



# North Carolina Retirement Systems Investment Cost Effectiveness Analysis

Summary of results for the 5-year period ending December 31, 2021

November 9, 2022

# Key takeaways

## Returns

- Your 5-year net total return was 9.4%. This was below both the U.S. Public median of 11.2% and the peer median of 11.7%.
- Your 5-year policy return was 9.4%. This was below both the U.S. Public median of 10.7% and the peer median of 10.9%.

## Value added

- Your 5-year net value added was 0.0%. This was below both the U.S. Public median of 0.7% and the peer median of 0.9%.

## Cost

- Your investment cost of 28.3 bps was below your benchmark cost of 33.3 bps. This suggests that your fund was low cost compared to your peers.
- Your fund was low cost because it paid less than its peers for similar services.
- Your costs decreased by 14.6 bps, from 42.9 bps in 2017 to 28.3 bps in 2021, primarily because you moved to a lower cost asset mix - Less private assets, more fixed income.

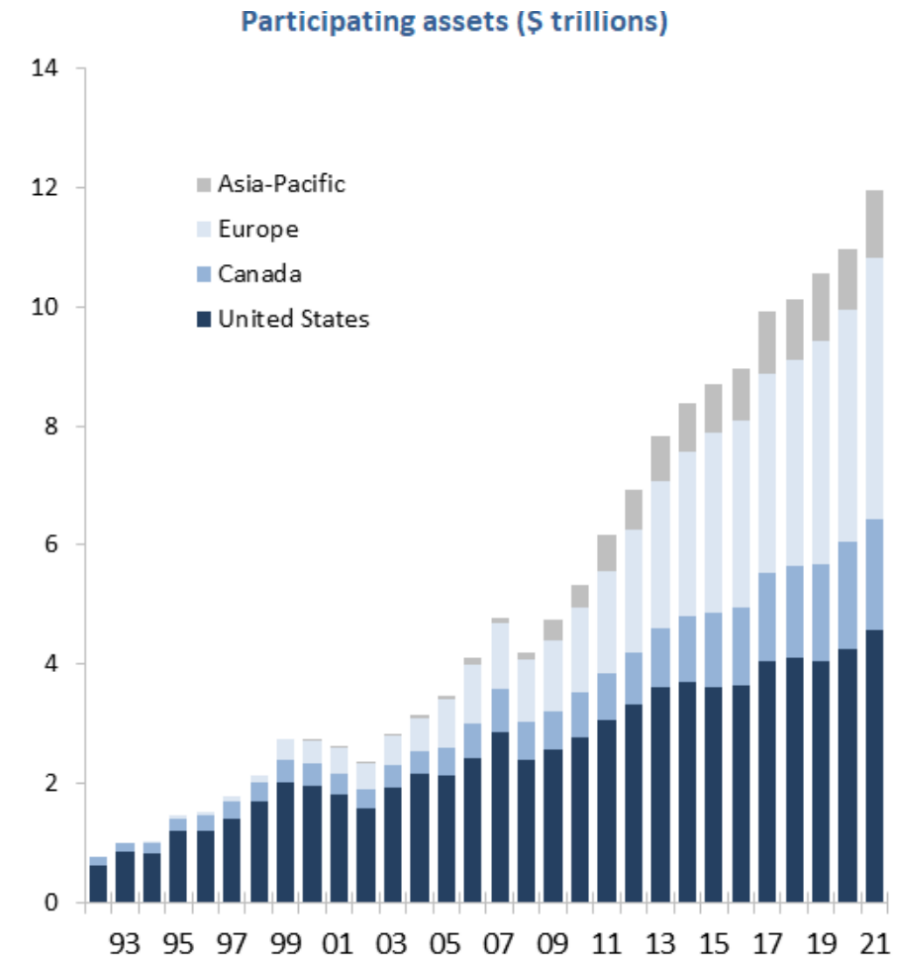
## Risk

- Your asset risk of 9.6% was below the U.S. Public median of 11.1%.

# This benchmarking report compares your cost and return performance to the 274 funds in CEM's extensive pension database.

- 145 U.S. pension funds participate. The median U.S. fund had assets of \$13.2 billion and the average U.S. fund had assets of \$31.5 billion. Total participating U.S. assets were \$4.6 trillion.
- 67 Canadian funds participate with assets totaling \$1.9 trillion.
- 54 European funds participate with aggregate assets of \$4.3 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Ireland, Denmark and the U.K.
- 6 Asia-Pacific funds participate with aggregate assets of \$1.1 trillion. Included are funds from Australia, New Zealand, China and South Korea.
- 2 funds from other regions participate.

