP	0.0 bp	83.2 bp	-83.1 bp	26	-220	71	-291
Asana Partners - Asana Equity Partners II	LP	126.5 bp	83.2 bp	43.3 bp	58	251	155	95
Asana Partners - Asana Equity Partners III	LP	135.8 bp	83.2 bp	52.6 bp	50	263	134	129
Blackstone REP IX	LP	140.7 bp	83.2 bp	57.6 bp	90	520	243	278
Blackstone REP VII	LP	1.8 bp	83.2 bp	-81.4 bp	47	-380	125	-506
Blackstone Rep X	LP	165.9 bp	83.2 bp	82.8 bp	100	828	268	559
Brookfield REF IV	LP	54.1 bp	83.2 bp	-29.0 bp	5	-15	13	-28
Brookfield REF V	LP	128.6 bp	83.2 bp	45.4 bp	42	192	113	78
Brookfield SREP I	LP	163.0 bp	83.2 bp	79.8 bp	16	128	43	85
Brookfield SREP II	LP	102.7 bp	83.2 bp	19.6 bp	57	111	153	-41
Brookfield SREP III B LP	LP	117.4 bp	83.2 bp	34.3 bp	93	320	250	69
Brookfield SREP IV B	LP	123.4 bp	83.2 bp	40.2 bp	100	402	268	134
Brookfield SREP V	LP	38.7 bp	83.2 bp	-44.5 bp	100	-445	268	-713
Carlyle VI	LP	23.1 bp	83.2 bp	-60.1 bp	18	-107	48	-154
Crow HRP IX	LP	75.2 bp	83.2 bp	-7.9 bp	100	-79	268	-348
Crow HRP VII	LP	136.7 bp	83.2 bp	53.6 bp	9	48	24	24
EQT Exeter VI	LP	140.0 bp	83.2 bp	56.9 bp	100	569	268	300
Equus - Equus XII	LP	151.9 bp	83.2 bp	68.8 bp	75	516	201	315
Greystar Real Estate Partners - Greystar Equity P	LP	1.3 bp	83.2 bp	-81.9 bp	6	-47	16	-63
Greystar Real Estate Partners - Greystar Equity P	LP	118.2 bp	83.2 bp	35.0 bp	130	455	349	107
Greystar Real Estate Partners - Greystar Equity P	LP	126.0 bp	83.2 bp	42.8 bp	150	643	403	240
Lone Star II	LP	3.2 bp	83.2 bp	-80.0 bp	0	-1	0	-1
Morgan Stanley - MS Real Estate	LP	73.9 bp	83.2 bp	-9.3 bp	85	-79	229	-308
Oaktree Capital - Oaktree ROF V	LP	723.5 bp	83.2 bp	640.4 bp	0	0	0	0
Oaktree Capital - Oaktree ROF VI	LP	132.1 bp	83.2 bp	48.9 bp	19	94	52	43
WL Ross - Resolution Recovery Partners	LP	-0.2 bp	83.2 bp	-83.3 bp	-7	60	-19	79
Sculptor Capital - Sculptor	LP	1.2 bp	83.2 bp	-82.0 bp	8	-65	21	-87
Stockbridge Value Fund IV	LP	94.1 bp	83.2 bp	10.9 bp	100	109	268	-159
Stockbridge Value Fund V	LP	76.9 bp	83.2 bp	-6.3 bp	75	-47	201	-249
TA Realty X	LP	3.2 bp	83.2 bp	-80.0 bp	0	0	0	0
Torchlight Investors - Torchlight IV	LP	45.6 bp	83.2 bp	-37.6 bp	13	-49	35	-84
Torchlight Investors - Torchlight V	LP	64.3 bp	83.2 bp	-18.9 bp	17	-33	47	-80
Real estate ex-REITs [top layer perf.]		-84.3 bp	5.9 bp	-90.1 bp	3,494	-31,481	157	-31,638
Blackstone Property	EA	-125.3 bp	5.9 bp	-131.2 bp	432	-5,663	-37	-5,626
CBRE Global Investors - CBRE US Core Partners	EA	9.2 bp	5.9 bp	3.4 bp	269	91	-23	114
Morgan Stanley Prime Property	EA	26.6 bp	5.9 bp	20.8 bp	951	1,974	-82	2,056
TA Realty Fund of One	EA	0.0 bp	5.9 bp	-5.9 bp	703	-412	-60	-352

Asset [fee type] / Mandate description ¹	Style				Avg. fee basis assets (D)	More/-less in \$000s		
		Your cost (A)	Benchmark cost (B)	More/-less (C = A - B)		Total More/-less (C X D)	Due to impl. style	Due to paying more/less
Apollo Granite Co-Inv	CO	119.9 bp	5.9 bp	114.1 bp	26	299	-15	315
Apollo MHC Co-Inv	CO	113.0 bp	5.9 bp	107.1 bp	11	121	-7	128
Centersquare Co-Invest	CO	-124.8 bp	5.9 bp	-130.7 bp	40	-522	-23	-499
Centersquare Co-Invest II	CO	-200.9 bp	5.9 bp	-206.7 bp	35	-719	-20	-699
Apollo AGRE Real Estate	LP	0.0 bp	5.9 bp	-5.9 bp	0	0	0	0
Asana Partners - Asana Equity Partners II	LP	-450.6 bp	5.9 bp	-456.5 bp	64	-2,928	27	-2,955
Asana Partners - Asana Equity Partners III	LP	0.0 bp	5.9 bp	-5.9 bp	12	-7	5	-12
Blackstone REP IX	LP	-160.2 bp	5.9 bp	-166.0 bp	117	-1,949	49	-1,998
Blackstone REP VII	LP	-762.4 bp	5.9 bp	-768.3 bp	26	-2,014	11	-2,025
Blackstone Rep X	LP	0.0 bp	5.9 bp	-5.9 bp	2	-1	1	-2
Brookfield REF IV	LP	-1674.9 bp	5.9 bp	-1680.8 bp	1	-243	1	-243
Brookfield REF V	LP	-353.9 bp	5.9 bp	-359.8 bp	34	-1,218	14	-1,232
Brookfield SREP I	LP	-494.6 bp	5.9 bp	-500.4 bp	16	-804	7	-811
Brookfield SREP II	LP	-42.7 bp	5.9 bp	-48.6 bp	49	-240	20	-260
Brookfield SREP III B LP	LP	195.2 bp	5.9 bp	189.3 bp	101	1,915	42	1,873
Brookfield SREP IV B	LP	-131.3 bp	5.9 bp	-137.1 bp	49	-672	20	-692
Brookfield SREP V	LP	0.0 bp	5.9 bp	-5.9 bp	0	0	0	0
Carlyle VI	LP	-93.8 bp	5.9 bp	-99.6 bp	8	-83	3	-87
Crow HRP IX	LP	-344.1 bp	5.9 bp	-349.9 bp	83	-2,915	34	-2,950
Crow HRP VII	LP	-1047.0 bp	5.9 bp	-1052.9 bp	4	-405	2	-407
EQT Exeter VI	LP	0.0 bp	5.9 bp	-5.9 bp	1	0	0	-1
Equus - Equus XII	LP	0.0 bp	5.9 bp	-5.9 bp	46	-27	19	-46
Greystar Real Estate Partners - Greystar Equity P	LP	-6.5 bp	5.9 bp	-12.4 bp	2	-3	1	-4
Greystar Real Estate Partners - Greystar Equity P	LP	-741.1 bp	5.9 bp	-747.0 bp	148	-11,028	61	-11,090
Greystar Real Estate Partners - Greystar Equity P	LP	0.0 bp	5.9 bp	-5.9 bp	47	-28	20	-47
Lone Star II	LP	2093.9 bp	5.9 bp	2088.1 bp	0	20	0	20
Morgan Stanley - MS Real Estate	LP	57.3 bp	5.9 bp	51.4 bp	85	439	35	403
Oaktree Capital - Oaktree ROF V	LP	-1890.0 bp	5.9 bp	-1895.9 bp	1	-133	0	-133
Oaktree Capital - Oaktree ROF VI	LP	0.0 bp	5.9 bp	-5.9 bp	19	-11	8	-19
WL Ross - Resolution Recovery Partners	LP	0.0 bp	5.9 bp	-5.9 bp	0	0	0	0
Sculptor Capital - Sculptor	LP	-732.3 bp	5.9 bp	-738.2 bp	3	-218	1	-220
Stockbridge Value Fund IV	LP	-285.3 bp	5.9 bp	-291.2 bp	88	-2,562	36	-2,599
Stockbridge Value Fund V	LP	0.0 bp	5.9 bp	-5.9 bp	0	0	0	0
TA Realty X	LP	-409.4 bp	5.9 bp	-415.2 bp	0	-1	0	-1
Torchlight Investors - Torchlight IV	LP	-1040.0 bp	5.9 bp	-1045.9 bp	6	-660	3	-663
Torchlight Investors - Torchlight V	LP	-858.6 bp	5.9 bp	-864.4 bp	10	-872	4	-876
Real estate ex-REITs [underlying base]		0.0 bp	0.5 bp	-0.5 bp	3,699	-178	-178	0
Real estate ex-REITs [underlying perf.]		0.0 bp	0.0 bp	0.0 bp	3,494	-6	-6	0
Infrastructure [top layer base]		81.1 bp	106.1 bp	-25.0 bp	1,524	-3,809	-1,519	-2,290
Axiom Infrastructure - Axiom NA II	EA	86.9 bp	106.1 bp	-19.2 bp	200	-385	-711	326
Brookfield Supercore	EA	69.6 bp	106.1 bp	-36.5 bp	206	-753	-732	-21
RREEF America LLC - DWS RREEF America	EA	25.4 bp	106.1 bp	-80.7 bp	161	-1,297	-571	-726
Stonepeak Partners - Stonepeak Infra IV	EA	110.0 bp	106.1 bp	3.9 bp	75	29	-267	296
Brookfield SuperCore Co In III	CO	3.4 bp	106.1 bp	-102.7 bp	30	-308	-284	-24
Brookfield SuperCore Co Inv I	CO	3.2 bp	106.1 bp	-102.9 bp	28	-288	-265	-23
Brookfield SuperCore Co Inv II	CO	3.1 bp	106.1 bp	-103.0 bp	27	-281	-258	-23
DigitalBridge Group - Digital Colony Co-Invest I	CO	3.7 bp	106.1 bp	-102.4 bp	28	-289	-267	-22
DigitalBridge Group - Digital Colony II Co-Invest I	CO	50.8 bp	106.1 bp	-55.3 bp	40	-221	-378	157
DigitalBridge Group - DigitalBridge I Co Invest I	CO	48.2 bp	106.1 bp	-57.9 bp	40	-231	-378	147
Actis Infra A	LP	114.5 bp	106.1 bp	8.4 bp	78	66	294	-229
Basalt Infrastructure Partners - Basalt Infrastruct	LP	162.8 bp	106.1 bp	56.7 bp	75	425	282	143
Brookfield Infrastructure IV	LP	158.9 bp	106.1 bp	52.8 bp	76	403	287	116
Brookfield Infrastructure V-B	LP	126.5 bp	106.1 bp	20.4 bp	100	204	376	-173
DigitalBridge Group - DigitalBridge Partners	LP	117.9 bp	106.1 bp	11.8 bp	128	150	481	-330
Grain , LLC - Grain Spectrum III	LP	48.0 bp	106.1 bp	-58.1 bp	100	-581	376	-957
Macquarie Infrastructure Fund	LP	71.8 bp	106.1 bp	-34.3 bp	131	-451	495	-946
Infrastructure [top layer perf.]		96.1 bp	55.4 bp	40.7 bp	1,355	5,521	-868	6,389

Asset [fee type] / Mandate description ¹	Style	Your cost	Benchmark cost	More/-less	Avg. fee basis assets	More/-less in \$000s		
						Total More/-less	Due to impl. style	Due to paying more/less
		(A)	(B)	(C = A - B)	(D)	(C X D)		
Axiom Infrastructure - Axiom NA II	EA	117.9 bp	55.4 bp	62.5 bp	165	1,028	-500	1,528
Brookfield Supercore	EA	24.0 bp	55.4 bp	-31.4 bp	208	-652	-631	-21
RREEF America LLC - DWS RREEF America	EA	42.3 bp	55.4 bp	-13.1 bp	161	-210	-488	278
Stonepeak Partners - Stonepeak Infra IV	EA	-64.5 bp	55.4 bp	-119.9 bp	37	-441	-112	-330
Brookfield SuperCore Co In III	CO	0.0 bp	55.4 bp	-55.4 bp	32	-179	-179	0
Brookfield SuperCore Co Inv I	CO	0.0 bp	55.4 bp	-55.4 bp	29	-160	-160	0
Brookfield SuperCore Co Inv II	CO	0.0 bp	55.4 bp	-55.4 bp	27	-150	-150	0
DigitalBridge Group - Digital Colony Co-Invest I	CO	0.0 bp	55.4 bp	-55.4 bp	33	-183	-183	0
DigitalBridge Group - Digital Colony II Co-Invest I	CO	0.0 bp	55.4 bp	-55.4 bp	44	-243	-243	0
DigitalBridge Group - DigitalBridge I Co Invest I	CO	0.0 bp	55.4 bp	-55.4 bp	41	-228	-228	0
Actis Infra A	LP	563.2 bp	55.4 bp	507.8 bp	64	3,274	223	3,051
Basalt Infrastructure Partners - Basalt Infrastruct	LP	0.0 bp	55.4 bp	-55.4 bp	2	-10	6	-16
Brookfield Infrastructure IV	LP	296.7 bp	55.4 bp	241.4 bp	85	2,049	294	1,755
Brookfield Infrastructure V-B	LP	0.0 bp	55.4 bp	-55.4 bp	15	-81	51	-132
DigitalBridge Group - DigitalBridge Partners	LP	266.5 bp	55.4 bp	211.1 bp	155	3,263	535	2,728
Grain , LLC - Grain Spectrum III	LP	-11.3 bp	55.4 bp	-66.6 bp	111	-741	385	-1,126
Macquarie Infrastructure Fund	LP	0.0 bp	55.4 bp	-55.4 bp	147	-815	510	-1,325
Infrastructure [underlying base]		0.0 bp	0.6 bp	-0.6 bp	1,524	-85	-85	0

1. The table shows only the full asset classes with underlying mandates. In cases when the full asset class includes also non-mandate type of assets, the sum of underlying mandate numbers will be different from those of the full asset class.

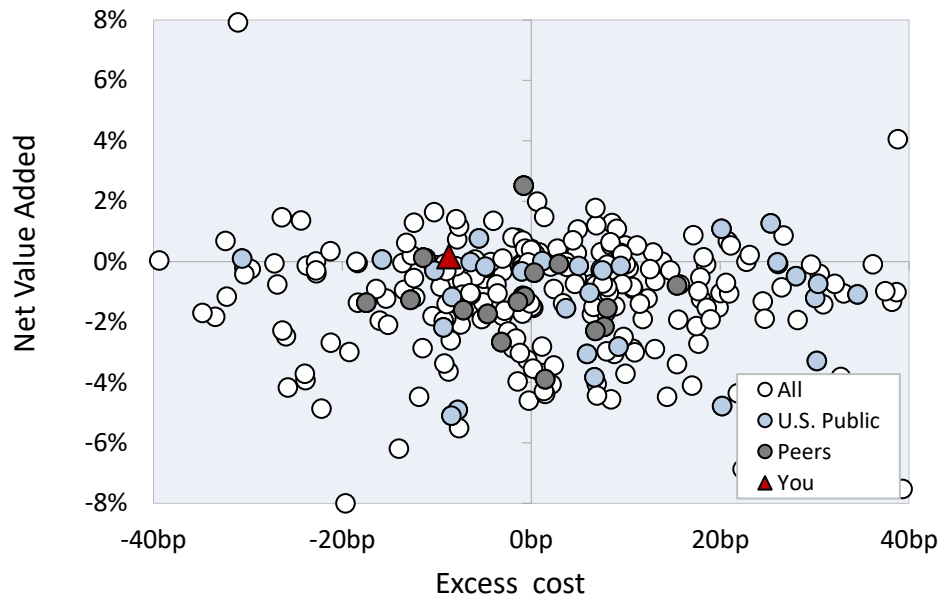
* Not all assets and mandates will appear in this table if the mandate count is too large.

Your cost impact ranking

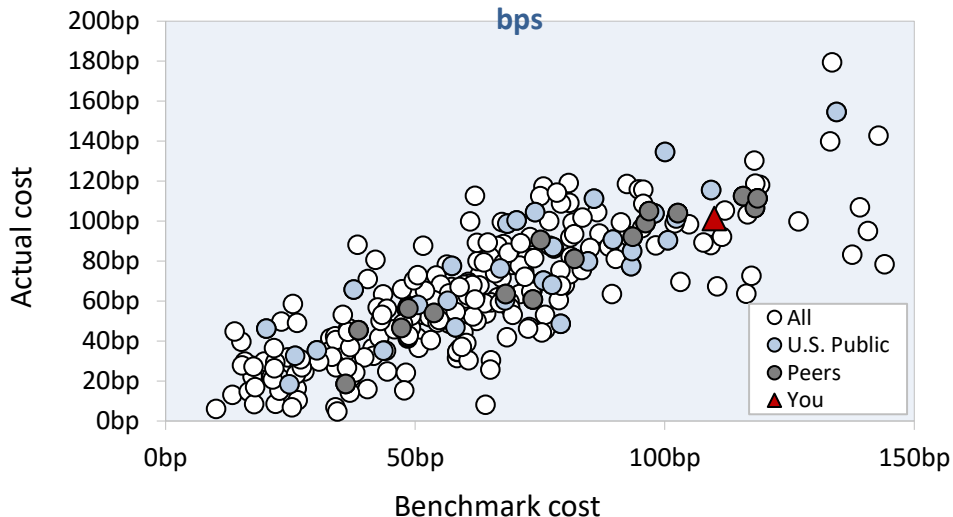
Being high or low cost is neither good nor bad. More important is whether you are receiving sufficient value for your excess cost. At the total fund level, we provide insight into this question by combining your excess return above benchmark and excess cost to create a snapshot of your cost impact performance relative to that of the global universe.

In 2023, your fund ranked in the positive net value added, low cost quadrant.

Your 2023 Net value added 0.2%, Excess cost -9 bps



Your 2023 Actual cost 101.2 bps, Benchmark cost 109.9 bps



For all funds except your fund, benchmark cost equals the sum of group median costs times the fund's average holdings by asset class plus group median cost of derivatives/overlays plus group median cost of oversight/support. Group is peer if the fund is in the peer group, universe - if the fund is part of the universe, and global/database otherwise. Your fund's benchmark cost is calculated using peer-based methodology per page 20 of this section.

Benchmarking methodology formulas and data

a) Formulas

Example calculations for 'Stock - U.S. small cap'

Asset class peer cost = weighted average by peer average style of peer median costs

$$= (9\% \times 1.5 \text{ bp}) + (6\% \times 5.3 \text{ bp}) + (23\% \times 1.8 \text{ bp}) + (62\% \times 56.3 \text{ bp}) = 36.0 \text{ bp}$$

Your cost versus benchmark (-savings/+excess) = asset class your cost - asset class peer cost

$$= 8.7 \text{ bp} - 36.0 \text{ bp} = -27.3 \text{ bp}$$

Attribution of 'your cost versus benchmark' to impact of style mix and impact of cost/paying more

Cost impact of differences in implementation style (-savings/+excess)

= cost impacts of passive vs active (A), internal passive vs external passive (B), internal active vs external active (C)

$$= -34.3 \text{ bp} + 0.1 \text{ bp} + 0.0 \text{ bp} = -34.2 \text{ bp}$$

A) Impact of Passive vs Active management (-savings/+excess)

$$= (\text{peer average passive cost} - \text{peer average active cost}) \times (\text{passive \% of asset, you} - \text{passive \% of asset, peer average}) \\ = (1.7 \text{ bp} - 52.2 \text{ bp}) \times (100\% - 32\%) = -34.3 \text{ bp}$$

Peer average passive cost = weighted average by peer average style of peer median costs for internal passive and external passive management

$$= [(9\% \times 1.5 \text{ bp}) + (23\% \times 1.8 \text{ bp})] / (9\% + 23\%) = 1.7 \text{ bp}$$

Peer average active cost = weighted average by peer average style of peer median costs for internal active and external active management

$$= [(6\% \times 5.3 \text{ bp}) + (62\% \times 56.3 \text{ bp})] / (6\% + 62\%) = 52.2 \text{ bp}$$

B) Impact of Internal Passive vs External Passive management (-savings/+excess)

$$= (\text{peer average internal passive cost} - \text{peer average external passive cost}) \times (\text{internal passive \% of passive, you} - \text{internal passive \% of passive, peer average}) \times \text{passive \% of asset, you} \\ = (1.5 \text{ bp} - 1.8 \text{ bp}) \times (0\% - 28\%) \times 100\% = 0.1 \text{ bp}$$

C) Impact of Internal Active vs External Active management (-savings/+excess)

$$= (\text{peer average internal active cost} - \text{peer average external active cost}) \times (\text{internal active \% of active, you} - \text{internal active \% of active, peer avg}) \times \text{active \% of asset, you} \\ = (5.3 \text{ bp} - 56.3 \text{ bp}) \times (0\% - 0\%) \times 0\% = 0.0 \text{ bp}$$

Cost impact of paying more/-less

$$= (\text{cost internal passive, you} - \text{cost internal passive, peer}) \times \text{internal passive \% of asset, you} + (\text{cost internal active, you} - \text{cost internal active, peer}) \times \text{internal active \% of asset, you} + (\text{cost external passive, you} - \text{cost external passive, peer}) \times \text{external passive \% of asset, you} + (\text{cost external active, you} - \text{cost external active, peer}) \times \text{external active \% of asset, you} \\ = (0.0 \text{ bp} - 1.5 \text{ bp}) \times 0\% + (0.0 \text{ bp} - 5.3 \text{ bp}) \times 0\% + (8.7 \text{ bp} - 1.8 \text{ bp}) \times 100\% + (0.0 \text{ bp} - 56.3 \text{ bp}) \times 0\% = 6.8 \text{ bp}$$

Your cost versus benchmark (-savings/+excess)

$$= \text{cost impact of differences in implementation style} + \text{cost impact of paying more/-less} \\ = -34.2 \text{ bp} + 6.8 \text{ bp} = -27.3 \text{ bp}$$

Benchmarking methodology formulas and data

b) 2023 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	Co-invest	Limited Partner.	Fund of Funds	Internal Passive	Internal Active	External Passive	External Active	Co-invest	Limited Partner.	Fund of Funds	Weighted Median
Stock - U.S. small cap			8.7					1.5	5.3	1.8	56.3				36.0
Stock - EAFE			6.6						9.2	4.0	50.6				35.4
Stock - Emerging			9.9					4.4	9.9	7.9	63.4				41.8
Stock - Global	3.2		4.9					3.1	5.3	3.4	44.8				17.9
Fixed income - U.S.		3.2		45.1				1.4	3.7	0.7	11.5				8.5
Fixed income - Emerging				25.7					7.7		41.1				40.2
Fixed income - High yield				45.0					6.9		32.3				31.4
Fixed income - Other				10.6				1.4	3.7	0.7	11.5				8.5
Cash		3.2		3.2					3.2		3.2				3.2
REITs				38.7					4.2		38.7				37.4
Real estate ex-REITs				99.2	52.9	106.6			39.7		74.9	69.5	110.0	47.9	83.2
Top layer perf. fees (on NAV)				-11.2	-67.3	-253.8			0.0		5.0	0.0	10.0	0.0	5.9
Underlying base fees														82.2	0.5
Underlying perf. fees (on NAV)														10.0	0.0
Infrastructure				68.6	22.5	109.2					70.6	11.5	143.7	100.0	106.1
Top layer perf. fees (on NAV)				50.5	0.0	175.2					25.0	0.0	90.0	39.0	55.4
Underlying base fees														58.9	0.6
Underlying perf. fees (on NAV)														90.0	1.0
Hedge funds				181.2			3.2				125.0			41.5	117.2
Top layer perf. fees				182.5			3.1				105.0			5.1	95.7
Underlying base fees							125.0							125.0	11.7
Underlying perf. fees							105.0							105.0	9.8
Global TAA				139.3					19.6		34.4				33.8
Private equity - Diversified					3.3	89.0	52.7					12.7	150.0	58.8	129.1
Top layer perf. fees (on NAV)					0.0	-16.0	4.4					0.0	105.0	17.7	87.3
Underlying base fees							150.0							150.0	23.1
Underlying perf. fees (on NAV)							105.0							105.0	13.6
Venture capital					2.6	115.3	42.4					12.4	115.3	42.4	98.9
Top layer perf. fees (on NAV)					0.0	105.9	-40.1					0.0	70.0	10.0	57.9
Underlying base fees							160.0							160.0	24.6
Underlying perf. fees (on NAV)							70.0							70.0	9.1
LBO					29.6	104.0	68.7					4.9	136.5	64.7	118.8
Top layer perf. fees (on NAV)					40.7	218.4	47.5					0.0	144.1	25.0	119.9
Underlying base fees							150.0							150.0	23.1
Underlying perf. fees (on NAV)							130.0							130.0	16.8
Private equity - Other					22.8	119.3	81.7					22.8	119.3	81.7	97.4
Top layer perf. fees (on NAV)					-34.8	156.1	0.0					-34.8	156.1	0.0	110.3
Underlying base fees							120.0							120.0	6.7
Underlying perf. fees (on NAV)							60.0							60.0	0.8
Private credit					47.9	77.6					69.9	47.9	110.0		90.6
Top layer perf. fees (on NAV)					-153.7	108.0					0.0	0.0	60.0		30.8
Underlying base fees															0.0
Underlying perf. fees (on NAV)															0.0

Benchmarking methodology formulas and data

c) 2023 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	Co-invest	Limited Partner.	Fund of Funds	Internal Passive	Internal Active	External Passive	External Active	Co-invest	Limited Partner.	Fund of Funds
Stock - U.S. small cap	0.0%	0.0%	100.0%	0.0%				9.0%	5.5%	23.1%	62.4%			
Stock - EAFE	0.0%	0.0%	100.0%	0.0%				4.3%	28.9%	66.9%				
Stock - Emerging	0.0%	0.0%	100.0%	0.0%				12.8%	3.8%	21.7%	61.7%			
Stock - Global	0.0%	0.0%	100.0%	0.0%				10.4%	7.1%	47.8%	34.8%			
Fixed income - U.S.	0.0%	2.8%	0.0%	97.2%				0.3%	19.7%	13.2%	66.8%			
Fixed income - Emerging		0.0%		100.0%					2.7%		97.3%			
Fixed income - High yield		0.0%		100.0%					3.6%		96.4%			
Fixed income - Other	0.0%	0.0%	0.0%	100.0%				0.3%	19.7%	13.2%	66.8%			
Cash		82.2%		17.8%					82.2%		17.8%			
REITs		0.0%		100.0%					3.7%		96.3%			
Real estate ex-REITs		0.0%		52.4%	2.1%	45.5%	0.0%		8.7%		57.5%	0.4%	32.8%	0.6%
Top layer perf. fees (on NAV)		0.0%		67.4%	3.2%	29.4%	0.0%		9.3%		62.9%	0.5%	27.1%	0.2%
Underlying base fees		0.0%		52.4%	2.1%	45.5%	0.0%		8.7%		57.5%	0.4%	32.8%	0.6%
Underlying perf. fees (on NAV)		0.0%		67.4%	3.2%	29.4%	0.0%		9.3%		62.9%	0.5%	27.1%	0.2%
Infrastructure				42.1%	12.7%	45.2%	0.0%				37.0%	7.7%	54.4%	0.9%
Top layer perf. fees (on NAV)				42.1%	15.2%	42.7%	0.0%				42.8%	6.9%	49.1%	1.1%
Underlying base fees				42.1%	12.7%	45.2%	0.0%				37.0%	7.7%	54.4%	0.9%
Underlying perf. fees (on NAV)				42.1%	15.2%	42.7%	0.0%				42.8%	6.9%	49.1%	1.1%
Hedge funds				99.7%			0.3%				90.6%			9.4%
Top layer perf. fees				99.7%			0.3%				90.6%			9.4%
Underlying base fees				99.7%			0.3%				90.6%			9.4%
Underlying perf. fees				99.7%			0.3%				90.6%			9.4%
Global TAA		0.0%		100.0%					3.6%		96.4%			
Private equity - Diversified					28.7%	39.6%	31.7%					5.0%	79.6%	15.4%
Top layer perf. fees (on NAV)					37.5%	23.4%	39.1%					6.1%	80.9%	13.0%
Underlying base fees					28.7%	39.6%	31.7%					5.0%	79.6%	15.4%
Underlying perf. fees (on NAV)					37.5%	23.4%	39.1%					6.1%	80.9%	13.0%
Venture capital					5.7%	40.8%	53.4%					5.0%	79.6%	15.4%
Top layer perf. fees (on NAV)					6.3%	24.4%	69.3%					6.1%	80.9%	13.0%
Underlying base fees					5.7%	40.8%	53.4%					5.0%	79.6%	15.4%
Underlying perf. fees (on NAV)					6.3%	24.4%	69.3%					6.1%	80.9%	13.0%
LBO					42.6%	53.6%	3.8%					5.0%	79.6%	15.4%
Top layer perf. fees (on NAV)					54.5%	41.6%	3.9%					6.1%	80.9%	13.0%
Underlying base fees					42.6%	53.6%	3.8%					5.0%	79.6%	15.4%
Underlying perf. fees (on NAV)					54.5%	41.6%	3.9%					6.1%	80.9%	13.0%
Private equity - Other					20.5%	73.9%	5.6%					20.5%	73.9%	5.6%
Top layer perf. fees (on NAV)					22.9%	75.8%	1.3%					22.9%	75.8%	1.3%
Underlying base fees					20.5%	73.9%	5.6%					20.5%	73.9%	5.6%
Underlying perf. fees (on NAV)					22.9%	75.8%	1.3%					22.9%	75.8%	1.3%
Private credit				0.0%	6.8%	93.2%					45.5%	1.8%	52.6%	
Top layer perf. fees (on NAV)				0.0%	6.0%	94.0%					46.9%	1.6%	51.4%	
Underlying base fees				0.0%	6.8%	93.2%					45.5%	1.8%	52.6%	
Underlying perf. fees (on NAV)				0.0%	6.0%	94.0%					46.9%	1.6%	51.4%	

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

Methodology of the cost trend model

CEM cost trend model relies on four factors or reasons to explain the cost differences over time: asset value, asset mix, implementation style, and paying more/less for similar services.

Factors affecting the cost differences

Asset value. If we keep the last three factors constant, costs will normally follow changes in the asset holdings. For external implementations, among the reasons is the common practice of charging management fees based on the value of assets under management. For internal, more assets requires additional internal staff (front and back office) and other operating expenditures. In the current model, for simplicity, we assume that costs change proportionately to the plan average assets.

Change in asset value only affects the cost amounts and does not affect costs in basis points. These are determined by the changes in the last three factors.

Asset mix. These are the cost differences associated with increasing / decreasing allocations to one or more of the asset classes, while keeping other factors constant. Higher allocations to more expensive assets will increase the cost both in amounts and in basis points.

Implementation style. These are changes in costs associated with increasing / decreasing allocations to one or more of the management styles within the same asset class.

Paying more/less for similar services. These cost differences reflect changes in the fees / internal costs in basis points for the same implementation style within the same asset class or same oversight service.

Attribution of the cost differences and other assumptions

Change in the cost amount for one asset =

Sum of impacts of asset value, asset mix, implementation style, and paying more/less for similar services.

Change in the basis point costs for one asset =

Sum of basis point impacts of asset mix, implementation style, and paying more/less for similar services.

For overlays, we do not differentiate between implementation styles and use entire asset category.

Oversight costs are only affected by changes in asset value and paying more/less for similar services.

The base model attributes cost differences between any two years. Trends and cumulative results are built upon combinations of multiple two-year attributions. When an entire asset class is missing in one of the two years, the cost difference for that asset is attributed to the asset value and mix impacts only. Impacts of other factors is 0. When an implementation style within the same asset class is missing in one of the two years, the cost difference for that style is attributed to the effects of the implementation style, while impact of paying more/less for similar services is 0. Impacts of changes in the asset value and asset mix are still accounted for.

General simplified formula for attributing basis point cost differences for one asset class

Cost difference in bps = impact of asset mix + impacts of style & paying =

$$[\text{CostBpsL} \times (\text{HavgHpct} - \text{HavgLpct})] + [\text{HavgHpct} \times (\text{CostBpsH} - \text{CostBpsL})]$$

where L/H are lower and higher years; HavgPct is % of asset's average holdings in total nav holdings;

CostBps is the asset total cost in basis points for a particular year.

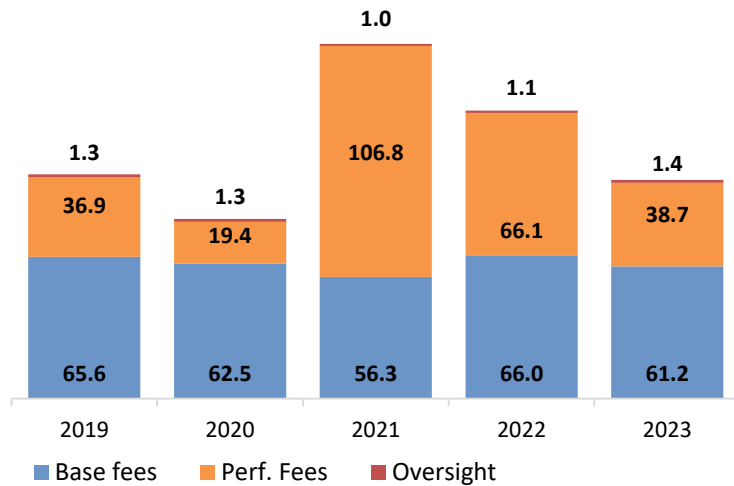
Further, cost difference for style & paying impacts (CostBpsH - CostBpsL) for one style =

$$\text{style impact} [\text{CostStyleBpsL} \times (\text{WgH} - \text{WgL})] + \text{paying impact} [\text{WgH} \times (\text{CostStyleBpsH} - \text{CostStyleBpsL})]$$

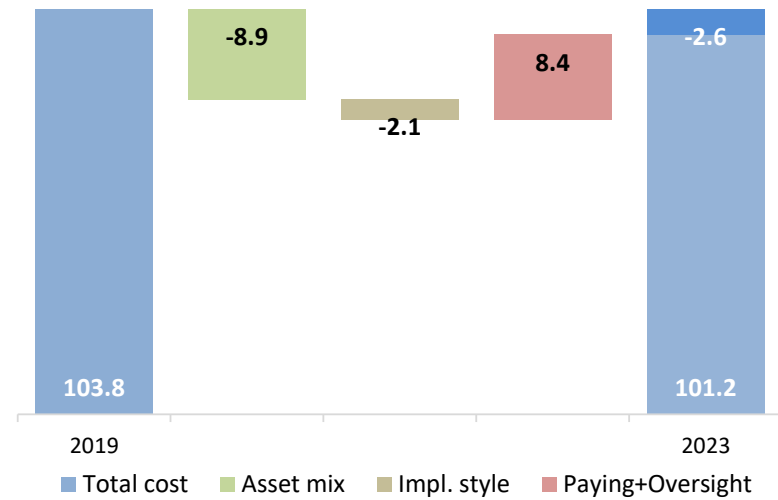
where CostStyleBps is the style cost in basis points; Wg is the weight for that style within the asset class.

Total plan cost and cost changes

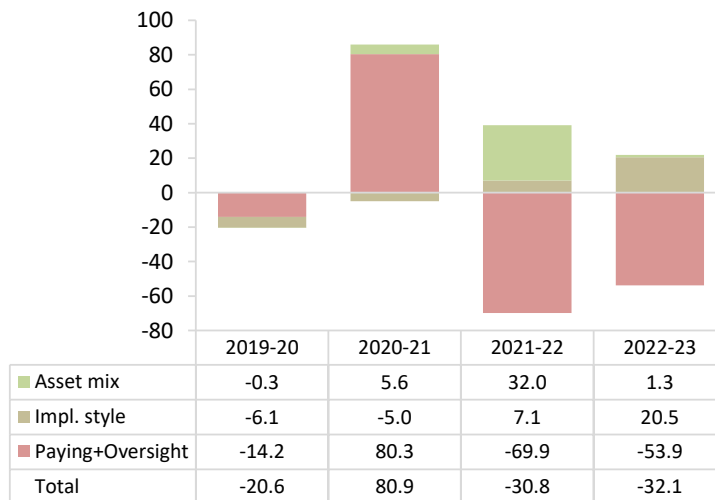
Total plan cost over time, bps



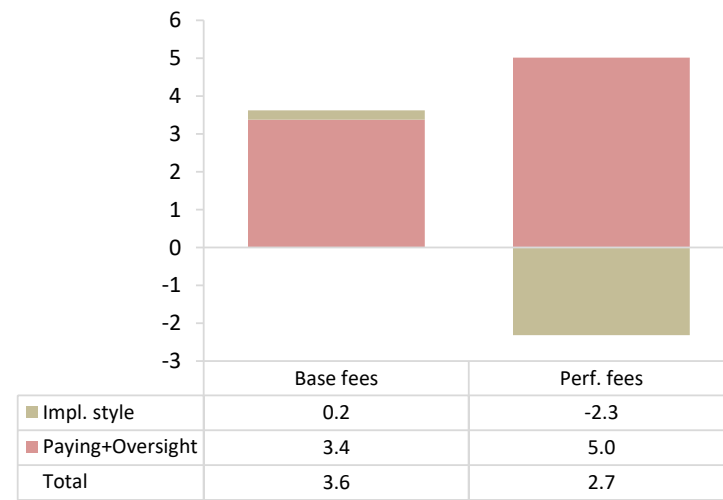
Cost differences, 2023 versus 2019, bps



Reasons for cost differences over time, bps



Impact of base and performance fees, 2023 vs. 2019, bps



Summary of cost differences, 2023 versus 2019

Your total cost decreased by 2.6 bps between 2019 and 2023 because of changes in: asset mix (-8.9 bps), implementation style (-2.1 bps), and paying more/less for similar services (8.4 bps).

	bps	\$000s
Starting total cost, 2019	103.8	328,148
Growth in asset value		88,907
Asset mix	<u>-8.9</u>	<u>-35,698</u>
Stock	-4.1	-16,486
Fixed income	-2.6	-10,594
Real estate ex-REITs	1.1	4,271
Real assets ex real estate	-0.2	-994
Hedge funds & multi-asset	0.5	2,036
Private equity	-2.5	-10,165
Private debt	-0.9	-3,766
Implementation style (less expensive vs. more)	<u>-2.1</u>	<u>-8,318</u>
More passive, less active	-3.4	-13,641
More int. active % of total active	0.0	-4
More evergreen % of external	1.2	4,830
Performance fees	-2.0	-8,150
Mix of LP and fund of funds	3.3	13,209
Performance fees	1.0	4,112
More co-investment	-0.9	-3,419
Performance fees	-1.3	-5,255
Paying more/-less for	<u>8.4</u>	<u>33,642</u>
Stock	0.1	234
Fixed income	0.1	449
Real estate ex-REITs	0.5	1,854
Performance fees	-8.4	-33,631
Real assets ex real estate	0.5	1,913
Performance fees	0.7	2,880
Hedge funds & multi-asset	2.7	10,976
Performance fees	10.6	42,558
Private equity	-1.2	-4,826
Performance fees	-2.3	-9,277
Private debt	0.6	2,606
Performance fees	4.4	17,637
Overlays and unfunded strategies	0.1	269
Oversight, custodial, other (pay more/-less)	<u>0.0</u>	<u>96</u>
Total difference	-2.6	78,629
Ending total cost, 2023	101.2	406,777

Summary of cost differences, year over year

	bps	\$000s	bps	\$000s	bps	\$000s	bps	\$000s	bps	\$000s
	2019		2020		2021		2022		2019	
Starting total cost	103.8	328,148	83.2	261,574	164.1	639,771	133.3	521,361	103.8	328,148
Growth in asset value		-1,742		62,622		2,182		14,290		88,907
Asset mix	-0.3	-970	5.6	21,799	32.0	125,107	1.3	5,313	-8.9	-35,698
Stock	-1.3	-4,176	-1.0	-4,011	-0.2	-901	0.0	155	-4.1	-16,486
Fixed income	-0.2	-773	-1.2	-4,560	-0.4	-1,668	-0.1	-571	-2.6	-10,594
Real estate ex-REITs	-1.1	-3,545	0.4	1,718	8.9	34,786	-0.3	-1,116	1.1	4,271
Real assets ex real estate	0.1	416	-0.5	-1,915	0.5	2,047	-0.1	-588	-0.2	-994
Hedge funds & multi-asset	-0.9	-2,887	0.2	719	3.2	12,441	-0.6	-2,305	0.5	2,036
Private equity	2.0	6,441	9.6	37,477	18.6	72,678	3.5	14,013	-2.5	-10,165
Private debt	1.1	3,554	-2.0	-7,628	1.5	5,724	-1.1	-4,276	-0.9	-3,766
Implementation style (less expensive vs. more)	-6.1	-19,325	-5.0	-19,438	7.1	27,691	20.5	82,419	-2.1	-8,318
Passive vs. active	-3.0	-9,458	-0.8	-3,271	0.0	1	0.0	23	-3.4	-13,641
Internal active vs. external active	0.0	96	0.0	115	0.0	27	0.0	4	0.0	-4
Evergreen vs. LP/Co & fund of funds	0.0	-47	-0.1	-224	-0.9	-3,508	-5.3	-21,477	-0.8	-3,320
LP/Co vs. fund of funds	0.5	1,424	-2.8	-10,909	6.6	25,724	25.4	102,191	4.3	17,321
Co-investment vs. LP	-3.6	-11,340	-1.3	-5,148	1.4	5,447	0.4	1,678	-2.2	-8,674
Paying more/-less for	-14.2	-44,510	80.6	314,284	-70.0	-273,713	-54.1	-217,506	8.4	33,642
Stock	-0.2	-604	-1.5	-5,672	0.2	783	0.4	1,596	0.1	234
Fixed income	-0.4	-1,312	-0.9	-3,667	0.5	2,008	0.2	946	0.1	449
Real estate ex-REITs	-0.9	-2,920	24.0	93,659	-29.5	-115,398	-8.5	-34,227	-7.9	-31,776
Real assets ex real estate	1.2	3,701	1.0	3,752	0.1	514	-1.4	-5,695	1.2	4,793
Hedge funds & multi-asset	-3.3	-10,515	31.2	121,494	7.5	29,412	-48.0	-192,886	13.3	53,533
Private equity	-7.5	-23,686	22.5	87,615	-49.6	-194,055	-0.9	-3,529	-3.5	-14,103
Private debt	-2.7	-8,616	4.3	16,630	0.7	2,689	4.0	16,138	5.0	20,243
Overlays and unfunded strategies	-0.2	-558	0.1	474	0.1	334	0.0	151	0.1	269
Oversight, custodial, other (pay more/-less)	0.0	-25	-0.3	-1,070	0.1	323	0.2	899	0.0	96
Total difference	-20.6	-66,574	80.9	378,197	-30.8	-118,410	-32.1	-114,584	-2.6	78,629
Ending total cost	83.2	261,574	164.1	639,771	133.3	521,361	101.2	406,777	101.2	406,777
	2020		2021		2022		2023		2023	

Sum of all changes (except for the total) between adjacent years will differ from the changes between starting and ending years in the last two columns.

Reasons by asset class and cost type, \$000

Your total cost has increased by \$79 million in 2023 compared to 2019. An increase of \$89 million was due to the \$8.6 billion rise in plan total average nav holdings. The remaining decrease of \$10 million is explained by the changes in the asset mix (-\$36 million), implementation style (-\$8.3 million), and paying more/less for similar services (\$34 million).

Asset class ¹	2019 cost \$000s	Asset mix \$000s	Implement. style \$000s	Paying more/-less \$000s	Total ex asset gr. \$000s	Total difference \$000s	Growth in asset value \$000s	2023 cost \$000s
	A	B	C	D	E=B+C+D	F=G-A	F-E	G
Stock - U.S. broad/all	12,637	-16,061	0	0	-16,061	-12,637	3,424	n/a
Stock - U.S. small cap	n/a	908	0	0	908	908	0	908
Stock - EAFE	n/a	470	0	0	470	470	0	470
Stock - Emerging	6,073	-6,907	-550	0	-7,457	-5,811	1,645	261
Stock - Global	7,480	10,417	-13,091	234	-2,440	-414	2,027	7,066
Stock - ACWI x U.S.	4,181	-5,314	0	0	-5,314	-4,181	1,133	n/a
Fixed income - U.S.	2,032	-1,499	4	708	-787	-237	551	1,795
Fixed income - Emerging	5,404	-6,847	0	-10	-6,856	-5,392	1,464	12
Fixed income - High yield	6,158	-2,054	0	-344	-2,398	-729	1,668	5,429
Fixed income - Other	n/a	194	0	0	194	194	0	194
Cash	621	-390	-8	95	-302	-134	168	487
REITs	2,002	-1,434	0	6	-1,428	-885	542	1,116
Real estate ex-REITs	27,652	979	-402	1,854	2,431	9,923	7,492	37,574
Top layer perf. fees	15,691	3,293	-19,038	-33,631	-49,376	-45,125	4,251	-29,434
Infrastructure	4,318	440	4,525	1,907	6,871	8,041	1,170	12,360
Top layer perf. fees	0	0	10,143	2,880	13,023	13,023	0	13,023
Hedge funds	41,761	4,133	20,312	2,184	26,630	37,944	11,314	79,705
Top layer perf. fees	16,939	1,677	14,574	42,499	58,750	63,339	4,589	80,279
Underlying base fees	7,016	694	-9,546	80	-8,772	-6,871	1,901	145
Underlying perf. fees	6,783	671	-9,229	59	-8,499	-6,662	1,838	121
Global TAA	5,148	-5,140	0	8,712	3,573	4,968	1,395	10,116
Private equity - Diversified	39,886	-41,053	-1,214	-4,668	-46,936	-36,129	10,807	3,757
Top layer perf. fees	60,575	-62,220	-7,354	-7,527	-77,100	-60,689	16,412	-114
Underlying base fees	3,847	-3,959	2,602	-157	-1,514	-472	1,042	3,375
Underlying perf. fees	7,419	-7,620	2,238	-1,750	-7,132	-5,122	2,010	2,297
Venture capital	n/a	6,983	0	0	6,983	6,983	0	6,983
Top layer perf. fees	n/a	-146	0	0	-146	-146	0	-146
Underlying base fees	n/a	8,545	0	0	8,545	8,545	0	8,545
Underlying perf. fees	n/a	3,637	0	0	3,637	3,637	0	3,637
LBO	n/a	25,644	0	0	25,644	25,644	0	25,644
Top layer perf. fees	n/a	41,545	0	0	41,545	41,545	0	41,545
Underlying base fees	n/a	2,076	0	0	2,076	2,076	0	2,076
Underlying perf. fees	n/a	1,822	0	0	1,822	1,822	0	1,822
Private equity - Other	n/a	7,159	0	0	7,159	7,159	0	7,159
Top layer perf. fees	n/a	6,881	0	0	6,881	6,881	0	6,881
Underlying base fees	n/a	491	0	0	491	491	0	491
Underlying perf. fees	n/a	50	0	0	50	50	0	50
Private credit	30,320	-8,788	-1,657	2,606	-7,839	376	8,215	30,696
Top layer perf. fees	9,198	5,022	-628	17,637	22,031	24,523	2,492	33,722
Total for asset management	323,139	-35,698	-8,318	33,374	-10,642	76,908	87,550	400,047
Overlays and unfunded strategies ²	800	0		269	269	486	217	1,286
Oversight	1,237			269	269	604	335	1,841
Trustee & custodial	825			760	760	984	224	1,809
Consulting	1,670			-972	-972	-519	452	1,151
Audit	120			133	133	166	32	285
Other	357			-95	-95	1	97	359
Total for fund oversight ³	4,209			96	96	1,236	1,140	5,445
Total	328,148	-35,698	-8,318	33,738	-10,278	78,629	88,907	406,777

1. Cost differences for asset classes are attributed to the effects of:

- Asset growth, asset mix, implementation style, and paying for similar services, when the asset class exists in both years.
- Asset growth and asset mix, when the asset class exists only in one of the years.

2. Cost differences for overlays are attributed to the effects of:

- Asset growth and paying more/less for similar services, when the fund has overlays in both years.
- Asset growth and asset mix, when the fund has overlays only in one of the years.

3. Cost differences for oversight are attributed to the effects of asset growth and paying more/less for similar services.

Reasons by asset class and cost type, basis points

Your total cost has decreased by 2.6 bps in 2023 vs. 2019. It was driven by the changes in the asset mix (-8.9 bps), implementation style (-2.1 bps), and paying more/less for similar services (8.4 bps).