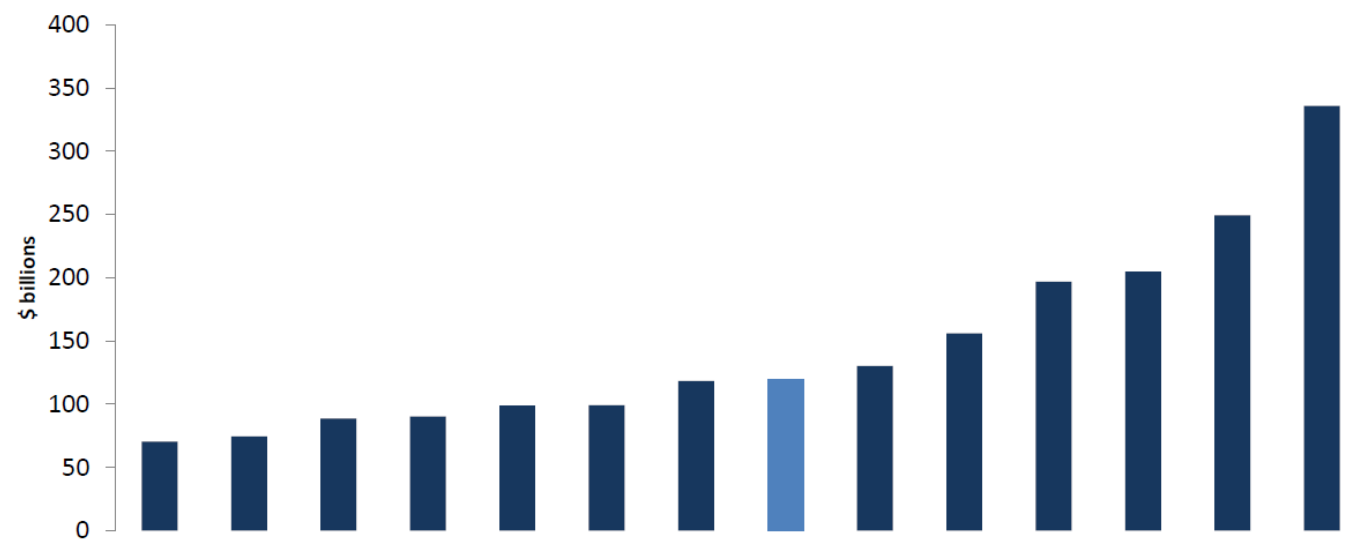
The most meaningful comparisons for your returns and value added are to the U.S. Public universe, which consists of 46 funds."



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

## Peer group for North Carolina Retirement Systems

- 14 U.S. Public sponsors from \$70.6 billion to \$335.8 billion
- Median size of \$119.1 billion versus your \$119.9 billion



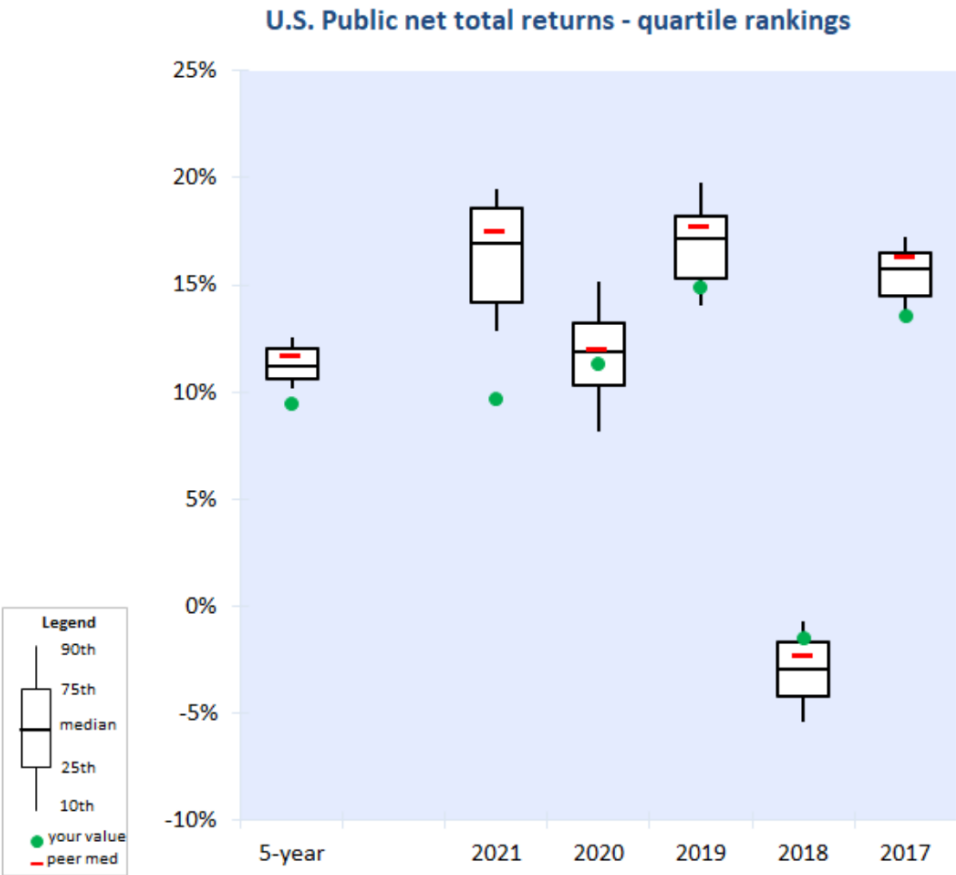
To preserve client confidentiality, given potential access to documents as permitted by the Freedom of Information Act, we do not disclose your peers' names in this document. For some of the peers, 2020 cost data was used as a proxy for 2021.

# Your 5-year net total return of 9.4% was below both the U.S. Public median of 11.2% and the peer median of 11.7%.

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	9.4%
- Policy return	9.4%
= Net value added	0.0%

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





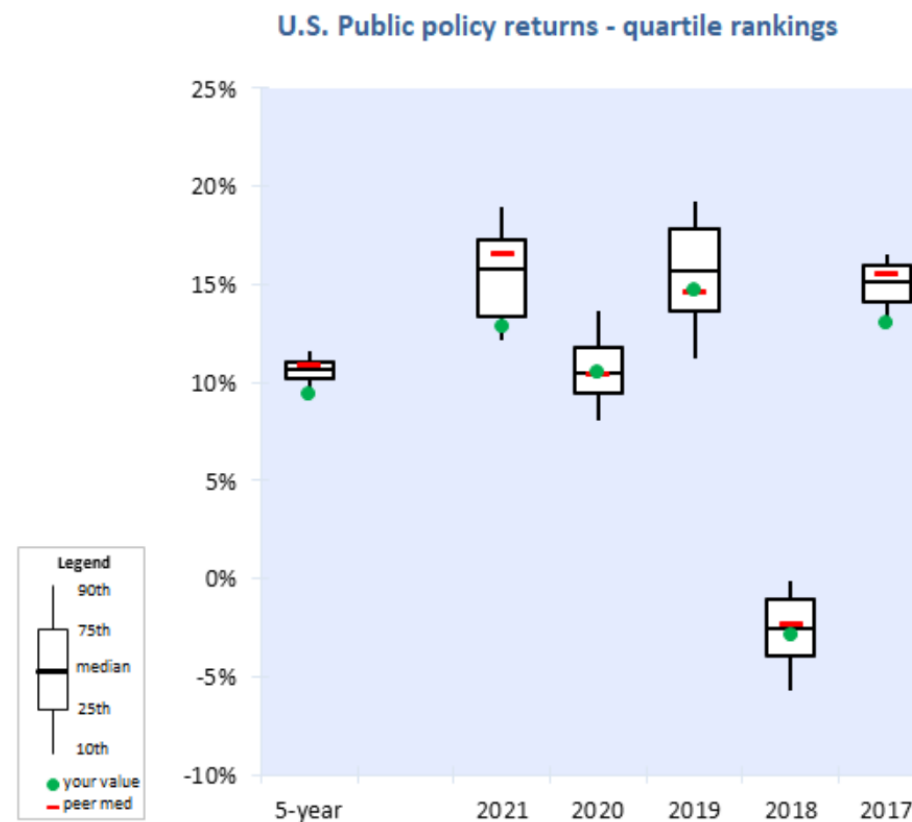
# Your 5-year policy return of 9.4% was below both the U.S. Public median of 10.7% and the peer median of 10.9%.

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 9.5%, 0.0% higher than your adjusted 5-year policy return of 9.4%. Mirroring this, your 5-year total fund net value added would be 0.0% lower.

## Your 5-year policy return of 9.4% was below the U.S. Public median of 10.7% primarily because of:

- The negative impact of your lower weight in Stock and Private Equity, which were two of the better performing asset classes over the past 5 years.
- The negative impact of your higher weight in Fixed Income, which was one of the poorer performing asset classes over the past 5 years.

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

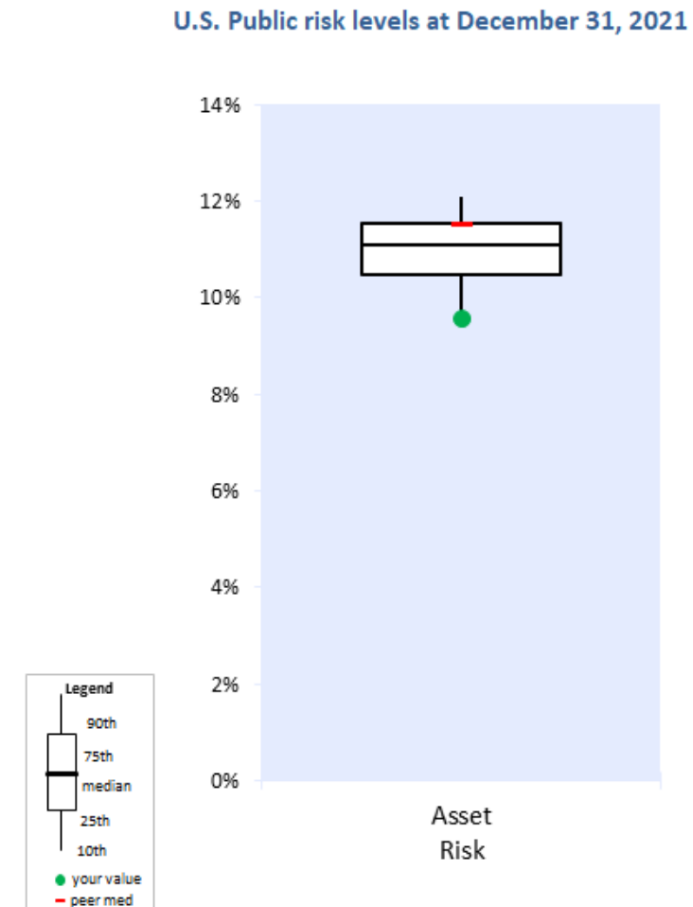
2. Other stock includes Emerging. Other fixed income includes Long Bonds and High Yield. Other real assets includes Infrastructure and REITs.

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.