Asset class	Asset mix bps	Implement. style bps	Paying more/-less bps	Total difference bps	Total ¹ ex asset gr. \$000s
	B	C	D	B+C+D	
Stock - U.S. broad/all	-4.0	0.0	0.0	-4.0	-16,061
Stock - U.S. small cap	0.2	0.0	0.0	0.2	908
Stock - EAFE	0.1	0.0	0.0	0.1	470
Stock - Emerging	-1.7	-0.1	0.0	-1.9	-7,457
Stock - Global	2.6	-3.3	0.1	-0.6	-2,440
Stock - ACWI x U.S.	-1.3	0.0	0.0	-1.3	-5,314
Fixed income - U.S.	-0.4	0.0	0.2	-0.2	-787
Fixed income - Emerging	-1.7	0.0	0.0	-1.7	-6,856
Fixed income - High yield	-0.5	0.0	-0.1	-0.6	-2,398
Fixed income - Other	0.0	0.0	0.0	0.0	194
Cash	-0.1	0.0	0.0	-0.1	-302
REITs	-0.4	0.0	0.0	-0.4	-1,428
Real estate ex-REITs	0.2	-0.1	0.5	0.6	2,431
Top layer perf. fees (on NAV)	0.8	-4.7	-8.4	-12.3	-49,376
Infrastructure	0.1	1.1	0.5	1.7	6,871
Top layer perf. fees (on NAV)	0.0	2.5	0.7	3.2	13,023
Hedge funds	1.0	5.1	0.5	6.6	26,630
Top layer perf. fees	0.4	3.6	10.6	14.6	58,750
Underlying base fees	0.2	-2.4	0.0	-2.2	-8,772
Underlying perf. fees	0.2	-2.3	0.0	-2.1	-8,499
Global TAA	-1.3	0.0	2.2	0.9	3,573
Private equity - Diversified	-10.2	-0.3	-1.2	-11.7	-46,936
Top layer perf. fees (on NAV)	-15.5	-1.8	-1.9	-19.2	-77,100
Underlying base fees	-1.0	0.6	0.0	-0.4	-1,514
Underlying perf. fees (on NAV)	-1.9	0.6	-0.4	-1.8	-7,132
Venture capital	1.7	0.0	0.0	1.7	6,983
Top layer perf. fees (on NAV)	0.0	0.0	0.0	0.0	-146
Underlying base fees	2.1	0.0	0.0	2.1	8,545
Underlying perf. fees (on NAV)	0.9	0.0	0.0	0.9	3,637
LBO	6.4	0.0	0.0	6.4	25,644
Top layer perf. fees (on NAV)	10.3	0.0	0.0	10.3	41,545
Underlying base fees	0.5	0.0	0.0	0.5	2,076
Underlying perf. fees (on NAV)	0.5	0.0	0.0	0.5	1,822
Private equity - Other	1.8	0.0	0.0	1.8	7,159
Top layer perf. fees (on NAV)	1.7	0.0	0.0	1.7	6,881
Underlying base fees	0.1	0.0	0.0	0.1	491
Underlying perf. fees (on NAV)	0.0	0.0	0.0	0.0	50
Private credit	-2.2	-0.4	0.6	-2.0	-7,839
Top layer perf. fees (on NAV)	1.2	-0.2	4.4	5.5	22,031
Total for asset management	-8.9	-2.1	8.3	-2.6	-10,642
Overlays and unfunded strategies	0.00		0.07	0.07	269
Oversight			0.1	0.1	269
Trustee & custodial			0.2	0.2	760
Consulting			-0.2	-0.2	-972
Audit			0.0	0.0	133
Other			0.0	0.0	-95
Total for fund oversight			0.0	0.0	96
Total	-8.9	-2.1	8.4	-2.6	-10,278
Total basis point costs in years 2023 and 2019		101.2	103.8	-2.6	

1. Calculated by multiplying total difference in bps by plan total nav average holdings for year 2023, \$40 billion. Similarly, basis point costs on this page are converted from the amounts on the previous page using the same total nav holdings as the fee basis.

Impact of changes in asset mix

Changes in the asset mix decreased your total cost by \$36 million or -8.9 bps.

Asset class	2019 Cost bps	2023 Cost bps	2019 asset ¹ weight %	2023 asset ¹ weight %	Change in asset weight	Asset mix changes ² bps	Asset mix changes ³ \$000s
	A	B	C	D	E=D-C	A (or B) x E	
Stock - U.S. broad/all	45.2	n/a	9%	0%	-9%	-4.0	-16,061
Stock - U.S. small cap	n/a	8.7	0%	3%	3%	0.2	908
Stock - EAFE	n/a	6.6	0%	2%	2%	0.1	470
Stock - Emerging	30.8	9.9	6%	1%	-6%	-1.7	-6,907
Stock - Global	13.7	4.9	17%	36%	19%	2.6	10,417
Stock - ACWI x U.S.	38.7	n/a	3%	0%	-3%	-1.3	-5,314
Fixed income - U.S.	26.5	44.0	2%	1%	-1%	-0.4	-1,499
Fixed income - Emerging	46.7	25.7	4%	0%	-4%	-1.7	-6,847
Fixed income - High yield	47.9	45.0	4%	3%	-1%	-0.5	-2,054
Fixed income - Other	n/a	10.6	0%	0%	0%	0.0	194
Cash	2.6	3.2	8%	4%	-4%	-0.1	-390
REITs	38.5	38.7	2%	1%	-1%	-0.4	-1,434
Real estate ex-REITs	97.7	101.6	9%	9%	0%	0.2	979
Top layer perf. fees (on NAV)	66.5	-84.3	7%	9%	1%	0.8	3,293
Infrastructure	38.9	81.1	4%	4%	0%	0.1	440
Hedge funds	129.7	180.8	10%	11%	1%	1.0	4,133
Top layer perf. fees	52.6	182.1	10%	11%	1%	0.4	1,677
Underlying base fees	21.8	0.3	10%	11%	1%	0.2	694
Underlying perf. fees	21.1	0.3	10%	11%	1%	0.2	671
Global TAA	19.3	139.3	8%	2%	-7%	-1.3	-5,140
Private equity - Diversified	135.7	52.9	9%	2%	-8%	-10.2	-41,053
Top layer perf. fees (on NAV)	263.8	-2.0	7%	1%	-6%	-15.5	-62,220
Underlying base fees	13.1	47.5	9%	2%	-8%	-1.0	-3,959
Underlying perf. fees (on NAV)	32.3	41.0	7%	1%	-6%	-1.9	-7,620
Venture capital	n/a	69.9	0%	2%	2%	1.7	6,983
Top layer perf. fees (on NAV)	n/a	-1.9	0%	2%	2%	0.0	-146
Underlying base fees	n/a	85.5	0%	2%	2%	2.1	8,545
Underlying perf. fees (on NAV)	n/a	48.5	0%	2%	2%	0.9	3,637
LBO	n/a	71.0	0%	9%	9%	6.4	25,644
Top layer perf. fees (on NAV)	n/a	114.9	0%	9%	9%	10.3	41,545
Underlying base fees	n/a	5.7	0%	9%	9%	0.5	2,076
Underlying perf. fees (on NAV)	n/a	5.0	0%	9%	9%	0.5	1,822
Private equity - Other	n/a	97.4	0%	2%	2%	1.8	7,159
Top layer perf. fees (on NAV)	n/a	110.3	0%	2%	2%	1.7	6,881
Underlying base fees	n/a	6.7	0%	2%	2%	0.1	491
Underlying perf. fees (on NAV)	n/a	0.8	0%	2%	2%	0.0	50
Private credit	73.2	75.5	13%	10%	-3%	-2.2	-8,788
Top layer perf. fees (on NAV)	45.8	92.4	6%	9%	3%	1.2	5,022
Total for asset management						-8.9	-35,698

1. Weight % = asset's average (NAV for performance lines) holdings / plan total nav average holdings.

2. If asset is not available in one of the years, the entire weighted cost difference in bps is attributed to the asset mix.

3. Calculated by multiplying asset mix changes in bps by plan total nav average holdings for year 2023, \$40 billion.

Impact of changes in implementation style

Changes in implementation style (passive vs. active, internal vs. external, etc.) in 2023 vs. 2019 saved you \$8.3 million.

Implementation choices	2023	Cost, 2019			Style 1 %			Cost/ \$000s
	avg. assets \$mils	Style 1	Style 2	Style 1 -Savings	2023	2019	More/ -Less	
	A	B	C	D = B - C	E			A x D x E
<u>Passive vs active</u>	Total assets	Passive	Active		Passive % of total assets			
Stock - Emerging	264	10 bp	31 bp	-21 bp	100%	0%	100%	-550
Stock - Global	14,539	5 bp	22 bp	-17 bp	100%	47%	53%	-13,091
More passive, less active								-13,641
<u>Internal passive vs external passive</u>	Passive assets	Internal passive	External passive		Internal passive % of passive			
Stock - Global	14,539	3 bp	5 bp	-2 bp	0%	0%	0%	0
More int. pass. % of total passive								0
<u>Internal active vs external active</u>	Active assets	Internal active	External active		Internal active % of active			
Fixed income - U.S.	408	4 bp	27 bp	-23 bp	3%	3%	0%	4
Cash	1,545	2 bp	4 bp	-2 bp	82%	79%	3%	-8
More int. active % of total active								-4
<u>Evergreen vs LP/Co & fund of funds</u>	External assets	Ever-green	LP/Co & FoF		Evergreen fund % of external			
Real estate ex-REITs	3,699	99 bp	98 bp	2 bp	52%	0%	52%	305
Perf. fees (on NAV)	3,494	-11 bp	67 bp	-78 bp	67%	0%	67%	-18,293
Infrastructure	1,524	39 bp	90 bp	-51 bp	42%	100%	-58%	4,525
Perf. fees (on NAV)	1,355	0 bp	129 bp	-129 bp	42%	100%	-58%	10,143
More evergreen % of external								-3,320
<u>LP/Co-investment vs fund of funds</u>	LP/Co & FoFs	LP/Co	Fund of funds		LP/Co % of LP/Co + FoFs			
Hedge funds	4,409	176 bp	113 bp	63 bp	100%	61%	38%	10,767
Perf. fees	4,409	86 bp	54 bp	32 bp	100%	61%	38%	5,345
Private equity - Diversified	710	137 bp	284 bp	-147 bp	68%	92%	-23%	2,442
Perf. fees (on NAV)	560	314 bp	212 bp	102 bp	61%	83%	-22%	-1,233
Mix of LP and fund of funds								17,321
<u>Co-investment vs LP</u>	LP/Co	Co-invest	LP		Co-invest % of LP/Co			
Real estate ex-REITs	1,762	7 bp	98 bp	-90 bp	4%	0%	4%	-708
Perf. fees (on NAV)	1,138	0 bp	67 bp	-67 bp	10%	0%	10%	-745
Private equity - Diversified	485	56 bp	157 bp	-101 bp	42%	20%	22%	-1,054
Perf. fees (on NAV)	341	66 bp	415 bp	-350 bp	62%	29%	33%	-3,883
Private credit	4,065	3 bp	74 bp	-71 bp	7%	1%	6%	-1,657
Perf. fees (on NAV)	3,651	0 bp	47 bp	-47 bp	6%	2%	4%	-628
More co-investment								-8,674
Total								-8,318

Cost differences are attributed exclusively to the effects of implementation style when the style existed in one of the years only.

Impact of paying more/-less for similar services

In 2023, you paid \$34 million more for similar asset management and oversight / support services vs. 2019.

Asset class styles where you had assets in both 2023 and 2019 ¹	Style	2023	Cost in bps			Cost/ -Savings
		avg. assets \$mils	2023	2019	More/ -less	\$000s
<u>External asset management</u>		A			B	A x B
Stock - Global	passive	14,538	4.9	4.7	0.2	234
Fixed income - U.S.	active	397	45.1	27.3	17.9	709
Fixed income - Emerging	active	5	25.7	46.7	-21.0	-10
Fixed income - High yield	active	1,206	45.0	47.9	-2.9	-344
Cash	active	275	3.2	3.9	-0.8	-21
REITs	active	289	38.7	38.5	0.2	6
Real estate ex-REITs	CO	79	52.9	7.3	45.6	358
Top layer perf. fees (on NAV)	CO	112	-67.3	0.0	-67.3	-755
Real estate ex-REITs	LP	1,683	106.6	97.7	8.9	1,496
Top layer perf. fees (on NAV)	LP	1,026	-253.8	66.5	-320.4	-32,875
Infrastructure	active	642	68.6	38.9	29.7	1,907
Top layer perf. fees (on NAV)	active	570	50.5	0.0	50.5	2,880
Hedge funds	active	4,398	181.2	176.1	5.1	2,245
Top layer perf. fees	active	4,398	182.5	85.9	96.6	42,495
Hedge funds	FoF	12	3.2	56.4	-53.2	-62
Top layer perf. fees	FoF	12	3.1	0.0	3.1	4
Underlying base fees	FoF	12	125.0	56.3	68.7	80
Underlying perf. fees	FoF	12	105.0	54.4	50.6	59
Global TAA	active	726	139.3	19.3	120.0	8,712
Private equity - Diversified	CO	204	3.3	56.4	-53.1	-1,083
Top layer perf. fees (on NAV)	CO	210	0.0	65.8	-65.8	-1,382
Private equity - Diversified	LP	281	89.0	157.1	-68.1	-1,916
Top layer perf. fees (on NAV)	LP	131	-16.0	415.5	-431.5	-5,650
Private equity - Diversified	FoF	225	52.7	126.9	-74.2	-1,669
Top layer perf. fees (on NAV)	FoF	219	4.4	27.0	-22.7	-496
Underlying base fees	FoF	225	150.0	157.0	-7.0	-157
Underlying perf. fees (on NAV)	FoF	219	105.0	185.0	-80.0	-1,750
Private credit	CO	278	47.9	2.8	45.0	1,253
Top layer perf. fees (on NAV)	CO	218	-153.7	0.0	-153.7	-3,349
Private credit	LP	3,786	77.6	74.0	3.6	1,353
Top layer perf. fees (on NAV)	LP	3,433	108.0	46.9	61.1	20,986
Total for external management						33,258
<u>Internal asset management</u>		A			B	A x B
Fixed income - U.S.	active	11	3.2	3.9	-0.8	-1
Cash	active	1,270	3.2	2.2	0.9	116
Total for internal management						115
Overlays and unfunded strategies		40,190	0.3	0.3	0.1	269
Oversight		40,190	0.5	0.4	0.1	269.0
Trustee & custodial		40,190	0.5	0.3	0.2	760
Consulting		40,190	0.3	0.5	-0.2	-972
Audit		40,190	0.1	0.0	0.0	133
Other		40,190	0.1	0.1	0.0	-95
Total for fund oversight						96
Total						33,738

1. Cost differences are attributed to paying more/less for similar services only if the asset-class style existed in both years.

5

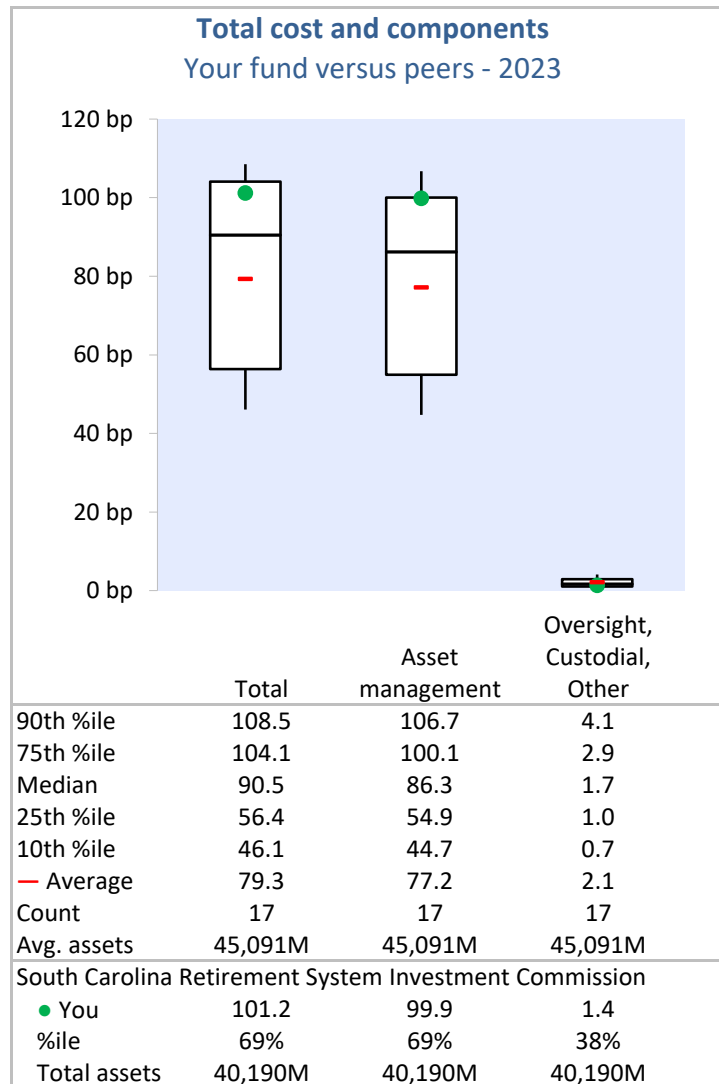
Cost comparisons

Total fund cost	2
Governance, operations & support	3
Public asset classes	
- Stock	4
- Fixed Income	13
- Commodities	27
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Real asset classes	
- Real estate ex-REITs	30
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Private equity	
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- Mortgages	39
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Global TAA	41
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Total fund cost

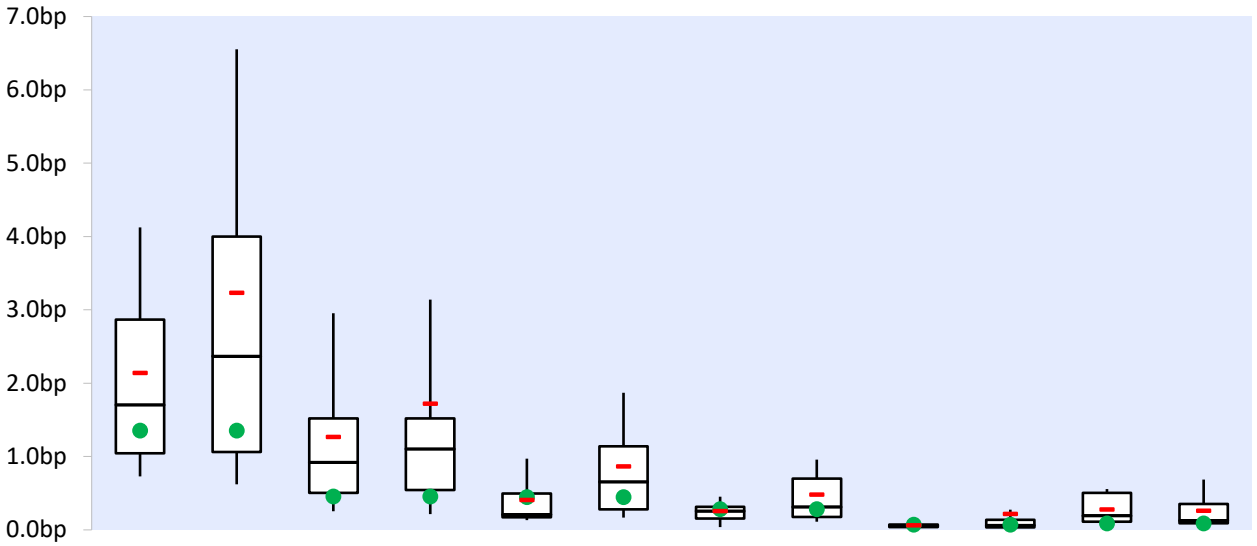
Total costs are benchmarked in the previous section. In this section, your fund's costs are compared on a line-item basis to your peers. This enables you to understand better why you may be a high or low cost fund and it also identifies and quantifies major cost differences that may warrant further investigation.

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.



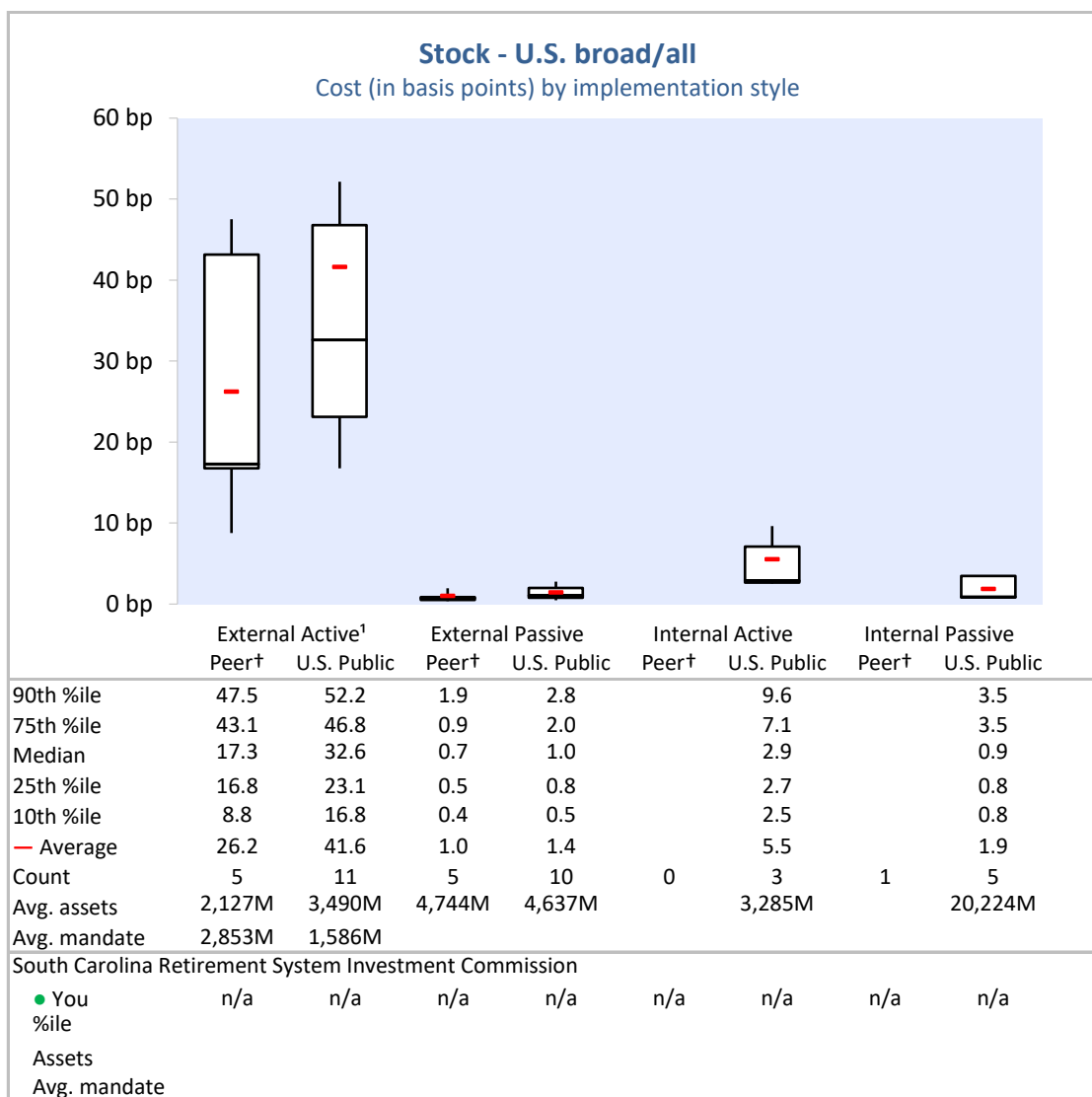
Governance, operations & support

Cost as a % of total plan assets



	Total		Oversight ¹		Consulting & Perf. Meas.		Custody		Audit		Other	
	Peer	U.S. Public	Peer	U.S. Public	Peer	U.S. Public	Peer	U.S. Public	Peer	U.S. Public	Peer	U.S. Public
90th %ile	4.1	6.6	3.0	3.1	1.0	1.9	0.5	1.0	0.1	0.3	0.6	0.7
75th %ile	2.9	4.0	1.5	1.5	0.5	1.1	0.3	0.7	0.1	0.1	0.5	0.4
Median	1.7	2.4	0.9	1.1	0.2	0.7	0.3	0.3	0.1	0.1	0.2	0.1
25th %ile	1.0	1.1	0.5	0.5	0.2	0.3	0.2	0.2	0.0	0.0	0.1	0.1
10th %ile	0.7	0.6	0.3	0.2	0.1	0.2	0.0	0.1	0.0	0.0	0.1	0.1
— Average	2.1	3.2	1.3	1.7	0.4	0.9	0.3	0.5	0.1	0.2	0.3	0.3
Count	17	46	17	46	15	35	16	45	14	40	13	33
Avg. assets	45,091M	65,166M	45,091M	65,166M	45,091M	65,166M	45,091M	65,166M	45,091M	65,166M	45,091M	65,166M
South Carolina Retirement System Investment Commission												
● You	1.4	1.4	0.5	0.5	0.5	0.5	0.3	0.3	0.1	0.1	0.1	0.1
%ile	38%	31%	19%	20%	71%	41%	67%	48%	77%	56%	17%	22%
Plan assets	40,190M	40,190M	40,190M	40,190M	40,190M	40,190M	40,190M	40,190M	40,190M	40,190M	40,190M	40,190M

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.

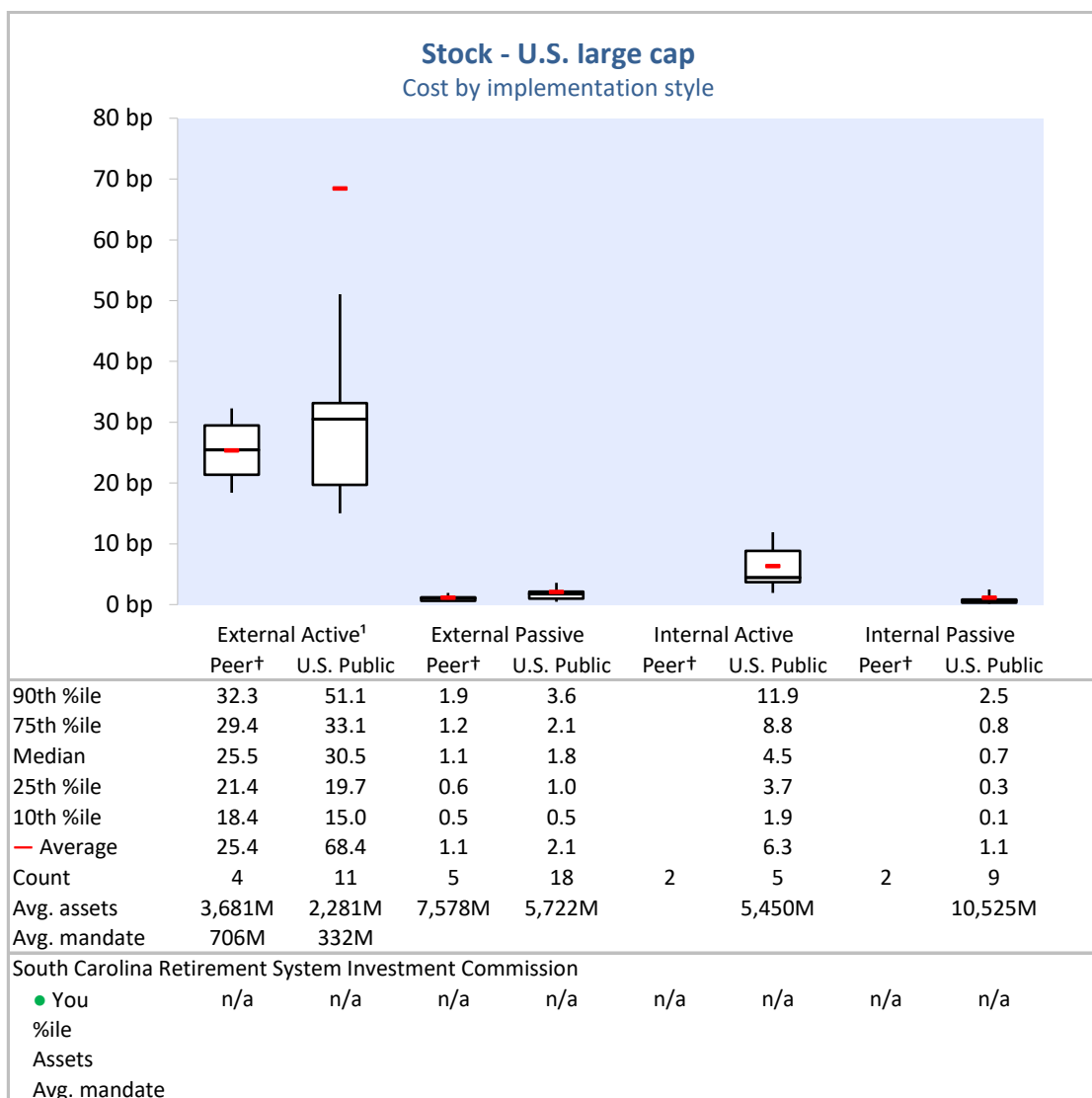


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	22.3	30.8
Performance fees*	n/a	3.3	9.8
Internal and other	<u>n/a</u>	<u>0.7</u>	<u>1.0</u>
Total	n/a	26.2	41.6

* 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 16.3 bps for peers (1 fund) and 27.0 bps for U.S. Public participants (4 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

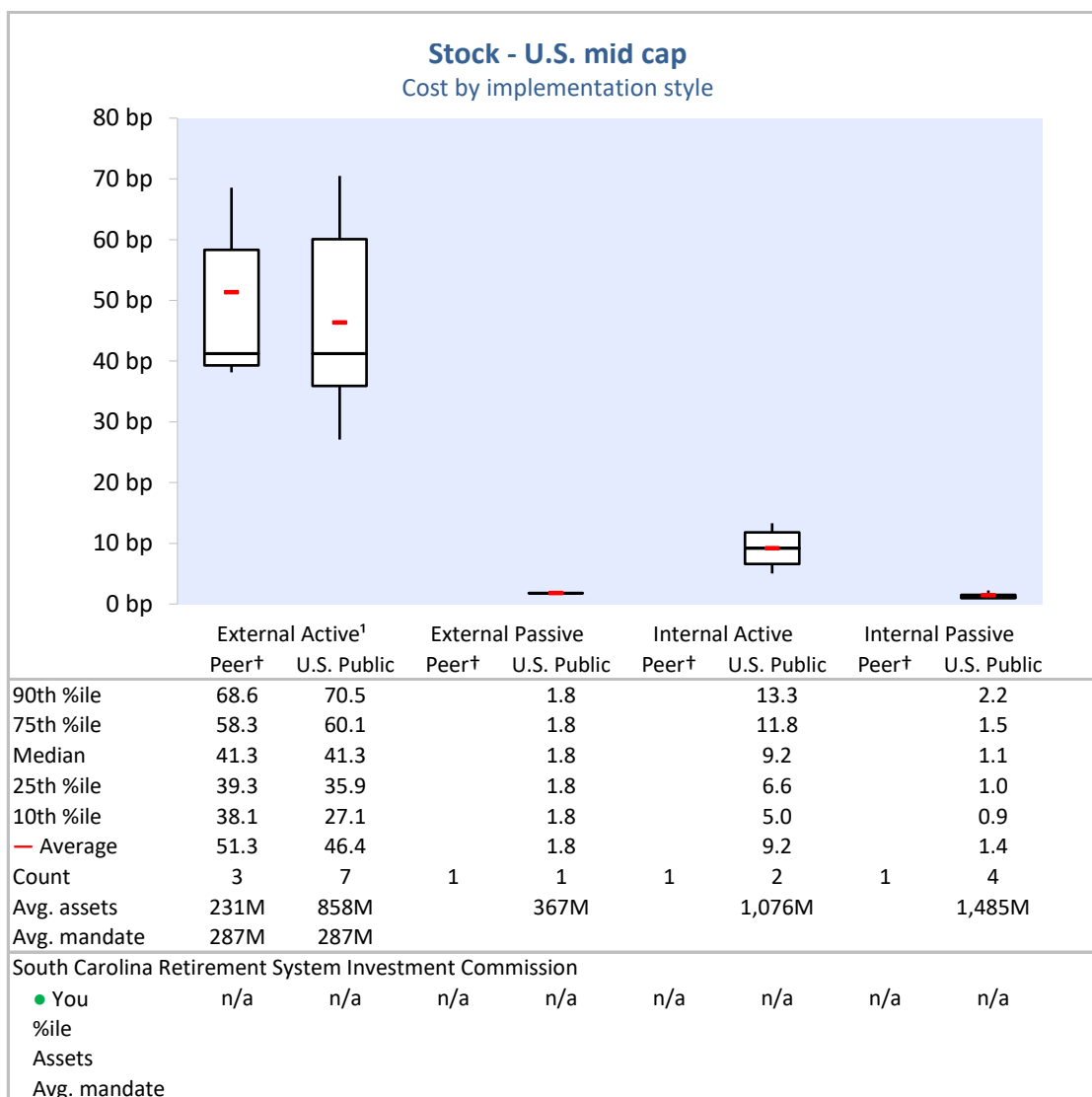


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	17.0	27.0
Performance fees*	n/a	8.0	40.9
Internal and other	<u>n/a</u>	<u>0.3</u>	<u>0.5</u>
Total	n/a	25.4	68.4

* 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 10.7 bps for peers (3 funds) and 90.0 bps for U.S. Public participants (5 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

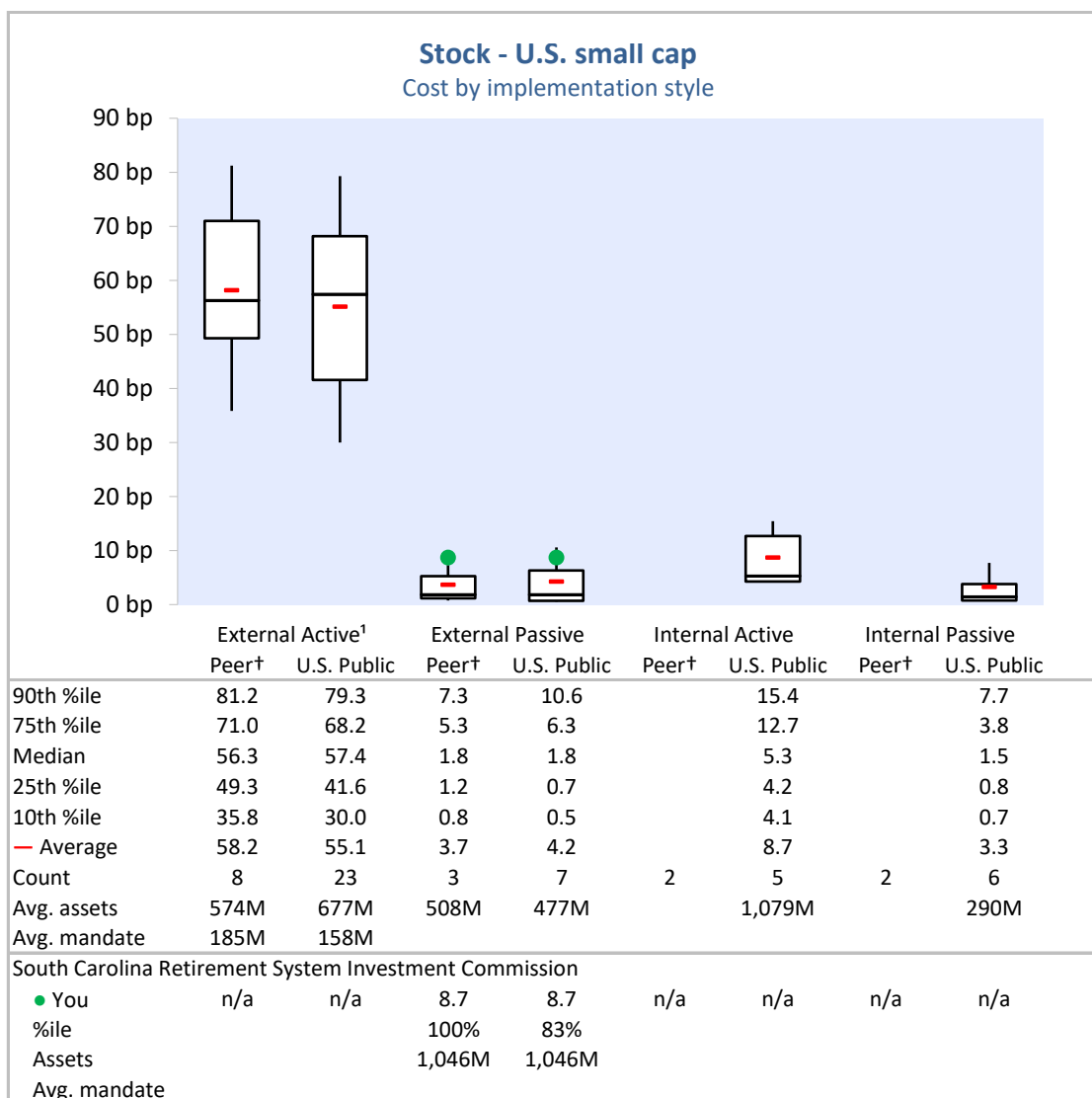


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	51.1	46.1
Performance fees*	n/a	n/a	0.0
Internal and other	<u>n/a</u>	<u>0.3</u>	<u>0.3</u>
Total	n/a	51.3	46.4

* 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 U.S. Public participants (2 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

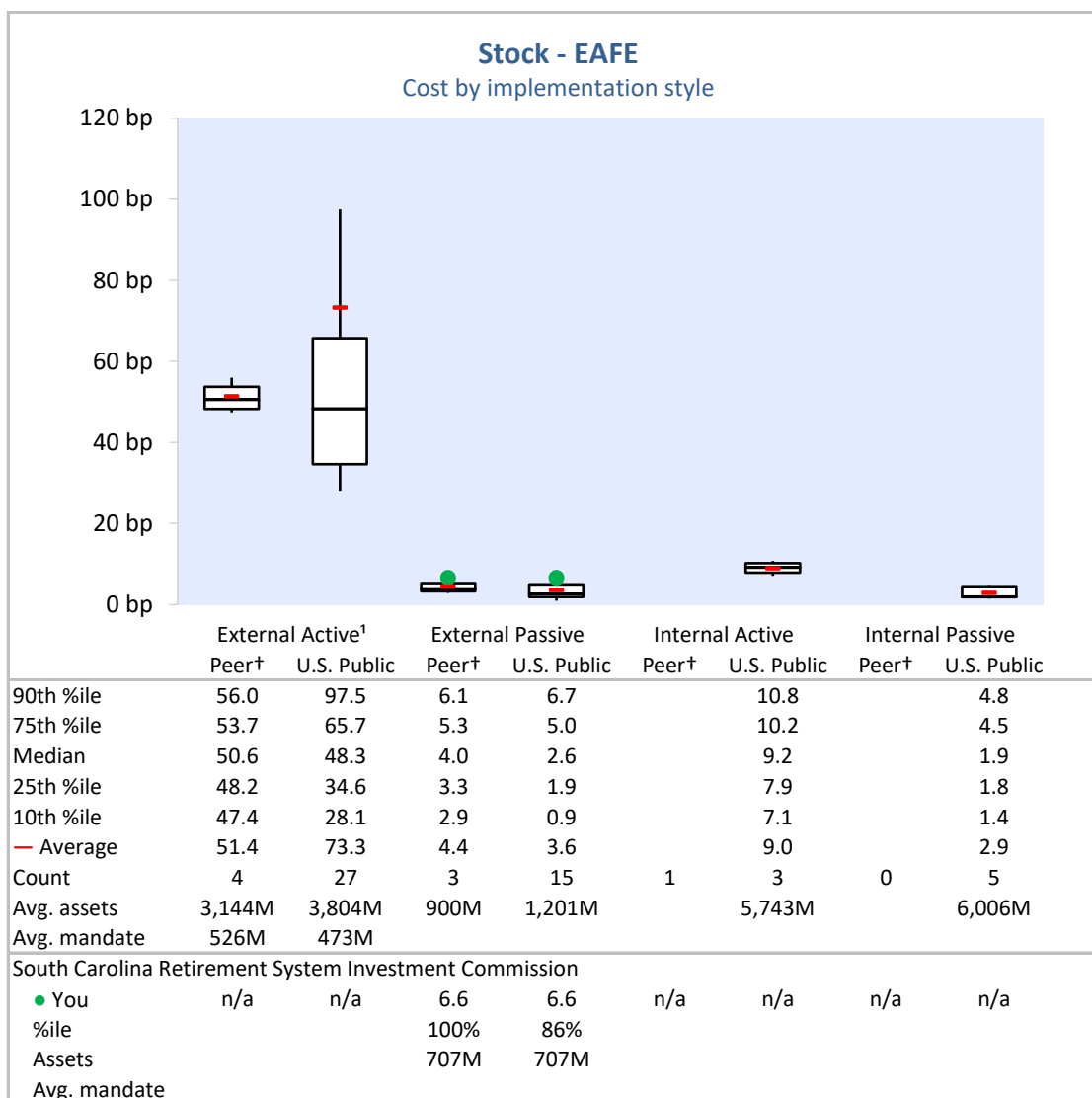


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	51.3	52.6
Performance fees*	n/a	6.7	2.2
Internal and other	<u>n/a</u>	<u>0.2</u>	<u>0.4</u>
Total	n/a	58.2	55.1

* 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 26.7 bps for peers (2 funds) and 7.2 bps for U.S. Public participants (7 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

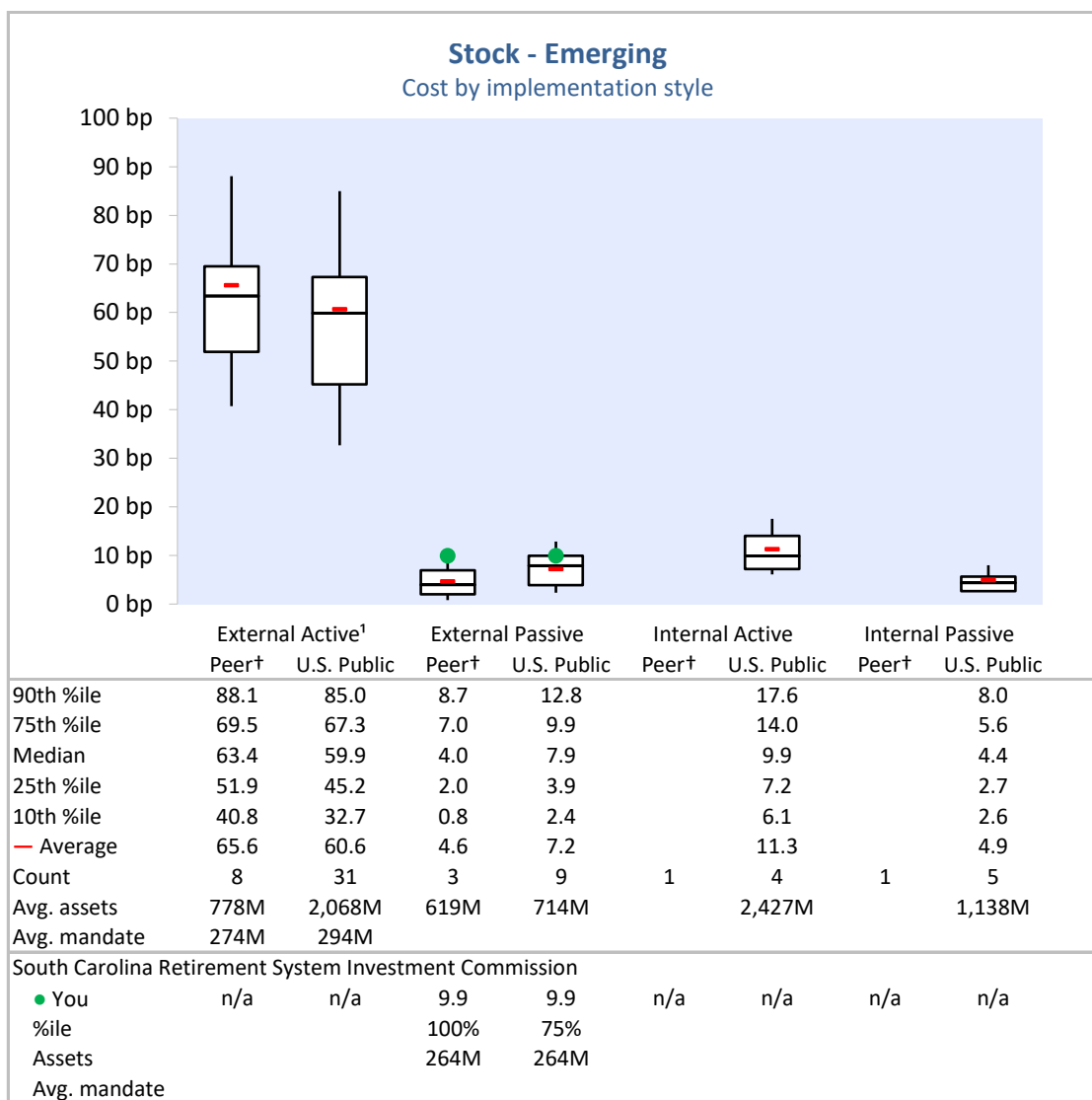


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	50.0	63.9
Performance fees*	n/a	1.2	9.0
Internal and other	<u>n/a</u>	<u>0.2</u>	<u>0.4</u>
Total	n/a	51.4	73.3

* 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 4.8 bps for peers (1 fund) and 22.1 bps for U.S. Public participants (11 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

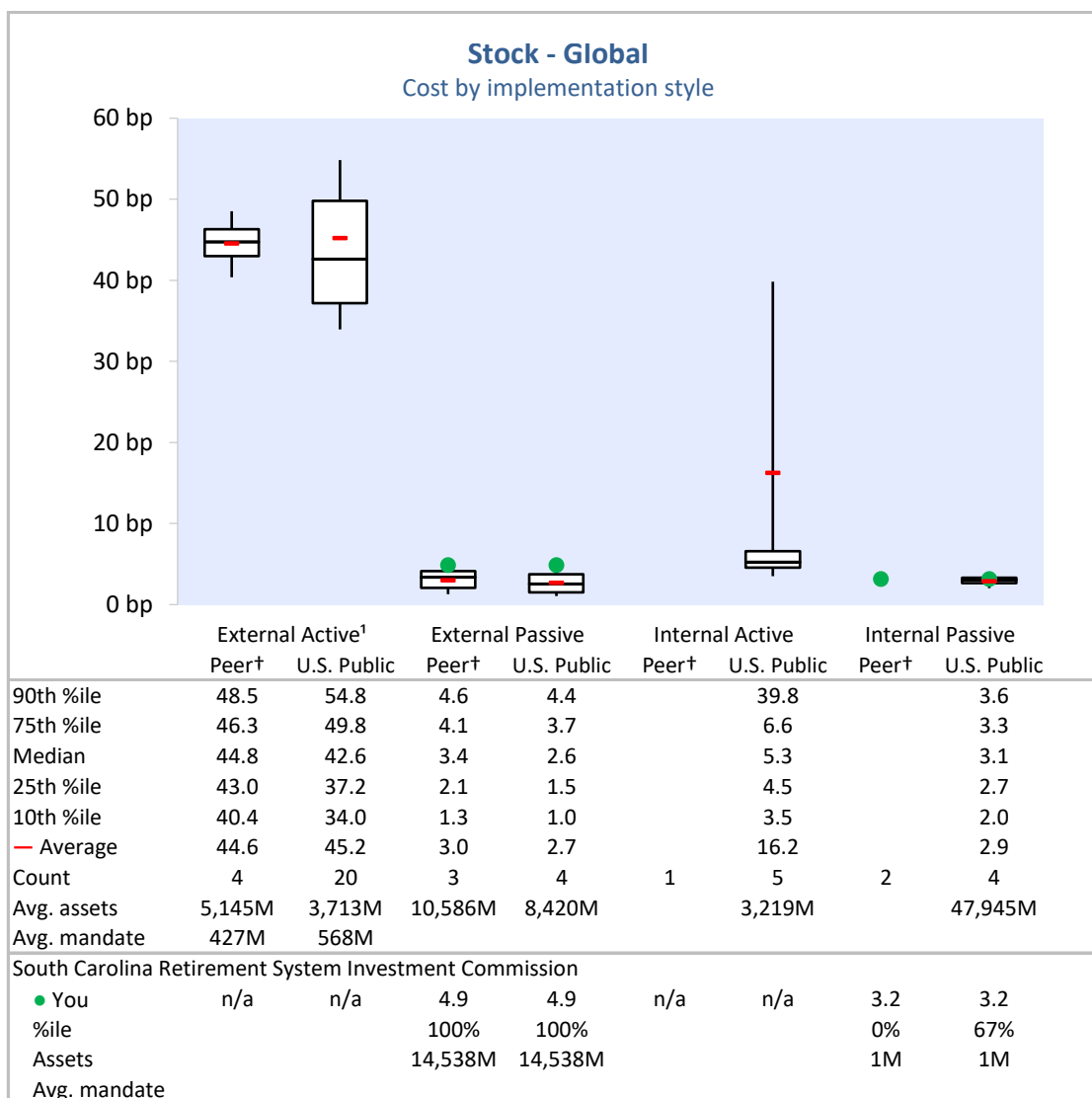


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	59.3	53.3
Performance fees*	n/a	5.5	6.4
Internal and other	<u>n/a</u>	<u>0.8</u>	<u>1.0</u>
Total	n/a	65.6	60.6

* 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 22.1 bps for peers (2 funds) and 18.0 bps for U.S. Public participants (11 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

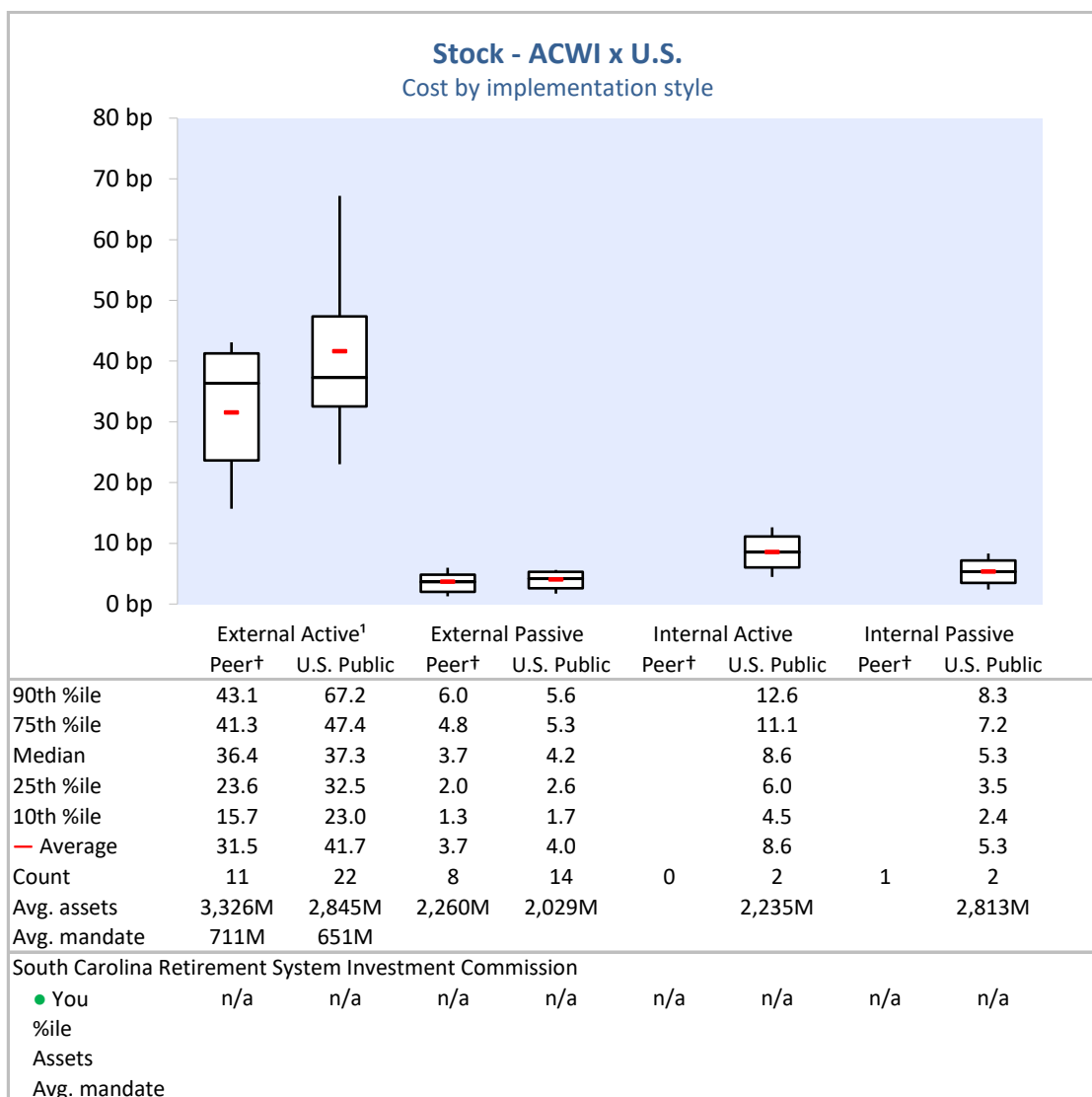


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	38.5	37.1
Performance fees*	n/a	4.1	7.2
Internal and other	<u>n/a</u>	<u>2.0</u>	<u>0.9</u>
Total	n/a	44.6	45.2

* 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 8.2 bps for peers (2 funds) and 18.0 bps for U.S. Public participants (8 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

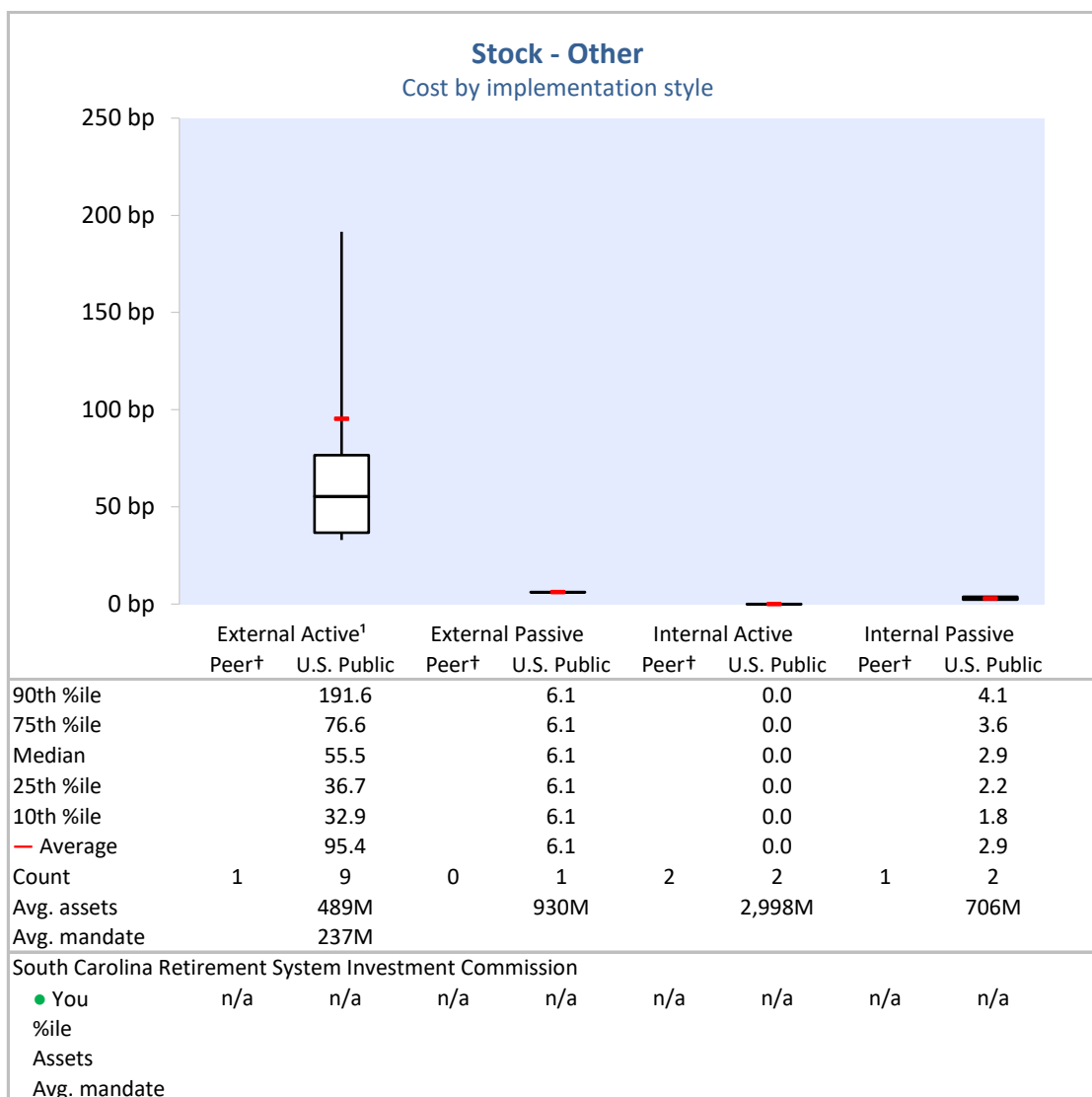


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	25.1	35.8
Performance fees*	n/a	6.2	5.3
Internal and other	<u>n/a</u>	<u>0.2</u>	<u>0.5</u>
Total	n/a	31.5	41.7

* 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 13.5 bps for peers (5 funds) and 14.6 bps for U.S. Public participants (8 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

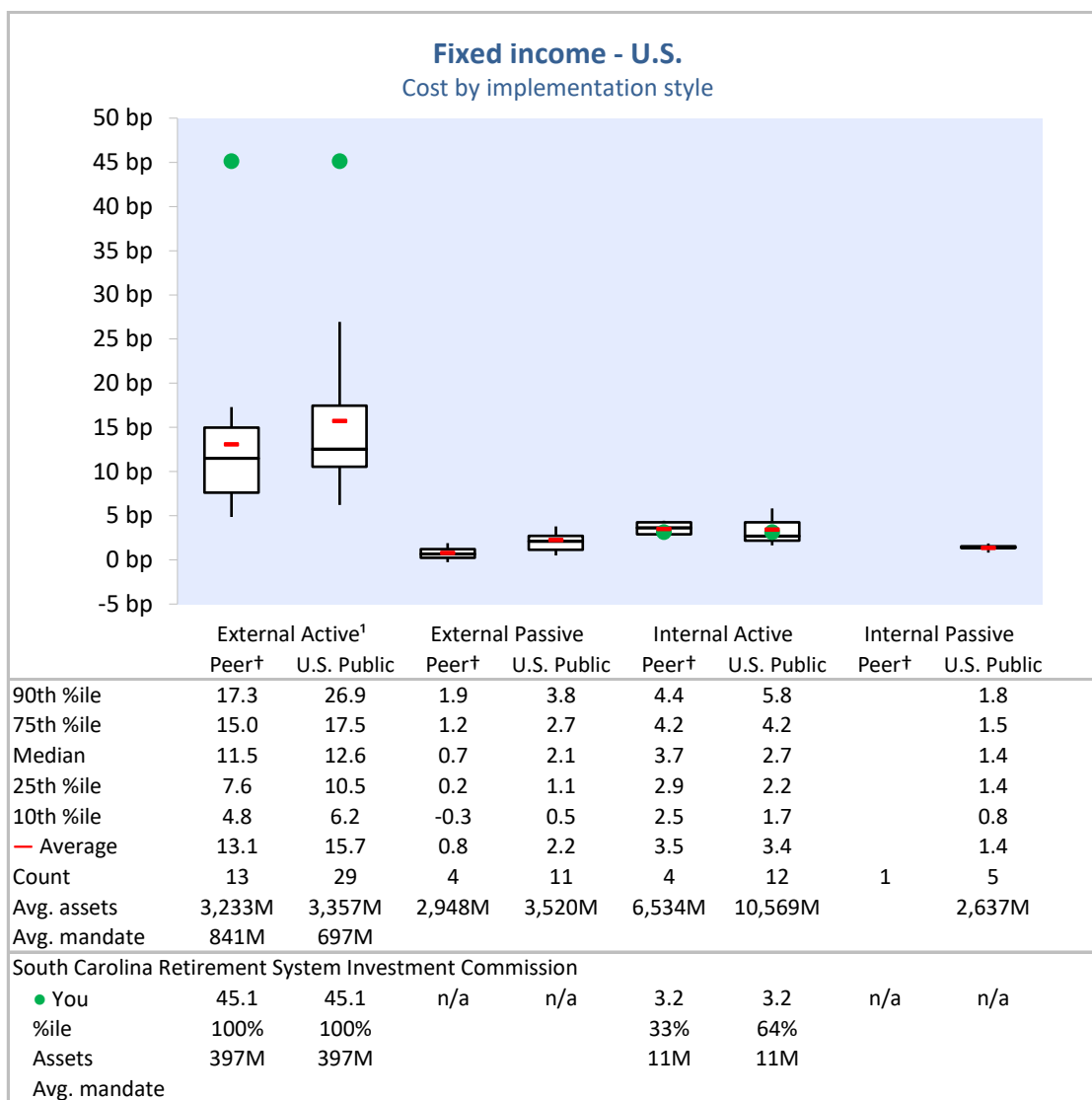


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	n/a	92.5
Performance fees*	n/a	n/a	1.9
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>1.0</u>
Total	n/a	n/a	95.4

* 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 8.1 bps for peers (1 fund) and 4.2 bps for U.S. Public participants (4 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

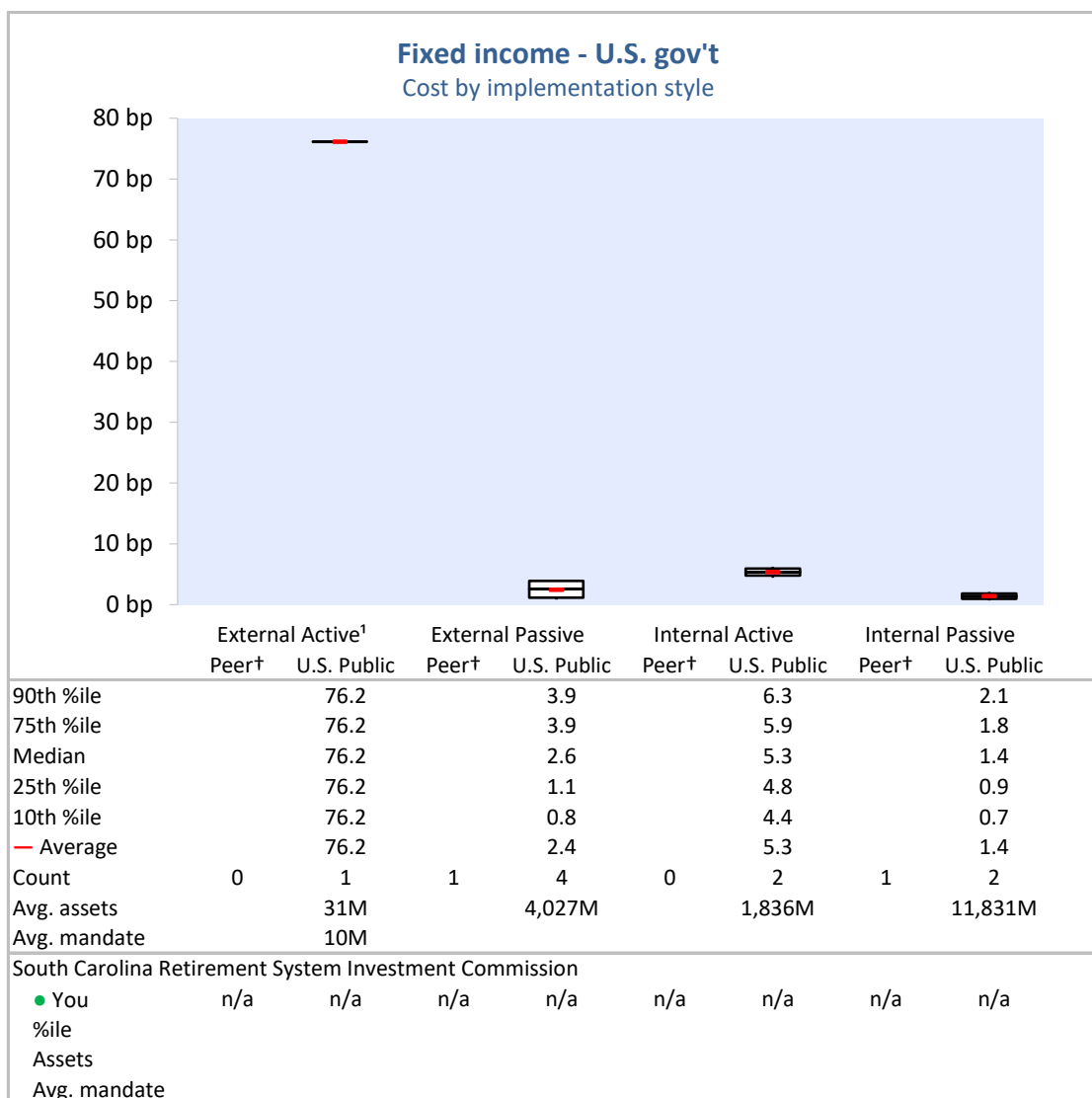


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	42.0	12.5	14.9
Performance fees*	0.0	0.1	0.2
Internal and other	<u>3.2</u>	<u>0.5</u>	<u>0.6</u>
Total	45.1	13.1	15.7

* 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 0.3 bps for peers (3 funds) and 0.6 bps for U.S. Public participants (10 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



1. Breakdown of external active fees

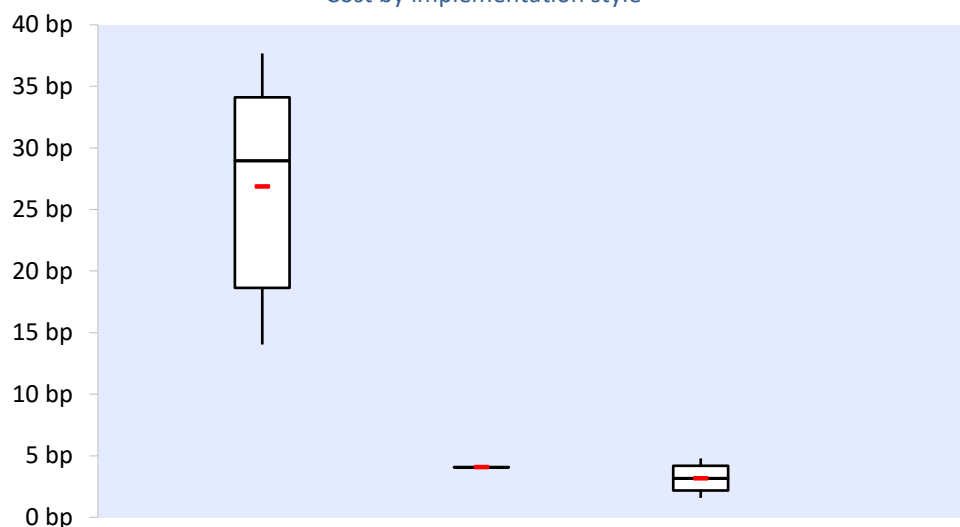
	You	Peer Average	U.S. Public Average
Base fees	n/a	n/a	76.2
Performance fees*	n/a	n/a	0.0
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Total	n/a	n/a	76.2

* 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 0.0 bps for U.S. Public participants (1 fund).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

Fixed income - U.S. credits

Cost by implementation style



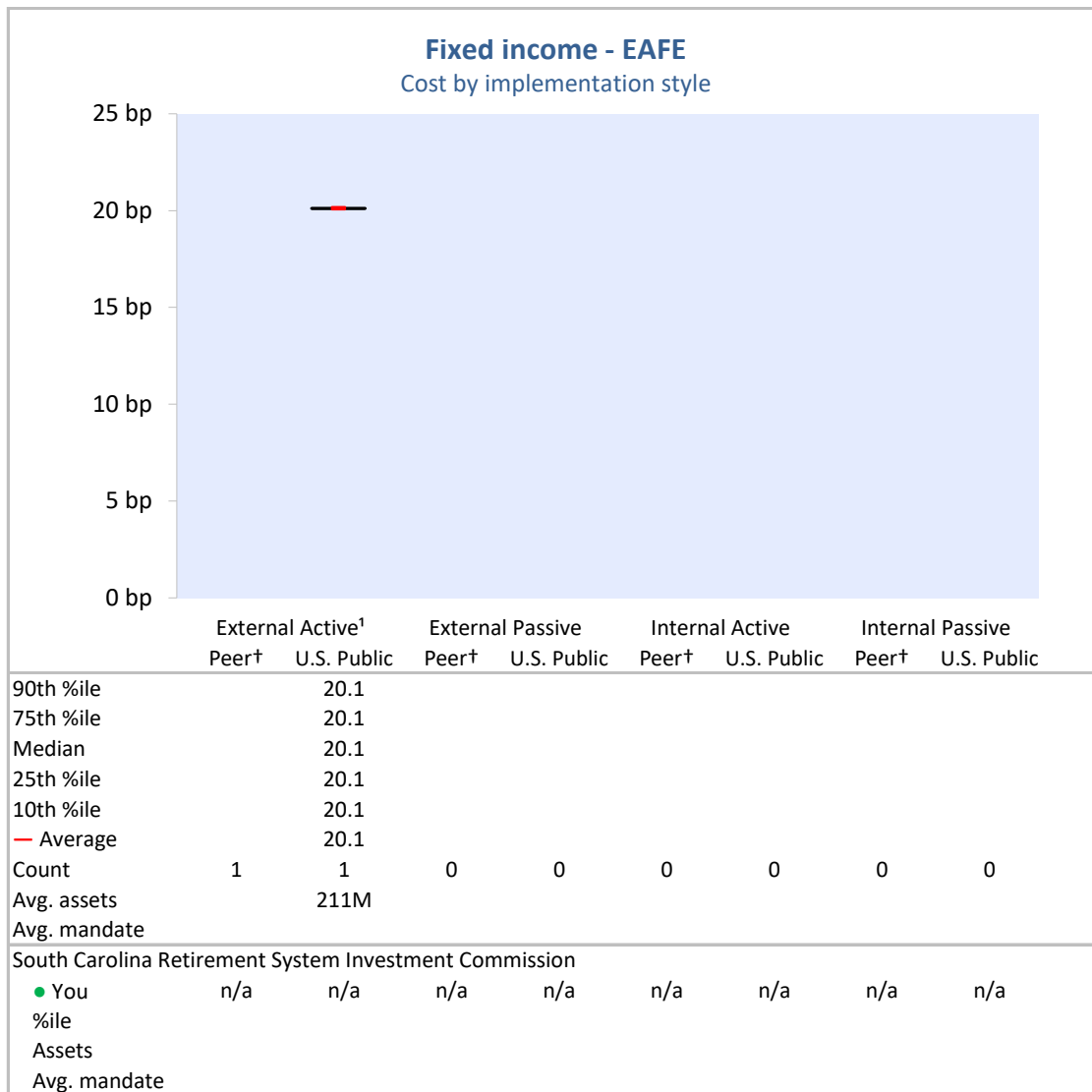
	External Active ¹		External Passive		Internal Active		Internal Passive	
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
90th %ile		37.7		4.1		4.8		
75th %ile		34.1		4.1		4.2		
Median		29.0		4.1		3.2		
25th %ile		18.6		4.1		2.2		
10th %ile		14.0		4.1		1.6		
— Average		26.9		4.1		3.2		
Count	1	6	0	1	0	2	0	0
Avg. assets		569M		146M		21,329M		
Avg. mandate		278M						
South Carolina Retirement System Investment Commission								
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
%ile								
Assets								
Avg. mandate								

1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	n/a	26.5
Performance fees*	n/a	n/a	0.0
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>0.4</u>
Total	n/a	n/a	26.9

* 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 U.S. Public participants (2 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

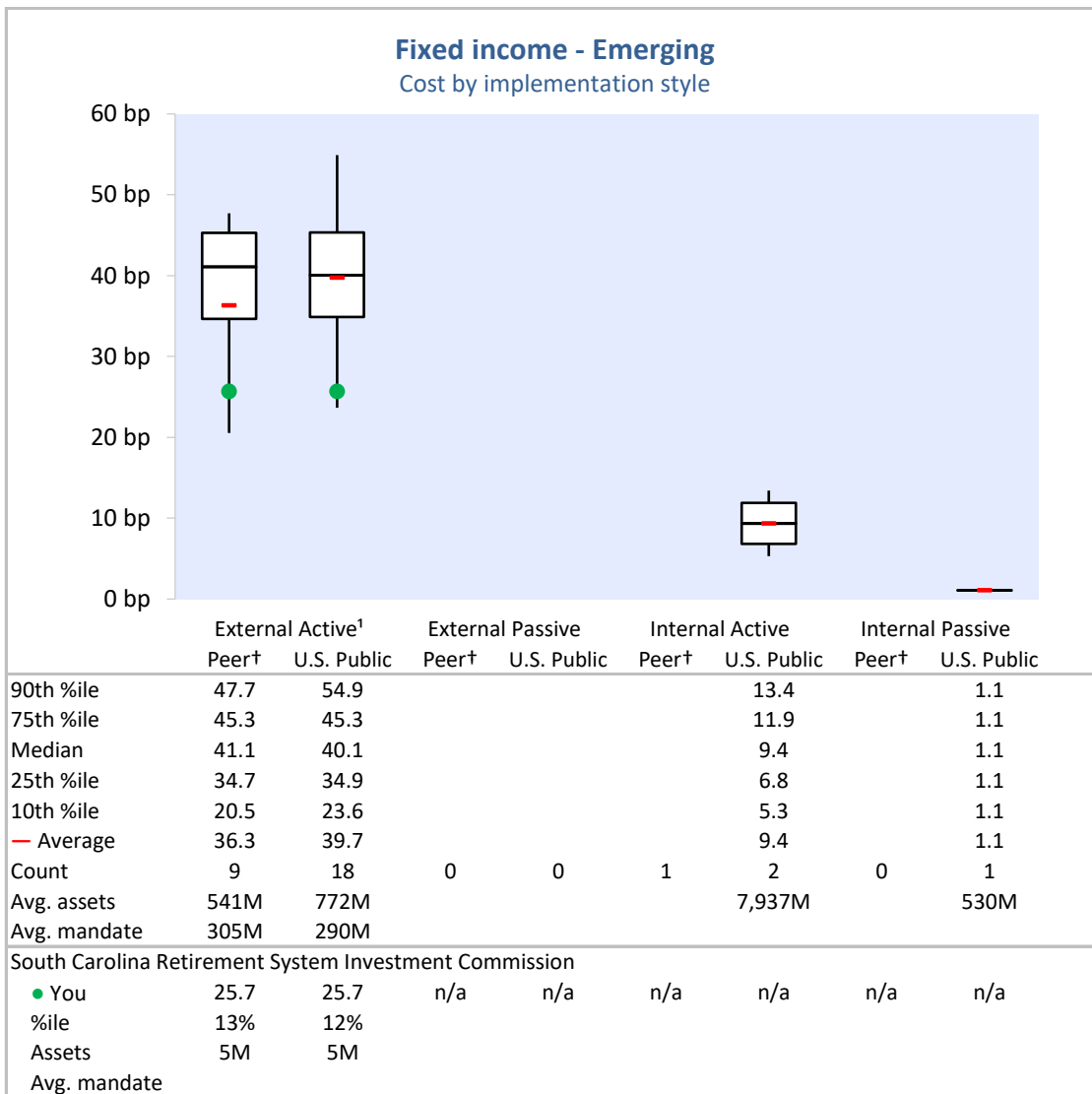


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	n/a	20.1
Performance fees*	n/a	n/a	0.0
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Total	n/a	n/a	20.1

* 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 1.4 bps for peers (1 fund) and 0.0 bps for U.S. Public participants (1 fund).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

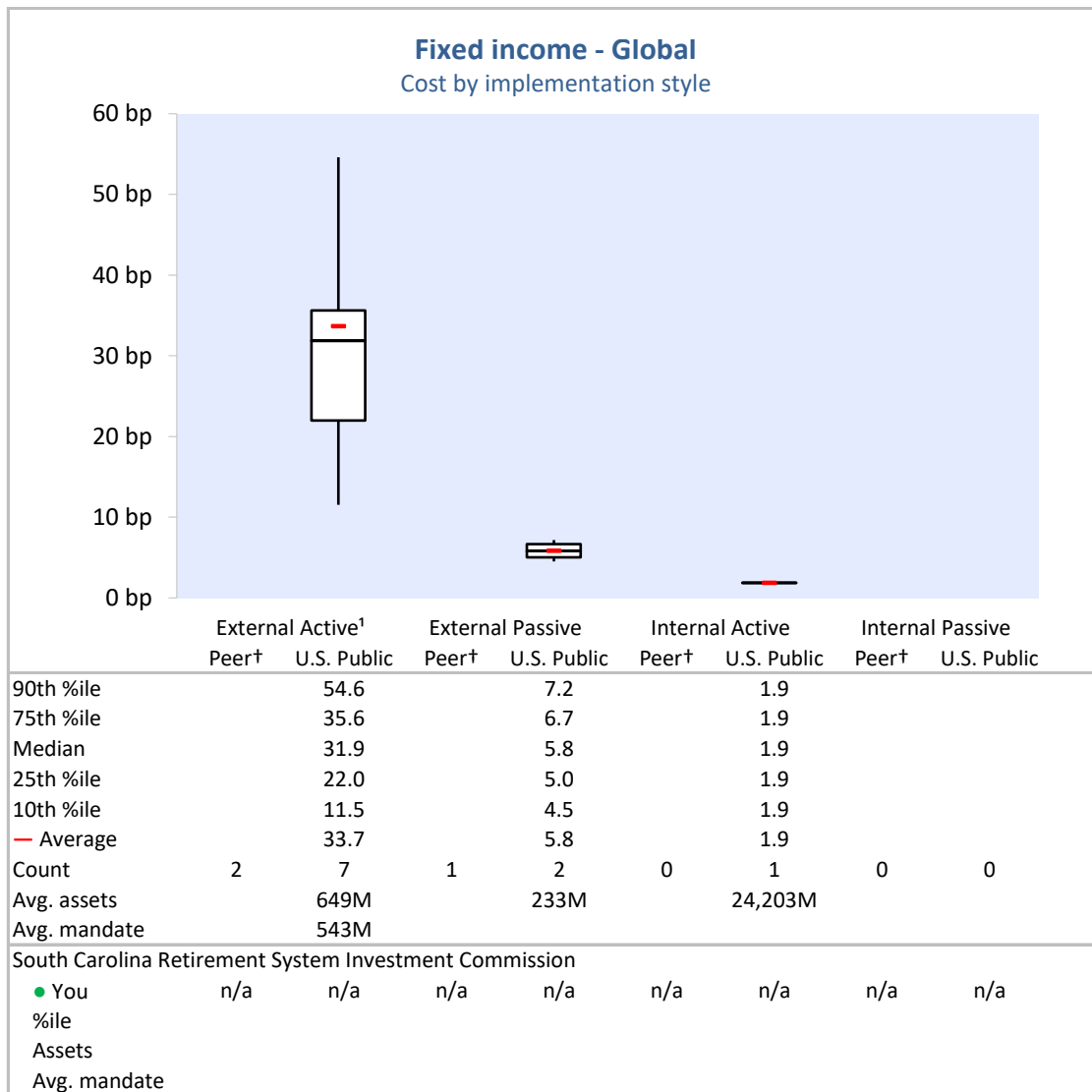


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	22.5	32.4	37.8
Performance fees*	n/a	2.4	0.6
Internal and other	<u>3.2</u>	<u>1.6</u>	<u>1.4</u>
Total	25.7	36.3	39.7

* 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 10.8 bps for peers (2 funds) and 1.7 bps for U.S. Public participants (6 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

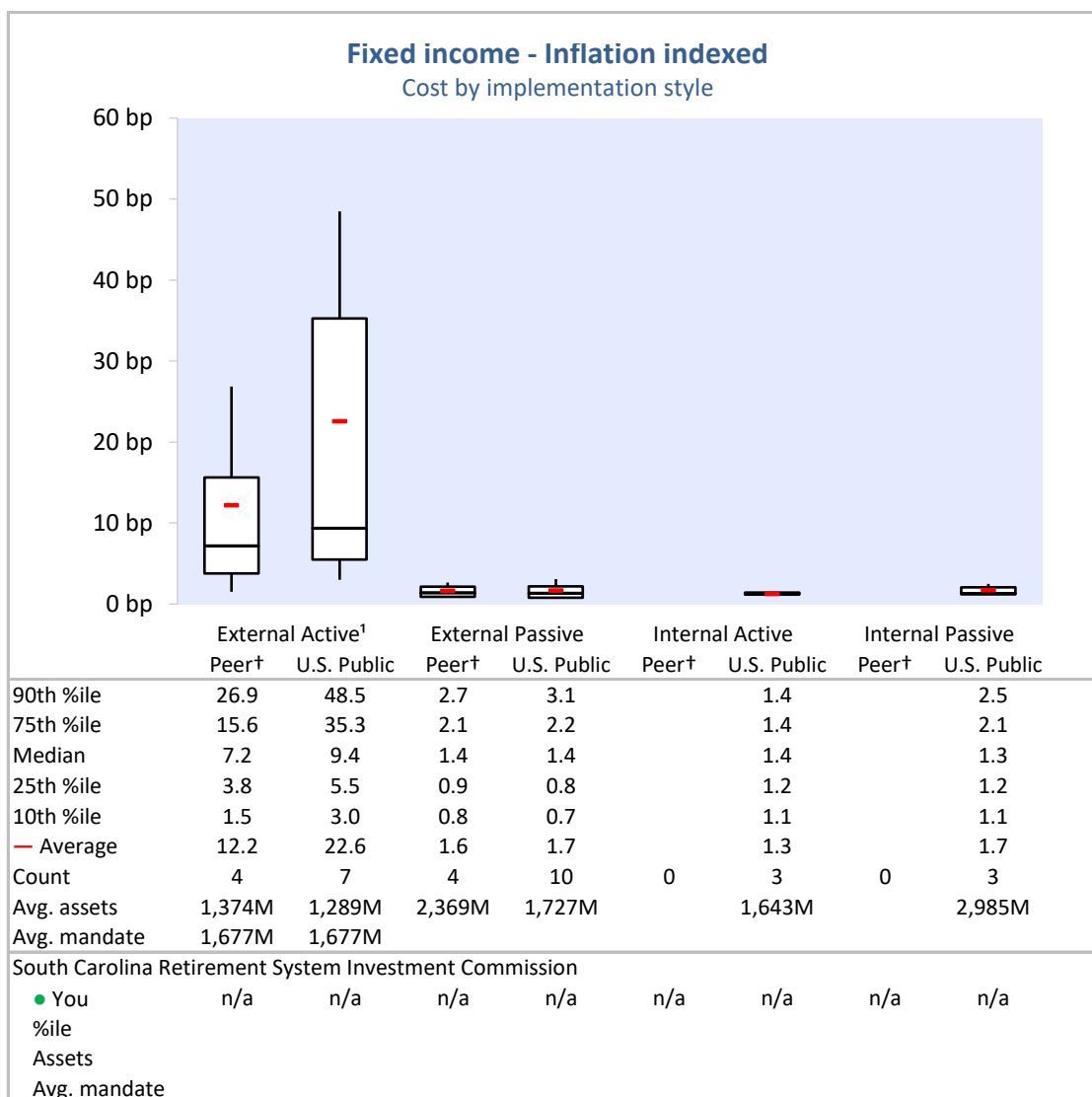


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	n/a	32.8
Performance fees*	n/a	n/a	0.0
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>0.8</u>
Total	n/a	n/a	33.7

* 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 0.1 bps for U.S. Public participants (2 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

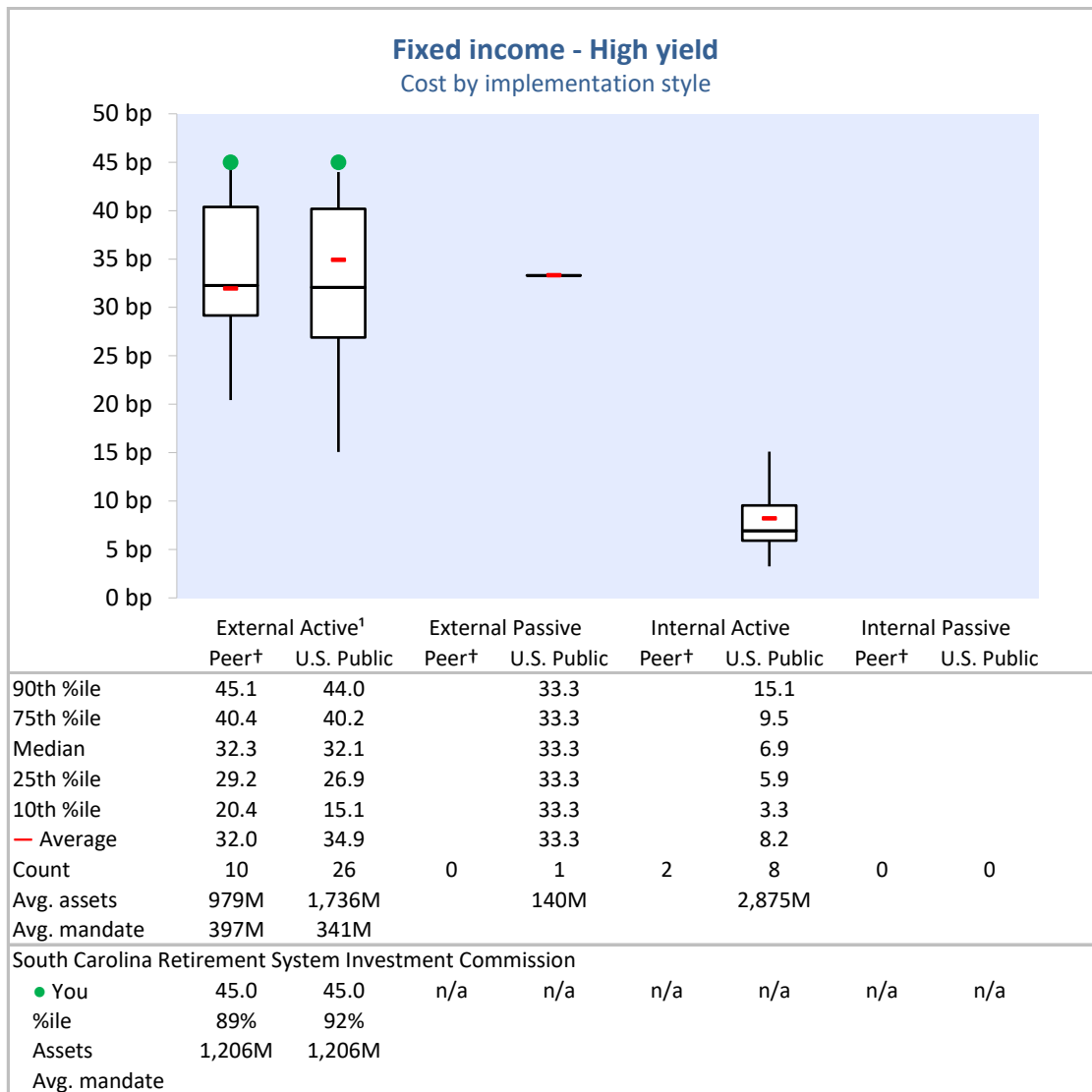


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	12.0	22.3
Performance fees*	n/a	0.0	0.0
Internal and other	<u>n/a</u>	<u>0.2</u>	<u>0.3</u>
Total	n/a	12.2	22.6

* 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 0.0 bps for peers (1 fund) and 0.0 bps for U.S. Public participants (2 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



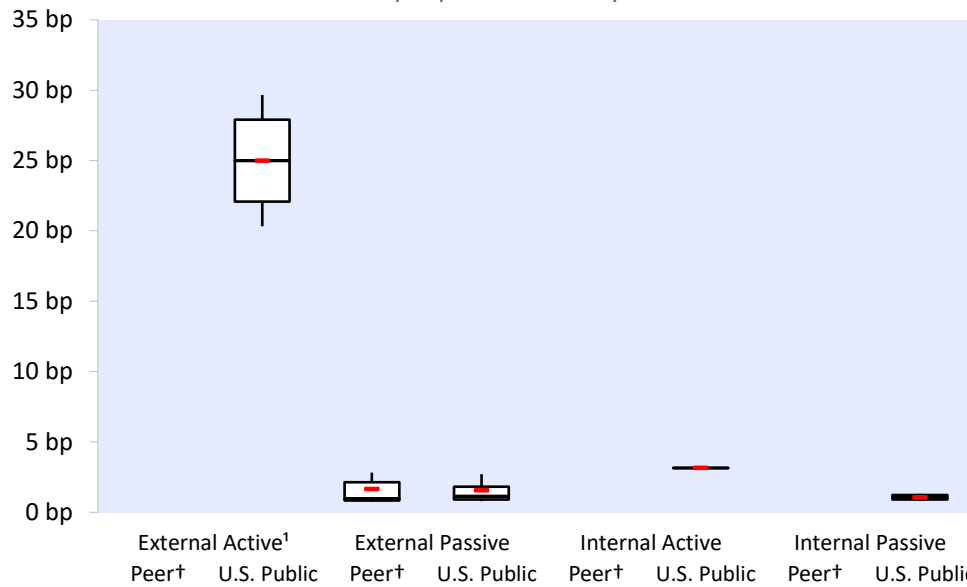
1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	41.8	31.5	29.0
Performance fees*	0.0	0.0	4.7
Internal and other	<u>3.2</u>	<u>0.5</u>	<u>1.2</u>
Total	45.0	32.0	34.9

* 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 11.2 bps for U.S. Public participants (11 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

Fixed income - Long bonds Cost by implementation style



	External Active ¹		External Passive		Internal Active		Internal Passive	
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
90th %ile		29.6	2.8	2.7		3.1		1.3
75th %ile		27.9	2.1	1.8		3.1		1.2
Median		25.0	1.0	1.1		3.1		1.1
25th %ile		22.1	0.8	0.9		3.1		0.9
10th %ile		20.3	0.8	0.8		3.1		0.8
— Average		25.0	1.7	1.6		3.1		1.1
Count	1	2	3	4	0	1	0	2
Avg. assets		970M	1,272M	1,031M		7,893M		14,594M
Avg. mandate								
South Carolina Retirement System Investment Commission								
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
%ile								
Assets								
Avg. mandate								

1. Breakdown of external active fees

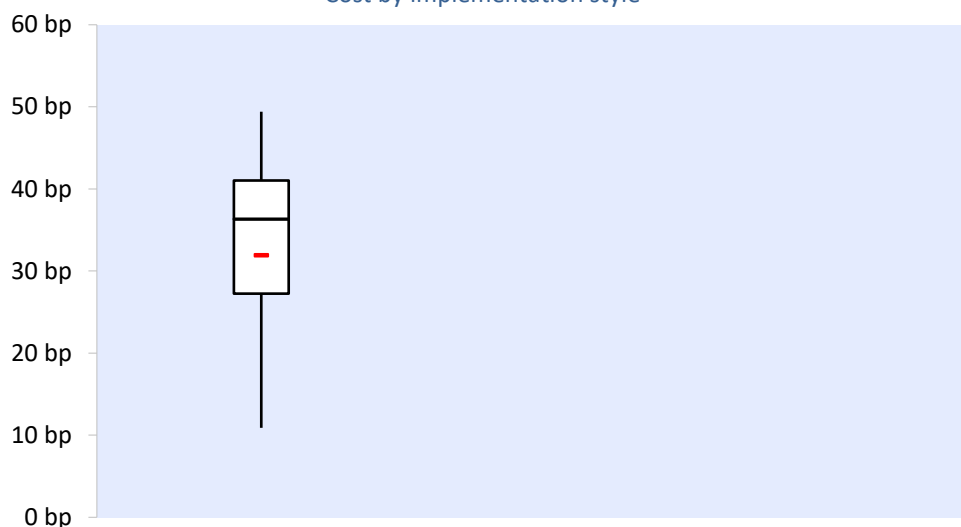
	You	Peer Average	U.S. Public Average
Base fees	n/a	n/a	18.6
Performance fees*	n/a	n/a	5.8
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>0.6</u>
Total	n/a	n/a	25.0

* 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 11.6 bps for U.S. Public participants (1 fund).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

Fixed income - Convertibles

Cost by implementation style



	External Active ¹		External Passive		Internal Active		Internal Passive	
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
90th %ile		49.4						
75th %ile		41.0						
Median		36.3						
25th %ile		27.2						
10th %ile		10.9						
— Average		31.9						
Count	2	4	0	0	0	0	0	0
Avg. assets		621M						
Avg. mandate								
South Carolina Retirement System Investment Commission								
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
%ile								
Assets								
Avg. mandate								

1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	n/a	30.4
Performance fees*	n/a	n/a	n/a
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>1.5</u>
Total	n/a	n/a	31.9

No funds reported a performance fee.