	5-year average policy mix <sup>1</sup>			5-year bench- mark return	
	Your Fund	U.S. Publ Avg.	More/ Less	Your Fund	U.S. Publ Avg.
Stock - U.S.	21%	18%	3%	17.9%	17.6%
Stock - EAFE	0%	4%	-5%	9.5%	9.8%
Stock - ACWI x U.S.	21%	7%	14%	9.8%	9.9%
Stock - Global	0%	13%	-13%	n/a <sup>3</sup>	14.5%
Other Stock <sup>2</sup>	0%	5%	-5%	n/a <sup>3</sup>	n/a <sup>3</sup>
Total Stock	42%	46%	-4%	13.9%	14.3%
Fixed Income - U.S.	25%	17%	8%	4.6%	3.7%
Fixed Inc. - Inflation indexed	2%	3%	-1%	3.0%	5.3%
Cash	4%	-1%	5%	1.1%	1.2%
Other Fixed Income <sup>2</sup>	0%	8%	-8%	n/a <sup>3</sup>	n/a <sup>3</sup>
Total Fixed Income	31%	27%	4%	4.0%	4.6%
Global TAA	2%	1%	1%	5.5%	7.4%
Hedge funds	3%	3%	0%	4.2%	4.7%
Commodities	1%	1%	0%	3.7%	3.4%
Natural resources	3%	1%	2%	3.9%	5.1%
Real estate ex-REITs	7%	8%	-1%	7.7%	7.4%
Other Real Assets <sup>2</sup>	1%	2%	-1%	n/a <sup>3</sup>	n/a <sup>3</sup>
Private equity	6%	9%	-3%	13.6%	14.4%
Private debt	4%	2%	2%	4.4%	6.1%
Total	100%	100%			

# Your asset risk of 9.6% was below the U.S. Public median of 11.1%.

- Asset risk is the standard deviation of your policy return. It is based on the historical variance of, and covariance between, the asset classes in your policy mix.





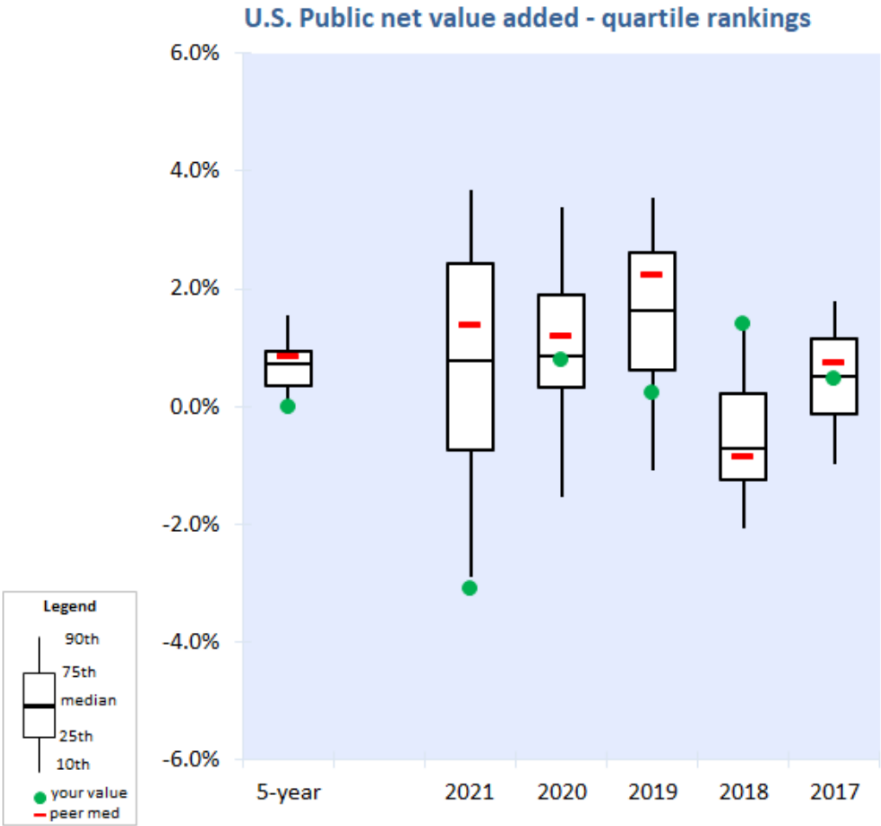
# Net value added is the component of total return from active management. Your 5-year net value added was 0.0%.

Net value added equals total net return minus policy return.

Value added for North Carolina Retirement Systems

Year	Net return	Policy return	Net value added
2021	9.7%	12.8%	-3.1%
2020	11.3%	10.5%	0.8%
2019	14.9%	14.7%	0.2%
2018	-1.5%	-2.9%	1.4%
2017	13.5%	13.0%	0.5%
5-Year	9.4%	9.4%	0.0%

Your 5-year net value added of 0.0% compares to a median of 0.9% for your peers and 0.7% for the U.S. Public universe.



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 0.0%.