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

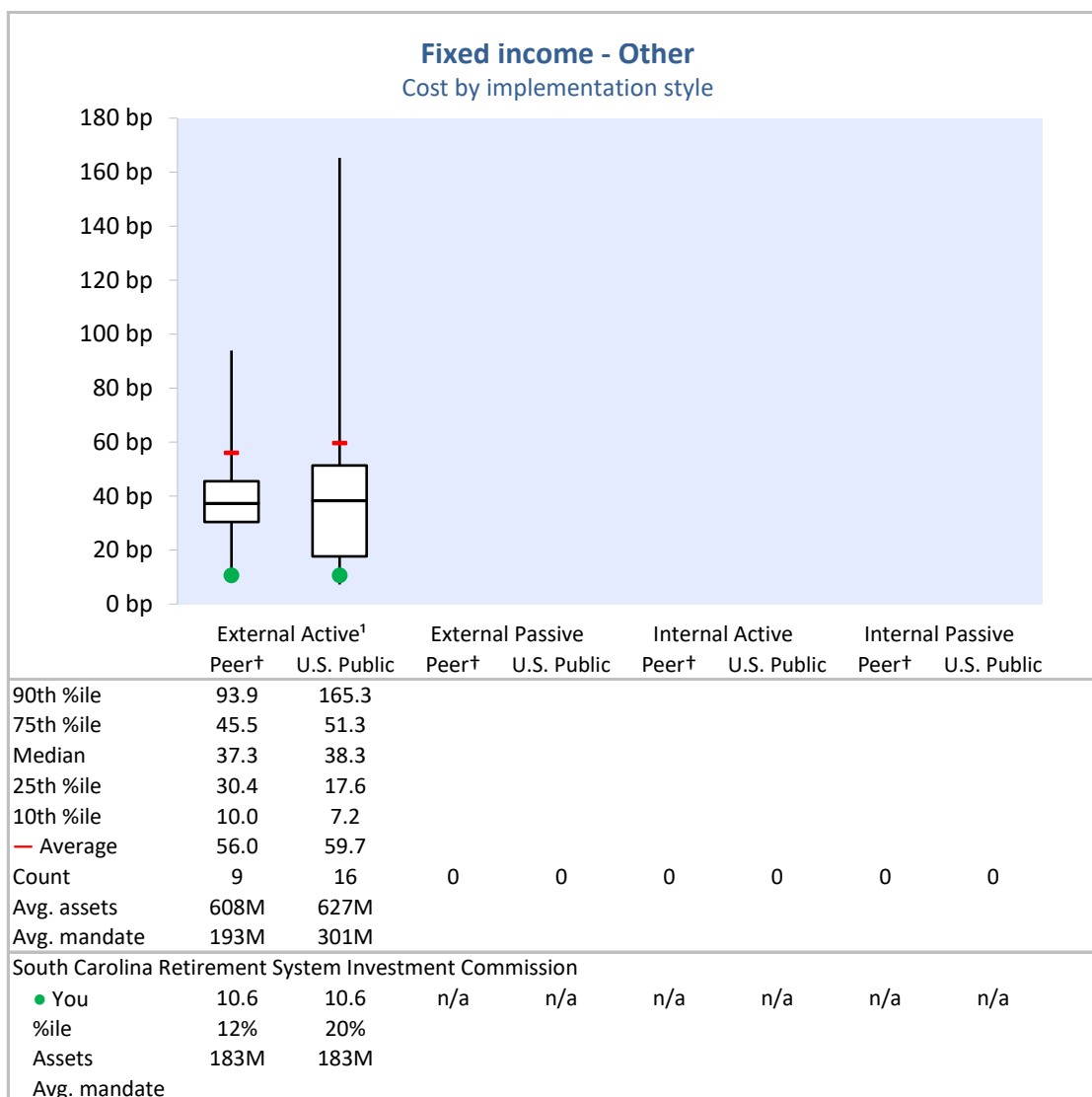


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	n/a	29.7
Performance fees*	n/a	n/a	0.0
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>0.5</u>
Total	n/a	n/a	30.2

* 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 0.0 bps for U.S. Public participants (1 fund).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

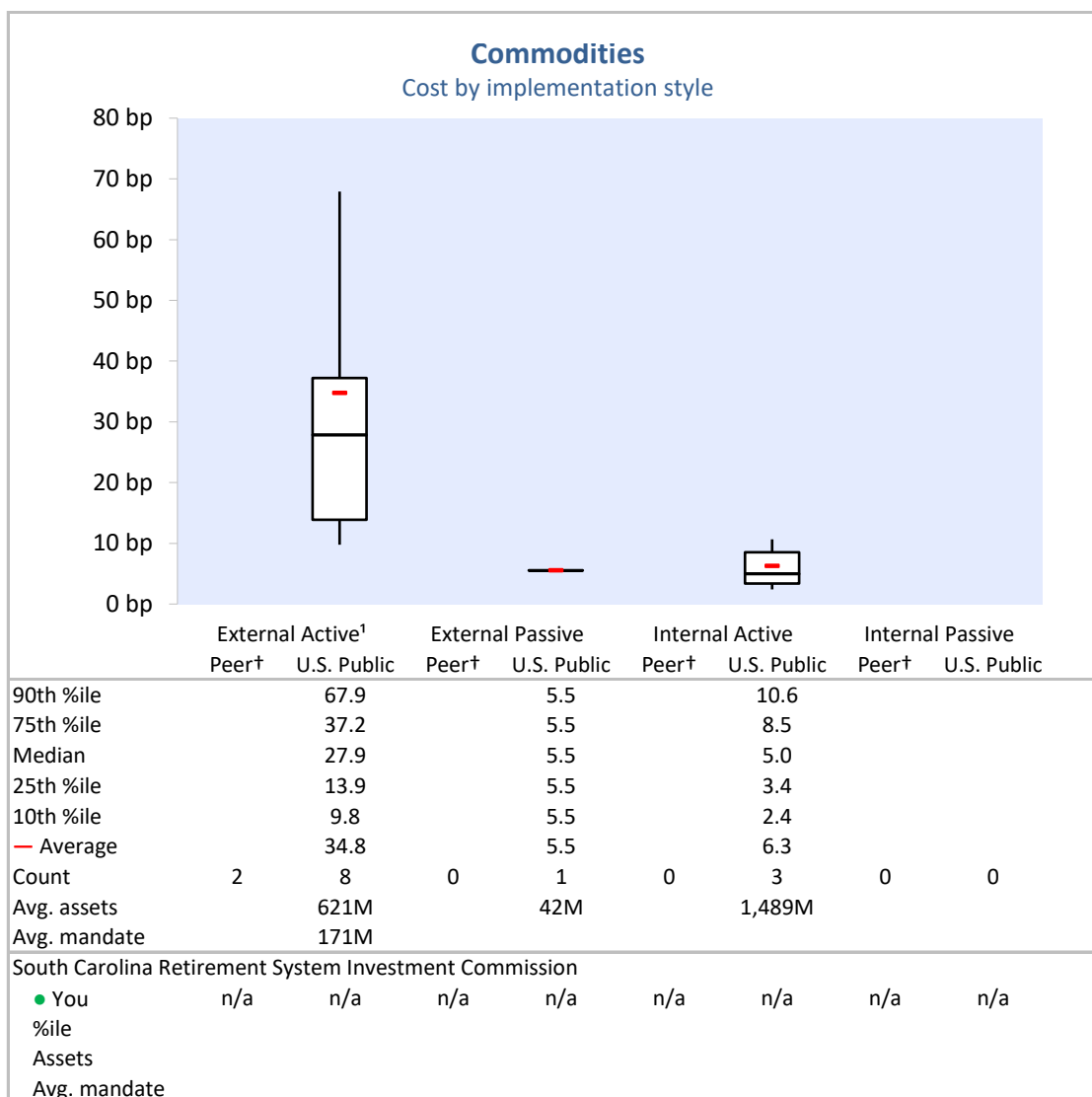


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	7.4	37.1	43.8
Performance fees*	0.0	18.1	15.1
Internal and other	<u>3.2</u>	<u>0.8</u>	<u>0.8</u>
Total	10.6	56.0	59.7

* 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 81.3 bps for peers (2 funds) and 48.4 bps for U.S. Public participants (5 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

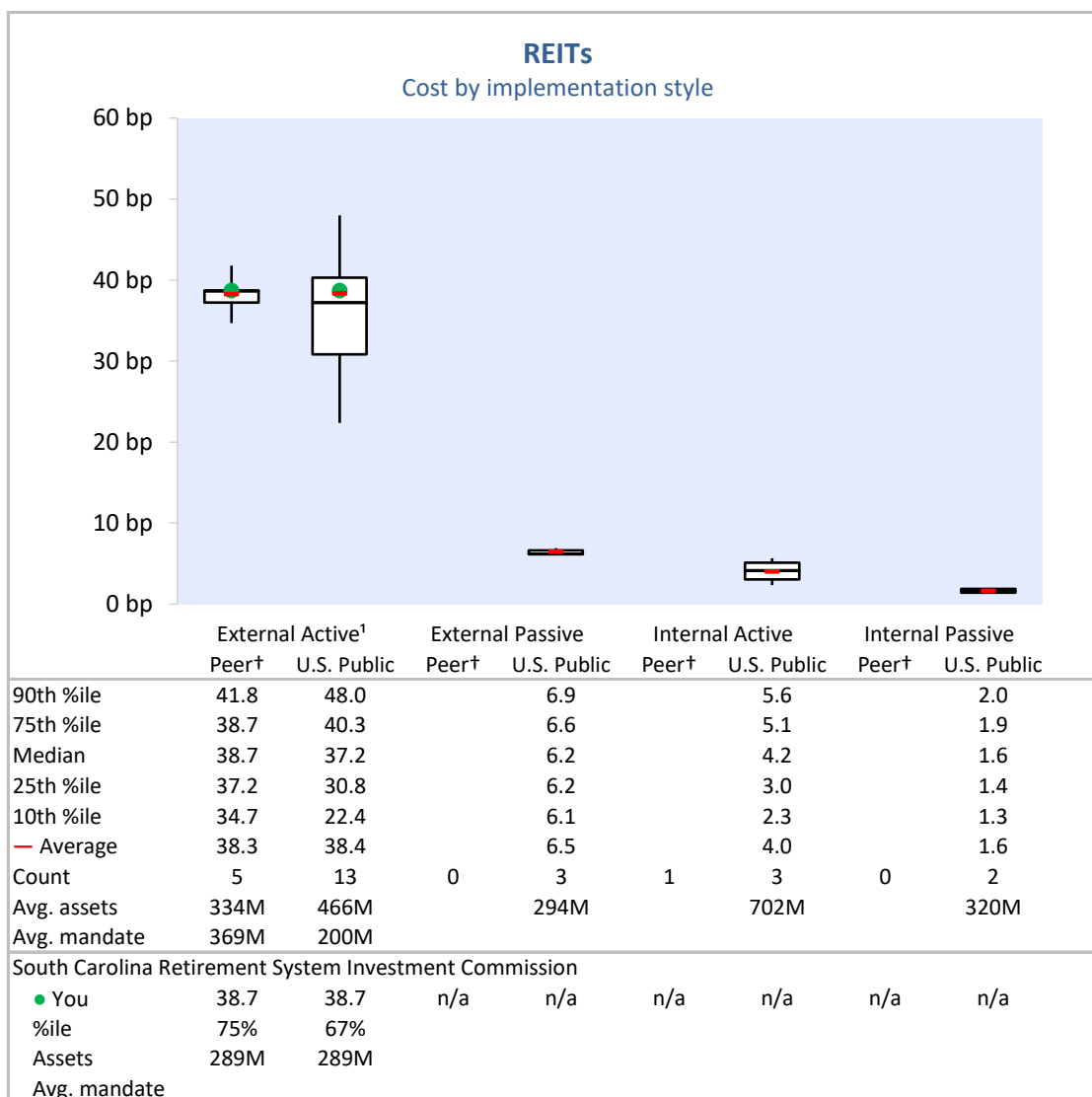


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	n/a	32.6
Performance fees*	n/a	n/a	0.5
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>1.7</u>
Total	n/a	n/a	34.8

* 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 1.0 bps for U.S. Public participants (4 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

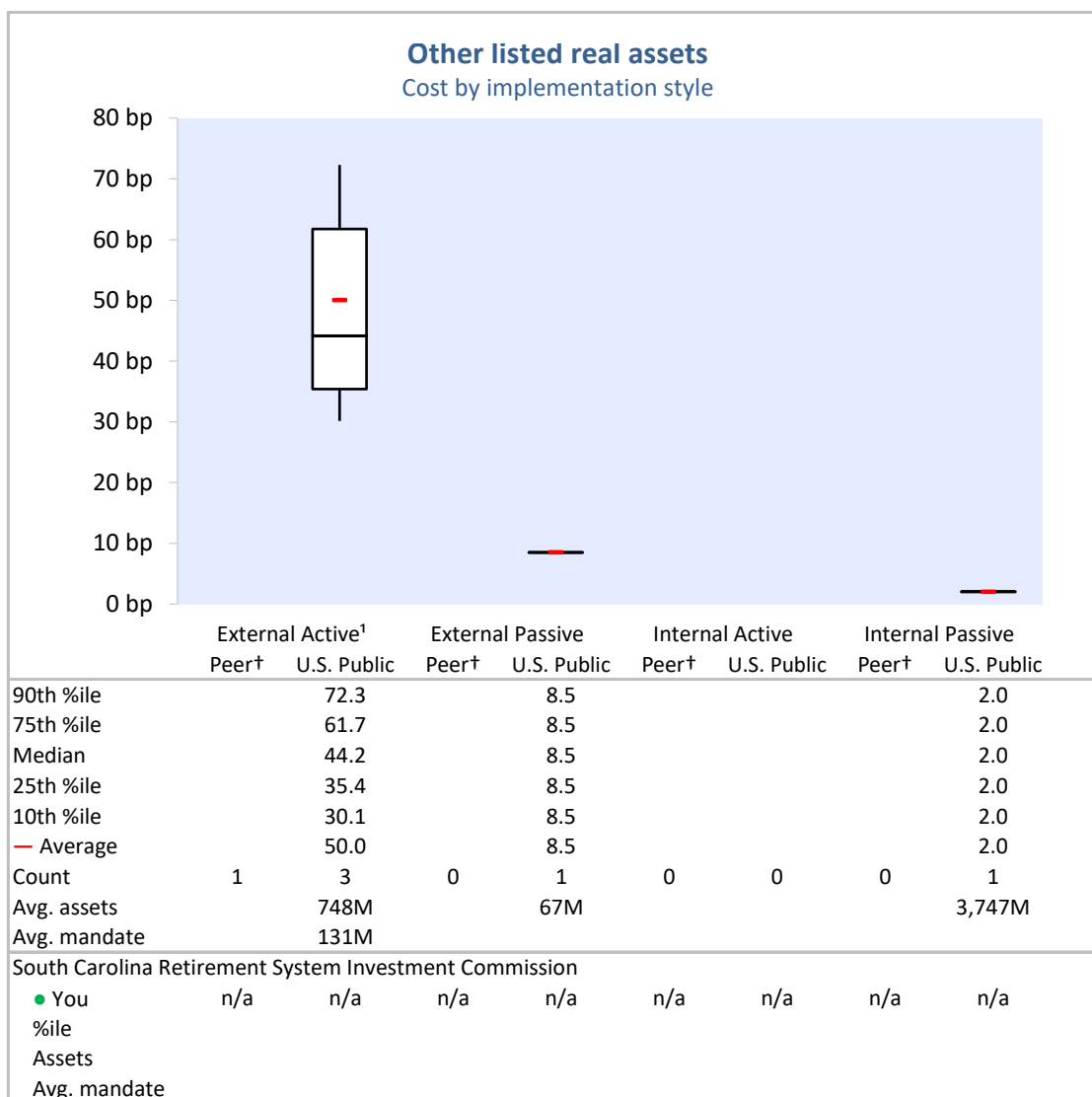


1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	35.5	30.9	35.9
Performance fees*	n/a	6.2	1.1
Internal and other	<u>3.2</u>	<u>1.2</u>	<u>1.4</u>
Total	38.7	38.3	38.4

* 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 31.2 bps for peers (1 fund) and 2.8 bps for U.S. Public participants (5 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



1. Breakdown of external active fees

	You	Peer Average	U.S. Public Average
Base fees	n/a	n/a	49.6
Performance fees*	n/a	n/a	0.0
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>0.5</u>
Total	n/a	n/a	50.0

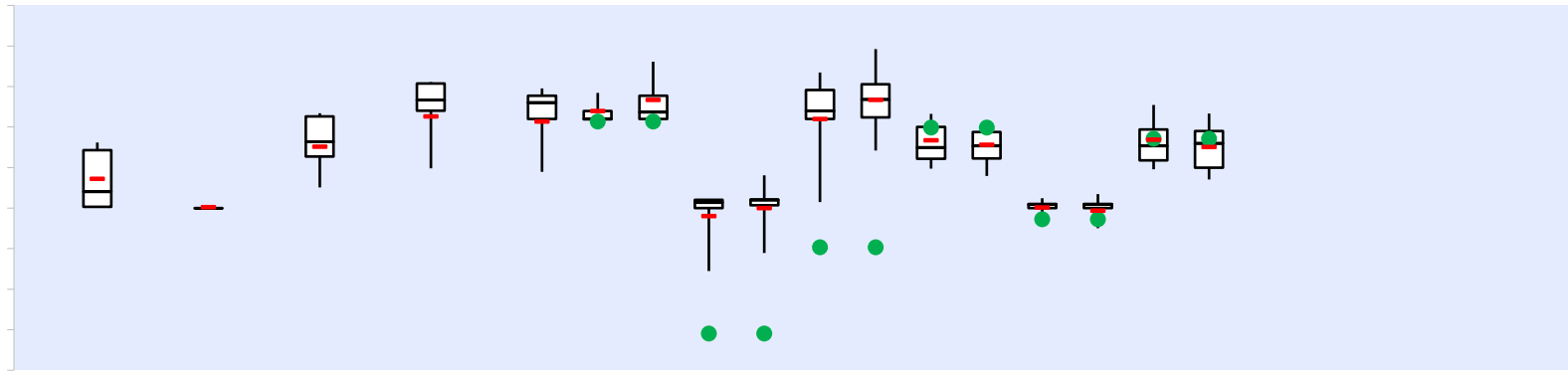
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 0.0 bps for peers (1 fund) and 0.0 bps for U.S. Public participants (2 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

Real estate ex-REITs

Cost as a % of the amount fees are based on¹

250bp
200bp
150bp
100bp
50bp
0bp
-50bp
-100bp
-150bp
-200bp



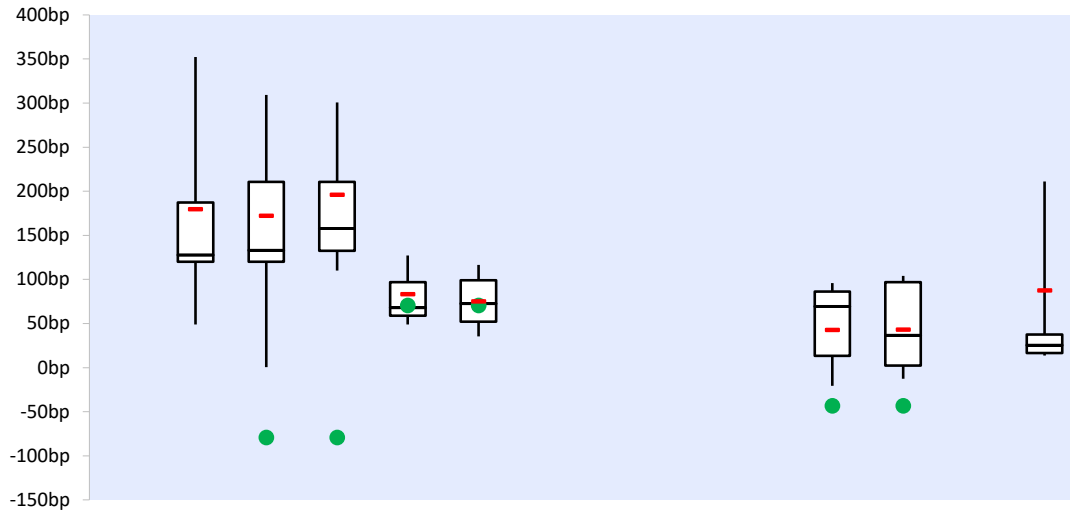
	Fund of Funds					Fund (Direct LP)					Fund (Evergreen)					Joint venture													
	Mgmt fees ³ (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees ³		Perf. fees		Total ³ incl. perf.		Mgmt fees ³		Perf. fees		Total ³ incl. perf.								
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public					
90th %ile	80.8	3.7	117.2	155.6	147.6	142.0	180.7	10.0	40.4	167.2	196.1	116.3	104.2	11.9	17.4	127.3	116.5												
75th %ile	71.5	0.0	112.9	153.7	138.5	119.6	138.5	10.0	10.5	145.5	152.7	99.9	93.8	5.0	5.0	97.0	94.9												
Median	20.5	0.0	82.2	133.4	130.5	110.0	118.5	7.0	10.0	120.0	134.2	74.9	77.0	4.7	4.9	77.0	80.2												
25th %ile	1.5	0.0	63.7	120.0	110.0	109.9	110.0	0.0	3.6	110.0	111.9	60.9	61.2	0.0	0.0	58.8	49.7												
10th %ile	0.6	0.0	25.5	48.9	44.9	107.2	104.2	-77.6	-55.2	7.3	71.2	48.5	39.6	-20.7	-24.8	48.1	35.5												
— Average	36.1	1.2	75.7	113.1	106.8	119.7	133.6	-9.8	-0.2	109.9	133.4	83.5	78.2	0.8	-3.0	84.3	75.2												
Count	1	5	1	5	1	5	1	5	1	5	13	33	13	33	13	33	16	37	16	37	16	37	1	2	0	1	1	2	
Avg. assets	205M	205M	205M	205M	205M	1,581M	2,705M	1,581M	2,705M	1,581M	2,705M	2,821M	6,537M	2,821M	6,537M	2,821M	6,537M	1,252M	2,503M	1,252M									
South Carolina Retirement System 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	106.6	106.6	-154.8	-154.8	-48.2	-48.2	99.2	99.2	-13.6	-13.6	85.7	85.7	n/a	n/a	n/a	n/a	n/a	n/a
%ile												8%	16%	0%	0%			73%	81%	13%	14%	67%	58%						
Assets						1,683M	1,683M	1,683M	1,683M	1,683M	1,683M	1,937M	1,937M	1,937M	1,937M	1,937M	1,937M												

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 imputed costs of 110 bps (on amount fees are based on) for underlying management fees and 3 bps (on NAV) for underlying performance fees were used.
3. The management fees and total cost also include the internal cost of monitoring and selecting real estate investments. Your cost of monitoring and selecting was 1.9 bps for LPs and 3.8 bps for external (not LPs). The peer average cost of monitoring and selecting was 3.0 bps for LPs and 2.1 bps for external (not LPs).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

Real estate ex-REITs - contd.

Cost as a % of NAV



	Fund of Funds		Fund (Direct LP)		Fund (Evergreen)		Joint venture		Oper. Sub.		Co-Inv.		Internal	
	Total ¹ incl. perf. Peer†	U.S. Public	Total ¹ incl. perf. Peer†	U.S. Public	Total ¹ incl. perf. Peer†	U.S. Public	Total ¹ incl. perf. Peer†	U.S. Public	Total ¹ incl. perf. Peer†	U.S. Public	Total ¹ incl. perf. Peer†	U.S. Public	Total Peer†	U.S. Public
90th %ile	352.3		309.2	300.9	127.3	116.5					96.0	104.2		210.9
75th %ile	187.4		210.6	210.6	97.0	99.1					86.1	96.8		37.5
Median	127.8		133.1	157.9	68.0	72.8					69.5	36.8		25.6
25th %ile	120.0		120.0	132.4	58.8	52.3					13.2	2.3		16.6
10th %ile	48.9		0.4	110.0	48.7	35.5					-20.6	-12.7		13.8
— Average	179.8		172.3	196.2	83.4	75.1					43.0	43.3		87.7
Count	1	5	13	33	16	37	1	2	0	0	3	10	2	7
Avg. assets	180M		1,280M	2,183M	2,916M	5,934M		1,252M			168M	2,123M		3,863M
South Carolina Retirement System Investment Commission														
● You	n/a	n/a	-79.0	-79.0	70.4	70.4	n/a	n/a	n/a	n/a	-43.2	-43.2	n/a	n/a
%ile			0%	0%	53%	47%					0%	0%		
Assets			1,026M	1,026M	2,355M	2,355M					112M	112M		

1. The total cost also includes the internal cost of monitoring and selecting real estate investments.

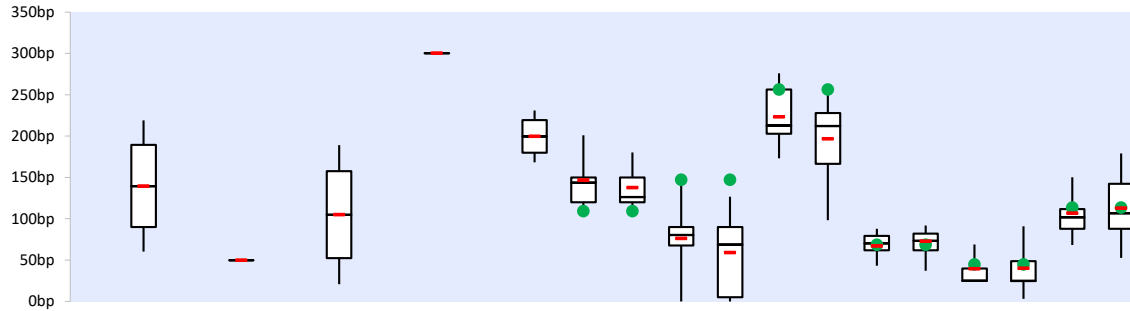
2. Co-investment is included with direct LPs because it can only be done alongside direct LPs. Co-investment is done by 3 of your peers and 10 of the U.S. Public funds.

3. The total cost also includes the internal cost of monitoring and selecting real estate investments. Internal and other - FoFs The peer average cost of monitoring and selecting was 3.0 bps for LPs and 2.1 bps for external (not LPs).

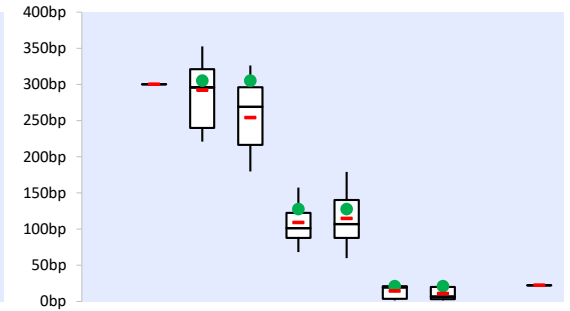
†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

Infrastructure

Cost as a % of the amount fees are based on¹



Cost as a % of NAV

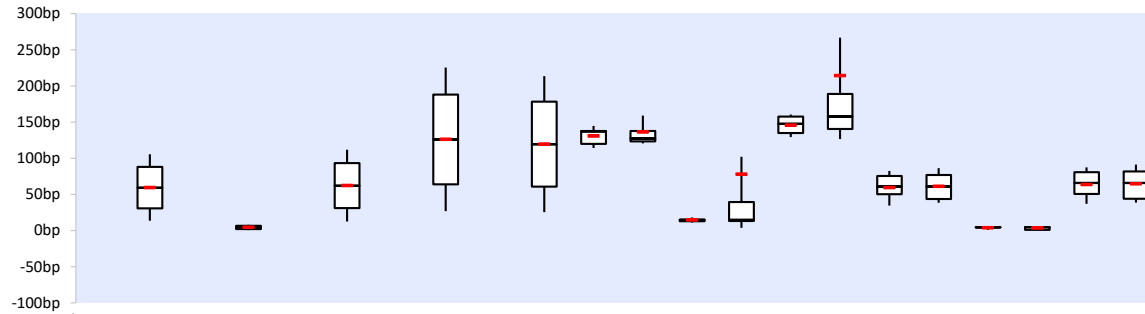


	Fund of Funds						Fund (Direct LP)						Fund (Evergreen)						Fund of Funds		Fund (Direct LP)		Fund (Evergreen)		Co-Inv.		Internal	
	Mgmt fees ³ (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees ³		Perf. fees		Total ³ incl. perf.		Mgmt fees ³		Perf. fees		Total ³ incl. perf.		Total ³ incl. perf.		Total		Total	
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
90th %ile	219.1	50.0	189.0	300.4	231.1	201.0	180.4	143.5	126.8	276.0	260.2	87.8	91.7	68.9	90.9	150.3	179.0	300.4	352.6	326.1	157.5	179.0	25.5	23.3	22.5	22.5		
75th %ile	189.4	50.0	157.5	300.4	219.4	150.0	150.0	90.0	90.0	256.5	228.1	79.2	82.1	40.0	48.8	111.7	142.5	300.4	321.1	296.0	122.5	140.3	21.1	20.0	22.5	22.5		
Median	139.7	50.0	105.0	300.4	199.7	143.7	126.4	80.6	69.0	213.1	212.5	70.6	73.6	25.1	25.0	102.1	106.9	300.4	296.0	269.2	101.6	107.0	19.6	6.8	22.5	22.5		
25th %ile	90.1	50.0	52.5	300.4	180.1	120.0	120.0	67.8	5.1	202.8	166.5	61.9	61.9	25.0	25.0	88.0	88.0	300.4	240.0	216.4	87.7	87.7	3.7	3.2	22.5	22.5		
10th %ile	60.3	50.0	21.0	300.4	168.3	107.6	104.5	0.0	0.0	173.3	98.3	43.2	37.1	25.0	3.3	68.2	52.7	300.4	220.9	179.8	68.2	60.0	1.5	1.5	22.5	22.5		
Average	139.7	50.0	105.0	300.4	199.7	146.9	137.7	76.4	59.1	223.3	196.8	67.2	73.0	39.7	40.1	106.9	113.1	300.4	292.4	254.1	109.1	114.7	14.6	11.1	22.5	22.5		
Count	1	2	1	1	1	2	1	1	2	2	9	25	9	25	9	25	6	14	6	14	6	14	6	14	5	8	0	1
Avg. assets	162M	319M	162M	319M	162M	1,244M	1,945M	1,244M	1,945M	1,244M	1,945M	992M	1,046M	992M	1,046M	992M	1,046M	319M	1,026M	1,418M	981M	896M	276M	619M	1,338M	1,338M		
South Carolina Retirement System 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	109.2	109.2	147.3	147.3	256.5	256.5	68.6	68.6	44.9	44.9	113.5	113.5	21.1	21.1	n/a	n/a	
%ile												13%	13%	100%	100%	75%	88%	40%	31%	80%	69%	80%	62%	75%	86%	0M	0M	
Assets						689M	689M	689M	689M	689M	689M	642M	642M	642M	642M	642M	642M	642M	642M	642M	642M	642M	642M	206M	206M	0M	0M	

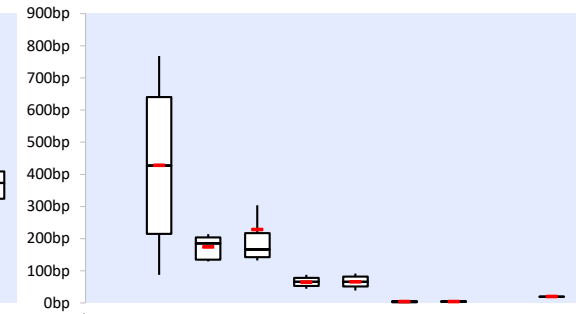
1. The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.
 2. The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so imputed costs of 120 bps (on amount fees are based on) for underlying management fees and 90 bps (on NAV) for underlying performance fees were used.
 3. The management fees and total cost also include the internal cost of monitoring and selecting infrastructure investments. Your cost of monitoring and selecting was 2.7 bps for LPs and 2.8 bps for external (not LPs). The peer average cost of monitoring and selecting was 1.7 bps for fund of funds, 8.4 bps for LPs and 2.5 bps for external (not LPs).
 Some averages on the right chart may be off the chart where there is outlier data resulting from large base or performance fees divided by small NAV.
 †Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

Natural resources

Cost as a % of the amount fees are based on¹

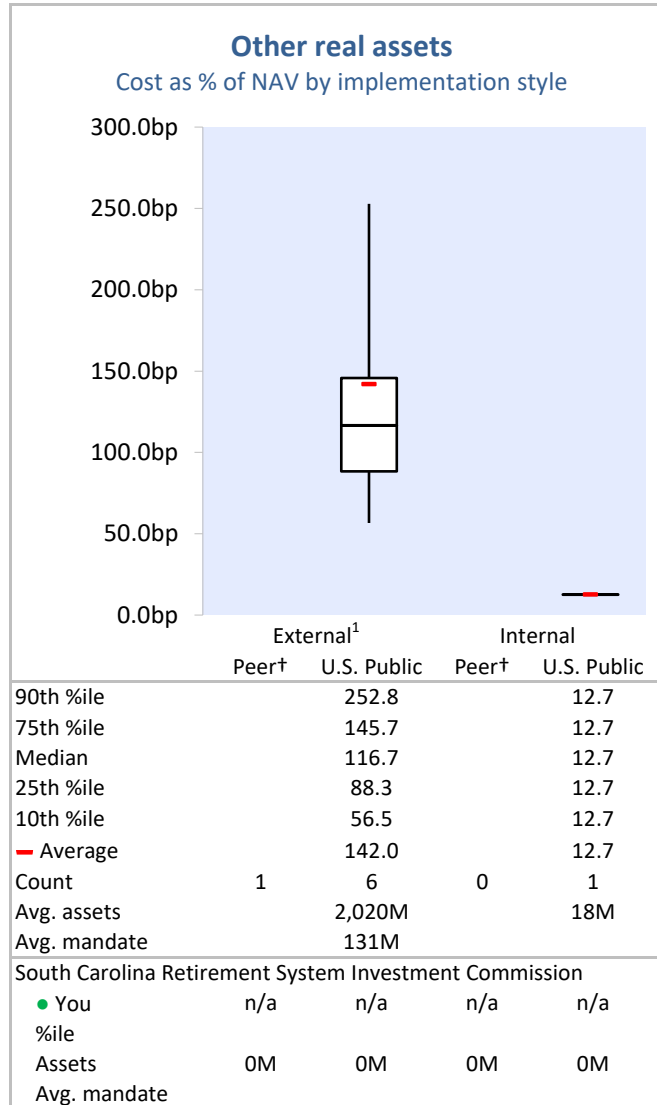


Cost as a % of NAV



	Fund of Funds										Fund (Direct LP)						Fund (Evergreen)						Fund of Funds		Fund (Direct LP)		Fund (Evergreen)		Co-Inv.		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.		Total ³ incl. perf.	
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
90th %ile	105.5	7.9	112.0	225.4	213.5	144.6	159.1	18.2	102.0	160.4	266.7	82.6	86.2	5.1	5.0	87.6	91.2	768.1	214.4	303.4	87.6	91.2	7.1	6.9	20.0	20.0	20.0	20.0	20.0	20.0		
75th %ile	88.3	6.6	93.3	188.2	178.3	137.8	137.6	15.0	39.4	157.6	188.9	75.5	76.8	5.0	5.0	80.7	81.9	640.4	203.9	217.0	78.3	81.6	5.9	5.8	20.0	20.0	20.0	20.0	20.0	20.0		
Median	59.5	4.4	62.2	126.1	119.5	137.3	127.7	15.0	15.0	147.8	157.9	61.1	61.1	5.0	5.0	66.1	66.1	427.6	185.7	167.0	66.1	66.1	4.0	4.4	20.0	20.0	20.0	20.0	20.0	20.0		
25th %ile	30.7	2.2	31.1	64.0	60.7	120.0	123.3	13.1	13.4	135.0	140.4	50.3	43.7	4.1	1.1	50.7	44.1	214.8	135.0	142.4	53.2	51.0	2.0	3.2	20.0	20.0	20.0	20.0	20.0	20.0		
10th %ile	13.5	0.9	12.4	26.8	25.5	114.2	120.6	11.3	4.0	129.2	126.7	34.6	38.6	1.0	0.0	37.1	38.7	87.1	129.2	132.1	44.2	38.9	0.8	1.4	20.0	20.0	20.0	20.0	20.0	20.0		
Average	59.5	4.4	62.2	126.1	119.5	130.9	136.3	14.7	78.1	145.6	214.4	59.6	61.1	4.0	3.5	63.5	64.5	427.6	174.3	228.4	64.4	65.1	4.0	4.3	20.0	20.0	20.0	20.0	20.0	20.0		
Count	0	2	0	2	0	2	2	0	2	2	2	5	18	5	18	5	18	8	12	8	12	8	12	0	1	0	1	0	1	0	1	
Avg. assets	47M	47M	47M	47M	47M	1,669M	1,196M	1,669M	1,196M	1,669M	1,196M	503M	426M	503M	426M	503M	426M	38M	1,364M	1,116M	478M	410M	144M	824M	0M	0M	0M	0M	0M	0M		
South Carolina Retirement System 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	n/a	n/a	

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 imputed costs of n/a bps (on amount fees are based on) for underlying management fees and n/a bps (on NAV) for underlying performance fees were used.
 3. The management fees and total cost also include the internal cost of monitoring and selecting natural resource investments. The peer average cost of monitoring and selecting was 9.2 bps for LPs and 1.2 bps for external (not LPs).
 †Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



1. Breakdown of external fees

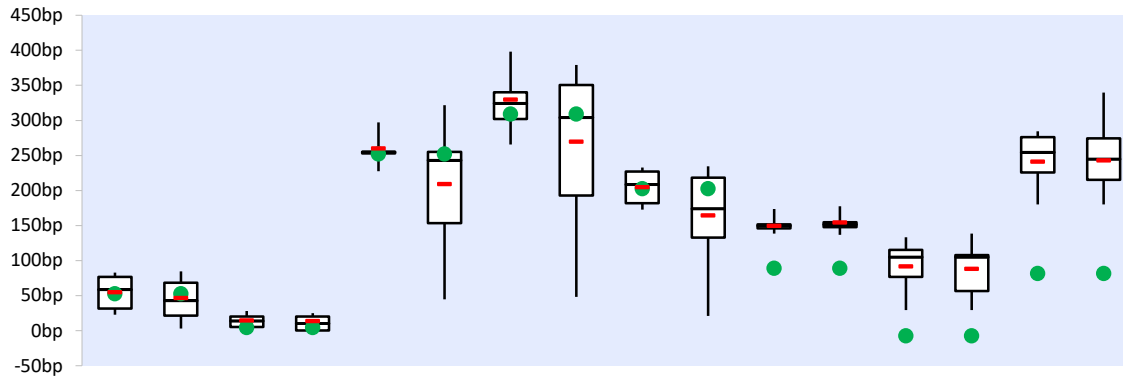
	Your Plan	Peer Average	U.S. Public Average
Base fees	n/a	n/a	137.8
Internal and other	n/a	0.0	0.9
Performance fees*	<u>n/a</u>	<u>0.0</u>	<u>3.3</u>
Total	n/a	n/a	142.0

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect

* For funds that did not report a performance fee, an imputed cost of 5 bps was applied. The average performance fee for only those funds that reported a performance fee is 0.0 bps for peers (1 funds) and 0.0 bps for U.S. Public participants (2 funds).

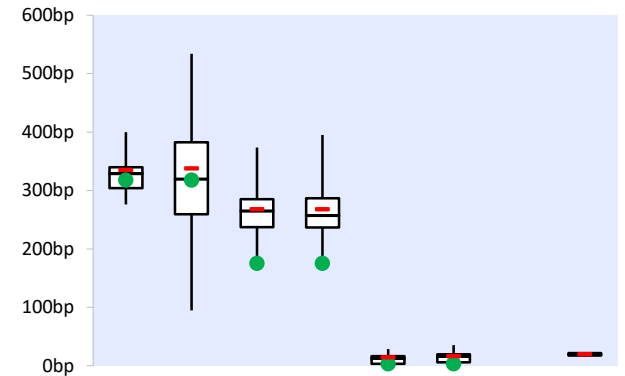
Private equity - Diversified

Cost as a % of the amount fees are based on¹



	Fund of Funds										Direct LP					
	Mgmt fees ³ (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees ³		Perf. fees		Total ³ incl. perf.	
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
90th %ile	82.9	84.6	28.0	25.1	297.1	321.6	398.1	379.1	232.9	234.6	173.8	177.4	133.3	138.4	284.6	339.9
75th %ile	76.9	68.4	20.0	20.0	255.0	255.0	340.0	350.5	226.9	218.4	151.8	154.9	115.4	107.9	276.0	274.5
Median	58.8	43.1	13.9	10.4	255.0	243.4	324.5	304.4	208.8	174.0	150.0	151.5	105.0	105.0	254.8	245.0
25th %ile	31.8	21.6	5.1	0.3	252.8	153.2	302.1	193.0	181.8	132.7	146.0	147.6	76.8	56.5	225.9	215.4
10th %ile	22.9	2.9	2.1	0.0	227.5	44.6	265.8	48.4	172.9	21.1	138.7	136.6	29.6	29.2	180.3	180.0
— Average	54.9	46.5	14.7	13.6	259.9	209.2	329.5	269.4	204.9	164.3	149.5	154.5	91.7	88.1	241.2	242.6
Count	6	22	6	22	6	22	6	22	6	22	14	31	14	31	14	31
Avg. assets	2,162M	1,202M	2,162M	1,202M	2,162M	1,202M	2,162M	1,202M	2,162M	1,202M	6,735M	8,129M	6,735M	8,129M	6,735M	8,129M
South Carolina Retirement System Investment Commission																
● You	52.7	52.7	4.3	4.3	252.1	252.1	309.0	309.0	202.7	202.7	89.0	89.0	-7.4	-7.4	81.6	81.6
%ile	40%	57%	20%	38%	20%	52%	40%	52%	40%	62%	0%	0%	0%	3%	0%	3%
Assets	225M	225M	225M	225M	225M	225M	225M	225M	225M	225M	281M	281M	281M	281M	281M	281M

Cost as a % of NAV



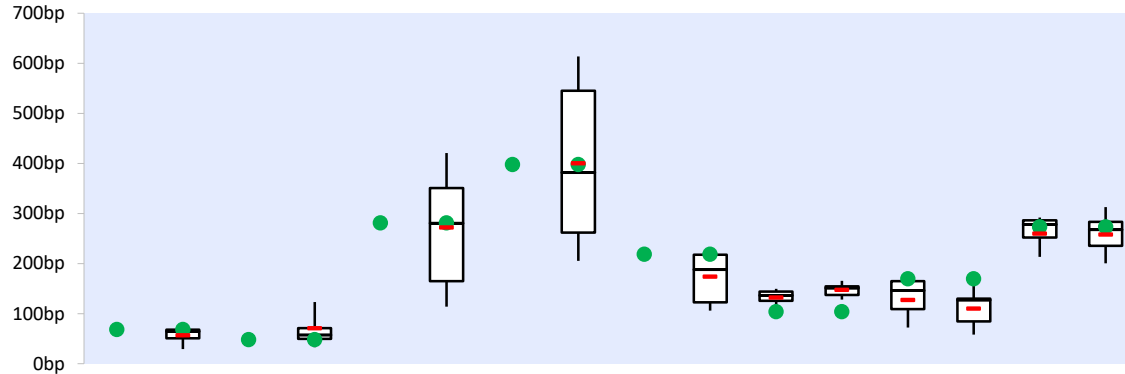
	Fund of Funds		Direct LP		Co-Investment		Internal	
	Total ³ incl. perf.		Total ³ incl. perf.		Total incl. perf.		Total	
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
90th %ile	399.7	534.1	373.5	395.2	28.5	35.2		22.7
75th %ile	340.0	382.6	285.0	286.5	16.5	19.5		21.5
Median	328.9	320.0	265.2	257.1	12.7	16.5		19.5
25th %ile	304.3	259.2	237.2	237.0	3.3	5.8		17.5
10th %ile	276.4	95.0	180.3	177.8	2.7	3.5		16.3
— Average	335.0	337.5	267.9	267.5	14.3	16.4		19.5
Count	6	22	14	31	5	13	0	2
Avg. assets	1,843M	992M	6,500M	7,876M	1,276M	2,211M		128M
● You	317.8	317.8	175.4	175.4	3.3	3.3	n/a	n/a
%ile	40%	43%	0%	7%	25%	8%		
Assets	219M	219M	131M	131M	210M	210M	0M	0M

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 imputed costs of 150 bps (on amount fees are based on) for underlying management fees and 105 bps (on NAV) for underlying performance fees were used.
3. The management fees and 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 fund of funds and 1.5 bps for LPs. The peer average cost of monitoring and selecting was 1.9 bps for fund of funds, 8.5 bps for LPs and 5.0 bps for co-investments.

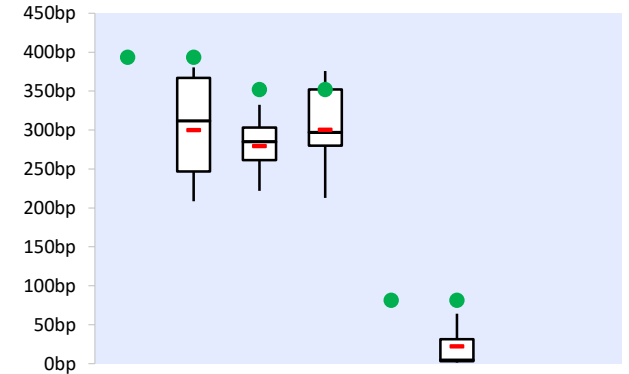
†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

LBO

Cost as a % of the amount fees are based on¹



Cost as a % of NAV



	Fund of Funds										Direct LP					
	Mgmt fees ³ (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees ³		Perf. fees		Total ³ incl. perf.	
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
90th %ile		77.6		123.2		421.1		613.6		227.6	149.4	165.5	167.7	165.8	291.9	312.8
75th %ile		67.7		70.7		351.0		545.1		217.7	143.8	154.2	164.8	130.0	286.2	283.1
Median		64.7		57.6		280.8		382.0		188.4	136.5	151.1	146.6	127.3	278.4	267.9
25th %ile		51.1		49.6		165.0		261.9		122.7	125.3	137.2	109.3	84.2	252.2	235.3
10th %ile		29.2		33.0		114.1		205.6		106.0	112.5	128.2	72.1	58.0	213.6	200.2
— Average		57.2		71.3		272.0		400.4		174.0	132.5	147.8	127.5	110.4	260.1	258.2
Count	2	6	2	6	2	6	2	6	2	6	4	17	4	17	4	17
Avg. assets		718M		718M		718M		718M		718M	2,315M	6,548M	2,315M	6,548M	2,315M	6,548M
South Carolina Retirement System Investment Commission																
● You	68.7	68.7	48.1	48.1	281.6	281.6	398.4	398.4	218.7	218.7	104.0	104.0	169.7	169.7	273.6	273.6
%ile	0%	80%	0%	20%	0%	60%	0%	60%	0%	80%	0%	0%	100%	94%	33%	56%
Assets	138M	138M	138M	138M	138M	138M	138M	138M	138M	138M	1,937M	1,937M	1,937M	1,937M	1,937M	1,937M

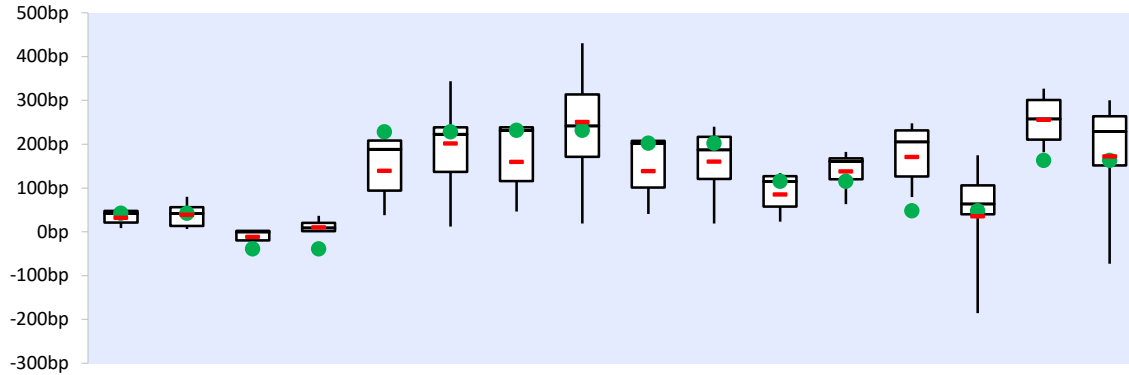
Fund of Funds		Direct LP		Co-Investment		Internal	
Total ³ incl. perf.		Total ³ incl. perf.		Total incl. perf.		Total	
Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
	380.4	332.6	375.8		64.1		
	367.0	303.1	352.0		31.3		
	311.9	285.0	297.3		4.9		
	246.6	261.3	280.0		3.2		
	208.4	222.1	213.0		1.4		
	300.3	279.5	300.3		22.2		
2	6	4	17	2	7	0	0
	768M	2,180M	5,877M		2,328M		
	393.5	393.5	352.2	352.2	81.7	81.7	n/a
	100%	100%	100%	81%	100%	100%	
	140M	140M	1,505M	1,505M	1,969M	1,969M	0M

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 imputed costs of 150 bps (on amount fees are based on) for underlying management fees and 130 bps (on NAV) for underlying performance fees were used.
3. The management fees and total cost also include the internal cost of monitoring and selecting private equity investments. Your cost of monitoring and selecting was 3.2 bps for fund of funds and 2.5 bps for LPs. The peer average cost of monitoring and selecting was 3.7 bps for fund of funds, 2.6 bps for LPs and 2.0 bps for co-investments.

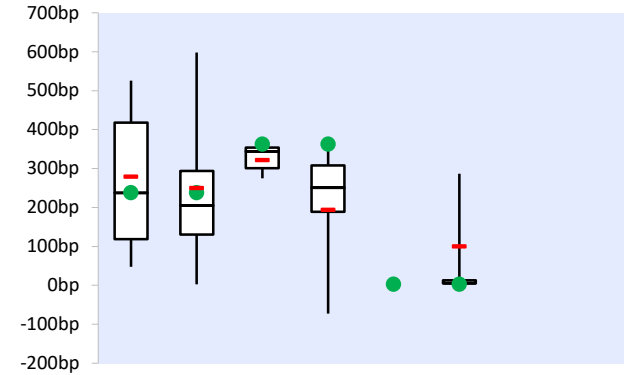
†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

Venture capital

Cost as a % of the amount fees are based on¹



Cost as a % of NAV



	Fund of Funds										Direct LP					
	Mgmt fees ³ (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees ³		Perf. fees		Total ³ incl. perf.	
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
90th %ile	50.6	80.1	3.3	36.5	220.2	343.9	242.7	430.5	210.6	240.1	134.1	182.6	247.5	175.0	327.0	300.3
75th %ile	47.5	56.5	2.1	20.6	208.4	238.4	238.5	313.6	207.5	216.5	127.0	168.1	231.7	106.3	301.1	263.8
Median	42.4	42.4	0.0	9.0	188.7	223.2	231.5	241.7	202.4	187.7	115.3	161.4	205.4	63.9	258.0	229.1
25th %ile	21.2	13.6	-19.5	1.8	94.4	136.9	115.7	171.1	101.2	120.4	57.6	120.2	126.5	40.3	210.4	151.9
10th %ile	8.5	6.3	-31.2	0.0	37.7	12.4	46.3	18.7	40.5	18.7	23.1	63.3	79.1	-185.6	181.9	-73.0
— Average	31.7	38.9	-11.6	9.9	138.9	201.3	159.0	250.2	138.3	159.7	84.7	137.2	170.3	34.9	255.0	172.1
Count	3	11	3	11	3	11	3	11	3	11	3	15	3	15	3	15
Avg. assets	280M	422M	280M	422M	280M	422M	280M	422M	280M	422M	155M	871M	155M	871M	155M	871M
South Carolina Retirement System Investment Commission																
● You	42.4	42.4	-39.0	-39.0	228.1	228.1	231.5	231.5	202.4	202.4	115.3	115.3	47.5	47.5	162.8	162.8
%ile	50%	50%	0%	0%	100%	60%	50%	30%	50%	60%	50%	21%	0%	29%	0%	29%
Assets	534M	534M	534M	534M	534M	534M	534M	534M	534M	534M	408M	408M	408M	408M	408M	408M

Fund of Funds		Direct LP		Co-Investment		Internal	
Total ³ incl. perf.		Total ³ incl. perf.		Total incl. perf.		Total	
Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
525.9	598.0	359.0	355.3		286.9		
417.9	293.7	353.5	308.4		13.4		
237.9	205.7	344.2	251.1		6.2		
118.9	130.7	301.1	188.9		5.6		
47.6	2.6	275.3	-72.5		3.8		
278.6	249.6	321.7	193.4		99.4		
3	11	3	15	1	5	0	0
215M	728M	80M	903M		207M		
237.9	237.9	362.7	362.7	2.6	2.6	n/a	n/a
50%	60%	100%	93%	0%	0%		
520M	520M	183M	183M	48M	48M	0M	0M

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

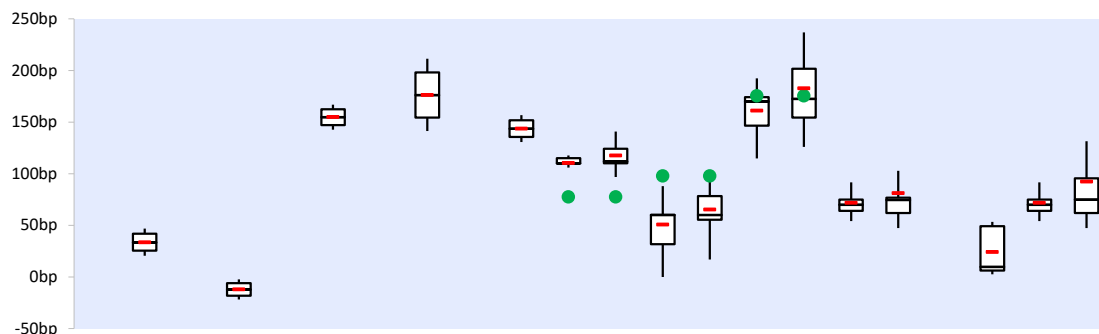
2. The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so imputed costs of 160 bps (on amount fees are based on) for underlying management fees and 70 bps (on NAV) for underlying performance fees were used.

3. The management fees and total cost also include the internal cost of monitoring and selecting private equity investments. Your cost of monitoring and selecting was 3.1 bps for fund of funds and 1.4 bps for LPs. The peer average cost of monitoring and selecting was 2.0 bps for fund of funds, 1.9 bps for LPs and 1.0 bps for co-investments.

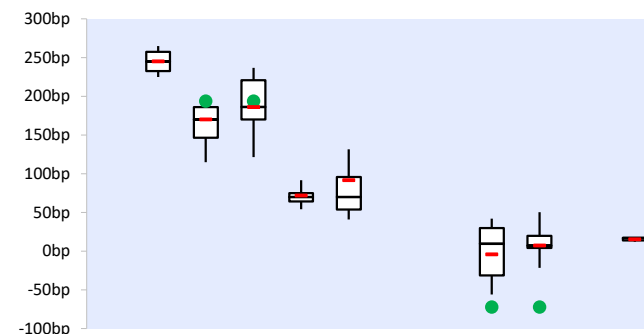
†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

Private credit

Cost as a % of the amount fees are based on¹



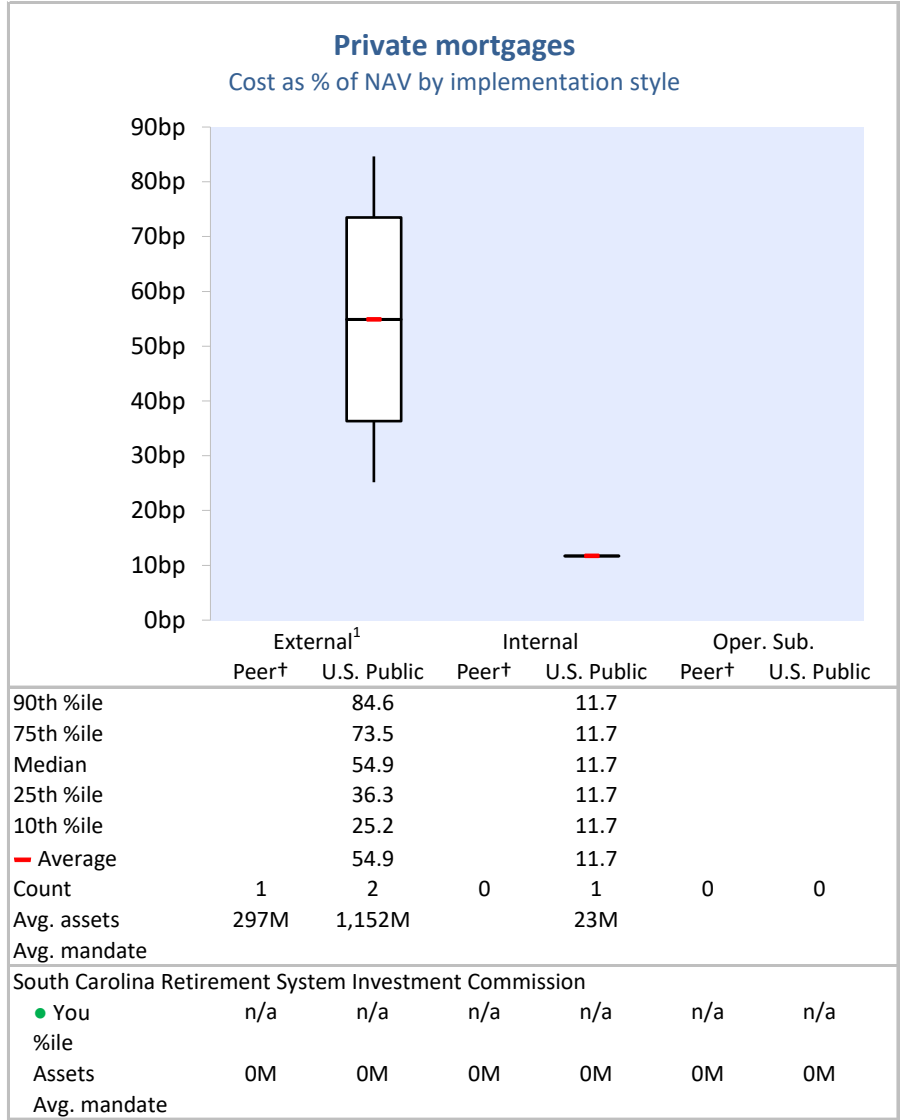
Cost as a % of NAV



	Fund of Funds										Direct LP					Evergreen					Fund of Funds		Direct LP		Evergreen		Oper. Sub.		Co-Inv.		Internal			
	Mgmt fees ³		Perf. fees		Underlying		Total ³		Total ³		Mgmt fees ³		Perf. fees		Total ³		Mgmt fees ³		Perf. fees		Total ³		Total ³		Total ³		Total ³		Total ³		Total ³		Total ³	
	(Top layer)		(Top layer)		mgmt. & perf. ²		incl. perf.		excl. perf.		incl. perf.		incl. perf.		incl. perf.		incl. perf.		incl. perf.		incl. perf.		incl. perf.		incl. perf.		incl. perf.		incl. perf.		incl. perf.		incl. perf.	
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public		
90th %ile	46.7	-2.4	166.9	211.2	156.7	117.7	140.7	87.9	100.1	192.3	236.9	91.7	102.9	53.3	91.7	131.4	264.8	201.4	236.6	91.7	131.4	42.0	50.2	17.6										
75th %ile	41.8	-6.1	162.4	198.1	151.8	115.1	124.0	60.0	78.4	174.1	201.6	74.9	76.7	49.1	74.9	95.4	257.4	186.1	220.6	74.9	95.7	29.9	19.8	17.3										
Median	33.6	-12.1	154.7	176.2	143.6	110.0	111.9	60.0	60.0	170.0	172.4	69.9	74.8	9.9	69.9	74.9	244.9	170.0	186.4	69.9	69.9	9.7	7.3	16.8										
25th %ile	25.5	-18.2	147.1	154.3	135.5	110.0	110.0	31.8	55.3	146.4	154.2	64.0	62.0	6.1	64.0	62.0	232.5	146.4	170.0	64.0	53.7	-31.4	4.0	13.9										
10th %ile	20.6	-21.9	142.5	141.2	130.6	106.0	96.7	0.0	16.8	114.9	125.9	54.0	47.4	2.5	54.0	47.4	225.0	114.9	121.4	54.0	41.0	-56.0	-21.7	12.2										
Average	33.6	-12.1	154.7	176.2	143.6	110.4	117.5	50.7	65.2	161.1	182.7	71.8	81.3	24.2	71.8	92.3	244.9	170.1	185.9	71.8	91.6	-4.2	7.2	15.2										
Count	0	2	0	2	0	2	0	2	0	2	0	2	0	2	0	2	5	11	0	5	5	11	0	0	3	8	0	3	0	3	0	3	0	3
Avg. assets	311M	311M	311M	311M	311M	1,527M	2,147M	1,527M	2,147M	1,527M	2,147M	4,109M	3,087M	6,791M	4,109M	3,087M	160M	1,475M	1,989M	4,109M	3,082M	237M	314M	316M										
South Carolina Retirement System 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	77.6	77.6	97.9	97.9	175.5	175.5	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												4%	100%	88%	78%	58%																		
Assets						3,786M	3,786M	3,786M	3,786M	3,786M	3,786M						3,433M	3,433M							218M	218M								

- 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 imputed values of n/a bps (on amount fees are based on) for underlying management fees and n/a bps (on NAV) for underlying performance fees were used.
- The management fees and total cost also include the internal cost of monitoring and selecting real estate investments. Your cost of monitoring and selecting was 2.9 bps for LPs. The peer average cost of monitoring and selecting was 1.7 bps for LPs and 1.8 bps for external (not LPs).

*Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



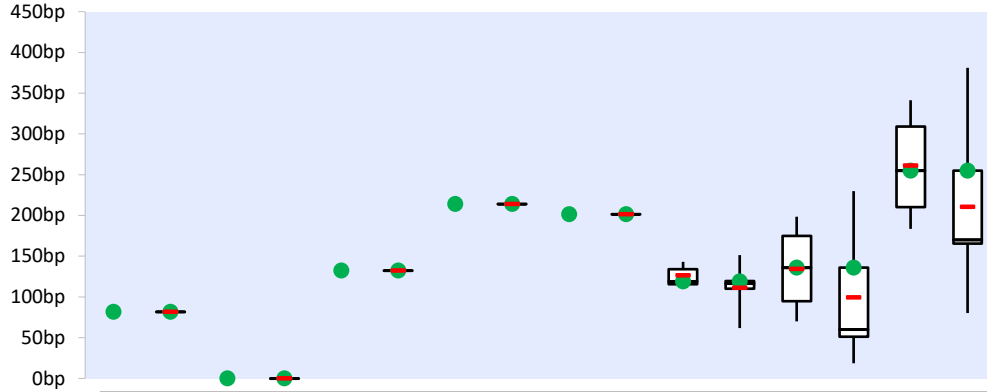
1. Breakdown of external fees

	Your Plan	Peer Average	U.S. Public Average
Base fees	n/a	91.1	54.0
Internal and other	n/a	0.9	0.9
Performance fees	<u>n/a</u>	<u>n/a</u>	<u>0.0</u>
Total	n/a	n/a	54.9

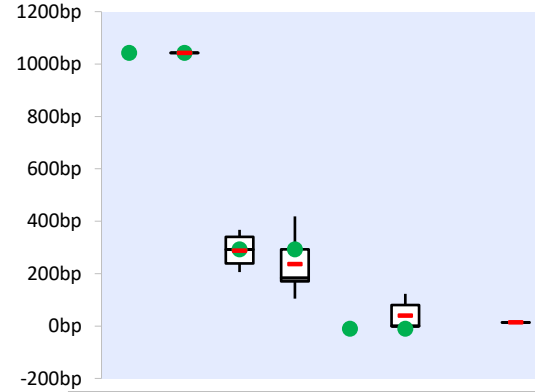
†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

Private equity - Other

Cost as a % of the amount fees are based on¹



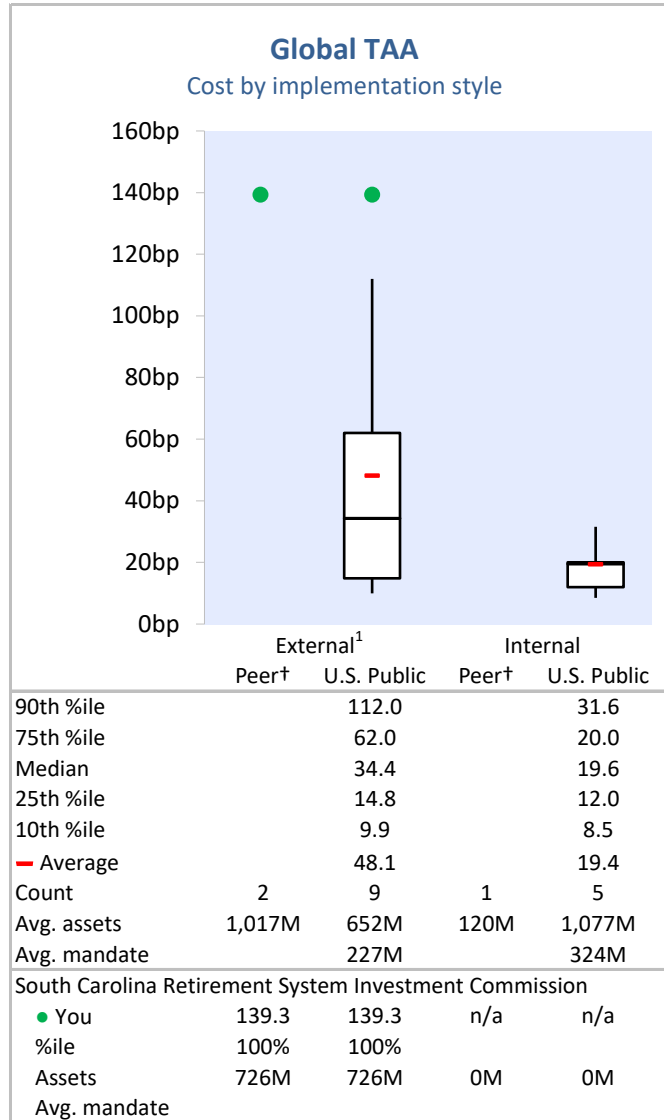
Cost as a % of NAV



	Fund of Funds										Direct LP						Fund of Funds		Direct LP		Co-Investment		Internal	
	Mgmt fees ³ (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees ³		Perf. fees		Total ³ incl. perf.		Total ³ incl. perf.		Total ³ incl. perf.		Total			
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public		
90th %ile	81.7	81.7	0.0	0.0	132.3	132.3	214.0	214.0	201.7	201.7	143.0	151.1	198.4	230.0	341.4	381.1	1043.1	1043.1	367.6	418.0	122.9	14.2		
75th %ile	81.7	81.7	0.0	0.0	132.3	132.3	214.0	214.0	201.7	201.7	134.1	119.7	174.9	135.8	309.0	255.1	1043.1	1043.1	339.7	293.1	80.4	14.2		
Median	81.7	81.7	0.0	0.0	132.3	132.3	214.0	214.0	201.7	201.7	119.3	116.8	135.8	60.0	255.1	170.0	1043.1	1043.1	293.1	184.5	0.3	14.2		
25th %ile	81.7	81.7	0.0	0.0	132.3	132.3	214.0	214.0	201.7	201.7	115.5	110.0	94.8	51.0	210.2	165.4	1043.1	1043.1	238.8	170.0	0.0	14.2		
10th %ile	81.7	81.7	0.0	0.0	132.3	132.3	214.0	214.0	201.7	201.7	113.2	61.6	70.2	18.8	183.4	80.4	1043.1	1043.1	206.2	104.5	-5.0	14.2		
— Average	81.7	81.7	0.0	0.0	132.3	132.3	214.0	214.0	201.7	201.7	126.6	111.2	134.6	99.4	261.2	210.6	1043.1	1043.1	288.0	236.7	39.4	14.2		
Count	1	1	1	1	1	1	1	1	1	1	3	9	3	9	3	9	1	1	3	9	2	6	0	1
Avg. assets	41M	41M	41M	41M	41M	41M	41M	41M	41M	41M	1,184M	1,705M	1,184M	1,705M	1,184M	1,705M	41M	41M	1,058M	1,459M	114M	224M	0	3M
South Carolina Retirement System Investment Commission																								
● You	81.7	81.7	0.0	0.0	132.3	132.3	214.0	214.0	201.7	201.7	119.3	119.3	135.8	135.8	255.1	255.1	####	1043.1	293.1	293.1	-10.1	-10.1	n/a	n/a
%ile	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	50%	62%	50%	75%	50%	75%	100%	100%	50%	75%	0%	0%	0M	0M
Assets	41M	41M	41M	41M	41M	41M	41M	41M	41M	41M	543M	543M	543M	543M	543M	543M	8M	8M	473M	473M	143M	143M	0M	0M

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 imputed values of 120 bps (on amount fees are based on) for underlying management fees and 60 bps (on NAV) for underlying
3. The management fees and total cost also include the internal cost of monitoring and selecting private equity investments. Your cost of monitoring and selecting was 0.6 bps for fund of funds. The peer average cost of monitoring and selecting was 0.6 bps for fund of funds.

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

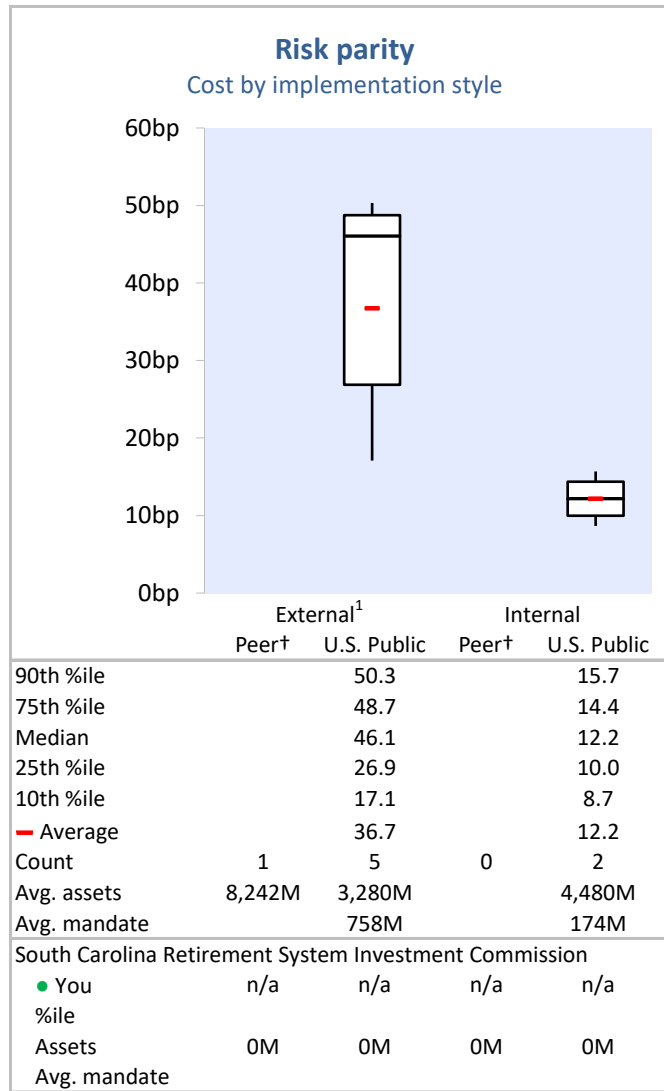


1. Breakdown of external fees

	Your Plan	Peer Average	U.S. Public Average
Base fees	112.0	76.8	40.7
Internal and other	3.2	2.2	1.6
Performance fees	<u>24.1</u>	<u>24.1</u>	<u>11.6</u>
Total*	139.3	n/a	48.1

* 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 24.1 bps for peers (1 fund) and 11.6 bps for U.S. Public participants (5 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



1. Breakdown of external fees

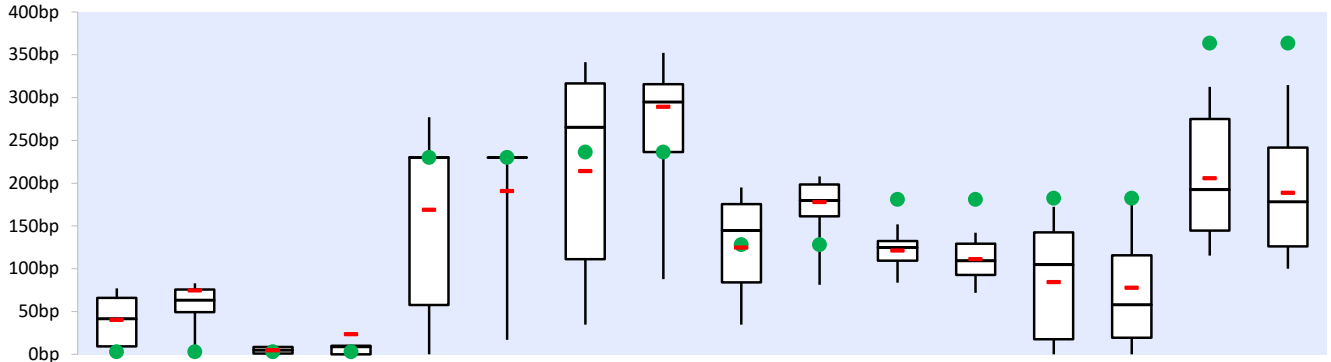
	Your Plan	Peer Average	U.S. Public Average
Base fees	n/a	26.6	35.8
Internal and other	n/a	0.2	1.2
Performance fees	<u>n/a</u>	<u>n/a</u>	<u>0.0</u>
Total*	n/a	n/a	36.7

* 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 0.0 bps for U.S. Public participants (3 funds).

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

Hedge funds

Cost by implementation style



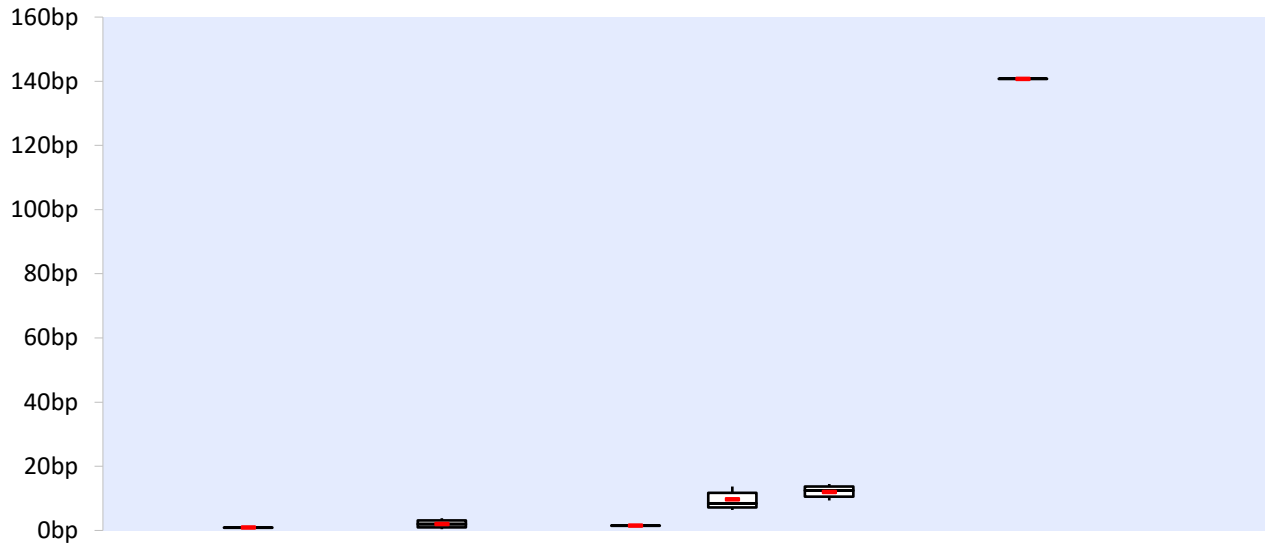
	Fund of Funds										External Direct					
	Mgmt fees (Top layer)		Perf. fees (Top layer)		Underlying mgmt. and perf. ¹		Total ² incl. perf.		Total ² excl. perf.		Mgmt fees		Perf. fees		Total ² incl. perf.	
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
90th %ile	77.2	83.0	9.5	11.1	277.1	230.0	341.6	352.3	194.9	208.0	151.9	142.2	172.5	180.0	312.5	314.6
75th %ile	65.9	75.6	8.5	10.0	230.0	230.0	316.6	315.6	175.4	198.5	132.3	129.1	142.6	115.8	274.9	241.8
Median	41.5	63.5	5.1	8.9	230.0	230.0	265.6	295.0	144.9	180.0	125.0	109.5	105.0	57.9	192.6	178.4
25th %ile	9.4	49.3	0.8	0.0	57.5	230.0	111.2	236.3	84.2	161.2	109.5	92.9	17.7	19.3	144.6	126.1
10th %ile	1.6	8.1	0.0	0.0	0.0	17.0	34.8	87.9	34.8	81.3	83.8	71.8	0.0	0.0	115.5	100.0
— Average	40.1	74.7	4.9	23.7	169.0	190.7	214.0	289.1	124.9	178.1	121.4	111.2	84.4	77.7	205.8	188.9
Count	6	13	6	13	6	13	6	13	6	13	9	23	9	23	9	23
Avg. assets	292M	416M	292M	416M	292M	416M	292M	416M	292M	416M	4,323M	4,253M	4,323M	4,253M	4,323M	4,253M
South Carolina Retirement System Investment Commission																
● You	3.2	3.2	3.1	3.1	230.0	230.0	236.3	236.3	128.2	128.2	181.2	181.2	182.5	182.5	363.8	363.8
%ile	20%	8%	40%	33%	40%	25%	40%	25%	40%	17%	100%	100%	100%	91%	100%	100%
Assets	12M	12M	12M	12M	12M	12M	12M	12M	12M	12M	4,398M	4,398M	4,398M	4,398M	4,398M	4,398M

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 imputed costs of 125 bps (on NAV) for underlying management fees and 105 bps (on NAV) for underlying performance fees were used.

2. The total cost also includes the internal cost of monitoring and selecting real estate investments. The peer average cost of monitoring and selecting was 1.8 bps for fund of funds and 2.9 bps for LPs.

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

Overlays: currency, duration Cost by implementation style

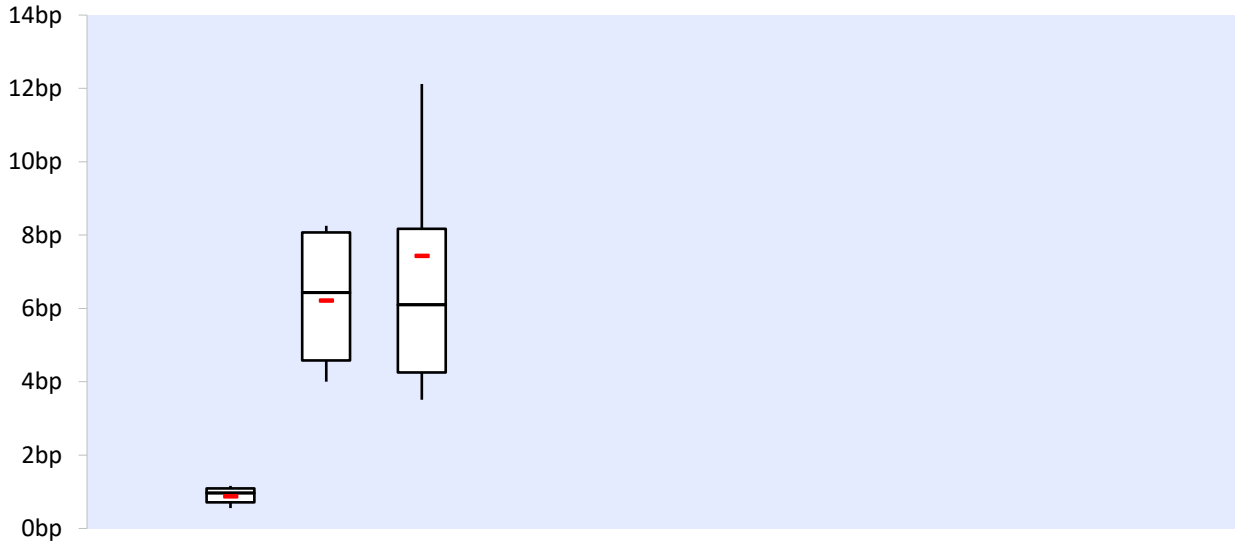


	Currency Hedge				Discretionary Currency				Duration Management			
	Internal		External		Internal		External		Internal		External	
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
90th %ile		0.9		3.8		1.6		13.7		14.5		140.8
75th %ile		0.9		3.1		1.6		11.7		13.7		140.8
Median		0.9		2.0		1.6		8.5		12.5		140.8
25th %ile		0.9		1.0		1.6		7.2		10.5		140.8
10th %ile		0.9		0.4		1.6		6.4		9.3		140.8
— Average		0.9		2.1		1.6		9.8		12.0		140.8
Count	0	1	0	3	0	1	3	3	1	1	0	0
Avg. notional		4,707M		5,882M		42,382M		2,439M		3,267M		4M
South Carolina Retirement System 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												
Avg. notional												

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

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†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
90th %ile		1.2	8.3	12.1								
75th %ile		1.1	8.1	8.2								
Median		1.0	6.4	6.1								
25th %ile		0.7	4.6	4.3								
10th %ile		0.6	4.0	3.5								
— Average		0.9	6.2	7.4								
Count	0	3	4	7	0	0	0	0	0	0	0	0
Avg. notional		10,881M	1,437M	4,795M								
South Carolina Retirement System 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												
Avg. notional												

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

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



	Commodity				Long/ Short				Other			
	Internal		External		Internal		External		Internal		External	
	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public	Peer†	U.S. Public
90th %ile		0.7	6.8	7.4						865.7		8.2
75th %ile		0.7	5.0	6.5						865.7		7.3
Median		0.7	2.0	4.0						865.7		5.9
25th %ile		0.7	1.0	1.5						865.7		4.4
10th %ile		0.7	0.4	0.6						865.7		3.6
— Average		0.7	3.3	4.0						865.7		5.9
Count	0	1	3	4	0	0	0	0	1	1	1	2
Avg. notional		4,897M	1,751M	1,425M					6M	6M	4,954M	3,767M
South Carolina Retirement System 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												
Avg. notional												

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

6

Risk

Modeled risk as a measure of expected volatility	2
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Modeled risk as a measure of expected volatility

Risk can be measured in various ways. A common measure of risk is volatility, i.e., the standard deviation of realized returns.

Calculating the standard deviation of historic returns (i.e., realized risk) poses several challenges. Firstly, it requires a significant number of data points to have validity. Since CEM universe participants only provide annual performance data, a fairly long time period is required before a reasonable risk value can be calculated. Secondly, even when such a time series is available, it is possible that the strategy or approach being used by the fund may have changed over the time series and may not be captured in the estimated volatility.

In addition, private asset class returns, which tend to be smoothed and lagged relative to public markets, can lower observed volatility simply due to differences in valuation approaches relative to public markets.

CEM calculates a modeled (expected) volatility based on the asset allocation of each peer, using a common covariance table based on historical data.

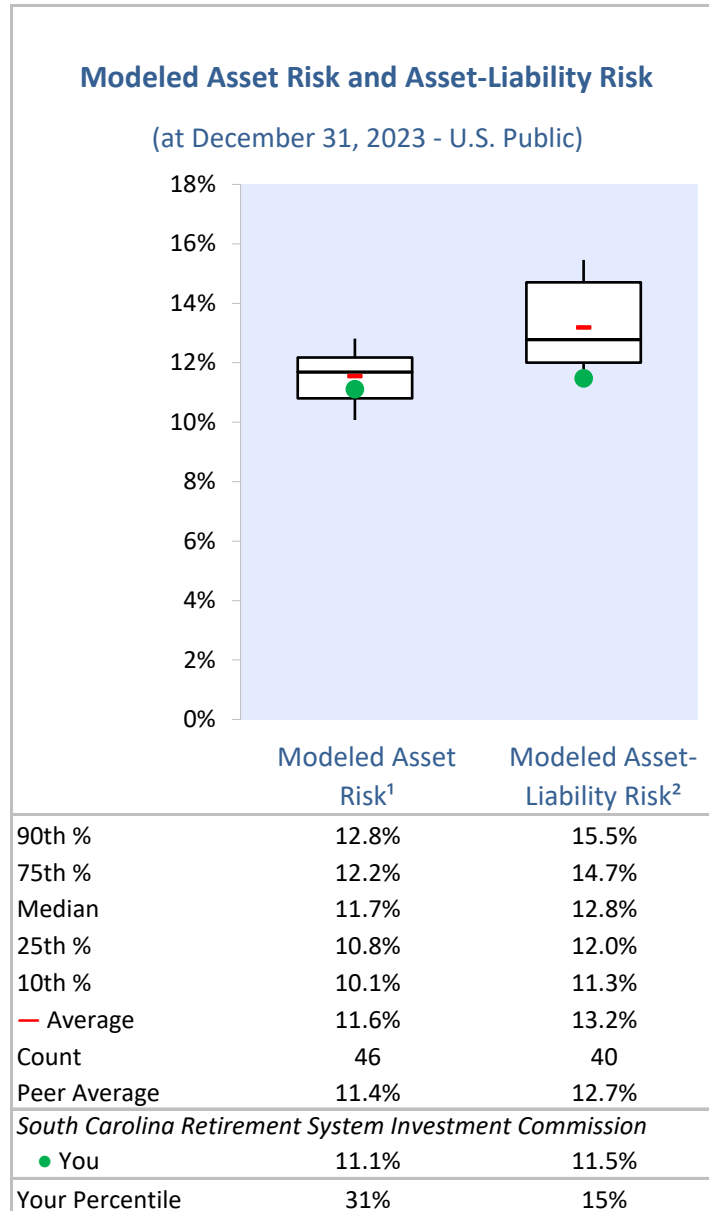
The covariance table is calculated based on a long term series of monthly return data. It does not require a large volume of data from peers to produce useful results. It is also able to calculate an expected volatility at a single point in time, and hence reasonably captures the expected impact of changes in allocation or strategy.

Proxies based on public markets, which share the risk factors of similar private market investments, are used to represent private assets without artificially smoothing expected volatility.

The following pages show how CEM calculates modeled risk, and comparisons of risk based on this standard risk measure.

CEM currently only models asset allocation risk (including currency and interest rate hedges), and does not specifically model active risk. The addition of an active risk model calculation is under consideration.

Comparison of your modeled risk levels to the U.S. Public universe



1. Modeled 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. Modeled 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 modeled asset risk

Before considering the benefit of diversification, the weighted average risk of the asset classes in your asset mix policy was 13.1%.

Calculation of your weighted asset class risk

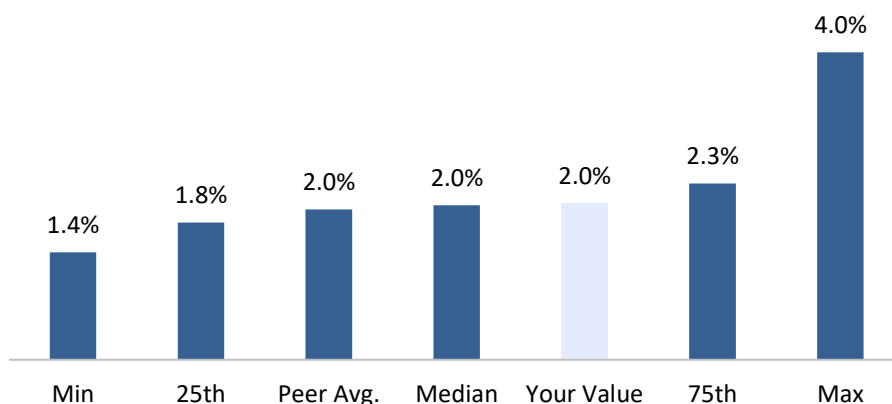
Asset Class	Policy weight	Risk ¹	Weighted risk
	(A)	(B)	(A X B)
Stock: U.S. small cap	6.1%	20%	1.2%
Stock: EAFE	3.8%	17%	0.6%
Stock: Emerging	1.5%	22%	0.3%
Stock: Global	34.6%	15%	5.3%
Bonds: U.S.	24.0%	5%	1.3%
Bonds: Emerging	1.0%	11%	0.1%
Bonds: High yield	1.0%	8%	0.1%
REITs	1.0%	20%	0.2%
Real estate ex-REITs	8.0%	10%	0.8%
Infrastructure	3.0%	14%	0.4%
Private equity - Diversified	9.0%	25%	2.2%
Private credit	7.0%	8%	0.5%
Weighted Total			13.1%

1. Risk is the standard deviation of returns for the asset class based on standard benchmarks used by CEM.

Reduction in modeled 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 15 of this section.

Diversification benefit: U.S. Public universe



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

Components of modeled asset risk

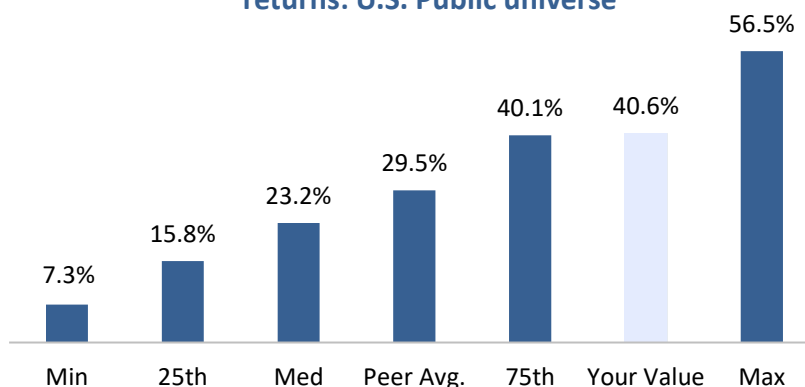
	You	Peer median*	Peer average	U.S. Public median*	U.S. Public average
Weighted asset risk	13.1%	13.5%	13.4%	13.5%	13.6%
Benefit of diversification	2.0%	2.0%	2.0%	2.0%	2.1%
Asset risk	11.1%	11.6%	11.4%	11.7%	11.6%

* 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.

Modeled 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.

Correlation between policy returns and liability returns: U.S. Public universe



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 modeled asset-liability risk

	You	Peer median	Peer average	U.S. Public median	U.S. Public average
Asset risk (R_A)	11.1%	11.6%	11.4%	11.7%	11.6%
Liability risk (R_L)	9.9%	9.9%	10.0%	10.2%	10.2%
Correlation between policy returns and liability returns (ρ_{AL})	40.6%	37.9%	29.5%	23.2%	27.0%
Asset-liability risk	11.5%	12.1%	12.7%	12.8%	13.2%

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	14.0	94%	12.2	69%	11.8	62%
Nominal Bonds	10.0	6%	13.3	31%	13.4	38%
Total		100%		100%		100%

Your liability proxy portfolio is a tool that:

- Helps you understand how the unsmoothed market value of your liabilities responds to changes in real and nominal interest rates.
- 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.
- 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 17-19 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	1	2%
Career Average	0	0%
Final/Highest/Best Avg	43	90%
Other	4	8%
Total	48	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

Retiree inflation protection	# of plans		
	Corporate	Public	Other
0%	0	24	0
>0% and <50%	0	1	0
50%	0	0	0
>50% and <100%	0	4	0
100%	0	16	0
Total	0	45	0

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 18 of this section). Your percentage of liabilities that relate to retired members was 59%.

	Your fund	Peer Average	U.S. Public Average
Active Members	58%	50%	52%
Retired Members	42%	50%	48%
Total	100%	100%	100%

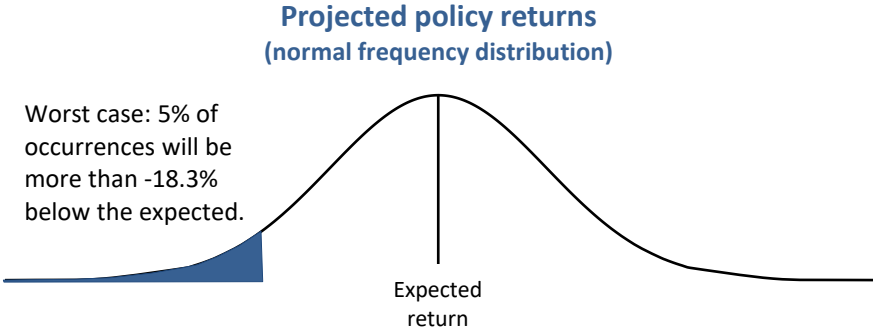
Projected worst case scenarios

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.

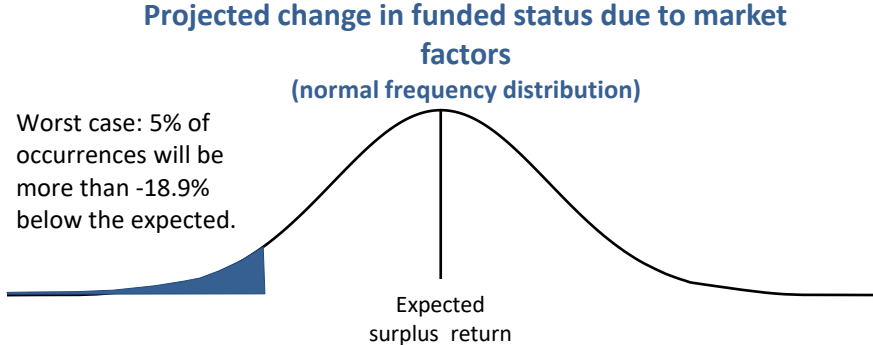
a) Worst case policy returns

Every year there is a 5% probability that your policy return will be worse than your expected policy return by more than -18.3% (-18.3% equals -1.65 X your asset risk of 11.1%). -18.3% 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 -18.9%. (-18.9% equals -1.65 X your asset-liability risk of 11.5%). -18.9% 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 -12.4% in 2022.

Historic policy returns - U.S. Public universe

	2023	2022	2021	2020	2019
90th %	15.4%	-9.5%	18.2%	13.0%	18.6%
75th %	13.8%	-10.9%	17.2%	11.5%	16.6%
Median	11.8%	-12.7%	15.7%	10.3%	14.9%
25th %	10.5%	-13.8%	14.3%	9.1%	13.2%
10th %	8.7%	-15.8%	12.5%	7.9%	10.3%
Average	12.1%	-12.6%	15.6%	10.4%	14.9%
Count	46	44	45	52	51
Peer Avg	12.0%	-12.2%	16.3%	10.6%	15.4%
Your Value	11.4%	-12.4%	15.2%	7.1%	15.9%

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 -7.1% in 2020.

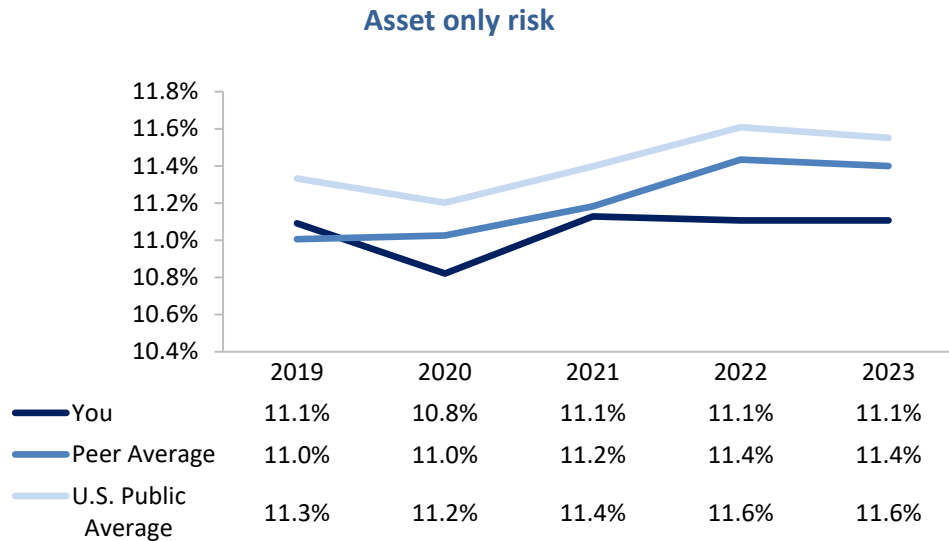
Historic changes in funded status caused by market factors - U.S. Public universe

	2023	2022	2021	2020	2019
90th %	10.1%	19.9%	21.3%	0.4%	7.9%
75th %	8.7%	16.9%	18.6%	-1.8%	7.0%
Median	7.5%	13.5%	15.2%	-3.5%	5.3%
25th %	6.0%	11.4%	12.6%	-4.8%	3.9%
10th %	5.1%	9.9%	9.9%	-6.6%	2.0%
Average	7.5%	14.4%	15.5%	-3.2%	5.2%
Count	40	37	40	47	46
Peer Avg	7.6%	14.8%	16.5%	-3.3%	5.3%
Your Value	8.7%	15.4%	14.3%	-7.1%	5.3%

Risk Trends - 2019 to 2023

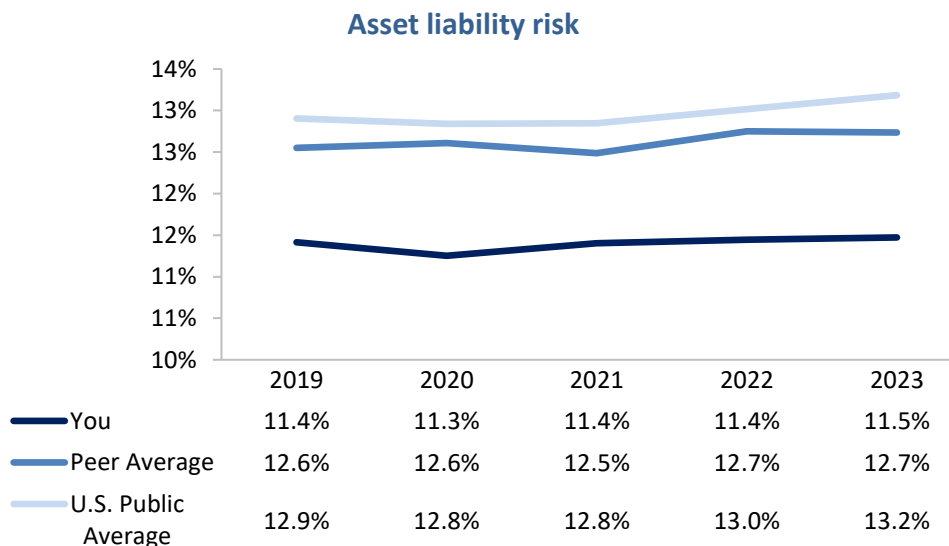
a) Asset risk trends

Asset risk will only change if policy asset mix changes. Between 2019 and 2023 the asset risk for your fund remained the same at 11.1%.

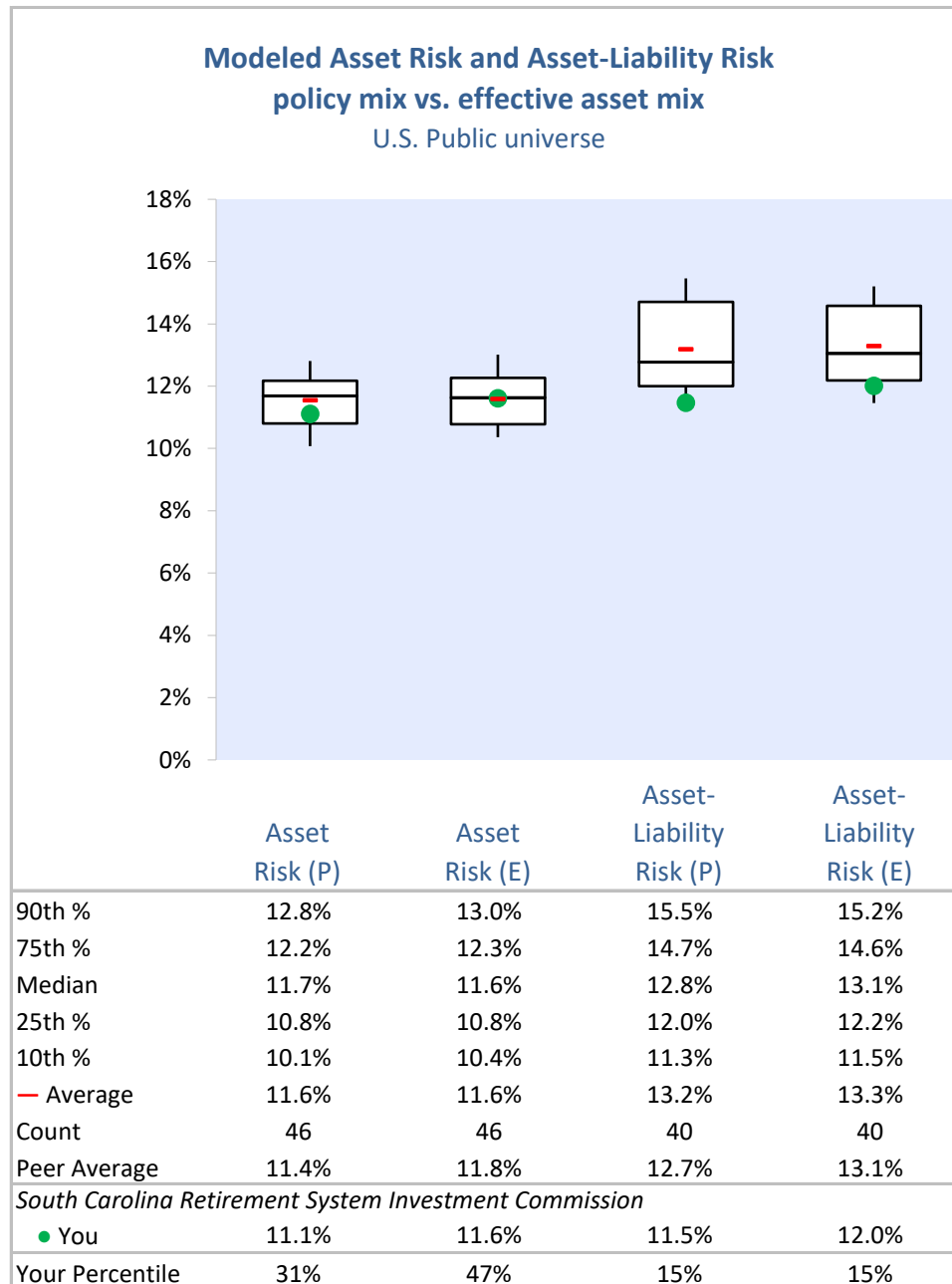


b) Asset-liability risk trends

Asset-liability risk will change if policy asset mix changes, or if the nature of your liabilities changes. Between 2019 and 2023 the asset-liability risk for your fund increased from 11.4% to 11.5%.



Risk levels based on the policy mix and the effective asset mix



P - calculated using your policy mix, same as the risk figures shown on page 3.

E - based on the effective asset mix (if a valid effective mix was provided, or the actual asset mix otherwise).

Measures of risk-adjusted performance

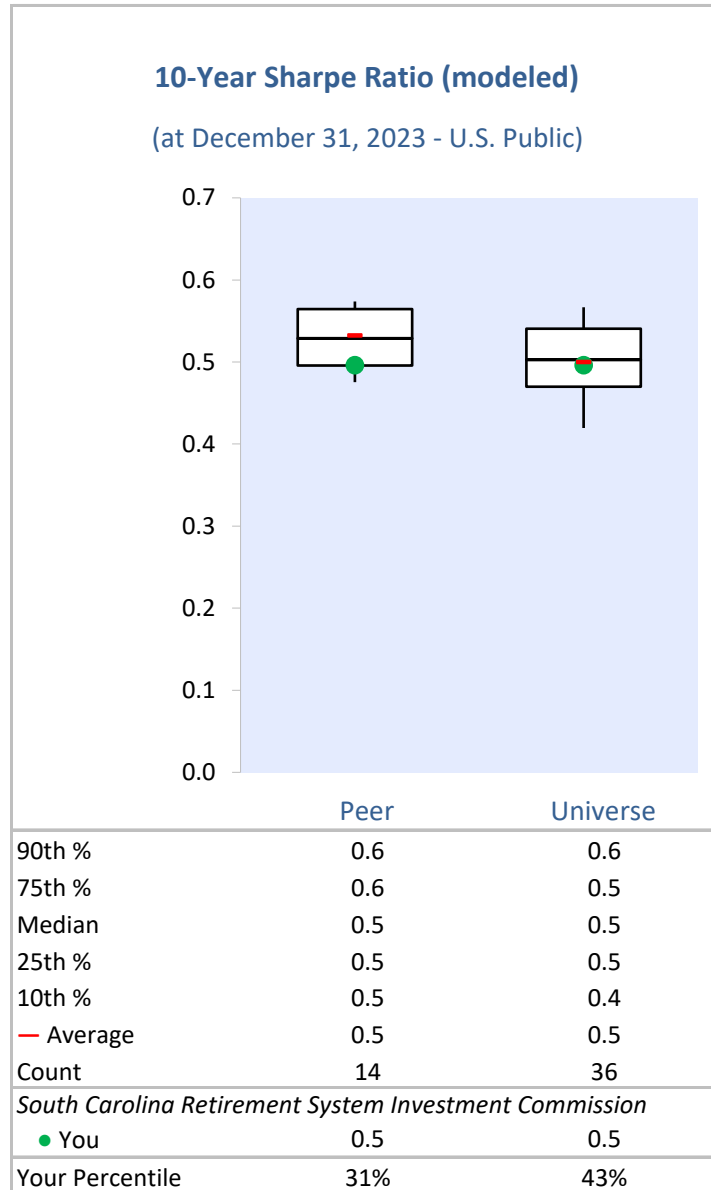
Risk-adjusted returns are used to assess performance relative to the amount of risk taken. Two of the popular industry measures of risk-adjusted returns are: (i) the Sharpe ratio (return less risk-free return per unit of risk), and (ii) the Information ratio (return less benchmark return per unit of risk).