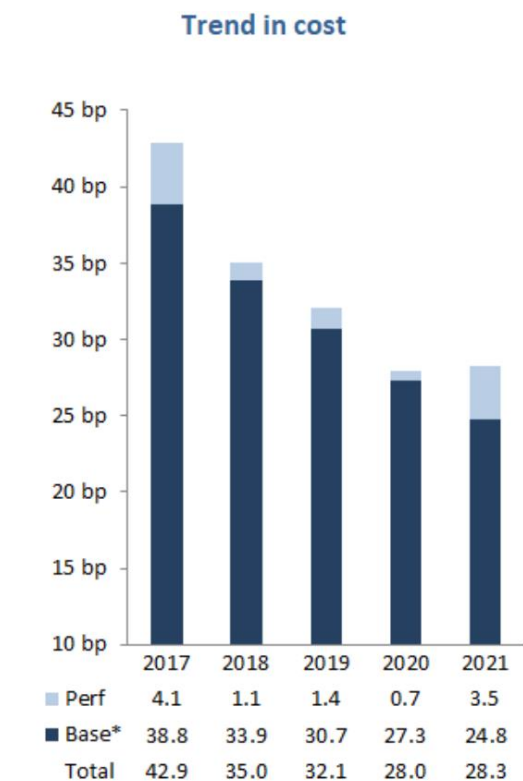
Your investment costs, excluding private asset performance fees, were \$339.2 million or 28.3 basis points in 2021.

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

2. Excludes non-investment costs, such as benefit insurance premiums and preparing cheques for retirees.

Asset management costs by asset class and style (\$000s)	Internal Management			External Management			Total
	Passive	Active	Overseeing of external	Passive fees	Active base fees	Perform. fees <sup>1</sup>	
Stock - U.S. broad/all			118		5,362		5,480
Stock - U.S. large cap	140						140
Stock - U.S. mid cap	42		89		7,135		7,266
Stock - U.S. small cap			92		5,825		5,916
Stock - EAFE			333	0	12,536		12,869
Stock - Emerging			67		1,969		2,036
Stock - ACWI x U.S.			812	1,443	27,849		30,103
Stock - Other			1	927			928
Fixed income - U.S.		1,374					1,374
Fixed income - Inflation indexed			117	19	4,431		4,566
Cash		764					764
Commodities			21		173		194
REITs			97		2,441		2,538
Infrastructure - LP <sup>1</sup>			61		6,272	3,494	6,333
Natural resources - LP <sup>1</sup>			250		24,119	14,081	24,370
Natural resources - Co-invest. <sup>1</sup>			23		412	851	435
Real estate ex-REITs <sup>1</sup>			466		31,136	42,394	31,602
Real estate ex-REITs - LP <sup>1</sup>			293		28,401	22,478	28,693
Real estate ex-REITs - Co-invest. <sup>1</sup>			52		2,196	4,102	2,248
Real estate ex-REITs - FoFs <sup>1</sup>			12		2,214	1,120	2,226
Global TAA			134		2,000		2,134
Hedge funds - External active			249		33,555	38,614	72,418
Hedge funds - FoFs			32		7,088	3,316	10,436
Private equity - Diversified - FoFs <sup>1</sup>			68		8,413	4,206	8,481
LBO - LP <sup>1</sup>			226		23,356	81,172	23,583
Venture capital - LP <sup>1</sup>			166		12,836	31,827	13,002
Venture capital - Co-invest. <sup>1</sup>			17			3,042	17
Private credit - LP <sup>1</sup>			232		19,077	14,136	19,309
Private credit - Co-invest. <sup>1</sup>			29		2,151	1,560	2,180
Private equity - Other - LP <sup>1</sup>			156		13,550	6,479	13,706
Private equity - Other - Co-invest. <sup>1</sup>			2		175		177
Total excluding private asset performance fees							335,523 28.0bp
<b>Oversight, custodial and other costs <sup>2</sup></b>							
Oversight of the fund							2,125
Trustee & custodial							1,550
Consulting and performance measurement							0
Audit							38
Other							0
Total oversight, custodial & other costs							3,713 0.3bp
Total investment costs (excl. transaction costs & private asset performance fees)							339,236 28.3bp