The unit of risk used in both Sharpe ratios and information ratios is volatility, i.e., the standard deviation of excess returns.

As discussed on page 2, of this section calculating the volatility from the standard deviation of historic returns (i.e., realized risk) has challenges. Likewise, modeled (expected) risk also suffers from limitations around estimation of active risk and is not perfect.

Therefore, CEM suggests looking at comparisons of risk-adjusted returns with both modeled (expected) and realized (historic) returns.

Comparison of your risk-return levels to the U.S. Public universe - modeled Sharpe ratio

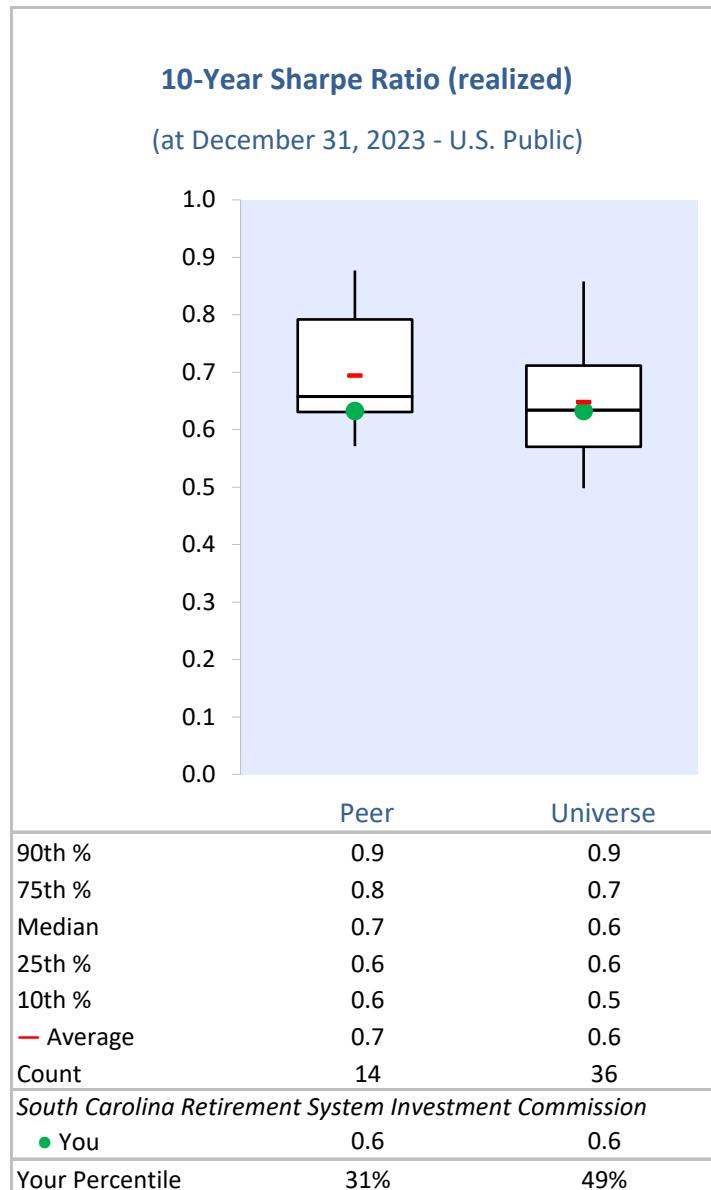


The Sharpe ratio is a measure of your portfolio's excess return compared to the expected volatility of your portfolio. It is calculated using your 10-year net return, less the 10-year risk-free rate of 1.28%, divided by your 10-year asset risk¹.

Your Sharpe ratio for the past 10-year period of 0.50 is similar to the universe median of 0.50.

1. The volatility used to calculate the Sharpe ratio 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.

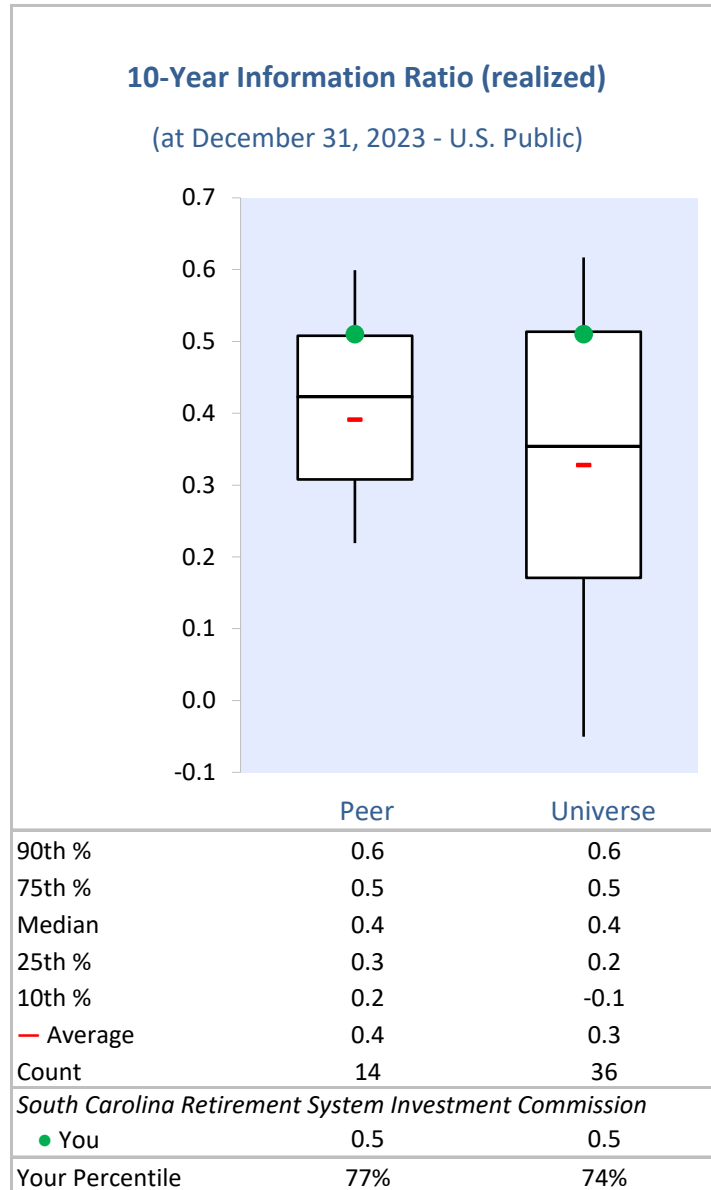
Comparison of your risk-return levels to the U.S. Public universe - realized Sharpe ratio



The Sharpe ratio (realized) is a measure of your portfolio's excess return compared to its realized volatility. It is calculated using your 10-year excess return, which is the 10-year net return less the 10-year risk-free rate of 1.28%, divided by the 10-year standard deviation of excess return.

Your Sharpe ratio for the past 10-year period of 0.63 is similar to the universe median of 0.66.

Comparison of your risk-return levels to the U.S. Public universe - realized Information ratio



The Information ratio is a measure of your active return¹ compared to its tracking error².

Your information ratio for the past 10-year period of 0.51 is above the universe median of 0.35.

1. Active return is the difference between your net return and policy return, also known as your net value added.
2. Tracking error is the volatility or standard deviation of your net value added.

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.

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.

Retirees as a % of Active + Retirees	% Liabilities Relating to Retirees
0%	0%
10%	22%
20%	35%
30%	45%
40%	55%
50%	63%
60%	71%
70%	79%
80%	86%
90%	93%
100%	100%

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 59%. 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.

$$\begin{aligned} &\text{Percentage change in pension liability cost} \\ &= (- \text{Modified duration relative to change in real yields} \times \text{change in real yields}) \\ &+ (- \text{Modified duration relative to change in nominal yields} \times \text{change in nominal yields}) \end{aligned}$$

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

$$\begin{aligned} &\text{Modified duration relative to changes in real yields} \\ &= 10 \times [\text{Inflation protection for active members} \times (1 - \% \text{ of liabilities relating to retirees}) \\ &+ \text{Inflation protection for retirees} \times (1 - \% \text{ of liabilities relating to retirees}/4) \\ &+ (\text{Inflation protection for retirees}/10) \times (1.5 - 0.5 \times \% \text{ liabilities relating to retirees})] \end{aligned}$$

$$\begin{aligned} &\text{Modified duration relative to changes in nominal yields} \\ &= 10 \times [(2 - 5 \times \% \text{ Liabilities relating to retirees}/4 - \text{inflation protection for actives} \times \\ &\quad (1 - \% \text{ liabilities relating to retirees}) \\ &- (\text{Inflation protection for retirees}/10) \times (8.5 - 2 \times \% \text{ liabilities relating to retirees}) \\ &- (\text{Inflation protection for retirees}/10) \times (1.5 - 0.5 \times \% \text{ liabilities relating to retirees})] \end{aligned}$$

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 20 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	
2023	3.87	0.03	1.99	0.22	4.12
2022	3.83	2.33	1.76	2.25	8.00
2021	1.50	0.59	-0.49	-0.05	4.70
2020	0.91	-1.00	-0.44	-1.01	1.23
2019	1.91	-0.78	0.57	-0.64	1.81

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 - Correlation Matrix

	Stock: U.S. small cap	Stock: EAFE	Stock: Emerging	Stock: Global	Bonds: U.S.	Bonds: Emerging	Bonds: High yield	Real Assets: REITs	Real Assets: Real estate ex-REITs	Real Assets: Infrastructure	Private equity - Diversified	Private credit	Nominal Bond: Duration 10	Nominal Bond: Duration 9	Real Return Bond: Duration 14	Real Return Bond: Duration 15
Stock: U.S. small cap	1.00	0.63	0.66	0.78	0.15	0.51	0.63	0.66	0.62	0.50	0.86	0.65	-0.07	-0.07	0.19	0.19
Stock: EAFE	0.63	1.00	0.71	0.95	0.19	0.57	0.55	0.59	0.57	0.60	0.87	0.67	0.02	0.03	0.28	0.28
Stock: Emerging	0.66	0.71	1.00	0.77	0.11	0.70	0.59	0.50	0.47	0.49	0.75	0.63	-0.07	-0.07	0.28	0.27
Stock: Global	0.78	0.95	0.77	1.00	0.19	0.61	0.64	0.63	0.61	0.66	0.90	0.70	-0.01	-0.01	0.31	0.30
Bonds: U.S.	0.15	0.19	0.11	0.19	1.00	0.41	0.31	0.28	0.49	0.18	0.22	0.33	0.92	0.93	0.83	0.83
Bonds: Emerging	0.51	0.57	0.70	0.61	0.41	1.00	0.61	0.48	0.52	0.46	0.62	0.63	0.25	0.24	0.59	0.58
Bonds: High yield	0.63	0.55	0.59	0.64	0.31	0.61	1.00	0.60	0.60	0.47	0.76	0.97	0.07	0.07	0.35	0.34
Real Assets: REITs	0.66	0.59	0.50	0.63	0.28	0.48	0.60	1.00	0.95	0.48	0.77	0.62	0.09	0.09	0.37	0.37
Real Assets: Real estate ex-REITs	0.62	0.57	0.47	0.61	0.49	0.52	0.60	0.95	1.00	0.50	0.74	0.64	0.29	0.29	0.52	0.52
Real Assets: Infrastructure	0.50	0.60	0.49	0.66	0.18	0.46	0.47	0.48	0.50	1.00	0.56	0.49	0.02	0.01	0.34	0.34
Private equity - Diversified	0.86	0.87	0.75	0.90	0.22	0.62	0.76	0.77	0.74	0.56	1.00	0.78	-0.06	-0.06	0.27	0.27
Private credit	0.65	0.67	0.63	0.70	0.33	0.63	0.97	0.62	0.64	0.49	0.78	1.00	0.05	0.05	0.39	0.38
Nominal Bond: Duration 10	-0.07	0.02	-0.07	-0.01	0.92	0.25	0.07	0.09	0.29	0.02	-0.06	0.05	1.00	1.00	0.78	0.78
Nominal Bond: Duration 9	-0.07	0.03	-0.07	-0.01	0.93	0.24	0.07	0.09	0.29	0.01	-0.06	0.05	1.00	1.00	0.78	0.78
Real Return Bond: Duration 14	0.19	0.28	0.28	0.31	0.83	0.59	0.35	0.37	0.52	0.34	0.27	0.39	0.78	0.78	1.00	1.00
Real Return Bond: Duration 15	0.19	0.28	0.27	0.30	0.83	0.58	0.34	0.37	0.52	0.34	0.27	0.38	0.78	0.78	1.00	1.00

Correlation Matrix of Common Asset Classes in U.S. Public universe

	Stock: U.S. broad/all	Stock: U.S. large cap	Stock: U.S. small cap	Stock: EAFE	Stock: Emerging	Stock: Global	Stock: ACWI x U.S.	Bonds: High yield	Bonds: Long bonds	Bonds: Other	Bonds: Cash	Real Assets: Real estate ex-REITs	Real Assets: Infrastructure	Hedge funds	Private equity - Diversified	Private credit	Nominal Bond: Duration 10	Nominal Bond: Duration 12	Real Return Bond: Duration 10	Real Return Bond: Duration 11
Stock: U.S. broad/all	1.00	0.99	0.89	0.70	0.68	0.91	0.78	0.63	0.23	0.23	0.02	0.62	0.67	0.82	0.89	0.68	0.03	0.04	0.19	0.20
Stock: U.S. large cap	0.99	1.00	0.82	0.76	0.66	0.91	0.77	0.63	0.20	0.21	0.02	0.61	0.69	0.81	0.88	0.66	0.02	0.02	0.19	0.20
Stock: U.S. small cap	0.89	0.82	1.00	0.63	0.66	0.78	0.70	0.63	0.14	0.15	0.00	0.62	0.50	0.72	0.86	0.65	-0.07	-0.06	0.13	0.13
Stock: EAFE	0.70	0.76	0.63	1.00	0.71	0.95	0.99	0.55	0.20	0.19	0.03	0.57	0.60	0.88	0.87	0.67	0.02	0.02	0.23	0.23
Stock: Emerging	0.68	0.66	0.66	0.71	1.00	0.77	0.78	0.59	0.11	0.11	0.01	0.47	0.49	0.78	0.75	0.63	-0.07	-0.07	0.24	0.24
Stock: Global	0.91	0.91	0.78	0.95	0.77	1.00	0.96	0.64	0.18	0.19	-0.02	0.61	0.66	0.88	0.90	0.70	-0.01	-0.01	0.23	0.23
Stock: ACWI x U.S.	0.78	0.77	0.70	0.99	0.78	0.96	1.00	0.60	0.17	0.18	-0.03	0.57	0.59	0.89	0.87	0.69	-0.02	-0.02	0.25	0.24
Bonds: High yield	0.63	0.63	0.63	0.55	0.59	0.64	0.60	1.00	0.30	0.31	0.01	0.60	0.47	0.70	0.76	0.97	0.07	0.07	0.32	0.32
Bonds: Long bonds	0.23	0.20	0.14	0.20	0.11	0.18	0.17	0.30	1.00	0.94	0.15	0.49	0.22	0.32	0.18	0.32	0.91	0.92	0.79	0.80
Bonds: Other	0.23	0.21	0.15	0.19	0.11	0.19	0.18	0.31	0.94	1.00	0.29	0.49	0.18	0.34	0.22	0.33	0.92	0.91	0.81	0.82
Bonds: Cash	0.02	0.02	0.00	0.03	0.01	-0.02	-0.03	0.01	0.15	0.29	1.00	0.00	-0.09	-0.02	-0.06	-0.06	0.18	0.16	0.05	0.04
Real Assets: Real estate ex-REITs	0.62	0.61	0.62	0.57	0.47	0.61	0.57	0.60	0.49	0.49	0.00	1.00	0.50	0.64	0.74	0.64	0.29	0.29	0.52	0.52
Real Assets: Infrastructure	0.67	0.69	0.50	0.60	0.49	0.66	0.59	0.47	0.22	0.18	-0.09	0.50	1.00	0.56	0.56	0.49	0.02	0.04	0.21	0.22
Hedge funds	0.82	0.81	0.72	0.88	0.78	0.88	0.89	0.70	0.32	0.34	-0.02	0.64	0.56	1.00	0.82	0.74	0.09	0.09	0.45	0.44
Private equity - Diversified	0.89	0.88	0.86	0.87	0.75	0.90	0.87	0.76	0.18	0.22	-0.06	0.74	0.56	0.82	1.00	0.78	-0.06	-0.08	0.31	0.30
Private credit	0.68	0.66	0.65	0.67	0.63	0.70	0.69	0.97	0.32	0.33	-0.06	0.64	0.49	0.74	0.78	1.00	0.05	0.05	0.37	0.37
Nominal Bond: Duration 10	0.03	0.02	-0.07	0.02	-0.07	-0.01	-0.02	0.07	0.91	0.92	0.18	0.29	0.02	0.09	-0.06	0.05	1.00	0.99	0.77	0.78
Nominal Bond: Duration 12	0.04	0.02	-0.06	0.02	-0.07	-0.01	-0.02	0.07	0.92	0.91	0.16	0.29	0.04	0.09	-0.08	0.05	0.99	1.00	0.75	0.77
Real Return Bond: Duration 10	0.19	0.19	0.13	0.23	0.24	0.23	0.25	0.32	0.79	0.81	0.05	0.52	0.21	0.45	0.31	0.37	0.77	0.75	1.00	1.00
Real Return Bond: Duration 11	0.20	0.20	0.13	0.23	0.24	0.23	0.24	0.32	0.80	0.82	0.04	0.52	0.22	0.44	0.30	0.37	0.78	0.77	1.00	1.00

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Appendices

Appendix A - Data Summary

Appendix B - Data Integrity

Appendix C - Glossary of terms

Appendix A - Data Summary

South Carolina Retirement System Investment Commission

Plan Info	2023	2022	2021	2020	2019
Survey Preparer	Jon Rychener	Jon Rychener	Kevin Reinhard	Kevin Reinhard	Kevin Reinhard
Additional Contact	Andrew Chernick	Andrew Chernick	Jon Rychener	Jon Rychener	Jon Rychener
Type of fund (corporate, public, other)	Public	Public	Public	Public	Public
Total fund size (\$mils) as at December 31	42,500.0	38,158.0	41,654.2	35,611.8	33,502.8
Asset-class level holdings provided on survey are: year end or average?	Average	Average	Average	Average	Average
Total return for year ended	11.66%	-7.23%	18.68%	8.19%	16.81%
Is the return net or gross?	Net of manager fees	Net of manager fees	Net of manager fees	Net of manager fees	Net of manager fees
Total fund policy or benchmark return	10.82%	-11.23%	15.07%	8.35%	17.05%

Ancillary Data	2023	2022	2021	2020	2019
What is your hedging policy for: Foreign Holdings					
What were your actuarial fees in 000s?	263	206	260	271	405
How many plan members/beneficiaries do you have:					
Active?	246,075	239,874	238,096	241,285	240,009
Active (no-accrual)?					
Retired?	180,643	177,339	173,770	171,280	168,851
Other?	251,489	239,252	229,607	219,515	210,922
What type of plan(s) do you have?	Final Average	Final Average	Final Average	Final Average	Final Average
To what extent are your retired members' benefits indexed to inflation?					
Contractual %	100%	100%	100%	100%	100%
If the indexation is subject to a cap, describe the cap	For SCRS and PORS,	For SCRS and PORS,	For SCRS and PORS,	For SCRS and PORS,	For SCRS and PORS,
What % of the plan's liabilities pertain to retired members?	59%	60%	60%	59%	61%
Actuarial valuation assumptions for funding purposes:					
Liability discount rate	7.0%	7.0%	7.0%	7.3%	7.3%
Salary progression rate	3.0%	3.0%	3.0%	3.0%	3.0%
What was your actuarial assumption for expected rate of return?	7.0%	7.0%	7.0%	7.3%	7.3%

Appendix A - Data Summary: Policy Weights and Benchmarks

South Carolina Retirement System Investment Commission

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Asset Class	Year	Policy Weight	Benchmark	
			Description	Return
Stock - U.S. broad/all	2023			
	2021		MSCI US IMI Net	
	2020	23.9	MSCI US IMI Net	20.7
	2019	16.3	MSCI US IMI Net	26.6
Stock - U.S. small cap	2023	6.1	MSCI US Small Cap Net Index	17.9
	2022	6.1	MSCI US Small Cap Net Index	-17.6
	2021	3.0	MSCI US Small Cap Net Index	19.1
	2020	2.9	MSCI US Small Cap Net Index	35.8
Stock - EAFE	2023	3.8	MSCI World Ex US Net Index	15.6
	2022	3.8	MSCI World Ex US Net Index	-14.3
	2021	2.0	MSCI World Ex US Net Index	11.1
	2020		MSCI World Ex US Net Index	10.7
Stock - Emerging	2023	1.5	MSCI Emerging Market IMI Net	10.3
	2022	1.5	MSCI Emerging Market IMI Net	-19.8
	2021	5.2	MSCI Emerging Market IMI Net	18.8
	2020	6.2	MSCI Emerging Market IMI Net	18.3
	2019	6.6	MSCI Emerging Market IMI Net	18.9
Stock - Global	2023	34.6	MSCI World Net Dividend	23.8
	2022	34.6	MSCI World Net Dividend	-18.1
	2021	35.8	MSCI World Net Dividend	18.5
	2020	12.2	MSCI World Net Dividend	15.9
	2019	18.3	MSCI World Net Dividend	27.7
Stock - ACWI x U.S.	2023			
	2021		MSCI ACWI x/US Net	11.1
	2020	2.2	MSCI ACWI x/US Net	10.7
	2019	3.6	MSCI ACWI x/US Net	21.5
Fixed income - U.S.	2023	24.0	Barclays US Aggregate	5.5
	2022	24.0	Barclays US Aggregate	-13.0
	2021	24.0	Barclays US Aggregate	-1.5
	2020	26.0	Barclays US Aggregate	7.5
	2019	11.0	Barclays US Aggregate	8.7
Fixed income - Emerging	2023	1.0	JP Morgan EMBI GD	11.1
	2022	1.0	JP Morgan EMBI GD	-6.9
	2021	1.0	JP Morgan EMBI GD	-1.8
	2020		50% JPM EMBI Global Diversified/50% JPM-GBI-EM Global	5.3
	2019	4.0	50% JPM EMBI Global Diversified/50% JPM-GBI-EM Global	14.3
Fixed income - High yield	2023	1.0	50%Bar U.S. High Yield 2% / 50%S&P LSTA Leveraged Loan	13.4
	2022	1.0	50%Bar U.S. High Yield 2% / 50%S&P LSTA Leveraged Loan	-6.0
	2021	1.0	50%Bar U.S. High Yield 2% / 50%S&P LSTA Leveraged Loan	5.2
	2020		50%Bar U.S. High Yield 2% / 50%S&P LSTA Leveraged Loan	5.1
	2019	4.4	50%Bar U.S. High Yield 2% / 50%S&P LSTA Leveraged Loan	11.5
Fixed income - Other	2023			
Cash	2023		ICE LIBOR USD 3 Month Index	5.4
	2022		ICE LIBOR USD 3 Month Index	4.9
	2021		ICE LIBOR USD 3 Month Index	0.2
	2020		BofA Merrill Lynch 3 Month US Treasury Bill GOO1	0.7
	2019	3.0	BofA Merrill Lynch 3 Month US Treasury Bill GOO1	2.3
REITs	2023	1.0	Your REIT benchmark	13.7
	2022	1.0	Your REIT benchmark	-24.4
	2021	1.0	Your REIT benchmark	43.2
	2020		Your REIT benchmark	-8.0
	2019	1.5	Your REIT benchmark	26.0
Real estate ex-REITs	2023	8.0	NCREIF ODCE Index	-12.7
	2022	8.0	NCREIF ODCE Index	6.5
	2021	8.0	NCREIF ODCE Index	21.1
	2020	9.0	NCREIF ODCE Index	0.3
	2019	7.5	NCREIF ODCE Index + 100 bps	5.4
Infrastructure	2023	3.0	Dow Jones Brookfield Global Infrastructure Net Index	4.5
	2022	3.0	Dow Jones Brookfield Global Infrastructure Net Index	-6.6
	2021	3.0	Dow Jones Brookfield Global Infrastructure Net Index	19.9
	2020	3.0	Dow Jones Brookfield Global Infrastructure Net Index	-7.0
	2019	3.0	Dow Jones Brookfield Global Infrastructure Net Index	28.7
Hedge funds	2023		50% MSCI World Net/50% Barclays US Aggregate	14.4
	2022		50% MSCI World Net/50% Barclays US Aggregate	-15.3
	2021		50% MSCI World Net/50% Barclays US Aggregate	8.5
	2020		50% MSCI World Net/50% Barclays US Aggregate	11.9
	2019	1.0	50% MSCI World Net/50% Barclays US Aggregate	18.2

Appendix A - Data Summary: Policy Weights and Benchmarks

South Carolina Retirement System Investment Commission

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Asset Class	Year	Policy Weight	Benchmark	
			Description	Return
Global TAA	2023		50% MSCI World Net/50% Barclays US Aggregate	14.4
	2022		50% MSCI World Net/50% Barclays US Aggregate	-15.3
	2021		50% MSCI World Net/50% Barclays US Aggregate	8.5
	2020		50% MSCI World Net/50% Barclays US Aggregate	11.9
	2019	7.0	50% MSCI World Net/50% Barclays US Aggregate	18.2
Private equity - Diversified	2023	9.0	Burgiss ALL PE Universe	3.5
	2022	9.0	Burgiss ALL PE Universe	-3.4
	2021	9.0	Burgiss ALL PE Universe	50.5
	2020	7.6	Burgiss ALL PE Universe	17.1
	2019	6.2	80% Russell 3000 / 20% MSCI EAFE Lagged + 300 Bps	5.1
Venture capital	2023		Burgiss ALL PE Universe	3.5
LBO	2023		Burgiss ALL PE Universe	3.5
Private equity - Other	2023		Burgiss ALL PE Universe	3.5
Private credit	2023	7.0	S&P/LSTA + 150 Bps 3 Month Lag	14.6
	2022	7.0	S&P/LSTA + 150 Bps 3 Month Lag	-1.0
	2021	7.0	S&P/LSTA + 150 Bps 3 Month Lag	9.9
	2020	7.0	S&P/LSTA + 150 Bps 3 Month Lag	2.6
	2019	6.6	S&P/LSTA + 150 Bps 3 Month Lag	4.6

Appendix A Data Summary - Assets, Returns and Costs: Public Market

South Carolina Retirement System Investment Commission

	Imputed cost for missing fees		Fee estimate from LP details
	Forward fill from last year's fees		Override for offsets netted from LP fees

Asset Class/Style	Year	Asset (\$millions)	Net Return %	Cost (\$000)				Cost (bps)					
				Internal & Other	Base Fees	Perf Fees	Total	Internal & Other	Base Fees	Perf Fees	Total		
Stock - U.S. broad/all	External passive	2023											
		2022											
		2021											
		2020	803.9		211.5	87.6		299.1	2.6	1.1		3.7	
	External active	2023											
		2022											
		2021	835.3		179.0	-	-	179.0	2.1	-	-	2.1	
		2020	956.6	-11.66	251.7	2,887.9	-	3,139.6	2.6	30.2	-	32.8	
2019	2,792.7	19.62	779.2	11,857.7		12,636.9	2.8	42.5		45.2			
Stock - U.S. small cap	External passive	2023	1,045.9		329.9	578.4		908.3	3.2	5.5		8.7	
		2022	1,059.4	-17.14	243.2	582.5		825.7	2.3	5.5		7.8	
		2021	1,192.8	19.39	255.7	490.5		746.2	2.1	4.1		6.3	
		2020	618.0		162.6	327.0		489.6	2.6	5.3		7.9	
Stock - EAFE	External passive	2023	706.7		222.9	246.7		469.6	3.2	3.5		6.6	
		2022	694.4	-20.00	161.0	242.9		403.9	2.3	3.5		5.8	
		2021	1,228.6	11.45	263.3	217.8		481.1	2.1	1.8		3.9	
		2020	629.6		165.7	191.5		357.2	2.6	3.0		5.7	
Stock - Emerging	External passive	2023	263.7		83.2	178.1		261.3	3.2	6.8		9.9	
		2022											
		2021											
		2020	551.4		145.1	148.2		293.3	2.6	2.7		5.3	
	External active	2023											
		2022	228.0	-18.00	52.1	153.8		205.9	2.3	6.7		9.0	
		2021	650.7	17.99	139.5	131.7		271.2	2.1	2.0		4.2	
		2020	1,401.2	11.45	368.7	3,978.8	-	4,347.4	2.6	28.4	-	31.0	
2019	1,973.6	18.75	518.7	5,554.0		6,072.7	2.6	28.1		30.8			
Stock - Global	Internal passive	2023	1.0		0.3			0.3	3.2			3.2	
		2022											
	External passive	2023	14,537.8		4,584.9	2,481.3		7,066.2	3.2	1.7		4.9	
		2022	13,733.3	-18.10	2,978.7	2,332.1		5,310.8	2.2	1.7		3.9	
		2021	14,365.6	18.89	3,078.9	2,082.0		5,160.9	2.1	1.4		3.6	
		2020	6,209.9	16.43	1,634.0	994.8		2,628.8	2.6	1.6		4.2	
		2019	2,549.9	27.84	664.8	533.5		1,198.3	2.6	2.1		4.7	
		External active	2023										
			2022										
			2021	6.7	-7.36	1.4	-	-	1.4	2.1	-	-	2.1
2020	1,108.4		50.73	291.7	2,656.7	-	2,948.4	2.6	24.0	-	26.6		
2019	2,908.7	25.74	797.1	5,484.9		6,281.9	2.7	18.9		21.6			
Stock - ACWI x U.S.	External active	2023											
		2022											
		2021	2.3	-9.49	0.5	-	-	0.5	2.1	-	-	2.1	
		2020	305.8	-28.21	80.5	1,387.8	-	1,468.3	2.6	45.4	-	48.0	
		2019	1,079.8	23.36	302.5	3,878.3		4,180.8	2.8	35.9		38.7	
Fixed income - U.S.													

Appendix A Data Summary - Assets, Returns and Costs: Public Market

South Carolina Retirement System Investment Commission

	Imputed cost for missing fees		Fee estimate from LP details
	Forward fill from last year's fees		Override for offsets netted from LP fees

Asset Class/Style	Year	Asset (\$millions)	Net Return %	Cost (\$000)				Cost (bps)				
				Internal & Other	Base Fees	Perf Fees	Total	Internal & Other	Base Fees	Perf Fees	Total	
Internal active	2023	11.3		3.6			3.6	3.2			3.2	
	2022	12.6	-0.20	2.8			2.8	2.2			2.2	
	2021	15.6	3.47	5.2			5.2	3.3			3.3	
	2020	19.9	5.53	5.8			5.8	2.9			2.9	
	2019	24.1	7.34	9.5			9.5	3.9			3.9	
External active	2023	397.0		125.2	1,666.5	-	1,791.7	3.2	42.0	-	45.1	
	2022	559.1	-12.37	96.7	1,283.0	-	1,379.7	1.7	22.9	-	24.7	
	2021	867.7	4.06	286.9	960.3	-	1,247.2	3.3	11.1	-	14.4	
	2020	722.5	10.33	190.1	1,578.4	-	1,768.5	2.6	21.8	-	24.5	
	2019	741.2	8.66	240.0	1,782.5		2,022.4	3.2	24.0		27.3	
Fixed income - Emerging External active	2023	4.6		1.5	10.4		11.9	3.2	22.5		25.7	
	2022	58.3	-9.60	12.6	135.6	-	148.2	2.2	23.3	-	25.4	
	2021	327.9	-3.82	70.3	172.0	-	242.3	2.1	5.2	-	7.4	
	2020	908.0	1.10	238.9	3,391.0	-	3,630.0	2.6	37.3	-	40.0	
	2019	1,158.4	13.23	416.6	4,987.5		5,404.0	3.6	43.1		46.7	
Fixed income - High yield External active	2023	1,206.3		380.4	5,048.2	-	5,428.6	3.2	41.8	-	45.0	
	2022	1,250.0	-4.40	288.4	5,197.4	-	5,485.8	2.3	41.6	-	43.9	
	2021	1,547.1	5.28	331.6	4,831.4	-	5,163.0	2.1	31.2	-	33.4	
	2020	1,381.0	4.00	363.4	5,601.2	-	5,964.6	2.6	40.6	-	43.2	
	2019	1,286.8	7.27	426.8	5,730.9		6,157.7	3.3	44.5		47.9	
Fixed income - Other External active	2023	183.2		57.8	136.1	-	193.9	3.2	7.4	-	10.6	
Cash	Internal active	2023	1,270.4		400.6		400.6	3.2			3.2	
		2022	564.7	2.10	181.2		181.2	3.2			3.2	
		2021										
		2020	1,162.4	0.09	339.9		339.9	2.9			2.9	
		2019	1,904.0	3.06	426.1		426.1	2.2			2.2	
	External active	2023	275.0		86.7	-	86.7	3.2	-	-	3.2	
		2022	465.1	-0.70	79.7	59.1	-	138.8	1.7	1.3	-	3.0
		2021	1,075.0	-0.11	230.4	57.6	-	288.0	2.1	0.5	-	2.7
		2020	963.5	-1.25	253.5	187.4	-	441.0	2.6	1.9	-	4.6
		2019	496.8	1.56	194.9	-	194.9	3.9	-		3.9	
REITs External active	2023	288.5		91.0	1,025.4		1,116.4	3.2	35.5		38.7	
	2022	352.9	-22.50	86.1	1,200.2	-	1,286.3	2.4	34.0	-	36.4	
	2021	409.8	44.09	87.8	933.4	-	1,021.2	2.1	22.8	-	24.9	
	2020	461.3	-1.28	121.4	1,529.9	-	1,651.3	2.6	33.2	-	35.8	
	2019	520.3	27.01	224.2	1,777.4	-	2,001.6	4.3	34.2	-	38.5	
Global TAA External active	2023	726.0		229.0	8,133.5	1,753.2	10,115.7	3.2	112.0	24.1	139.3	
	2022	665.3	12.30	199.8	8,806.4	33,819.8	42,826.0	3.0	132.4	508.3	643.7	
	2021	628.4	1.18	134.7	6,326.6	6,725.1	13,186.4	2.1	100.7	107.0	209.8	
	2020	1,276.9	-7.46	336.0	2,638.1	-	2,974.1	2.6	20.7	-	23.3	
	2019	2,663.6	20.28	758.2	4,389.9	-	5,148.1	2.8	16.5	-	19.3	

Appendix A Data Summary - Assets, Returns and Costs: Hedge Funds and Private Market

South Carolina Retirement System Investment Commission

	Imputed cost for missing fees		Fee estimate from LP details
	Forward fill from last year's fees		Override for offsets netted from LP fees

See page 11 for more details.

Asset Class/Style	Year	Asset (\$millions)	Fee basis (\$millions)	Net Return %	Cost (\$000)						
					Internal & Other	Base Fees	Perf Fees	Underlying fees		Total	
							Base	Perf	excl. perf	incl. perf	
Hedge funds	External active	2023	4,397.8		1,387.0	78,314.4	80,275.0			79,701.3	159,976.3
		2022	2,316.9	11.90	541.9	50,756.2	115,307.6			51,298.1	166,605.7
		2021	1,644.7	15.41	352.5	36,125.1	70,862.8			36,477.6	107,340.4
		2020	1,759.4	2.90	462.9	32,516.3	3,325.9			32,979.2	36,305.1
		2019	1,971.9	2.74	561.3	34,167.6	16,939.2			34,728.9	51,668.1
	Fund of funds	2023	11.6		3.6	-	3.6	144.6	121.4	148.2	273.3
		2022	2,075.0	8.90	469.2	7,705.9	-	18,724.7	21,698.8	26,899.9	48,598.7
		2021	2,469.7	10.99	529.3	9,122.0	-	24,699.0	41,162.9	34,350.3	75,513.2
		2020	1,431.9	16.18	376.8	7,695.3	-	8,003.9	6,619.3	16,076.0	22,695.2
		2019	1,246.9	7.08	426.5	6,605.4	-	7,015.7	6,783.0	14,047.7	20,830.6
Real estate ex-REITs	External active	2023	2,355.1	1,936.8		742.8	18,478.3	(2,630.1)		19,221.1	16,591.0
	Co-investment	2023	112.3	78.6		35.4	380.3	(755.1)		415.7	(339.4)
		2022	100.0	89.6	23.80	27.4	381.1	2,008.9		408.5	2,417.4
		2021	62.3	88.4	16.48	13.4	323.1	527.8		336.5	864.3
		2020	20.6	20.6	-0.03	5.4	148.0	364.5		153.5	518.0
		2019	0.6	0.6	28.63	0.4	-	-		0.4	0.4
	LP/Value add	2023	1,026.2	1,663.8		323.7	17,613.6	(26,049.1)		17,937.3	(8,111.8)
		2022	3,819.8	3,198.9	15.30	847.7	28,979.6	27,796.6		29,827.3	57,623.9
		2021	2,942.1	3,078.7	24.42	630.6	27,597.6	111,619.5		28,228.2	139,847.7
		2020	2,313.8	2,441.1	0.42	608.8	23,031.4	12,173.9		23,640.2	35,814.1
2019		2,358.7	2,830.7	5.64	547.5	27,103.6	15,690.9		27,651.1	43,342.0	
Infrastructure	External active	2023	569.8	641.7		179.7	4,223.4	2,879.9		4,403.1	7,283.0
		2022	356.0	350.0	7.96	86.2	3,073.1	2,465.0		3,159.3	5,624.3
		2021	1,024.0	1,271.3	12.75	219.5	6,631.0	5,891.0		6,850.5	12,741.5
		2020	916.1	1,231.5	0.37	241.0	6,997.5	1,377.0		7,238.5	8,615.5
		2019	830.0	1,110.1	26.51	236.3	4,081.9	-		4,318.2	4,318.2
	Co-investment	2023	206.4	193.6		65.1	369.5	-		434.6	434.6
		2022	182.3	192.3	2.00	48.2	372.1	(490.6)		420.3	(70.3)
		2021	83.2	85.8	9.41	17.8	180.0	488.0		197.8	685.8
		2020	35.2	35.2	3.19	9.3	78.1	2.3		87.4	89.7
		2019	578.8	688.6		182.6	7,339.4	10,143.3		7,521.9	17,665.2
LP/Value add	2022	720.1	1,078.1	0.75	171.1	11,150.7	17,794.3		11,321.8	29,116.0	
Private equity - Diversified	Co-investment	2023	210.0	203.8		66.2	-	-		66.2	66.2
		2022	2,002.8	1,942.2	8.20	518.0	4,462.4	18,321.2		4,980.4	23,301.6
		2021	1,292.8	1,726.7	39.01	277.1	2,118.0	15,383.2		2,395.1	17,778.3
		2020	727.0	727.0	8.22	229.3	960.3	892.5		1,189.5	2,082.0
		2019	550.2	550.2	12.89	156.6	2,945.9	3,620.1		3,102.5	6,722.6
	LP/Value add	2023	130.9	281.4		41.3	2,464.3	(209.3)		2,505.6	2,296.3
		2022	2,783.2	3,627.6	5.80	679.4	57,539.4	(2,608.8)		58,218.8	55,610.0
		2021	2,133.3	3,420.9	47.37	457.2	54,587.1	101,809.3		55,044.3	156,853.6
		2020	1,047.0	2,479.9	2.36	277.7	39,267.3	18,736.3		39,544.9	58,281.3
		2019	1,344.7	2,143.2	6.32	382.8	33,292.1	55,870.5		33,674.8	89,545.3
Fund of funds	2023	218.7	225.0		69.0	1,116.1	95.8	3,374.6	2,296.8	4,559.7	6,952.3
	2022	813.9	723.2	0.50	199.7	3,912.4	(8,325.4)	11,136.8	13,022.4	15,248.9	19,945.9

Appendix A Data Summary - Assets, Returns and Costs: Hedge Funds and Private Market

South Carolina Retirement System Investment Commission

	Imputed cost for missing fees		Fee estimate from LP details
	Forward fill from last year's fees		Override for offsets netted from LP fees

See page 11 for more details.

Asset Class/Style	Year	Asset (\$millions)	Fee basis (\$millions)	Net Return %	Cost (\$000)							
					Internal & Other	Base Fees	Perf Fees	Underlying fees		Total		
								Base	Perf	excl. perf	incl. perf	
Fund of funds (cont'd)	2021	482.1	527.8	82.95	103.3	3,430.2	23,019.2	8,127.5	12,052.0	11,661.0	46,732.2	
	2020	329.9	506.5	18.62	84.6	4,578.8	9,723.6	7,951.3	6,334.8	12,614.7	28,673.1	
	2019	401.0	245.0	5.37	114.2	2,994.6	1,084.5	3,846.8	7,418.7	6,955.6	15,458.7	
Venture capital												
Co-investment	2023	47.6	57.3		15.0	-	-			15.0	15.0	
LP/Value add	2023	183.1	408.0		57.8	4,646.0	1,939.3			4,703.8	6,643.0	
Fund of funds	2023	519.6	534.0		163.9	2,099.9	(2,085.3)	8,545.1	3,637.4	10,808.9	12,361.1	
LBO												
Co-investment	2023	1,969.5	1,539.3		621.1	3,937.4	8,020.5			4,558.6	12,579.1	
LP/Value add	2023	1,504.6	1,936.5		474.6	19,660.3	32,858.8			20,134.8	52,993.6	
Fund of funds	2023	140.1	138.4		44.2	906.4	665.7	2,076.5	1,821.7	3,027.0	5,514.5	
Private equity - Other												
Co-investment	2023	142.6	151.0		45.0	300.0	(496.7)			345.0	(151.8)	
LP/Value add	2023	472.8	543.3		149.1	6,330.9	7,378.0			6,480.0	13,858.0	
Fund of funds	2023	8.4	40.9		2.6	331.2	-	490.6	50.3	824.5	874.8	
Private credit												
Co-investment	2023	217.9	278.3		68.7	1,263.9	(3,349.0)			1,332.6	(2,016.4)	
	2022	1,275.0	691.7	3.80	352.9	5,227.7	3,713.3			5,580.6	9,293.9	
	2021	548.6	634.9	20.97	117.6	1,331.0	(1,335.7)			1,448.6	112.9	
	2020	296.7	296.7	1.78	40.1	2,426.6	485.6			2,466.7	2,952.3	
	2019	46.2	46.2	-1.66	13.1	-	-			13.1	13.1	
	LP/Value add	2023	3,433.0	3,783.6		1,082.7	28,281.1	37,070.5			29,363.7	66,434.3
		2022	2,502.1	3,704.8	4.21	550.6	24,852.5	14,167.8			25,403.1	39,570.9
		2021	2,634.5	3,588.2	19.31	564.7	19,788.4	28,099.9			20,353.1	48,452.9
		2020	2,199.1	3,998.9	-0.72	578.6	26,915.1	909.2			27,493.7	28,402.9
		2019	1,963.2	4,096.7	6.60	558.8	29,748.3	9,198.2			30,307.2	39,505.3

1. External Active' style is alternatively named 'Fund (Evergreen, Core)' on the survey. This category typically includes core funds having perpetual or undefined lifetimes and operated by an external manager who invests in opportunities where a large part of expected return is income or yield. They are often described as core or core+ investments. Include funds-of-one and separately managed accounts (SMAs) if they are operated by an external manager.

2. LP' style is alternatively named 'Fund (LP, Value Add)' on the survey. This category typically includes value-add or opportunistic funds having a pre-defined term and a GP/LP structure. Typically, the investment period is less than 12 years. They are operated by an external manager who invests in opportunities where a large part of the expected return is capital gains due to repositioning or redevelopment.

Appendix A Data Summary - Costs in bps: Hedge Funds and Private Market

South Carolina Retirement System Investment Commission

	Imputed cost for missing fees		Fee estimate from LP details
	Forward fill from last year's fees		Override for offsets netted from LP fees

(See page 11 for more details)

Asset Class/Style	Year	Cost on NAV (bps)						Cost on fee basis (bps)								
		& Other	Base Fees	Perf Fees	Underlying fees Base	Perf	Total excl. perf incl. perf	& Other	Base Fees	Perf Fees	Underlying fees Base	Perf	Total excl. perf incl. perf			
Hedge funds	External active	2023	3.2	178.1	182.5		181.2	363.8	3.2	178.1	182.5		181.2	363.8		
		2022	2.3	219.1	497.7		221.4	719.1	2.3	219.1	497.7		221.4	719.1		
		2021	2.1	219.6	430.9		221.8	652.6	2.1	219.6	430.9		221.8	652.6		
		2020	2.6	184.8	18.9		187.5	206.4	2.6	184.8	18.9		187.5	206.4		
		2019	2.8	173.3	85.9		176.1	262.0	2.8	173.3	85.9		176.1	262.0		
	Fund of funds	2023	3.2	-	3.1	125.0	105.0	128.2	236.3	3.2	-	3.1	125.0	105.0	128.2	236.3
		2022	2.3	37.1	-	90.2	104.6	129.6	234.2	2.3	37.1	-	90.2	104.6	129.6	234.2
		2021	2.1	36.9	-	100.0	166.7	139.1	305.8	2.1	36.9	-	100.0	166.7	139.1	305.8
		2020	2.6	53.7	-	55.9	46.2	112.3	158.5	2.6	53.7	-	55.9	46.2	112.3	158.5
		2019	3.4	53.0	-	56.3	54.4	112.7	167.1	3.4	53.0	-	56.3	54.4	112.7	167.1
Real estate ex-REITs	External active	2023	3.2	78.5	(11.2)		81.6	70.4	3.8	95.4	(13.6)		99.2	85.7		
		Co-investment	2023	3.2	33.9	(67.3)		37.0	(30.2)	4.5	48.4	(96.0)		52.9	(43.2)	
			2022	2.7	38.1	200.9		40.9	241.7	3.1	42.5	224.1		45.6	269.7	
			2021	2.1	51.8	84.7		54.0	138.7	1.5	36.5	59.7		38.1	97.7	
			2020	2.6	71.8	176.7		74.4	251.1	2.6	71.8	176.7		74.4	251.1	
	LP/Value add	2019	7.3	-	-		7.3	7.3	7.3	-	-		7.3	7.3		
		2023	3.2	171.6	(253.8)		174.8	(79.0)	1.9	104.6	(154.8)		106.6	(48.2)		
		2022	2.2	75.9	72.8		78.1	150.9	2.6	90.6	86.9		93.2	180.1		
		2021	2.1	93.8	379.4		95.9	475.3	2.0	89.6	362.6		91.7	454.3		
		2020	2.6	99.5	52.6		102.2	154.8	2.5	94.3	49.9		96.8	146.7		
2019	2.3	114.9	66.5		117.2	183.8	1.9	95.7	55.4		97.7	153.1				
Infrastructure	External active	2023	3.2	74.1	50.5		77.3	127.8	2.8	65.8	44.9		68.6	113.5		
		2022	2.4	86.3	69.2		88.8	158.0	2.5	87.8	70.4		90.3	160.7		
		2021	2.1	64.8	57.5		66.9	124.4	1.7	52.2	46.3		53.9	100.2		
		2020	2.6	76.4	15.0		79.0	94.0	2.0	56.8	11.2		58.8	70.0		
		2019	2.8	49.2	-		52.0	52.0	2.1	36.8	-		38.9	38.9		
	Co-investment	2023	3.2	17.9	-		21.1	21.1	3.4	19.1	-		22.5	22.5		
		2022	2.6	20.4	(26.9)		23.1	(3.9)	2.5	19.4	(25.5)		21.9	(3.7)		
		2021	2.1	21.6	58.7		23.8	82.5	2.1	21.0	56.9		23.1	79.9		
	LP/Value add	2020	2.6	22.2	0.7		24.8	25.5	2.6	22.2	0.7		24.8	25.5		
		2023	3.2	126.8	175.2		129.9	305.2	2.7	106.6	147.3		109.2	256.5		
2022	2.4	154.9	247.1		157.2	404.4	1.6	103.4	165.0		105.0	270.1				
Private equity - Diversified	Co-investment	2023	3.2	-	-		3.2	3.2	3.3	-	-		3.3	3.3		
		2022	2.6	22.3	91.5		24.9	116.3	2.7	23.0	94.3		25.6	120.0		
		2021	2.1	16.4	119.0		18.5	137.5	1.6	12.3	89.1		13.9	103.0		
		2020	3.2	13.2	12.3		16.4	28.6	3.2	13.2	12.3		16.4	28.6		
		2019	2.8	53.5	65.8		56.4	122.2	2.8	53.5	65.8		56.4	122.2		
	LP/Value add	2023	3.2	188.2	(16.0)		191.4	175.4	1.5	87.6	(7.4)		89.0	81.6		
		2022	2.4	206.7	(9.4)		209.2	199.8	1.9	158.6	(7.2)		160.5	153.3		
		2021	2.1	255.9	477.2		258.0	735.3	1.3	159.6	297.6		160.9	458.5		
		2020	2.7	375.1	179.0		377.7	556.7	1.1	158.3	75.6		159.5	235.0		
		2019	2.8	247.6	415.5		250.4	665.9	1.8	155.3	260.7		157.1	417.8		
	Fund of funds	2023	3.2	51.0	4.4	154.3	105.0	208.5	317.8	3.1	49.6	4.3	150.0	102.1	202.7	309.0
		2022	2.5	48.1	(102.3)	136.8	160.0	187.4	245.1	2.8	54.1	(115.1)	154.0	180.1	210.9	275.8

Appendix A Data Summary - Costs in bps: Hedge Funds and Private Market

South Carolina Retirement System Investment Commission

Imputed cost for missing fees	Fee estimate from LP details
Forward fill from last year's fees	Override for offsets netted from LP fees

(See page 11 for more details)

Asset Class/Style	Year	Cost on NAV (bps)							Cost on fee basis (bps)						
		Internal & Other	Base Fees	Perf Fees	Underlying fees		Total		Internal & Other	Base Fees	Perf Fees	Underlying fees		Total	
					Base	Perf	excl. perf	incl. perf				Base	Perf	excl. perf	incl. perf
Fund of funds (cont'd)	2021	2.1	71.2	477.5	168.6	250.0	241.9	969.4	2.0	65.0	436.2	154.0	228.4	221.0	885.5
	2020	2.6	138.8	294.7	241.0	192.0	382.3	869.0	1.7	90.4	192.0	157.0	125.1	249.1	566.2
	2019	2.8	74.7	27.0	95.9	185.0	173.5	385.5	4.7	122.2	44.3	157.0	302.8	283.9	630.9
Venture capital															
Co-investment	2023	3.2	-	-			3.2	3.2	2.6	-	-			2.6	2.6
LP/Value add	2023	3.2	253.7	105.9			256.8	362.7	1.4	113.9	47.5			115.3	162.8
Fund of funds	2023	3.2	40.4	(40.1)	164.4	70.0	208.0	237.9	3.1	39.3	(39.0)	160.0	68.1	202.4	231.5
LBO															
Co-investment	2023	3.2	20.0	40.7			23.1	63.9	4.0	25.6	52.1			29.6	81.7
LP/Value add	2023	3.2	130.7	218.4			133.8	352.2	2.5	101.5	169.7			104.0	273.6
Fund of funds	2023	3.2	64.7	47.5	148.2	130.0	216.0	393.5	3.2	65.5	48.1	150.0	131.6	218.7	398.4
Private equity - Other															
Co-investment	2023	3.2	21.0	(34.8)			24.2	(10.6)	3.0	19.9	(32.9)			22.8	(10.1)
LP/Value add	2023	3.2	133.9	156.1			137.1	293.1	2.7	116.5	135.8			119.3	255.1
Fund of funds	2023	3.2	395.0	-	585.0	60.0	983.1	1,043.1	0.6	81.0	-	120.0	12.3	201.7	214.0
Private credit															
Co-investment	2023	3.2	58.0	(153.7)			61.2	(92.6)	2.5	45.4	(120.4)			47.9	(72.5)
	2022	2.8	41.0	29.1			43.8	72.9	5.1	75.6	53.7			80.7	134.4
	2021	2.1	24.3	(24.3)			26.4	2.1	1.9	21.0	(21.0)			22.8	1.8
	2020	1.4	81.8	16.4			83.2	99.5	1.4	81.8	16.4			83.2	99.5
	2019	2.8	-	-			2.8	2.8	2.8	-	-			2.8	2.8
LP/Value add	2023	3.2	82.4	108.0			85.5	193.5	2.9	74.7	97.9			77.6	175.5
	2022	2.2	99.3	56.6			101.5	158.2	1.5	67.1	38.2			68.6	106.8
	2021	2.1	75.1	106.7			77.3	183.9	1.6	55.1	78.3			56.7	135.0
	2020	2.6	122.4	4.1			125.0	129.2	1.4	67.3	2.3			68.8	71.0
	2019	2.8	151.5	46.9			154.4	201.2	1.4	72.6	22.5			74.0	96.4

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

South Carolina Retirement System Investment Commission

Oversight, Custodial and Other Costs			
		000s	bps
Oversight of the fund assets ¹	2023	1,840.8	0.5bp
	2022	1,348.5	0.3bp
	2021	1,237.9	0.3bp
	2020	1,198.5	0.4bp
	2019	1,236.7	0.4bp
Custodial total	2023	1,150.7	0.3bp
	2022	1,187.4	0.3bp
	2021	1,394.3	0.4bp
	2020	1,394.3	0.4bp
	2019	1,670.0	0.5bp
Consulting / performance measurement	2023	1,809.1	0.5bp
	2022	1,252.9	0.3bp
	2021	835.0	0.2bp
	2020	785.7	0.2bp
	2019	825.1	0.3bp
Audit	2023	285.3	0.1bp
	2022	278.1	0.1bp
	2021	237.7	0.1bp
	2020	409.3	0.1bp
	2019	119.7	0.0bp
Other (legal etc)	2023	358.7	0.1bp
	2022	357.4	0.1bp
	2021	382.2	0.1bp
	2020	373.3	0.1bp
	2019	357.3	0.1bp
Total	2023	5,444.7	1.4bp
	2022	4,424.2	1.1bp
	2021	4,087.1	1.0bp
	2020	4,161.1	1.3bp
	2019	4,208.9	1.3bp

Summary of All Asset Management Costs			
		000s	bps
Investment Management Costs	2023	401,332.5	99.9bp
	2022	516,937.1	132.1bp
	2021	635,684.1	163.1bp
	2020	257,413.1	81.8bp
	2019	323,939.4	102.4bp
Oversight, Custodial & Other Costs	2023	5,444.7	1.4bp
	2022	4,424.2	1.1bp
	2021	4,087.1	1.0bp
	2020	4,161.1	1.3bp
	2019	4,208.9	1.3bp
Total	2023	406,777.2	101.2bp
	2022	521,361.2	133.3bp
	2021	639,771.3	164.1bp
	2020	261,574.2	83.2bp
	2019	328,148.2	103.8bp

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 System 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/	2023							815.9		1,028.2		257.3	1,285.6		
Passive Beta	2022						6,142.5	527.9	928.0		175.9	1,103.9	1.8		

Appendix A - Data Summary: Comments and data enrichments

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

- 2023 - GCM Grosvenor - GCM - Low Beta HF (Hedge funds - FoFs): A CEM-imputed cost of 125 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - GCM Grosvenor - GCM - Low Beta HF (Hedge funds - FoFs): A CEM-imputed cost of 105 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - GSO Capital Partners, LP - GSO - Mixed Credit HF (Hedge funds - FoFs): A CEM-imputed cost of 125 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - GSO Capital Partners, LP - GSO - Mixed Credit HF (Hedge funds - FoFs): A CEM-imputed cost of 105 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Reservoir Strategic Partners - Reservoir Strategic (Hedge funds - FoFs): A CEM-imputed cost of 125 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Reservoir Strategic Partners - Reservoir Strategic (Hedge funds - FoFs): A CEM-imputed cost of 105 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Blackrock SLS (Private equity - Diversified - FoFs): A CEM-imputed cost of 150 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Blackrock SLS (Private equity - Diversified - FoFs): A CEM-imputed cost of 105 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Venture Managers , L.P. - Venture Invest Mgrs (Private equity - Diversified - FoFs): A CEM-imputed cost of 150 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Venture Managers , L.P. - Venture Invest Mgrs (Private equity - Diversified - FoFs): A CEM-imputed cost of 105 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Horsley Bridge Partners - Horsley Bridge G C (Venture capital - FoFs): A CEM-imputed cost of 160 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Horsley Bridge Partners - Horsley Bridge G C (Venture capital - FoFs): A CEM-imputed cost of 70 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Horsley Bridge Partners - Horsley Bridge IV (Venture capital - FoFs): A CEM-imputed cost of 160 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Horsley Bridge Partners - Horsley Bridge IV (Venture capital - FoFs): A CEM-imputed cost of 70 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Horsley Bridge Partners - Horsley Bridge V (Venture capital - FoFs): A CEM-imputed cost of 160 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Horsley Bridge Partners - Horsley Bridge V (Venture capital - FoFs): A CEM-imputed cost of 70 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Horsley Bridge Partners - Horsley Bridge XIII (Venture capital - FoFs): A CEM-imputed cost of 160 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Horsley Bridge Partners - Horsley Bridge XIII (Venture capital - FoFs): A CEM-imputed cost of 70 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Horsley Bridge Partners - Horsley Bridge 14 (Venture capital - FoFs): A CEM-imputed cost of 160 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.

- 2023 - Horsley Bridge Partners - Horsley Bridge 14 (Venture capital - FoFs): A CEM-imputed cost of 70 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Industry Ventures - Industry Venture Secondary VII (Venture capital - FoFs): A CEM-imputed cost of 160 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Industry Ventures - Industry Venture Secondary VII (Venture capital - FoFs): A CEM-imputed cost of 70 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Industry Ventures PH V (Venture capital - FoFs): A CEM-imputed cost of 160 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Industry Ventures PH V (Venture capital - FoFs): A CEM-imputed cost of 70 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Industry Ventures PH VI (Venture capital - FoFs): A CEM-imputed cost of 160 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Industry Ventures PH VI (Venture capital - FoFs): A CEM-imputed cost of 70 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Industry Ventures V (Venture capital - FoFs): A CEM-imputed cost of 160 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Industry Ventures V (Venture capital - FoFs): A CEM-imputed cost of 70 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Industry Ventures VI (Venture capital - FoFs): A CEM-imputed cost of 160 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Industry Ventures VI (Venture capital - FoFs): A CEM-imputed cost of 70 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Square 1 Venture Managers - Square 1 Venture 1 (Venture capital - FoFs): A CEM-imputed cost of 160 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Square 1 Venture Managers - Square 1 Venture 1 (Venture capital - FoFs): A CEM-imputed cost of 70 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - TrueBridge Capital Partners - Truebridge I CVE (Venture capital - FoFs): A CEM-imputed cost of 160 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - TrueBridge Capital Partners - Truebridge I CVE (Venture capital - FoFs): A CEM-imputed cost of 70 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - TrueBridge Capital Partners - Truebridge II Kauff (Venture capital - FoFs): A CEM-imputed cost of 160 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - TrueBridge Capital Partners - Truebridge II Kauff (Venture capital - FoFs): A CEM-imputed cost of 70 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - TA Associates XIII (LBO - LP/Value add): A CEM-imputed cost of 150 bps was applied to the lp/value add base fee because it was not provided.
- 2023 - TA Associates XIII (LBO - LP/Value add): A CEM-imputed cost of 130 bps (on NAV) was applied to the lp/value add performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - TA Associates XIV (LBO - LP/Value add): A CEM-imputed cost of 150 bps was applied to the lp/value add base fee because it was not provided.
- 2023 - TA Associates XIV (LBO - LP/Value add): A CEM-imputed cost of 130 bps (on NAV) was applied to the lp/value add performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - HighVista Strategies - HighVista PE VIII (LBO - FoFs): A CEM-imputed cost of 150 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - HighVista Strategies - HighVista PE VIII (LBO - FoFs): A CEM-imputed cost of 130 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - HighVista Strategies - HighVista US PE IX (LBO - FoFs): A CEM-imputed cost of 150 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - HighVista Strategies - HighVista US PE IX (LBO - FoFs): A CEM-imputed cost of 130 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Paul Capital IX (Private equity - Other - FoFs): A CEM-imputed cost of 120 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2023 - Paul Capital IX (Private equity - Other - FoFs): A CEM-imputed cost of 60 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2022 - Real estate ex-REITs - LP/Value add: Lp/value add base fee is a deal-based cost of 91 bps per partnership level detail provided by you. It replaces the cost on the main survey of 115 bps (36.7 million).
- 2022 - Infrastructure - LP/Value add: Lp/value add base fee is a deal-based cost of 103 bps per partnership level detail provided by you. It replaces the cost on the main survey of 59 bps (6.4 million).

- 2022 - Private equity - Diversified - LP/Value add: Lp/value add base fee is a deal-based cost of 159 bps per partnership level detail provided by you. It replaces the cost on the main survey of 101 bps (36.6 million).
- 2022 - Private equity - Diversified - FoFs: A CEM-imputed cost of 154 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2022 - Private equity - Diversified - FoFs: A CEM-imputed cost of 160 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2022 - Private credit - LP/Value add: Lp/value add base fee is a deal-based cost of 67 bps per partnership level detail provided by you. It replaces the cost on the main survey of 71 bps (26.4 million).
- 2021 - Real estate ex-REITs - LP/Value add: Lp/value add base fee is a deal-based cost of 90 bps per partnership level detail provided by you. It replaces the cost on the main survey of 104 bps (32.1 million).
- 2021 - Private equity - Diversified - LP/Value add: Lp/value add base fee is a deal-based cost of 160 bps per partnership level detail provided by you. It replaces the cost on the main survey of 93 bps (31.9 million).
- 2021 - Private equity - Diversified - FoFs: A CEM-imputed cost of 154 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2021 - Private equity - Diversified - FoFs: A CEM-imputed cost of 250 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2021 - Private credit - LP/Value add: Lp/value add base fee is a deal-based cost of 55 bps per partnership level detail provided by you. It replaces the cost on the main survey of 64 bps (23 million).
- 2020 - Real estate ex-REITs - LP/Value add: Lp/value add base fee is a deal-based cost of 94 bps per partnership level detail provided by you. It replaces the cost on the main survey of 106 bps (25.8 million).
- 2020 - Private equity - Diversified - LP/Value add: Lp/value add base fee is a deal-based cost of 158 bps per partnership level detail provided by you. It replaces the cost on the main survey of 102 bps (25.2 million).
- 2020 - Private equity - Diversified - FoFs: A CEM-imputed cost of 157 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2020 - Private equity - Diversified - FoFs: A CEM-imputed cost of 192 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2020 - Private credit - LP/Value add: Lp/value add base fee is a deal-based cost of 67 bps per partnership level detail provided by you. It replaces the cost on the main survey of 55 bps (22.2 million).
- 2019 - Real estate ex-REITs - LP/Value add: Lp/value add base fee is a deal-based cost of 96 bps per partnership level detail provided by you. It replaces the cost on the main survey of 84 bps (23.8 million).
- 2019 - Private equity - Diversified - LP/Value add: Lp/value add base fee is a deal-based cost of 155 bps per partnership level detail provided by you. It replaces the cost on the main survey of 88 bps (18.9 million).
- 2019 - Private equity - Diversified - FoFs: A CEM-imputed cost of 157 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2019 - Private equity - Diversified - FoFs: A CEM-imputed cost of 185 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles.
- 2019 - Private credit - LP/Value add: Lp/value add base fee is a deal-based cost of 73 bps per partnership level detail provided by you. It replaces the cost on the main survey of 41 bps (16.9 million).

Appendix A - Data Summary: Mandates

Imputed cost for missing fees
Forward fill from last year's fees

Fee estimate from LP details
Override for offsets netted from LP fees

South Carolina Retirement System Investment Commission

Details		Assets (millions)		Returns (%)				Costs (000s)					Costs (bps)							
Option Name	Year	Average	Year-end	ReturnType	Return %	Policy Return	Value Added	Base fees	Perf. Fees	Und Base	Und Perf	Internal & Oversight	Total	Base fees	Perf. Fees	Und Base	Und Perf	Internal & Oversight	Total	
Blackrock US Sm Cap	2023	1,045.9	n/a	NetExtMgr	18.5%	17.9%	0.6%	578.4	0.0	0.0	0.0	329.9	908.3	5.5	0.0	0.0	0.0	3.2	8.7	
Pyramis Global Advisors - Pyramis Small Cap	2023	0.0	n/a	Gross	n/a	17.9%	n/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2
Blackrock World Ex-US Sm Cap	2023	706.7	n/a	NetExtMgr	13.2%	15.6%	-2.5%	246.7	0.0	0.0	0.0	222.9	469.6	3.5	0.0	0.0	0.0	3.2	6.6	
Blackrock EME SM Cap	2023	263.7	n/a	NetExtMgr	22.5%	10.3%	12.2%	178.1	0.0	0.0	0.0	83.2	261.3	6.8	0.0	0.0	0.0	3.2	9.9	
D.E. Shaw - DE Shaw World Enhanc	2023	1.0	n/a	NetExtMgr	1.6%	23.8%	-22.2%	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	3.2	3.2	
BlackRock MSCI ACWI	2023	9,846.5	n/a	NetExtMgr	22.7%	23.8%	-1.0%	1,782.6	0.0	0.0	0.0	3,105.3	4,887.9	1.8	0.0	0.0	0.0	3.2	5.0	
State Street Global Advisors - State Street MSCI ACWI	2023	4,691.3	n/a	NetExtMgr	22.6%	23.8%	-1.2%	698.7	0.0	0.0	0.0	1,479.5	2,178.2	1.5	0.0	0.0	0.0	3.2	4.6	
Internal - SCRS Fixed Inc.	2023	11.3	n/a	NetExtMgr	4.4%	5.5%	-1.1%	0.0	0.0	0.0	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.2	3.2	
PIMCO Core	2023	344.3	n/a	NetExtMgr	2.3%	5.5%	-3.2%	635.6	0.0	0.0	0.0	108.6	744.2	18.5	0.0	0.0	0.0	3.2	21.6	
Barings - Thompson River LLC	2023	52.6	n/a	NetExtMgr	-1.6%	5.5%	-7.2%	1,030.9	0.0	0.0	0.0	16.6	1,047.5	195.9	0.0	0.0	0.0	3.2	199.0	
EnTrust Capital - Entrust EMD	2023	4.6	n/a	NetExtMgr	-85.5%	11.1%	-96.6%	10.4	0.0	0.0	0.0	1.5	11.9	22.5	0.0	0.0	0.0	3.2	25.7	
Barings Multi Sector	2023	2.7	n/a	NetExtMgr	3.2%	13.4%	-10.2%	12.0	0.0	0.0	0.0	0.8	12.8	45.0	0.0	0.0	0.0	3.2	48.2	
GoldenTree Asset - GoldenTree Credit	2023	571.7	n/a	NetExtMgr	13.0%	13.4%	-0.4%	2,696.6	0.0	0.0	0.0	180.3	2,876.9	47.2	0.0	0.0	0.0	3.2	50.3	
Guggenheim Partners - Guggenheim Multi	2023	631.9	n/a	NetExtMgr	10.2%	13.4%	-3.2%	2,339.6	0.0	0.0	0.0	199.3	2,538.9	37.0	0.0	0.0	0.0	3.2	40.2	
Blackrock Short Duration	2023	160.0	n/a	NetExtMgr	5.5%	0.0%	5.5%	50.0	0.0	0.0	0.0	50.5	100.5	3.1	0.0	0.0	0.0	3.2	6.3	
Penn Capital - Penn LTD Term HY	2023	23.2	n/a	NetExtMgr	6.9%	0.0%	6.9%	86.1	0.0	0.0	0.0	7.3	93.4	37.1	0.0	0.0	0.0	3.2	40.2	
SCRS - Internal Cash	2023	1,268.3	n/a	NetExtMgr	5.2%	5.4%	-0.2%	0.0	0.0	0.0	0.0	400.0	400.0	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - SCRS- Residual Assets	2023	2.1	n/a	NetExtMgr	0.0%	5.4%	-5.4%	0.0	0.0	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	3.2	3.2	
Algett GI International	2023	0.3	n/a	NetExtMgr	2.1%	5.4%	-3.3%	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	3.2	3.2	
Apollo - Cash and Other	2023	14.4	n/a	NetExtMgr	66.3%	5.4%	60.9%	0.0	0.0	0.0	0.0	4.5	4.5	0.0	0.0	0.0	0.0	3.2	3.2	
Apollo Offshore-Cash and Other	2023	9.9	n/a	NetExtMgr	332.8%	5.4%	327.4%	0.0	0.0	0.0	0.0	3.1	3.1	0.0	0.0	0.0	0.0	3.2	3.2	
AQR Global Enhanced	2023	1.4	n/a	NetExtMgr	0.6%	5.4%	-4.7%	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	3.2	3.2	
Barings High Yield	2023	0.0	n/a	NetExtMgr	1.5%	5.4%	-3.9%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	
Blackrock Core	2023	0.0	n/a	NetExtMgr	3.5%	5.4%	-1.9%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - ENT - Cash & Other	2023	0.5	n/a	NetExtMgr	-2.7%	5.4%	-8.0%	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - Gen. Assembly 2%	2023	5.9	n/a	NetExtMgr	5.0%	5.4%	-0.4%	0.0	0.0	0.0	0.0	1.8	1.8	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - Gen. Assembly Cash- NIB	2023	0.2	n/a	NetExtMgr	0.2%	5.4%	-5.2%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	
GMO Partners, LLC - GMO Emerging Country Debt	2023	23.6	n/a	NetExtMgr	17.6%	5.4%	12.3%	0.0	0.0	0.0	0.0	7.4	7.4	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - GSO Cash & Other	2023	11.2	n/a	NetExtMgr	2.8%	5.4%	-2.6%	0.0	0.0	0.0	0.0	3.5	3.5	0.0	0.0	0.0	0.0	3.2	3.2	
INTECH LLC - Intech Global Enhanc	2023	0.9	n/a	NetExtMgr	3.3%	5.4%	-2.0%	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - Judges 2%	2023	17.0	n/a	NetExtMgr	5.0%	5.4%	-0.4%	0.0	0.0	0.0	0.0	5.4	5.4	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - Judges Cash - NIB	2023	0.2	n/a	NetExtMgr	0.7%	5.4%	-4.6%	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - LH - Cash & Other	2023	3.6	n/a	Gross	n/a	5.4%	n/a	0.0	0.0	0.0	0.0	1.2	1.2	0.0	0.0	0.0	0.0	3.2	3.2	
Numeric Investor LLC - Man Numeric SM	2023	0.3	n/a	NetExtMgr	-3.8%	5.4%	-9.1%	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	3.2	3.2	
Morgan Stanley GTAAN	2023	0.5	n/a	NetExtMgr	0.0%	5.4%	-5.4%	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - MS - Cash and Other	2023	2.3	n/a	NetExtMgr	-13.7%	5.4%	-19.1%	0.0	0.0	0.0	0.0	0.7	0.7	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - Nat. Guards Cash - NIB	2023	0.1	n/a	NetExtMgr	0.2%	5.4%	-5.2%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - National Guards 2%	2023	9.3	n/a	NetExtMgr	5.0%	5.4%	-0.4%	0.0	0.0	0.0	0.0	2.9	2.9	0.0	0.0	0.0	0.0	3.2	3.2	
PineBridge Loans	2023	0.0	n/a	NetExtMgr	-19.7%	5.4%	-25.1%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - Police Cash - NIB	2023	5.1	n/a	NetExtMgr	1.0%	5.4%	-4.4%	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - Police- 2%	2023	42.9	n/a	NetExtMgr	5.0%	5.4%	-0.4%	0.0	0.0	0.0	0.0	13.5	13.5	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - RAN - Cash & Other	2023	0.3	n/a	Gross	n/a	5.4%	n/a	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - Retirement - 2%	2023	84.6	n/a	NetExtMgr	5.0%	5.4%	-0.4%	0.0	0.0	0.0	0.0	26.7	26.7	0.0	0.0	0.0	0.0	3.2	3.2	
Internal - Retirement Cash - NIB	2023	39.3	n/a	NetExtMgr	0.8%	5.4%	-4.6%	0.0	0.0	0.0	0.0	12.4	12.4	0.0	0.0	0.0	0.0	3.2	3.2	
Russell Global Transition	2023	0.0	n/a	NetExtMgr	34.9%	5.4%	29.6%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	
Russell Infrastructure Trans	2023	0.0	n/a	NetExtMgr	8.9%	5.4%	3.6%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	
Russell Intl Sm Cap Transition	2023	0.2	n/a	NetExtMgr	6.4%	5.4%	1.0%	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	3.2	3.2	
Russell Other Opportunistic	2023	0.0	n/a	Gross	n/a	5.4%	n/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	
Russell Sm Cap Pass Trans	2023	0.0	n/a	NetExtMgr	-2.0%	5.4%	-7.4%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.2	
Russell Sm/Mid Cap Transition	2023	0.7	n/a	Gross	n/a	5.4%	n/a	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	3.2	3.2	
CenterSquare US REIT Focused	2023	288.5	n/a	NetExtMgr	15.0%	13.7%	1.3%	1,025.4	0.0	0.0	0.0	91.0	1,116.4	35.5	0.0	0.0	0.0	3.2	38.7	
Blackstone Property	2023	431.6	n/a	NetExtMgr	-11.2%	-12.7%	1.5%	3,518.0	-5,410.4	0.0	0.0	136.1	-1,756.3	111.5	-171.4	0.0	0.0	4.3	-55.7	
CBRE Global Investors - CBRE US Core Partners	2023	269.0	n/a	NetExtMgr	-12.3%	-12.7%	0.5%	1,882.4	248.6	0.0	0.0	84.8	2,215.8	75.3	9.9	0.0	0.0	3.4	88.6	
Morgan Stanley Prime Property	2023	951.2	n/a	NetExtMgr	-5.9%	-12.7%	6.8%	8,096.8	2,531.8	0.0	0.0	300.0	10,928.5	87.0	27.2	0.0	0.0	3.2	117.4	
TA Realty Fund of One	2023	703.3	n/a	NetExtMgr	-10.6%	-12.7%	2.1%	4,981.2	0.0	0.0	0.0	221.8	5,203.0	113.2	0.0	0.0	0.0	5.0	118.2	
Apollo Granite Co-Inv	2023	26.2	n/a	NetExtMgr	9.2%	-12.7%	21.9%	75.0	314.5	0.0	0.0	8.3	397.8	61.8	259.3	0.0	0.0	6.8	328.0	
Apollo MHC Co-Inv	2023	11.3	n/a	NetExtMgr	8.5%	-12.7%	21.2%	39.8	127.8	0.0	0.0	3.6	171.1	61.1	196.3	0.0	0.0	5.5	262.9	
Centersquare Co-Invest	2023	40.0	n/a	NetExtMgr	-0.4%	-12.7%	12.4%	142.0	-498.8	0.0	0.0	12.6	-344.3	47.3	-166.3	0.0	0.0	4.2	-114.8	

Details		Assets (millions)		Returns (%)				Costs (000s)					Costs (bps)							
Option Name	Year	Average	Year-end	ReturnType	Return %	Policy Return	Value Added	Base fees	Perf. Fees	Und Base	Und Perf	Internal & Oversight	Total	Base fees	Perf. Fees	Und Base	Und Perf	Internal & Oversight	Total	
Centersquare Co-Invest II	2023	34.8	n/a	NetExtMgr	-5.4%	-12.7%	7.4%	123.5	-698.6	0.0	0.0	11.0	-564.1	41.2	-232.9	0.0	0.0	3.7	-188.0	
Apollo AGRE Real Estate	2023	0.3	n/a	NetExtMgr	-50.7%	-12.7%	-38.0%	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	
Asana Partners - Asana Equity Partners II	2023	64.1	n/a	NetExtMgr	3.1%	-12.7%	15.8%	711.5	-2,890.6	0.0	0.0	20.2	-2,158.9	123.0	-499.7	0.0	0.0	3.5	-373.2	
Asana Partners - Asana Equity Partners III	2023	12.3	n/a	NetExtMgr	-8.7%	-12.7%	4.0%	675.0	0.0	0.0	0.0	3.9	678.9	135.0	0.0	0.0	0.0	0.8	135.8	
Blackstone REP IX	2023	117.4	n/a	NetExtMgr	-0.4%	-12.7%	12.3%	1,234.8	-1,880.6	0.0	0.0	37.0	-608.7	136.6	-208.1	0.0	0.0	4.1	-67.4	
Blackstone REP VII	2023	26.2	n/a	NetExtMgr	-24.4%	-12.7%	-11.6%	0.0	-1,998.6	0.0	0.0	8.3	-1,990.3	0.0	0.0	0.0	0.0	1.8	-426.0	
Blackstone Rep X	2023	2.4	n/a	Gross	n/a	-12.7%	n/a	1,658.3	0.0	0.0	0.0	0.8	1,659.1	165.8	0.0	0.0	0.0	0.1	165.9	
Brookfield REF IV	2023	1.4	n/a	NetExtMgr	-32.0%	-12.7%	-19.3%	26.6	-242.0	0.0	0.0	0.5	-215.0	53.2	-484.3	0.0	0.0	0.9	-430.1	
Brookfield REF V	2023	33.9	n/a	NetExtMgr	-0.6%	-12.7%	12.1%	531.4	-1,198.4	0.0	0.0	10.7	-656.3	126.1	-284.3	0.0	0.0	2.5	-155.7	
Brookfield SREP I	2023	16.1	n/a	NetExtMgr	-28.7%	-12.7%	-15.9%	257.1	-794.5	0.0	0.0	5.1	-532.3	159.8	-493.8	0.0	0.0	3.1	-330.9	
Brookfield SREP II	2023	49.4	n/a	NetExtMgr	-4.5%	-12.7%	8.2%	569.3	-210.8	0.0	0.0	15.6	374.1	100.0	-37.0	0.0	0.0	2.7	65.7	
Brookfield SREP III B LP	2023	101.2	n/a	NetExtMgr	7.9%	-12.7%	20.7%	1,063.5	1,974.6	0.0	0.0	31.9	3,070.1	114.0	211.7	0.0	0.0	3.4	329.2	
Brookfield SREP IV B	2023	49.0	n/a	NetExtMgr	4.8%	-12.7%	17.6%	1,218.4	-643.3	0.0	0.0	15.5	590.5	121.8	-64.3	0.0	0.0	1.5	59.1	
Brookfield SREP V	2023	0.0	n/a	Gross	n/a	-12.7%	n/a	386.6	0.0	0.0	0.0	0.0	386.6	38.7	0.0	0.0	0.0	0.0	38.7	
Carlyle VI	2023	8.4	n/a	NetExtMgr	-1.6%	-12.7%	11.1%	38.4	-78.3	0.0	0.0	2.6	-37.4	21.6	-44.1	0.0	0.0	1.5	-21.0	
Crow HRP IX	2023	83.3	n/a	NetExtMgr	-6.3%	-12.7%	6.4%	726.0	-2,866.2	0.0	0.0	26.3	-2,113.9	72.6	-286.6	0.0	0.0	2.6	-211.4	
Crow HRP VII	2023	3.8	n/a	NetExtMgr	-36.8%	-12.7%	-24.1%	120.2	-403.0	0.0	0.0	1.2	-281.5	135.4	-453.8	0.0	0.0	1.4	-317.0	
EQT Exeter VI	2023	0.6	n/a	Gross	n/a	-12.7%	n/a	1,400.0	0.0	0.0	0.0	0.2	1,400.2	140.0	0.0	0.0	0.0	0.0	140.0	
Equus - Equus XII	2023	46.0	n/a	NetExtMgr	-2.3%	-12.7%	10.5%	1,125.1	0.0	0.0	0.0	14.5	1,139.6	150.0	0.0	0.0	0.0	1.9	151.9	
Greystar Real Estate Partners - Greystar Equity Partners IX	2023	2.3	n/a	NetExtMgr	-61.1%	-12.7%	-48.3%	0.0	-1.5	0.0	0.0	0.7	-0.8	0.0	-2.6	0.0	0.0	1.3	-1.4	
Greystar Real Estate Partners - Greystar Equity Partners X	2023	147.6	n/a	NetExtMgr	-11.2%	-12.7%	1.6%	1,488.5	-10,941.9	0.0	0.0	46.6	-9,406.8	114.6	-842.5	0.0	0.0	3.6	-724.3	
Greystar Real Estate Partners - Greystar Equity Partners XI	2023	47.4	n/a	NetExtMgr	2.7%	-12.7%	15.5%	1,875.0	0.0	0.0	0.0	14.9	1,889.9	125.0	0.0	0.0	0.0	1.0	126.0	
Lone Star II	2023	0.1	n/a	Gross	n/a	-12.7%	n/a	0.0	20.5	0.0	0.0	0.0	20.5	0.0	2,093.9	0.0	0.0	3.2	2,097.1	
Morgan Stanley - MS Real Estate	2023	85.3	n/a	NetExtMgr	6.1%	-12.7%	18.9%	603.4	488.5	0.0	0.0	26.9	1,118.8	70.7	57.3	0.0	0.0	3.2	131.2	
Oaktree Capital - Oaktree ROF V	2023	0.7	n/a	NetExtMgr	-57.9%	-12.7%	-45.1%	0.0	-132.3	0.0	0.0	0.2	-132.1	0.0	-433,615.2	0.0	0.0	723.5	-432,891.7	
Oaktree Capital - Oaktree ROF VI	2023	19.3	n/a	NetExtMgr	-13.4%	-12.7%	-0.7%	248.6	0.0	0.0	0.0	6.1	254.7	128.9	0.0	0.0	0.0	3.2	132.1	
WL Ross - Resolution Recovery Partners	2023	0.4	n/a	Gross	n/a	-12.7%	n/a	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	-0.2	-0.2
Sculptor Capital - Sculptor	2023	3.0	n/a	NetExtMgr	-11.9%	-12.7%	0.8%	0.0	-216.7	0.0	0.0	0.9	-215.7	0.0	-271.8	0.0	0.0	1.2	-270.7	
Stockbridge Value Fund IV	2023	88.0	n/a	NetExtMgr	-2.2%	-12.7%	10.5%	912.9	-2,510.6	0.0	0.0	27.8	-1,570.0	91.3	-251.1	0.0	0.0	2.8	-157.0	
Stockbridge Value Fund V	2023	-0.1	n/a	Gross	n/a	-12.7%	n/a	576.4	0.0	0.0	0.0	0.0	576.4	76.8	0.0	0.0	0.0	0.0	76.9	
TA Realty X	2023	0.0	n/a	Gross	n/a	-12.7%	n/a	0.0	-0.9	0.0	0.0	0.0	-0.9	0.0	-409.4	0.0	0.0	3.2	-406.2	
Torchlight Investors - Torchlight IV	2023	6.3	n/a	NetExtMgr	-28.5%	-12.7%	-15.8%	57.5	-656.7	0.0	0.0	2.0	-597.2	44.1	-503.1	0.0	0.0	1.5	-457.5	
Torchlight Investors - Torchlight V	2023	10.1	n/a	NetExtMgr	-4.6%	-12.7%	8.1%	109.1	-865.8	0.0	0.0	3.2	-753.5	62.5	-495.7	0.0	0.0	1.8	-431.4	
Axiom Infrastructure - Axiom NA II	2023	164.5	n/a	NetExtMgr	7.9%	4.5%	3.3%	1,685.1	1,939.0	0.0	0.0	51.9	3,676.0	84.3	96.9	0.0	0.0	2.6	183.8	
Brookfield Supercore	2023	207.7	n/a	NetExtMgr	8.0%	4.5%	3.5%	1,367.5	498.4	0.0	0.0	65.5	1,931.4	66.4	24.2	0.0	0.0	3.2	93.8	
RREEF America LLC - DWS RREEF America	2023	160.7	n/a	NetExtMgr	3.8%	4.5%	-0.7%	357.4	680.1	0.0	0.0	50.7	1,088.2	22.2	42.3	0.0	0.0	3.2	67.7	
Stonepeak Partners - Stonepeak Infra IV	2023	36.8	n/a	NetExtMgr	7.4%	4.5%	2.8%	813.3	-237.6	0.0	0.0	11.6	587.3	108.4	-31.7	0.0	0.0	1.5	78.3	
Brookfield SuperCore Co In III	2023	32.4	n/a	NetExtMgr	9.6%	4.5%	5.1%	0.0	0.0	0.0	0.0	10.2	10.2	0.0	0.0	0.0	0.0	3.4	3.4	
Brookfield SuperCore Co Inv I	2023	28.8	n/a	NetExtMgr	15.9%	4.5%	11.3%	0.0	0.0	0.0	0.0	9.1	9.1	0.0	0.0	0.0	0.0	3.2	3.2	
Brookfield SuperCore Co Inv II	2023	27.1	n/a	NetExtMgr	9.5%	4.5%	5.0%	0.0	0.0	0.0	0.0	8.6	8.6	0.0	0.0	0.0	0.0	3.1	3.1	
DigitalBridge Group - Digital Colony Co-Invest I	2023	33.0	n/a	NetExtMgr	0.0%	4.5%	-4.6%	0.0	0.0	0.0	0.0	10.4	10.4	0.0	0.0	0.0	0.0	3.7	3.7	
DigitalBridge Group - Digital Colony II Co-Invest I	2023	44.0	n/a	NetExtMgr	9.2%	4.5%	4.7%	189.5	0.0	0.0	0.0	13.9	203.4	47.4	0.0	0.0	0.0	3.5	50.8	
DigitalBridge Group - DigitalBridge I Co Invest I	2023	41.1	n/a	NetExtMgr	-0.6%	4.5%	-5.1%	180.0	0.0	0.0	0.0	13.0	193.0	45.0	0.0	0.0	0.0	3.2	48.2	
Actis Infra A	2023	64.5	n/a	NetExtMgr	19.9%	4.5%	15.4%	874.3	3,631.0	0.0	0.0	20.3	4,525.6	111.9	464.7	0.0	0.0	2.6	579.2	
Basalt Infrastructure Partners - Basalt Infrastructure IV	2023	1.7	n/a	NetExtMgr	-8.7%	4.5%	-13.3%	1,220.5	0.0	0.0	0.0	0.5	1,221.1	162.7	0.0	0.0	0.0	0.1	162.8	
Brookfield Infrastructure IV	2023	84.9	n/a	NetExtMgr	13.4%	4.5%	8.9%	1,185.9	2,518.8	0.0	0.0	26.8	3,731.5	155.4	330.1	0.0	0.0	3.5	489.0	
Brookfield Infrastructure V-B	2023	14.7	n/a	Gross	n/a	4.5%	n/a	1,260.0	0.0	0.0	0.0	4.6	1,264.6	126.0	0.0	0.0	0.0	0.5	126.5	
DigitalBridge Group - DigitalBridge Partners	2023	154.6	n/a	NetExtMgr	18.3%	4.5%	13.8%	1,456.8	4,118.8	0.0	0.0	48.7	5,624.4	114.1	322.5	0.0	0.0	3.8	440.4	
Grain , LLC - Grain Spectrum III	2023	111.2	n/a	NetExtMgr	38.2%	4.5%	33.7%	445.0	-125.4	0.0	0.0	35.1	354.7	44.5	-12.5	0.0	0.0	3.5	35.5	
Macquarie Infrastructure Fund	2023	147.3	n/a	NetExtMgr	11.5%	4.5%	7.0%	896.9	0.0	0.0	0.0	46.4	943.3	68.2	0.0	0.0	0.0	3.5	71.8	
Blackstone SAF II Composite	2023	0.2	n/a	NetExtMgr	-4.5%	14.4%	-18.9%	0.0	20.9	0.0	0.0	0.1	20.9	0.0	905.5	0.0	0.0	3.2	908.6	
Symmetry Adaptive Fund	2023	239.9	n/a	NetExtMgr	8.9%	14.4%	-5.6%	2,658.7	5,507.4	0.0	0.0	75.7	8,241.8	110.8	229.6	0.0	0.0	3.2	343.5	
Apollo Credit Strategies	2023	154.8	n/a	NetExtMgr	8.3%	14.4%	-6.1%	1,551.8	2,568.6	0.0	0.0	48.8	4,169.2	100.2	165.9	0.0	0.0	3.2	269.3	
Bridgewater - Bridgewater PA II	2023	185.3	n/a	NetExtMgr	-7.5%	14.4%	-22.0%	4,937.2	0.0	0.0	0.0	58.4	4,995.6	266.5	0.0	0.0	0.0	3.2	269.6	
Lighthouse Strategic Partnership - Capula	2023	191.3	n/a	NetExtMgr	9.4%	14.4%	-5.0%	2,943.4	2,491.4	0.0	0.0	60.3	5,495.1	153.9	130.2	0.0	0.0	3.2	287.3	
Caspian Mixed Credit	2023	151.1	n/a	NetExtMgr	15.3%	14.4%	0.9%	723.8	-24.3	0.0	0.0	47.7	747.1	47.9	-1.6	0.0	0.0	3.2	49.4	
D.E. Shaw - DE Shaw - Low Beta HF	2023	1,017.4	n/a	NetExtMgr	9.7%	14.4%	-4.7%	30,856.7	46,425.5	0.0	0.0	320.9	77,603.1	303.3	456.3	0.0	0.0	3.2	762.7	
Lighthouse Strategic Partnership - Hudson Bay Cap Struct	2023	101.9	n/a	NetExtMgr	4.2%	14.4%	-10.2%	1,049.4	1,827.0	0.0	0.0	32.1	2,908.6	103.0	179.3	0.0	0.0	3.2	285.4	
Lighthouse Strategic Partnership - Hudson Bay Fund	2023	330.4	n/a	NetExtMgr	6.2%	14.4%	-8.2%	6,638.0	4,986.3	0.0	0.0	104.2	11,728.5	200.9	150.9	0.0	0.0	3.2	355.0	
Lighthouse Strategic Partnership - Kyger Map 197	2023	2.5	n/a	Gross	n/a	14.4%	n/a	23.1	0.0	0.0	0.0	0.8	23.8	93.4	0.0	0.0	0.0	3.2	96.5	
Lighthouse Strategic Partnership - Laurion Cap Fund	2023	255.4	n/a	NetExtMgr	7.9%	14.4%	-6.5%	5,131.6	209.0	0.0	0.0	80.6	5,421.2	200.9	8.2	0.0	0.0	3.2	212.2	

Details		Assets (millions)		Returns (%)				Costs (000s)					Costs (bps)						
Option Name	Year	Average	Year-end	ReturnType	Return %	Policy Return	Value Added	Base fees	Perf. Fees	Und Base	Und Perf	Internal & Oversight	Total	Base fees	Perf. Fees	Und Base	Und Perf	Internal & Oversight	Total
Lighthouse Strategic Partnership - Lighthouse Asian	2023	2.4	n/a	Gross	n/a	14.4%	n/a	0.0	0.0	0.0	0.0	0.8	0.8	0.0	0.0	0.0	0.0	3.2	3.2
Lighthouse Strategic Partnership - Mission Crest Map 240	2023	213.0	n/a	NetExtMgr	-2.4%	14.4%	-16.8%	0.0	91.5	0.0	0.0	67.2	158.7	0.0	4.3	0.0	0.0	3.2	7.5
Morgan Stanley - MS - Low Beta HF	2023	13.4	n/a	NetExtMgr	5.6%	14.4%	-8.9%	0.0	0.0	0.0	0.0	4.2	4.2	0.0	0.0	0.0	0.0	3.2	3.2
Lighthouse Strategic Partnership - North Rock LP	2023	519.8	n/a	NetExtMgr	3.4%	14.4%	-11.0%	7,987.7	0.0	0.0	0.0	163.9	8,151.6	153.7	0.0	0.0	0.0	3.2	156.8
Lighthouse Strategic Partnership - PengLai Peak Fund MAF	2023	84.0	n/a	NetExtMgr	4.3%	14.4%	-10.1%	0.0	289.4	0.0	0.0	26.5	315.8	0.0	34.5	0.0	0.0	3.2	37.6
Lighthouse Strategic Partnership - Pier61	2023	63.8	n/a	NetExtMgr	16.7%	14.4%	2.3%	234.0	475.1	0.0	0.0	20.1	729.3	36.7	74.5	0.0	0.0	3.2	114.3
Polymer Capital - Polymer Asia US Fd	2023	151.1	n/a	NetExtMgr	3.3%	14.4%	-11.2%	2,307.7	1,169.6	0.0	0.0	47.7	3,524.9	152.7	77.4	0.0	0.0	3.2	233.2
Lighthouse Strategic Partnership - Shaolin Map 214	2023	4.6	n/a	Gross	n/a	14.4%	n/a	27.4	0.0	0.0	0.0	1.4	28.9	59.9	0.0	0.0	0.0	3.2	63.0
Symmetry US Master Fund	2023	99.7	n/a	NetExtMgr	12.1%	14.4%	-2.3%	1,899.9	7,859.7	0.0	0.0	31.4	9,791.1	190.6	788.6	0.0	0.0	3.2	982.4
Lighthouse Strategic Partnership - Systematica	2023	197.5	n/a	NetExtMgr	-2.0%	14.4%	-16.4%	2,530.6	0.0	0.0	0.0	62.3	2,592.9	128.1	0.0	0.0	0.0	3.2	131.3
Lighthouse Strategic Partnership - Tower Bay MAP 269	2023	109.9	n/a	NetExtMgr	7.0%	14.4%	-7.5%	1,656.1	786.1	0.0	0.0	34.6	2,476.9	150.7	71.6	0.0	0.0	3.2	225.4
Lighthouse Strategic Partnership - Tudor BVI Global	2023	135.5	n/a	NetExtMgr	3.3%	14.4%	-11.1%	2,732.2	1,474.5	0.0	0.0	42.7	4,249.4	201.6	108.8	0.0	0.0	3.2	313.6
Valor Equity Partners V	2023	93.5	n/a	NetExtMgr	1.3%	14.4%	-13.1%	1,201.2	945.5	0.0	0.0	29.5	2,176.1	128.5	101.1	0.0	0.0	3.2	232.7
Lighthouse Strategic Partnership - Voloridge Map 138	2023	23.8	n/a	NetExtMgr	19.8%	14.4%	5.4%	109.9	2,724.6	0.0	0.0	7.5	2,842.0	46.3	1,146.8	0.0	0.0	3.2	1,196.2
Lighthouse Strategic Partnership - Voloridge Master Fund	2023	53.7	n/a	NetExtMgr	2.7%	14.4%	-11.7%	1,114.1	447.2	0.0	0.0	16.9	1,578.2	207.6	83.3	0.0	0.0	3.2	294.1
Lighthouse Strategic Partnership - Voloridge Trading Aggr	2023	2.0	n/a	Gross	n/a	14.4%	n/a	0.0	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	3.2	3.2
GCM Grosvenor - GCM - Low Beta HF	2023	2.8	n/a	NetExtMgr	32.7%	14.4%	18.2%	0.0	0.0	35.3	29.7	0.9	65.9	0.0	0.0	125.0	105.0	3.2	233.2
GSO Capital Partners, LP - GSO - Mixed Credit HF	2023	8.4	n/a	NetExtMgr	11.5%	14.4%	-3.0%	0.0	0.0	105.4	88.6	2.7	196.7	0.0	0.0	125.0	105.0	3.2	233.2
Reservoir Strategic Partners - Reservoir Strategic	2023	0.3	n/a	NetExtMgr	1.6%	14.4%	-12.8%	0.0	3.6	3.8	3.2	0.1	10.8	0.0	118.6	125.0	105.0	3.2	351.8
Brevan Howard Alpha	2023	329.8	n/a	NetExtMgr	2.4%	14.4%	-12.0%	3,397.4	881.9	0.0	0.0	104.0	4,383.4	103.0	26.7	0.0	0.0	3.2	132.9
Brevan Howard Master FD	2023	97.5	n/a	NetExtMgr	-2.2%	14.4%	-16.6%	1,984.2	0.0	0.0	0.0	30.8	2,015.0	203.4	0.0	0.0	0.0	3.2	206.6
Brevan Howard Pass Thru Fund	2023	45.9	n/a	Gross	n/a	14.4%	n/a	501.7	0.0	0.0	0.0	14.5	516.2	109.3	0.0	0.0	0.0	3.2	112.5
Lighthouse Strategic Partnership - Pillar Juniperus	2023	252.8	n/a	NetExtMgr	20.1%	14.4%	5.7%	2,250.2	871.3	0.0	0.0	79.7	3,201.2	89.0	34.5	0.0	0.0	3.2	126.6
BlackRock SLS CoInvest I	2023	206.3	n/a	NetExtMgr	19.8%	10.4%	9.4%	0.0	0.0	0.0	0.0	65.1	65.1	0.0	0.0	0.0	0.0	3.3	3.3
Varsity Healthcare Partners - Varsity Healthcare IV Co Inv I	2023	3.8	n/a	NetExtMgr	n/a	10.4%	n/a	0.0	0.0	0.0	0.0	1.2	1.2	0.0	0.0	0.0	0.0	3.2	3.2
Apollo Natural Resources I	2023	3.1	n/a	NetExtMgr	-0.7%	10.4%	-11.1%	1.5	0.0	0.0	0.0	1.0	2.5	0.2	0.0	0.0	0.0	0.1	0.4
Apollo Natural Resources II	2023	44.3	n/a	NetExtMgr	4.7%	10.4%	-5.7%	416.6	-1,216.9	0.0	0.0	14.0	-786.4	51.2	-149.4	0.0	0.0	1.7	-96.6
Apollo Natural Resources III	2023	80.8	n/a	NetExtMgr	4.4%	10.4%	-6.0%	1,091.3	1,007.6	0.0	0.0	25.5	2,124.4	137.4	126.9	0.0	0.0	3.2	267.5
Varsity Healthcare Partners - Varsity Healthcare IV	2023	2.8	n/a	NetExtMgr	n/a	10.4%	n/a	954.9	0.0	0.0	0.0	0.9	955.8	191.0	0.0	0.0	0.0	0.2	191.2
Blackrock SLS	2023	180.5	n/a	NetExtMgr	3.3%	10.4%	-7.1%	975.0	105.9	3,000.0	1,894.9	56.9	6,032.7	48.8	5.3	150.0	94.7	2.8	301.6
Venture Managers , L.P. - Venture Invest Mgrs	2023	38.3	n/a	NetExtMgr	-11.1%	10.4%	-21.6%	141.1	-10.1	374.6	401.9	12.1	919.6	56.5	-4.0	150.0	160.9	4.8	368.2
Brighton Park Capital - Brighton Park I Co Inv II	2023	9.8	n/a	NetExtMgr	8.4%	10.4%	-2.0%	0.0	0.0	0.0	0.0	3.1	3.1	0.0	0.0	0.0	0.0	6.2	6.2
Brighton Park Capital - Brighton Park I Co Inv III	2023	13.2	n/a	NetExtMgr	6.3%	10.4%	-4.1%	0.0	0.0	0.0	0.0	4.2	4.2	0.0	0.0	0.0	0.0	4.1	4.1
Brighton Park Capital - Brighton Park I Co Inv IV	2023	12.5	n/a	NetExtMgr	22.3%	10.4%	11.9%	0.0	0.0	0.0	0.0	3.9	3.9	0.0	0.0	0.0	0.0	3.3	3.3
Horsley Bridge Partners - Horsley Bridge 14 Plus 1	2023	7.2	n/a	NetExtMgr	-6.4%	10.4%	-16.8%	0.0	0.0	0.0	0.0	2.3	2.3	0.0	0.0	0.0	0.0	1.1	1.1
Resolve Growth Partners - Resolve Growth I Co-Invest I	2023	4.8	n/a	NetExtMgr	3.5%	10.4%	-6.9%	0.0	0.0	0.0	0.0	1.5	1.5	0.0	0.0	0.0	0.0	1.5	1.5
Brighton Park Capital - Brighton Park Cap I	2023	91.5	n/a	NetExtMgr	6.5%	10.4%	-3.9%	952.3	1,921.6	0.0	0.0	28.8	2,902.8	127.5	257.3	0.0	0.0	3.9	388.6
Brighton Park Capital - Brighton Park II	2023	7.4	n/a	NetExtMgr	8.4%	10.4%	-2.0%	1,219.6	0.0	0.0	0.0	2.3	1,221.9	162.6	0.0	0.0	0.0	0.3	162.9
General Atlantic 2021	2023	25.3	n/a	NetExtMgr	3.5%	10.4%	-6.9%	798.1	315.6	0.0	0.0	8.0	1,121.6	159.6	63.1	0.0	0.0	1.6	224.3
Great Hill Equity Partners - Great Hill VIII	2023	8.4	n/a	NetExtMgr	31.3%	10.4%	20.9%	536.0	0.0	0.0	0.0	2.7	538.7	71.5	0.0	0.0	0.0	0.4	71.8
Hillhouse Capital - Hillhouse Focus Growth V	2023	19.7	n/a	NetExtMgr	-8.1%	10.4%	-18.5%	600.0	0.0	0.0	0.0	6.2	606.2	200.0	0.0	0.0	0.0	2.1	202.1
Resolve Growth Partners - Resolve Growth I	2023	30.9	n/a	NetExtMgr	4.9%	10.4%	-5.5%	540.0	-708.6	0.0	0.0	9.7	-158.8	191.0	-250.7	0.0	0.0	3.4	-56.2
Industry Ventures Secondary X	2023	0.0	n/a	NetExtMgr	n/a	10.4%	n/a	0.0	410.7	0.0	0.0	n/a	410.7	0.0	54.8	0.0	0.0	n/a	54.8
Horsley Bridge Partners - Horsley Bridge G C	2023	34.3	n/a	NetExtMgr	-19.4%	10.4%	-29.8%	0.0	0.0	480.0	240.0	10.8	730.8	0.0	0.0	160.0	80.0	3.6	243.6
Horsley Bridge Partners - Horsley Bridge IV	2023	61.3	n/a	NetExtMgr	-14.7%	10.4%	-25.1%	0.0	-563.0	640.0	428.9	19.3	525.3	0.0	-140.7	160.0	107.2	4.8	131.3
Horsley Bridge Partners - Horsley Bridge V	2023	140.4	n/a	NetExtMgr	-9.2%	10.4%	-19.6%	0.0	-408.7	3,600.0	983.1	44.3	4,218.7	0.0	-18.2	160.0	43.7	2.0	187.5
Horsley Bridge Partners - Horsley Bridge XIII	2023	60.3	n/a	NetExtMgr	-9.1%	10.4%	-19.5%	437.5	0.0	701.7	421.8	19.0	1,580.0	99.8	0.0	160.0	96.2	4.3	360.3
Horsley Bridge Partners - Horsley Bridge 14	2023	11.7	n/a	NetExtMgr	-7.3%	10.4%	-17.8%	437.5	0.0	800.0	82.1	3.7	1,323.3	87.5	0.0	160.0	16.4	0.7	264.7
Industry Ventures - Industry Venture Secondary VII	2023	11.7	n/a	NetExtMgr	-4.6%	10.4%	-15.0%	58.7	169.8	304.4	82.2	3.7	618.8	30.8	89.2	160.0	43.2	1.9	325.2
Industry Ventures PH V	2023	92.8	n/a	NetExtMgr	-9.1%	10.4%	-19.5%	500.0	-1,663.6	727.8	649.9	29.3	243.4	109.9	-365.7	160.0	142.9	6.4	53.5
Industry Ventures PH VI	2023	20.8	n/a	NetExtMgr	9.4%	10.4%	-1.0%	500.0	411.5	800.0	145.7	6.6	1,863.7	100.0	82.3	160.0	29.1	1.3	372.7
Industry Ventures V	2023	0.1	n/a	NetExtMgr	n/a	10.4%	n/a	0.0	0.0	0.9	0.4	0.0	1.3	0.0	0.0	160.0	70.0	3.2	233.2
Industry Ventures VI	2023	0.5	n/a	NetExtMgr	8.0%	10.4%	-2.5%	6.1	-142.0	192.0	3.6	0.2	59.8	5.1	-118.4	160.0	3.0	0.1	49.8
Square 1 Venture Managers - Square 1 Venture 1	2023	8.7	n/a	NetExtMgr	-19.0%	10.4%	-29.4%	35.1	-47.2	295.4	60.7	2.7	346.7	19.0	-25.6	160.0	32.9	1.5	187.8
TrueBridge Capital Partners - Truebridge I CVE	2023	4.6	n/a	NetExtMgr	-17.6%	10.4%	-28.0%	0.0	-21.3	1.0	32.2	1.5	13.4	0.0	-3,373.3	160.0	5,104.4	230.0	2,121.1
TrueBridge Capital Partners - Truebridge II Kauff	2023	72.4	n/a	NetExtMgr	-12.9%	10.4%	-23.3%	125.0	179.3	1.9	506.7	22.8	835.7	10,280.5	14,742.5	160.0	41,672.2	1,877.5	68,732.7
Apollo Athora	2023	89.6	n/a	NetExtMgr	7.4%	10.4%	-3.0%	0.0	0.0	0.0	0.0	28.3	28.3	0.0	0.0	0.0	0.0	5.8	5.8
Apollo Champ	2023	109.0	n/a	NetExtMgr	8.7%	10.4%	-1.7%	0.0	2,312.8	0.0	0.0	34.4	2,347.2	0.0	354.3	0.0	0.0	5.3	359.6
Apollo Converse	2023	4.2	n/a	NetExtMgr	-25.2%	10.4%	-35.6%	0.0	0.0	0.0	0.0	1.3	1.3	0.0	0.0	0.0	0.0	0.7	0.7
Apollo Highlands	2023	27.3	n/a	NetExtMgr	-0.6%	10.4%	-11.0%	0.0	0.0	0.0	0.0	8.6	8.6	0.0	0.0	0.0	0.0	3.5	3.5
Apollo IX Tiger	2023	15.7	n/a	NetExtMgr	41.2%	10.4%	30.8%	0.0	0.0	0.0	0.0	4.9	4.9	0.0	0.0	0.0	0.0	2.5	2.5