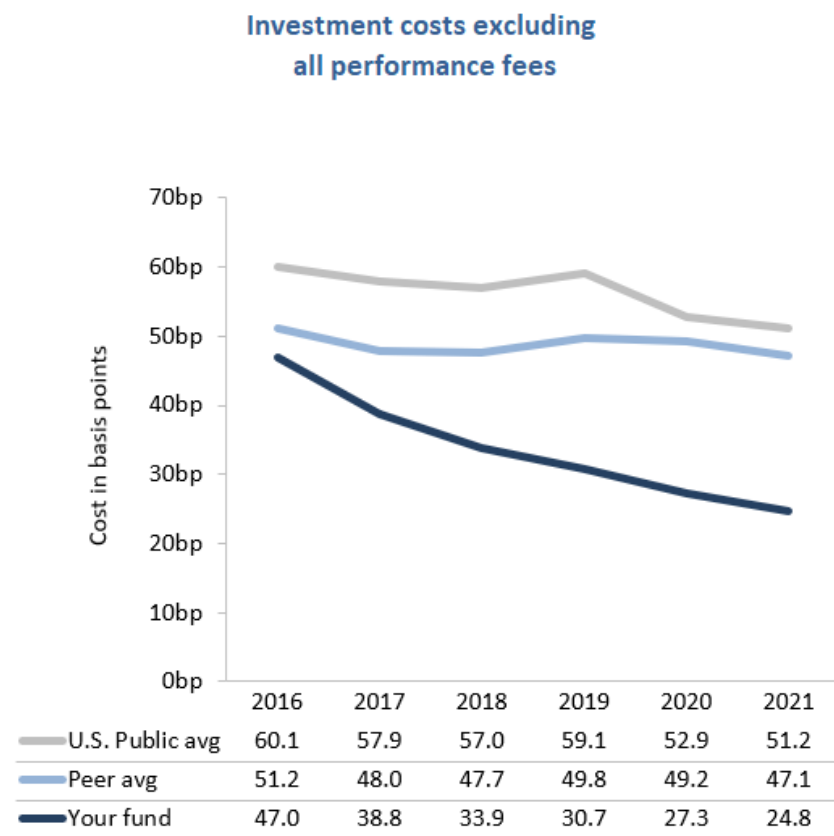
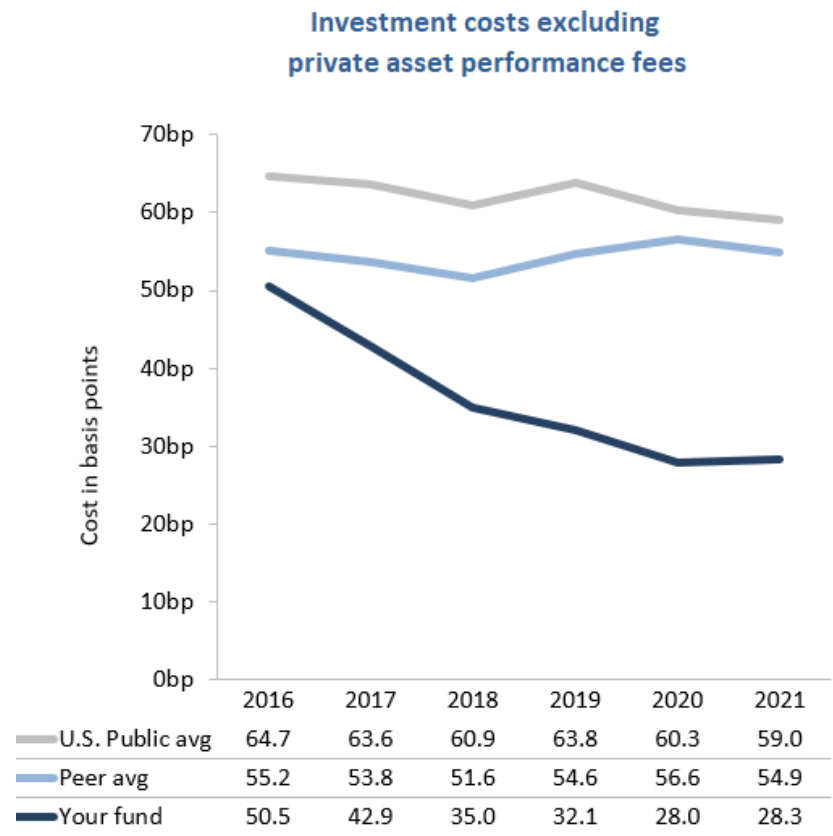
Your costs decreased from 42.9 bps in 2017 to 28.3 bps in 2021, primarily because you moved to a lower cost asset mix – Less private assets, more fixed income.



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

Reasons why your costs decreased by 14.6 bps				Impact in bps
1. Lower cost asset mix				
• Less Real estate ex-REITs: 2017 10% vs 2021 6%				(3.1)
• Less REITs & Commodities & Infrastructure & Natural resources: 2017 7% vs 2021 4%				(2.8)
• Less Hedge funds & multi-asset: 2017 8% vs 2021 5%				(5.2)
• Less Private equity: 2017 7% vs 2021 5%				(3.4)
• All other mix changes				(0.3)
				(14.8)
2. Lower cost implementation style				
				(0.7)
3. Paid more in total for similar investment styles				
	<u>2017 cost</u>	<u>2021 cost</u>		
• Higher Hedge Funds performance fees	52.6 bp	113.9 bp	1.7	
• Lower internal investment management costs			(0.2)	
• Lower oversight, custodial & other costs	0.4 bp	0.3 bp	(0.1)	
• All other differences			(0.5)	
				0.9
Total decrease				(14.6)

# Your investment cost excluding all performance fees has declined every year since 2016

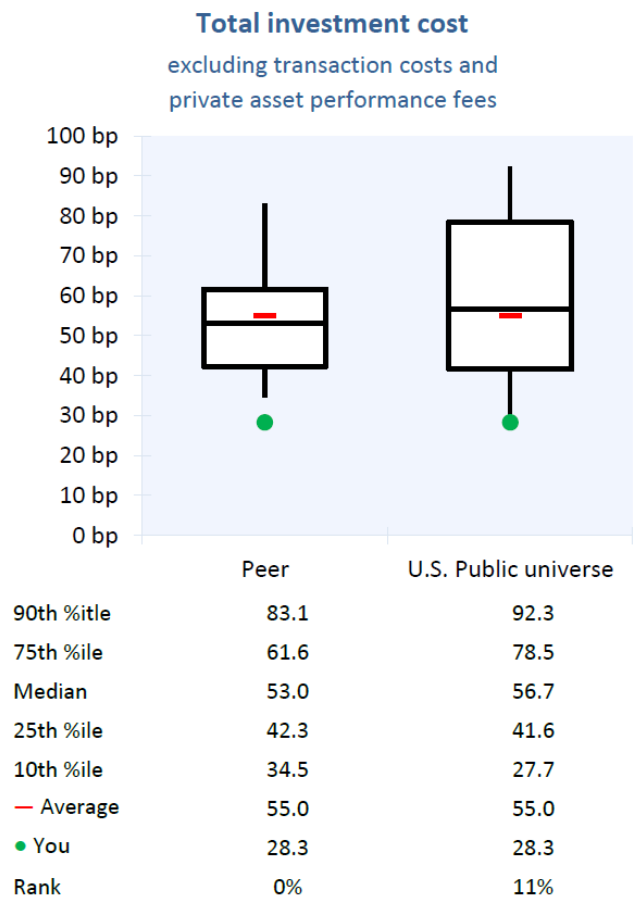


# Your total investment cost of 28.3 bps was the lowest of the peers. It was substantially below the peer median of 53.0 bps.

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

- Asset mix, particularly holdings of the highest cost asset classes: real estate (excl. REITs), infrastructure, hedge funds, private equity and private credit. These high-cost assets equaled 23% of your fund’s assets at the end of 2020 versus a peer average of 29%.
- 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.



Benchmark cost analysis suggests that, after adjusting for fund size and asset mix, your fund was low cost by 5.0 basis points in 2021.

- 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 28.3 bp was below your benchmark cost of 33.3 bp. Thus, your cost savings were 5.0 bp.

Your cost versus benchmark

	\$000s	basis points
Your total investment cost	339,236	28.3 bp
Your benchmark cost	399,272	33.3 bp
Your excess cost	(60,036)	(5.0) bp



# Your fund was low cost because it paid less than peers for similar services.

## Reasons for your low cost status

	Excess Cost/ (Savings)	
	\$000s	bps
1. Higher cost implementation style		
• Use of active management vs. lower cost passive	(2,482)	(0.2)
• Use of external management vs. lower cost internal	17,552	1.5
• More LPs as a percentage of external	12,586	1.0
• More fund of funds	3,167	0.3
• Less co-investment as a percentage of LP/Co	8,106	0.7
• Less overlays	(2,471)	(0.2)
	36,459	3.0
2. Paying less than peers for similar services		
• External investment management costs	(82,288)	(6.9)
• Internal investment management costs	(7,377)	(0.6)
• Oversight, custodial & other costs	(6,830)	(0.6)
	(96,494)	(8.0)
Total savings	(60,036)	(5.0)

# Details of your \$96.494 million savings from paying less for similar services

## Cost impact of paying more/(less) for internal asset management

	Style	Your avg holdings in \$mils	Cost in bps			Cost/ (savings) \$000s
			Your Fund	Peer median	More/ (less)	
<i>Internal asset management</i>		(A)	(B)			(A X B)
Stock - U.S. large cap	passive	13,065	0.1	0.5	(0.4)	(531)
Stock - U.S. mid cap*	passive	3,906	0.1	1.1	(1.0)	(378)
Fixed income - U.S.	active	29,827	0.5	2.6	(2.2)	(6,468)
Cash	active	16,578	0.5	Excluded	--	--
Total for internal management						(7,377)
Total in bps						(0.6) bps

<sup>1</sup>Excluded<sup>1</sup> indicates that the asset class was excluded from this analysis due to comparability concerns with peers.

\*Universe median used as peer data was insufficient.

## Cost impact of differences in oversight, custodial & other costs

	Your avg holdings in \$mils	Cost in bps			Cost/ (savings) \$000s
		Your Fund	Peer median	More/ (less)	
	(A)			(B)	(A X B)
Oversight	119,931	0.2	0.3	(0.2)	
Consulting	119,931	0.0	0.0	0.0	
Custodial	119,931	0.1	0.2	(0.1)	
Audit	119,931	0.0	0.0	(0.0)	
Other	119,931	0.0	0.1	(0.1)	
Total for oversight, custodial, other <sup>1</sup>		0.3	0.9	(0.6)	(6,830)
Total in bps					(0.6) bp

## Cost impact of paying more/-less for external asset management

	Style	Your avg holdings (mils)	Cost in bps			Cost/
			Your	Peer median	More/ -less	-Savings \$000s bps
External asset management		(A)			(B)	(A X B)
Stock - U.S. broad/all	active	1,733	31.6	35.4	-3.8	-662
Stock - U.S. mid cap <sup>1</sup>	active	1,302	55.5	53.5	2.0	263
Stock - U.S. small cap	active	1,341	44.1	66.5	-22.4	-3,001
Stock - EAFE	passive	4	0.3	1.6	-1.3	0
Stock - EAFE	active	4,884	26.3	37.8	-11.5	-5,612
Stock - Emerging	active	984	20.7	54.9	-34.2	-3,362
Stock - ACWI x U.S. <sup>1</sup>	passive	7,063	2.4	3.7	-1.3	-939
Stock - ACWI x U.S.	active	8,318	34.2	35.0	-0.8	-668
Stock - Other <sup>2</sup>	passive	30	305.2	305.2	0.0	0
Fixed income - Inflation indexed	passive	63	3.9	1.1	2.7	17
Fixed income - Inflation indexed <sup>1</sup>	active	1,302	34.9	7.7	27.2	3,545
Commodities <sup>1</sup>	active	246	7.9	46.1	-38.2	-940
REITs	active	929	27.3	49.0	-21.7	-2,016
Real estate ex-REITs	active	4,452	71.0	71.0	0.0	0
Real estate ex-REITs	CO	357	63.0	74.2	-11.1	-397
Real estate ex-REITs	LP	2,827	101.5	138.2	-36.7	-10,381
Real estate ex-REITs	FoF	107	75.9	75.9	0.0	0
Underlying base fees	FoF	107	132.9	132.9	0.0	0
Infrastructure	LP	431	147.0	147.2	-0.2	-9
Natural resources	CO	105	41.5	4.5	37.0	388
Natural resources	LP	2,796	87.2	139.5	-52.3	-14,618
Hedge funds	active	3,390	99.7	97.9	1.8	601
Top layer perf. fees	active	3,390	113.9	150.0	-36.1	-12,233
Hedge funds	FoF	438	89.7	77.2	12.5	549
Top layer perf. fees <sup>2</sup>	FoF	438	0.0	41.0	-41.0	-1,797
Underlying base fees	FoF	438	72.8	104.2	-31.5	-1,379
Underlying perf. fees	FoF	438	75.7	140.0	-64.3	-2,820
Global TAA <sup>1</sup>	active	1,809	11.8	43.9	-32.1	-5,802
Private equity - Diversified	FoF	563	56.7	59.5	-2.7	-154
Underlying base fees	FoF	563	93.8	154.0	-60.2	-3,392
Venture capital	CO	60	2.8	6.7	-3.9	-23
Venture capital	LP	932	139.5	167.8	-28.3	-2,641
LBO	LP	1,545	152.6	167.8	-15.2	-2,354
Private equity - Other <sup>3</sup>	CO	55	32.2	32.2	0.0	0
Private equity - Other <sup>3</sup>	LP	2,384	57.5	57.5	0.0	0
Private credit	CO	442	49.3	28.9	20.4	902
Private credit	LP	2,656	72.7	126.4	-53.7	-14,261
Total for external management						-83,195 -6.9 bps