Details		Assets (millions)		Returns (%)				Costs (000s)					Costs (bps)						
Option Name	Year	Average	Year-end	ReturnType	Return %	Policy Return	Value Added	Base fees	Perf. Fees	Und Base	Und Perf	Internal & Oversight	Total	Base fees	Perf. Fees	Und Base	Und Perf	Internal & Oversight	Total
Apollo Magic	2023	12.3	n/a	NetExtMgr	-13.2%	10.4%	-23.6%	0.0	0.0	0.0	0.0	3.9	3.9	0.0	0.0	0.0	0.0	2.6	2.6
Brookfield - BCP IV Co-Invest I	2023	61.8	n/a	NetExtMgr	n/a	10.4%	n/a	0.0	0.0	0.0	0.0	19.5	19.5	0.0	0.0	0.0	0.0	156.3	156.3
Brookfield - BCP V Co-Invest I	2023	51.4	n/a	NetExtMgr	29.2%	10.4%	18.8%	0.0	0.0	0.0	0.0	16.2	16.2	0.0	0.0	0.0	0.0	7.2	7.2
Brookfield - BCP V Co-Invest II	2023	15.3	n/a	NetExtMgr	-11.3%	10.4%	-21.7%	41.5	0.0	0.0	0.0	4.8	46.4	19.9	0.0	0.0	0.0	2.3	22.3
Brookfield - BCP V Co-Invest III	2023	18.7	n/a	NetExtMgr	-9.6%	10.4%	-20.0%	125.6	0.0	0.0	0.0	5.9	131.5	44.8	0.0	0.0	0.0	2.1	46.9
Brookfield - BCP V Co-Invest IV	2023	35.2	n/a	NetExtMgr	48.7%	10.4%	38.3%	14.8	0.0	0.0	0.0	11.1	25.9	4.8	0.0	0.0	0.0	3.6	8.4
Brookfield - BCP V Co-Invest V	2023	37.4	n/a	NetExtMgr	17.6%	10.4%	7.2%	0.0	0.0	0.0	0.0	11.8	11.8	0.0	0.0	0.0	0.0	4.4	4.4
Brookfield - BCP V Co-Invest VI	2023	34.4	n/a	NetExtMgr	30.5%	10.4%	20.1%	0.0	0.0	0.0	0.0	10.9	10.9	0.0	0.0	0.0	0.0	3.6	3.6
Brookfield - BCP VI Co Invest II	2023	10.2	n/a	NetExtMgr	6.6%	10.4%	-3.8%	0.0	0.0	0.0	0.0	3.2	3.2	0.0	0.0	0.0	0.0	3.2	3.2
Brookfield - BCP VI Co-Invest I	2023	19.1	n/a	NetExtMgr	43.3%	10.4%	32.9%	0.0	0.0	0.0	0.0	6.0	6.0	0.0	0.0	0.0	0.0	4.0	4.0
Bridgepoint VI Colnv I	2023	19.0	n/a	NetExtMgr	7.3%	10.4%	-3.1%	31.6	0.0	0.0	0.0	6.0	37.6	22.2	0.0	0.0	0.0	4.2	26.4
Francisco Partners - Francisco Agility II Co-Inv I	2023	13.0	n/a	NetExtMgr	24.5%	10.4%	14.1%	0.0	0.0	0.0	0.0	4.1	4.1	0.0	0.0	0.0	0.0	4.1	4.1
Francisco Partners V Co-Inv I	2023	25.2	n/a	NetExtMgr	-34.5%	10.4%	-45.0%	0.0	0.0	0.0	0.0	8.0	8.0	0.0	0.0	0.0	0.0	2.7	2.7
Francisco Partners - Francisco Prtnrs VI Co Invest I	2023	10.0	n/a	NetExtMgr	n/a	10.4%	n/a	0.0	0.0	0.0	0.0	3.2	3.2	0.0	0.0	0.0	0.0	3.2	3.2
GCM Ares ACOF IV Co-Inv I	2023	33.6	n/a	NetExtMgr	-10.0%	10.4%	-20.4%	10.0	0.0	0.0	0.0	10.6	20.6	2.5	0.0	0.0	0.0	2.6	5.1
Brighton Park Capital - GCM Brighton Park I Co-Inv I	2023	29.4	n/a	NetExtMgr	1.8%	10.4%	-8.6%	10.0	0.0	0.0	0.0	9.3	19.3	3.1	0.0	0.0	0.0	2.9	6.0
GCM Cinven Fund 7 Co-Invest I	2023	24.5	n/a	NetExtMgr	32.2%	10.4%	21.7%	10.0	0.0	0.0	0.0	7.7	17.7	4.3	0.0	0.0	0.0	3.4	7.7
GCM Grosvenor - GCM Discretionary 2019	2023	174.0	n/a	NetExtMgr	12.6%	10.4%	2.2%	681.7	811.0	0.0	0.0	54.9	1,547.5	59.8	71.1	0.0	0.0	4.8	135.7
GCM Grosvenor - GCM Discretionary 2020	2023	257.9	n/a	NetExtMgr	-3.6%	10.4%	-14.0%	1,013.4	-1,604.5	0.0	0.0	81.3	-509.8	50.7	-80.2	0.0	0.0	4.1	-25.5
GCM Grosvenor - GCM Discretionary 2021	2023	227.6	n/a	NetExtMgr	23.4%	10.4%	13.0%	1,027.4	2,893.7	0.0	0.0	71.8	3,992.9	51.4	144.7	0.0	0.0	3.6	199.6
GCM Grosvenor - GCM Discretionary 2022	2023	146.7	n/a	NetExtMgr	18.8%	10.4%	8.4%	861.5	2,835.5	0.0	0.0	46.3	3,743.2	57.4	189.0	0.0	0.0	3.1	249.5
Hg Capital - GCM HG Saturn Co-Invest	2023	5.8	n/a	NetExtMgr	19.7%	10.4%	9.3%	10.0	0.0	0.0	0.0	1.8	11.8	20.0	0.0	0.0	0.0	3.7	23.7
GCM KKR Asia X Co-Invest I	2023	14.1	n/a	NetExtMgr	21.3%	10.4%	10.9%	12.5	0.0	0.0	0.0	4.5	17.0	12.5	0.0	0.0	0.0	4.5	17.0
GCM KKR Core Co-Invest I	2023	27.4	n/a	NetExtMgr	12.8%	10.4%	2.4%	10.0	0.0	0.0	0.0	8.6	18.6	6.5	0.0	0.0	0.0	5.6	12.2
GCM KKR Euro V Co-Invest I	2023	35.6	n/a	NetExtMgr	-6.7%	10.4%	-17.2%	10.0	0.0	0.0	0.0	11.2	21.2	3.9	0.0	0.0	0.0	4.4	8.4
MidOcean Partners - GCM Midocean V Co-Invest I	2023	28.4	n/a	NetExtMgr	-6.2%	10.4%	-16.6%	12.5	0.0	0.0	0.0	9.0	21.5	6.3	0.0	0.0	0.0	4.5	10.7
Nordic Capital - GCM Nordic X Co-Invest I	2023	35.8	n/a	NetExtMgr	-33.5%	10.4%	-43.9%	12.5	0.0	0.0	0.0	11.3	23.8	5.4	0.0	0.0	0.0	4.9	10.3
Silver Lake Partners - GCM Silver Lake VI Co-Invest I	2023	21.1	n/a	NetExtMgr	5.8%	10.4%	-4.6%	10.0	0.0	0.0	0.0	6.7	16.7	4.8	0.0	0.0	0.0	3.2	7.9
Valor Equity Partners - GCM Valor Equity IV Co-Inv I	2023	2.0	n/a	NetExtMgr	-72.3%	10.4%	-82.8%	12.5	0.0	0.0	0.0	0.6	13.1	8.3	0.0	0.0	0.0	0.4	8.8
Valor Equity Partners - GCM Valor Equity V Co-Inv I	2023	88.4	n/a	NetExtMgr	7.6%	10.4%	-2.8%	10.0	0.0	0.0	0.0	27.9	37.9	3.9	0.0	0.0	0.0	11.0	14.9
Vista Equity - GCM Vista VII Co-Invest I	2023	11.7	n/a	NetExtMgr	10.3%	10.4%	-0.2%	10.0	0.0	0.0	0.0	3.7	13.7	10.0	0.0	0.0	0.0	3.7	13.7
Gemspring Capital - Gemspring Cap III Co Invest I	2023	3.3	n/a	NetExtMgr	n/a	10.4%	n/a	0.0	0.0	0.0	0.0	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1
Great Hill Equity Partners - Great Hill VII Co Invest I	2023	8.7	n/a	NetExtMgr	3.8%	10.4%	-6.7%	0.0	0.0	0.0	0.0	2.8	2.8	0.0	0.0	0.0	0.0	2.7	2.7
Hg Capital - Hg Saturn 3 Co-Invest I	2023	11.4	n/a	NetExtMgr	13.8%	10.4%	3.4%	0.0	0.0	0.0	0.0	3.6	3.6	0.0	0.0	0.0	0.0	3.2	3.2
Hg Capital - Hg Saturn 3 Co-Invest II	2023	10.8	n/a	NetExtMgr	13.0%	10.4%	2.6%	0.0	0.0	0.0	0.0	3.4	3.4	0.0	0.0	0.0	0.0	3.4	3.4
HighVista Strategies - HighVista US IX Co Invest I	2023	26.0	n/a	NetExtMgr	35.3%	10.4%	24.9%	0.0	772.0	0.0	0.0	8.2	780.2	0.0	302.7	0.0	0.0	3.2	306.0
Mill Point Capital - Mill Point II Co Inv I	2023	6.1	n/a	NetExtMgr	161.1%	10.4%	150.7%	0.0	0.0	0.0	0.0	1.9	1.9	0.0	0.0	0.0	0.0	3.9	3.9
Nordic Capital - Nordic X Co-Invest II	2023	18.5	n/a	NetExtMgr	18.2%	10.4%	7.8%	0.0	0.0	0.0	0.0	5.8	5.8	0.0	0.0	0.0	0.0	3.9	3.9
Providence Equity - Providence EQ VIII Co Inv I	2023	20.7	n/a	NetExtMgr	-5.4%	10.4%	-15.8%	0.0	0.0	0.0	0.0	6.5	6.5	0.0	0.0	0.0	0.0	5.0	5.0
Providence Equity - Providence EQ VIII Co Inv II	2023	32.8	n/a	NetExtMgr	14.6%	10.4%	4.2%	0.0	0.0	0.0	0.0	10.3	10.3	0.0	0.0	0.0	0.0	4.4	4.4
Providence Equity - Providence EQ VIII Co Inv III	2023	39.4	n/a	NetExtMgr	12.4%	10.4%	2.0%	0.0	0.0	0.0	0.0	12.4	12.4	0.0	0.0	0.0	0.0	5.0	5.0
Providence Equity - Providence VII Co Inv I	2023	9.1	n/a	NetExtMgr	-1.8%	10.4%	-12.2%	0.0	0.0	0.0	0.0	2.9	2.9	0.0	0.0	0.0	0.0	2.9	2.9
TA Associates - TA XIV Co Inv I	2023	10.0	n/a	NetExtMgr	-0.3%	10.4%	-10.7%	0.0	0.0	0.0	0.0	3.1	3.1	0.0	0.0	0.0	0.0	3.1	3.1
Apollo Investment Fund IX	2023	116.6	n/a	NetExtMgr	18.7%	10.4%	8.3%	521.4	4,147.9	0.0	0.0	36.8	4,706.0	58.5	465.3	0.0	0.0	4.1	527.9
Apollo Investment Fund VII	2023	1.2	n/a	NetExtMgr	4.3%	10.4%	-6.1%	0.0	8.3	0.0	0.0	0.4	8.7	0.0	71.8	0.0	0.0	3.2	75.0
Apollo Investment Fund VIII	2023	29.0	n/a	NetExtMgr	-6.0%	10.4%	-16.4%	117.4	-655.0	0.0	0.0	9.1	-528.4	28.1	-157.0	0.0	0.0	2.2	-126.6
Aquiline Capital Partners - Aquiline I	2023	34.0	n/a	NetExtMgr	-3.5%	10.4%	-13.9%	0.0	0.0	0.0	0.0	10.7	10.7	0.0	0.0	0.0	0.0	2.5	2.5
Aquiline Capital Partners - Aquiline II	2023	39.4	n/a	NetExtMgr	14.3%	10.4%	3.9%	302.1	0.0	0.0	0.0	12.4	314.5	48.5	0.0	0.0	0.0	2.0	50.5
Azalea Capital - Azalea III	2023	1.2	n/a	NetExtMgr	-8.4%	10.4%	-18.8%	-321.5	-17.4	0.0	0.0	0.4	-338.5	-306.2	-16.5	0.0	0.0	0.4	-322.4
Azalea Capital - Azalea IV	2023	3.5	n/a	NetExtMgr	-20.6%	10.4%	-31.1%	111.8	25.9	0.0	0.0	1.1	138.8	119.7	27.7	0.0	0.0	1.2	148.6
Bridgepoint Development Cap IV	2023	33.2	n/a	NetExtMgr	2.4%	10.4%	-8.0%	1,429.4	0.0	0.0	0.0	10.5	1,439.9	149.5	0.0	0.0	0.0	1.1	150.6
Bridgepoint Euro IV	2023	11.3	n/a	NetExtMgr	1.9%	10.4%	-8.5%	80.7	-8.1	0.0	0.0	3.6	76.2	40.9	-4.1	0.0	0.0	1.8	38.6
Bridgepoint Euro V	2023	20.2	n/a	NetExtMgr	n/a	10.4%	n/a	0.0	0.0	0.0	0.0	6.4	6.4	0.0	0.0	0.0	0.0	21.2	21.2
Bridgepoint Euro VI	2023	46.1	n/a	NetExtMgr	n/a	10.4%	n/a	0.0	0.0	0.0	0.0	14.5	14.5	0.0	0.0	0.0	0.0	33.1	33.1
Brookfield Cap Partners IV	2023	111.7	n/a	NetExtMgr	-5.9%	10.4%	-16.3%	941.0	33.5	0.0	0.0	35.2	1,009.7	80.9	2.9	0.0	0.0	3.0	86.8
Brookfield Cap Partners V	2023	180.2	n/a	NetExtMgr	18.7%	10.4%	8.3%	2,110.2	6,153.0	0.0	0.0	56.8	8,320.0	136.7	398.5	0.0	0.0	3.7	538.9
Brookfield Cap Partners VI	2023	23.2	n/a	NetExtMgr	37.6%	10.4%	27.2%	1,420.0	2,333.8	0.0	0.0	7.3	3,761.1	142.0	233.4	0.0	0.0	0.7	376.1
Carousel Capital IV	2023	10.8	n/a	NetExtMgr	51.8%	10.4%	41.4%	194.8	710.6	0.0	0.0	3.4	908.7	178.5	651.1	0.0	0.0	3.1	832.7
Clayton, Dubilier & Rice - CD&R VIII	2023	7.0	n/a	NetExtMgr	n/a	10.4%	n/a	0.0	0.0	0.0	0.0	2.2	2.2	0.0	0.0	0.0	0.0	3.1	3.1
Cinven 8	2023	-0.1	n/a	NetExtMgr	n/a	10.4%	n/a	1,098.3	0.0	0.0	0.0	0.0	1,098.3	99.4	0.0	0.0	0.0	0.0	99.4
Crestview II	2023	41.9	n/a	NetExtMgr	21.8%	10.4%	11.4%	280.1	1,470.5	0.0	0.0	13.2	1,763.8	52.9	277.8	0.0	0.0	2.5	333.2

Details		Assets (millions)		Returns (%)				Costs (000s)					Costs (bps)						
Option Name	Year	Average	Year-end	ReturnType	Return %	Policy Return	Value Added	Base fees	Perf. Fees	Und Base	Und Perf	Internal & Oversight	Total	Base fees	Perf. Fees	Und Base	Und Perf	Internal & Oversight	Total
Crestview III	2023	63.6	n/a	NetExtMgr	-16.3%	10.4%	-26.7%	720.9	-7,711.0	0.0	0.0	20.1	-6,970.1	111.5	-1,192.2	0.0	0.0	3.1	-1,077.6
Falfurrias Partners - Falfurrias Growth Partners I	2023	0.6	n/a	NetExtMgr	n/a	10.4%	n/a	596.9	0.0	0.0	0.0	0.2	597.1	199.0	0.0	0.0	0.0	0.1	199.0
Francisco Partners - Francisco Agility II	2023	37.4	n/a	NetExtMgr	29.3%	10.4%	18.9%	412.5	2,382.4	0.0	0.0	11.8	2,806.7	91.7	529.4	0.0	0.0	2.6	623.7
Francisco Partners V	2023	73.4	n/a	NetExtMgr	18.3%	10.4%	7.8%	417.7	3,790.0	0.0	0.0	23.1	4,230.9	105.0	952.5	0.0	0.0	5.8	1,063.3
Francisco Partners VI	2023	77.2	n/a	NetExtMgr	19.3%	10.4%	8.9%	85.7	3,720.5	0.0	0.0	24.3	3,830.6	10.7	465.1	0.0	0.0	3.0	478.8
Gemspring Capital III	2023	0.3	n/a	NetExtMgr	n/a	10.4%	n/a	1,284.5	0.0	0.0	0.0	0.1	1,284.6	256.9	0.0	0.0	0.0	0.0	256.9
Great Hill Equity Partners - Great Hill VII	2023	56.7	n/a	NetExtMgr	10.2%	10.4%	-0.2%	687.1	2,570.2	0.0	0.0	17.9	3,275.2	136.1	508.9	0.0	0.0	3.5	648.5
Hellman & Friedman - Hellman Friedman IX	2023	30.9	n/a	NetExtMgr	n/a	10.4%	n/a	0.0	0.0	0.0	0.0	9.7	9.7	0.0	0.0	0.0	0.0	69.5	69.5
Hg Capital - Hg Genesis 10	2023	4.4	n/a	NetExtMgr	n/a	10.4%	n/a	876.9	0.0	0.0	0.0	1.4	878.3	180.4	0.0	0.0	0.0	0.3	180.7
Hg Capital - Hg Mercury 4	2023	0.0	n/a	NetExtMgr	n/a	10.4%	n/a	305.7	0.0	0.0	0.0	0.0	305.7	110.7	0.0	0.0	0.0	0.0	110.7
Hg Capital - Hg Saturn 3	2023	7.0	n/a	NetExtMgr	n/a	10.4%	n/a	500.0	0.0	0.0	0.0	2.2	502.2	100.0	0.0	0.0	0.0	0.4	100.4
Kps Mid Cap I	2023	15.3	n/a	NetExtMgr	15.4%	10.4%	5.0%	39.7	1,063.5	0.0	0.0	4.8	1,108.1	36.7	981.8	0.0	0.0	4.5	1,022.9
Mill Point Capital - Mill Point Cap II	2023	34.4	n/a	NetExtMgr	46.1%	10.4%	35.7%	647.9	4,889.2	0.0	0.0	10.8	5,548.0	129.6	977.8	0.0	0.0	2.2	1,109.6
Nordic Capital X	2023	97.5	n/a	NetExtMgr	16.4%	10.4%	6.0%	1,265.5	4,005.5	0.0	0.0	30.8	5,301.7	114.6	362.6	0.0	0.0	2.8	479.9
Nordic Capital XI	2023	1.0	n/a	NetExtMgr	n/a	10.4%	n/a	786.5	0.0	0.0	0.0	0.3	786.8	142.4	0.0	0.0	0.0	0.1	142.5
Peak Rock Capital III	2023	20.6	n/a	NetExtMgr	27.9%	10.4%	17.5%	387.2	2,240.5	0.0	0.0	6.5	2,634.3	77.4	448.1	0.0	0.0	1.3	526.9
Pacific Equity Partners - PEP V	2023	3.2	n/a	NetExtMgr	n/a	10.4%	n/a	4.2	-62.1	0.0	0.0	1.0	-57.0	8.9	-133.6	0.0	0.0	2.1	-122.6
Providence Equity - Providence EQ VIII	2023	119.6	n/a	NetExtMgr	6.0%	10.4%	-4.4%	108.7	-376.4	0.0	0.0	37.7	-230.0	18.3	-63.4	0.0	0.0	6.4	-38.7
Silver Lake Partners - Silver Lake VI	2023	57.6	n/a	NetExtMgr	-2.0%	10.4%	-12.4%	187.5	0.0	0.0	0.0	18.2	205.7	37.5	0.0	0.0	0.0	3.6	41.1
TA Associates XIII	2023	38.9	n/a	NetExtMgr	n/a	10.4%	n/a	0.2	505.5	0.0	0.0	12.3	518.0	150.0	335,031.5	0.0	0.0	8,127.7	343,309.3
TA Associates XIV	2023	16.5	n/a	NetExtMgr	n/a	10.4%	n/a	742.5	214.2	0.0	0.0	5.2	961.9	150.0	43.3	0.0	0.0	1.0	194.3
Warburg Pincus X	2023	1.9	n/a	NetExtMgr	0.9%	10.4%	-9.5%	0.0	-1.9	0.0	0.0	0.6	-1.3	0.0	-2.9	0.0	0.0	0.9	-1.9
WL Ross - WLR Transportation	2023	35.9	n/a	NetExtMgr	44.1%	10.4%	33.7%	218.2	1,425.7	0.0	0.0	11.3	1,655.2	105.8	691.6	0.0	0.0	5.5	802.9
Alpine Investors IX	2023	0.3	n/a	NetExtMgr	n/a	10.4%	n/a	1,098.6	0.0	0.0	0.0	0.1	1,098.7	219.7	0.0	0.0	0.0	0.0	219.7
HighVista Strategies - HighVista PE VIII	2023	50.0	n/a	NetExtMgr	2.0%	10.4%	-8.4%	300.0	154.2	501.5	650.2	15.8	1,621.6	89.7	46.1	150.0	194.5	4.7	485.1
HighVista Strategies - HighVista US PE IX	2023	90.1	n/a	NetExtMgr	6.1%	10.4%	-4.3%	606.4	511.5	1,575.0	1,171.5	28.4	3,892.8	57.8	48.7	150.0	111.6	2.7	370.7
KKR CFO Co Invest I	2023	1.5	n/a	NetExtMgr	29.4%	10.4%	19.0%	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.3	0.3
KKR CFO Co Invest II	2023	1.5	n/a	NetExtMgr	25.7%	10.4%	15.3%	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	0.3	0.3
Providence Strategic Growth - PSG III Co-Invest I	2023	26.1	n/a	NetExtMgr	-53.8%	10.4%	-64.2%	0.0	0.0	0.0	0.0	8.2	8.2	0.0	0.0	0.0	0.0	4.1	4.1
Blackstone - Strategic Partner IX Co-Inv I	2023	18.2	n/a	NetExtMgr	7.1%	10.4%	-3.3%	0.0	0.0	0.0	0.0	5.7	5.7	0.0	0.0	0.0	0.0	3.2	3.2
Westcap Co Inv I	2023	53.1	n/a	NetExtMgr	-10.1%	10.4%	-20.5%	300.0	-96.0	0.0	0.0	16.8	220.7	100.0	-32.0	0.0	0.0	5.6	73.6
WestCap II Co Invest I	2023	1.3	n/a	NetExtMgr	n/a	10.4%	n/a	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0	0.3	0.3
WestCap II Co Invest II	2023	15.0	n/a	NetExtMgr	-0.2%	10.4%	-10.6%	0.0	0.0	0.0	0.0	4.7	4.7	0.0	0.0	0.0	0.0	3.2	3.2
WestCap II Co Invest III	2023	18.3	n/a	NetExtMgr	-4.1%	10.4%	-14.6%	0.0	-400.7	0.0	0.0	5.8	-394.9	0.0	-267.1	0.0	0.0	3.9	-263.3
WestCap II Co Invest IV	2023	7.5	n/a	NetExtMgr	-0.1%	10.4%	-10.6%	0.0	0.0	0.0	0.0	2.4	2.4	0.0	0.0	0.0	0.0	3.2	3.2
WL Ross - BB Aggregator LLC	2023	2.0	n/a	NetExtMgr	n/a	10.4%	n/a	0.0	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.2	0.2
Goldman Sachs - GS Vintage V	2023	5.3	n/a	NetExtMgr	-1.9%	10.4%	-12.4%	41.8	41.9	0.0	0.0	1.7	85.4	-14.2	-14.2	0.0	0.0	-0.6	-28.9
Morgan Stanley - MS - Private Equity	2023	28.8	n/a	NetExtMgr	-6.6%	10.4%	-17.0%	0.0	-32.0	0.0	0.0	9.1	-22.9	0.0	-11.1	0.0	0.0	3.2	-7.9
Providence Strategic Growth - Providence Strat Growth III	2023	71.6	n/a	NetExtMgr	-8.3%	10.4%	-18.7%	639.8	-607.2	0.0	0.0	22.6	55.2	103.5	-98.2	0.0	0.0	3.7	8.9
Providence Strategic Growth - Providence Strat Growth IV	2023	83.0	n/a	NetExtMgr	11.7%	10.4%	1.3%	699.9	2,616.5	0.0	0.0	26.2	3,342.6	106.9	399.8	0.0	0.0	4.0	510.7
Providence Strategic Growth - Providence Strat Growth V	2023	27.5	n/a	NetExtMgr	11.5%	10.4%	1.1%	808.2	839.3	0.0	0.0	8.7	1,656.1	161.6	167.9	0.0	0.0	1.7	331.2
Reservoir Capital Partners - Reservoir Capital	2023	1.6	n/a	NetExtMgr	25.9%	10.4%	15.4%	2.1	33.2	0.0	0.0	0.5	35.8	0.6	9.5	0.0	0.0	0.1	10.2
Blackstone - Strategic Partner IX	2023	22.8	n/a	NetExtMgr	5.1%	10.4%	-5.4%	1,000.0	364.9	0.0	0.0	7.2	1,372.1	100.0	36.5	0.0	0.0	0.7	137.2
WestCap Strat OP FD	2023	165.7	n/a	NetExtMgr	-16.3%	10.4%	-26.7%	1,389.1	4,121.4	0.0	0.0	52.3	5,562.8	148.1	439.5	0.0	0.0	5.6	593.2
WestCap Strat Op FD II	2023	64.5	n/a	NetExtMgr	-1.1%	10.4%	-11.5%	1,750.0	0.0	0.0	0.0	20.3	1,770.3	175.0	0.0	0.0	0.0	2.0	177.0
Paul Capital IX	2023	8.4	n/a	NetExtMgr	-45.0%	10.4%	-55.4%	331.2	0.0	490.6	50.3	2.6	874.8	81.0	0.0	120.0	12.3	0.6	214.0
Apollo Drive	2023	5.1	n/a	NetExtMgr	126.5%	14.6%	112.0%	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.0	20.1	20.1
Apollo Hybrid II Co Invest I	2023	7.4	n/a	NetExtMgr	n/a	14.6%	n/a	0.0	0.0	0.0	0.0	2.3	2.3	0.0	0.0	0.0	0.0	2.4	2.4
Apollo Midcap FinCo	2023	74.8	n/a	NetExtMgr	21.7%	14.6%	7.1%	1,263.9	-3,349.0	0.0	0.0	23.6	-2,061.5	194.3	-514.9	0.0	0.0	3.6	-316.9
Apollo Midcap FinCo II	2023	1.0	n/a	NetExtMgr	36.6%	14.6%	22.1%	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.2	0.2
Apollo Neptune - Spar	2023	8.4	n/a	NetExtMgr	4.3%	14.6%	-10.3%	0.0	0.0	0.0	0.0	2.6	2.6	0.0	0.0	0.0	0.0	2.6	2.6
Apollo Rose II	2023	71.1	n/a	NetExtMgr	-6.4%	14.6%	-20.9%	0.0	0.0	0.0	0.0	22.4	22.4	0.0	0.0	0.0	0.0	3.4	3.4
Apollo Tele	2023	4.0	n/a	NetExtMgr	n/a	14.6%	n/a	0.0	0.0	0.0	0.0	1.2	1.2	0.0	0.0	0.0	0.0	0.9	0.9
Apollo Ulysses	2023	11.6	n/a	NetExtMgr	6.0%	14.6%	-8.5%	0.0	0.0	0.0	0.0	3.7	3.7	0.0	0.0	0.0	0.0	2.9	2.9
Banner Ridge Partners - Banner Ridge Sec V Co Inv I	2023	0.1	n/a	NetExtMgr	n/a	14.6%	n/a	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eagle Point Credit - Eagle Point SRT Co Invest I	2023	3.6	n/a	NetExtMgr	n/a	14.6%	n/a	0.0	0.0	0.0	0.0	1.1	1.1	0.0	0.0	0.0	0.0	3.2	3.2
KKR ABF Co Invest I	2023	2.0	n/a	NetExtMgr	n/a	14.6%	n/a	0.0	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	0.6	0.6
KKR Co Invest I	2023	9.8	n/a	NetExtMgr	19.8%	14.6%	5.2%	0.0	0.0	0.0	0.0	3.1	3.1	0.0	0.0	0.0	0.0	3.5	3.5
KKR Co Invest II	2023	9.8	n/a	NetExtMgr	17.8%	14.6%	3.3%	0.0	0.0	0.0	0.0	3.1	3.1	0.0	0.0	0.0	0.0	3.4	3.4
KKR Co Invest III	2023	5.0	n/a	NetExtMgr	n/a	14.6%	n/a	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.0	0.0	0.0	3.2	3.2
KKR Co Invest IV	2023	1.5	n/a	NetExtMgr	n/a	14.6%	n/a	0.0	0.0	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	3.2	

Details			Assets (millions)		Returns (%)				Costs (000s)					Costs (bps)						
Option Name	Year	Average	Year-end	ReturnType	Return %	Policy Return	Value Added	Base fees	Perf. Fees	Und Base	Und Perf	Internal & Oversight	Total	Base fees	Perf. Fees	Und Base	Und Perf	Internal & Oversight	Total	
KKR ABF Co Invest II	2023	0.4	n/a	NetExtMgr	n/a	14.6%	n/a	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.3
KKR CFO Co Invest III	2023	2.4	n/a	NetExtMgr	n/a	14.6%	n/a	0.0	0.0	0.0	0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.3	0.3
Apollo ADIP	2023	194.9	n/a	NetExtMgr	5.0%	14.6%	-9.6%	0.0	575.6	0.0	0.0	61.5	637.1	0.0	45.5	0.0	0.0	4.9	50.3	
Apollo ADIP II	2023	15.1	n/a	NetExtMgr	n/a	14.6%	n/a	0.0	238.0	0.0	0.0	4.8	242.8	0.0	16.1	0.0	0.0	0.3	16.4	
Apollo Euro Principal Fin I	2023	0.3	n/a	NetExtMgr	-1.6%	14.6%	-16.2%	0.0	-9.4	0.0	0.0	0.1	-9.3	0.0	41.9	0.0	0.0	-0.4	41.4	
Apollo Euro Principal Fin II	2023	2.8	n/a	NetExtMgr	-36.6%	14.6%	-51.1%	23.0	0.0	0.0	0.0	0.9	23.9	7.0	0.0	0.0	0.0	0.3	7.3	
Apollo Hybrid Value Fd	2023	40.7	n/a	NetExtMgr	13.0%	14.6%	-1.5%	495.1	1,150.2	0.0	0.0	12.8	1,658.1	141.0	327.5	0.0	0.0	3.7	472.2	
Apollo Hybrid Value II	2023	73.7	n/a	NetExtMgr	13.3%	14.6%	-1.2%	975.8	0.0	0.0	0.0	23.2	999.0	65.8	0.0	0.0	0.0	1.6	67.4	
Apollo Moultrie Credit	2023	504.0	n/a	NetExtMgr	11.7%	14.6%	-2.9%	4,563.0	7,064.0	0.0	0.0	158.9	11,786.0	160.6	248.7	0.0	0.0	5.6	414.9	
Ares Jasper Fund	2023	308.2	n/a	NetExtMgr	10.5%	14.6%	-4.0%	3,477.1	9,919.0	0.0	0.0	97.2	13,493.3	152.2	434.1	0.0	0.0	4.3	590.6	
Ares Pathfinder Fund LP	2023	56.3	n/a	NetExtMgr	8.8%	14.6%	-5.8%	687.2	1,372.9	0.0	0.0	17.7	2,077.9	91.6	183.1	0.0	0.0	2.4	277.1	
Avenue Capital Group - Avenue SSF VI	2023	11.0	n/a	NetExtMgr	-2.2%	14.6%	-16.7%	0.0	0.0	0.0	0.0	3.5	3.5	0.0	0.0	0.0	0.0	16.3	16.3	
Banner Ridge Partners - Banner Ridge Secondary V	2023	0.9	n/a	NetExtMgr	n/a	14.6%	n/a	524.0	177.8	0.0	0.0	0.3	702.1	5,681.3	1,928.0	0.0	0.0	3.2	7,612.5	
Barings Cap Invest B	2023	137.1	n/a	NetExtMgr	11.3%	14.6%	-3.2%	449.9	2,572.3	0.0	0.0	43.2	3,065.5	32.7	187.1	0.0	0.0	3.1	222.9	
Barings CMS Fund	2023	1.8	n/a	NetExtMgr	n/a	14.6%	n/a	0.0	47.8	0.0	0.0	0.6	48.4	0.0	159.4	0.0	0.0	1.9	161.4	
Blue Owl First Lien I	2023	181.5	n/a	NetExtMgr	16.1%	14.6%	1.5%	2,446.3	0.0	0.0	0.0	57.2	2,503.5	131.9	0.0	0.0	0.0	3.1	135.0	
Blue Owl First Lien II	2023	73.9	n/a	NetExtMgr	9.6%	14.6%	-4.9%	-240.5	0.0	0.0	0.0	23.3	-217.2	-16.0	0.0	0.0	0.0	1.6	-14.5	
Blue Owl Tech BDC	2023	103.3	n/a	NetExtMgr	9.0%	14.6%	-5.5%	1,785.4	1,255.2	0.0	0.0	32.6	3,073.2	178.5	125.5	0.0	0.0	3.3	307.3	
Goldman Sachs - Broad Street Credit I	2023	76.7	n/a	NetExtMgr	10.9%	14.6%	-3.7%	851.7	2,017.8	0.0	0.0	24.2	2,893.7	101.6	240.7	0.0	0.0	2.9	345.3	
KKR - Credit Opport Partners JV	2023	197.9	n/a	NetExtMgr	16.3%	14.6%	1.7%	0.0	0.0	0.0	0.0	62.4	62.4	0.0	0.0	0.0	0.0	2.8	2.8	
Crescent Capital - Crescent Mezz V	2023	0.5	n/a	NetExtMgr	55.2%	14.6%	40.7%	0.0	-3.8	0.0	0.0	0.2	-3.7	0.0	67.1	0.0	0.0	-2.6	64.5	
Crescent Capital - Crescent Mezz VI	2023	10.4	n/a	NetExtMgr	4.3%	14.6%	-10.3%	82.4	292.0	0.0	0.0	3.3	377.7	53.1	188.2	0.0	0.0	2.1	243.4	
Eagle Point Credit	2023	51.2	n/a	NetExtMgr	14.8%	14.6%	0.2%	773.8	618.0	0.0	0.0	16.2	1,407.9	154.8	123.6	0.0	0.0	3.2	281.6	
Eagle Point Credit - Eagle Point Defensive II	2023	22.9	n/a	NetExtMgr	14.8%	14.6%	0.2%	213.4	348.0	0.0	0.0	7.2	568.6	42.7	69.6	0.0	0.0	1.4	113.7	
Eagle Point Credit - Eagle Point Defensive Income	2023	50.5	n/a	NetExtMgr	6.4%	14.6%	-8.1%	661.3	0.0	0.0	0.0	15.9	677.3	120.2	0.0	0.0	0.0	2.9	123.1	
EIG Global Energy Partners - EIG Gateway Fund	2023	3.4	n/a	NetExtMgr	-13.7%	14.6%	-28.3%	0.0	0.0	0.0	0.0	1.1	1.1	0.0	0.0	0.0	0.0	0.3	0.3	
Fortress Group - Fortress Credit OP V	2023	30.8	n/a	NetExtMgr	5.1%	14.6%	-9.5%	318.0	470.1	0.0	0.0	9.7	797.8	42.4	62.7	0.0	0.0	1.3	106.4	
Fortress Group - Fortress Lending Fund II	2023	52.7	n/a	NetExtMgr	16.2%	14.6%	1.7%	695.6	1,795.2	0.0	0.0	16.6	2,507.3	92.7	239.4	0.0	0.0	2.2	334.3	
Fortress Group - Fortress Lending Fund III	2023	30.4	n/a	NetExtMgr	9.2%	14.6%	-5.4%	388.9	756.4	0.0	0.0	9.6	1,154.8	77.8	151.3	0.0	0.0	1.9	231.0	
GoldenTree Asset - GoldenTree Loan II	2023	43.3	n/a	NetExtMgr	27.2%	14.6%	12.6%	2,730.4	1,243.5	0.0	0.0	13.7	3,987.6	364.1	165.8	0.0	0.0	1.8	531.7	
GoldenTree Asset - GoldenTree Structured VII	2023	12.7	n/a	NetExtMgr	-4.5%	14.6%	-19.1%	6.5	-73.5	0.0	0.0	4.0	-63.1	2.6	-29.4	0.0	0.0	1.6	-25.2	
Goldman Sachs Mezz V	2023	0.1	n/a	NetExtMgr	n/a	14.6%	n/a	0.0	-0.4	0.0	0.0	0.0	-0.4	0.0	-4.9	0.0	0.0	0.3	-4.6	
GSO Capital Partners, LP - GSO - Private Debt	2023	103.6	n/a	NetExtMgr	-2.8%	14.6%	-17.4%	62.8	-4.4	0.0	0.0	32.7	91.1	6.1	-0.4	0.0	0.0	3.2	8.8	
Hark Capital Advisors - Hark Capital III	2023	32.3	n/a	NetExtMgr	11.2%	14.6%	-3.4%	525.4	677.7	0.0	0.0	10.2	1,213.3	131.4	169.4	0.0	0.0	2.5	303.3	
Heitman Capital - Heitman Core RE Cred	2023	48.0	n/a	NetExtMgr	-0.8%	14.6%	-15.3%	305.5	0.0	0.0	0.0	15.1	320.7	84.8	0.0	0.0	0.0	4.2	89.0	
Highbridge Principal Strategies - Highbridge Sandlapper Cr	2023	295.6	n/a	NetExtMgr	11.6%	14.6%	-2.9%	2,423.1	4,431.5	0.0	0.0	93.2	6,947.9	81.5	149.1	0.0	0.0	3.1	233.7	
Barings - Jocassee Partners	2023	402.7	n/a	NetExtMgr	12.3%	14.6%	-2.2%	0.0	0.0	0.0	0.0	127.0	127.0	0.0	0.0	0.0	0.0	4.3	4.3	
KKR ABF Partners	2023	43.8	n/a	NetExtMgr	5.6%	14.6%	-8.9%	247.4	687.4	0.0	0.0	13.8	948.6	24.7	68.7	0.0	0.0	1.4	94.9	
KKR Lending Partners II	2023	8.3	n/a	NetExtMgr	6.6%	14.6%	-7.9%	0.0	0.0	0.0	0.0	2.6	2.6	0.0	0.0	0.0	0.0	1.6	1.6	
KKR Lending Partners III	2023	105.8	n/a	NetExtMgr	13.4%	14.6%	-1.2%	2,141.4	0.0	0.0	0.0	33.4	2,174.7	186.2	0.0	0.0	0.0	2.9	189.1	
KKR Lending Partners IV	2023	30.1	n/a	NetExtMgr	n/a	14.6%	n/a	452.0	0.0	0.0	0.0	9.5	461.5	30.1	0.0	0.0	0.0	0.6	30.8	
KKR SSF II	2023	60.5	n/a	NetExtMgr	-10.6%	14.6%	-25.2%	172.7	0.0	0.0	0.0	19.1	191.8	30.7	0.0	0.0	0.0	3.4	34.1	
Northstar Mezz V	2023	0.2	n/a	NetExtMgr	n/a	14.6%	n/a	0.0	-109.0	0.0	0.0	0.1	-108.9	0.0	-177.3	0.0	0.0	0.1	-177.2	
Bain Capital - Sankaty COP IV	2023	2.7	n/a	NetExtMgr	-2.5%	14.6%	-17.1%	0.0	-132.4	0.0	0.0	0.8	-131.5	0.0	-496.5	0.0	0.0	3.2	-493.3	
Bain Capital - Sankaty COP V	2023	9.3	n/a	NetExtMgr	3.0%	14.6%	-11.5%	0.0	-262.5	0.0	0.0	2.9	-259.6	0.0	-214.4	0.0	0.0	2.4	-212.0	
WL Ross Whole Loans	2023	1.0	n/a	NetExtMgr	-3.7%	14.6%	-18.2%	0.0	-44.5	0.0	0.0	0.3	-44.2	0.0	-57.3	0.0	0.0	0.4	-56.9	
GoldenTree Asset - GoldenTree Loan III	2023	0.3	n/a	NetExtMgr	n/a	14.6%	n/a	42.4	0.0	0.0	0.0	0.1	42.5	5.7	0.0	0.0	0.0	0.0	5.7	
Russell - Overlay	2023	815.9	n/a	n/a	n/a	0.0%	n/a	1,028.2	0.0	0.0	0.0	257.3	1,285.6	0.0	0.0	0.0	0.0	n/a	n/a	

Appendix B - Data Integrity

The value of the information contained in these reports is only as good as the quality of the data received. As a data and insights company, our reputation is built on high standards of data quality. CEM upholds the following

Data Principles for quality:

- Completeness
- Comparability
- Accuracy
- Confidentiality
- Providence
- Timeliness
- Transparency
- Security

CEM's **Data Governance Committee**, with input from our clients, sets the data principles and ensures the compliance of the principles.

To ensure the completeness and comparability of the cost data, we:

- **Forward fill costs** for mandates from last year's reporting where missing for this year, or
- **Estimate costs** from your contractual deal terms (e.g., LP details) where missing, or
- **Impute costs** based on the experiences of the peers where an estimation or forward fill is not possible.

Return conversion: For comparability of performance data, the reports where either the peer group or universe include funds from multiple countries, we typically convert 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 convert U.S. returns to Euro based on the currency return for the year using December 31 spot rates.

Data cleaning for accuracy: CEM's procedures for checking the accuracy of data include the following:

- Data with material errors or omissions cannot be submitted to CEM.
- Once a survey is submitted, our rules engine identifies potential areas of discrepancies.
- Our internal experts then review the discrepancies and engage the survey respondent to iron out issues. In specific circumstances, our team is permitted to enrich the data for completeness and comparability using the approaches described above.
- Where we do not have clarity and confidence in the data, it is rejected.
- Finally, our Relationship Managers perform a final check before the material is shipped.

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.

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

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.