1. Universe median used because peer data was insufficient.

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

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

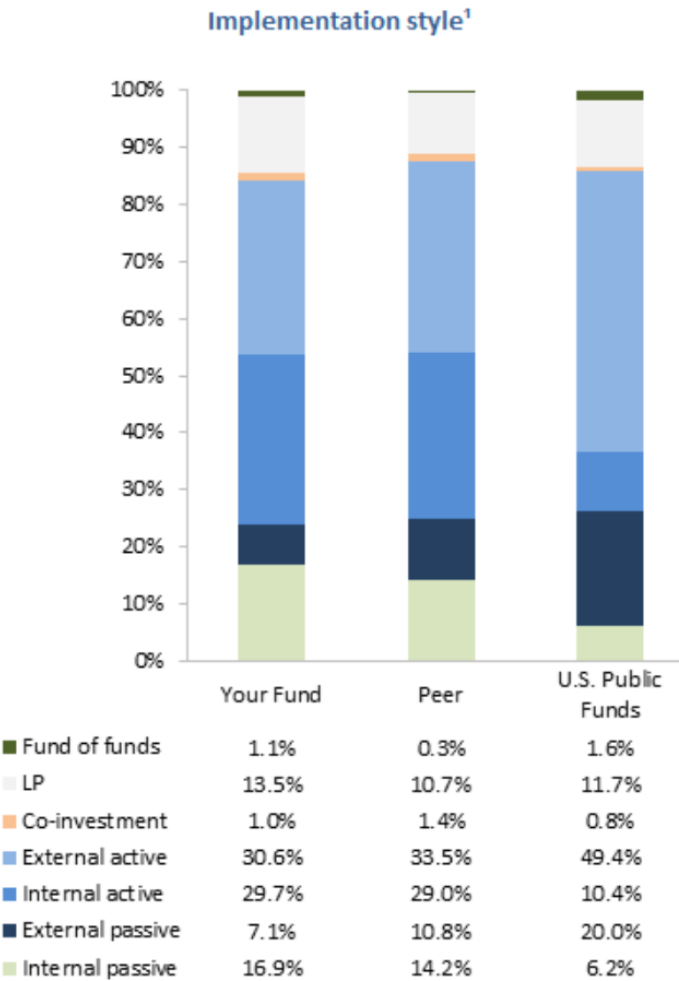
# Your implementation style was 3.0 bps higher cost than the peer average.

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 passive, more active	(0.2) bp <sup>2</sup>
More internal as a % of passive	(0.0) bp
More internal as a % of active	1.5 bp <sup>2</sup>
Less evergreen % in private assets, excl. PE	1.0 bp
More fund of funds % of LP/Co/FoF	0.3 bp
Less co-investment % of LP/Co	0.7 bp
Less overlays	(0.2) bp
Total impact	3.0 bp

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. 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.

2. Typically, less passive is higher cost. But your mix of passive versus active by asset class decreased your cost. Typically, more internal as a % of active is lower cost. But your mix of internal by asset class increased your cost.



If your internally managed assets were managed externally and you paid the peer median costs, your costs would have been higher by approximately \$34.6 million.

Additional external investment management costs: assuming North Carolina no longer had internal holdings and paid peer median external costs

		North Carolina RS		Peer	Cost savings	
	Style	Avg holdings in \$mils	Internal cost (bps)	median external cost (bps)	in bps	\$000s
Stock - U.S. large cap	passive	13,065	0.1	1.0 <sup>1</sup>	(0.9)	(1,202)
Stock - U.S. mid cap	passive	3,906	0.1	2.7 <sup>1</sup>	(2.6)	(1,009)
Fixed income - U.S.	active	29,827	0.5	11.3	(10.9)	(32,431)
Cash	active	16,578	0.5	Excluded	--	--
Total					2.9 bp	(34,643)

1. Universe median was used because insufficient peers had external active U.S. mid-cap and large cap holdings.

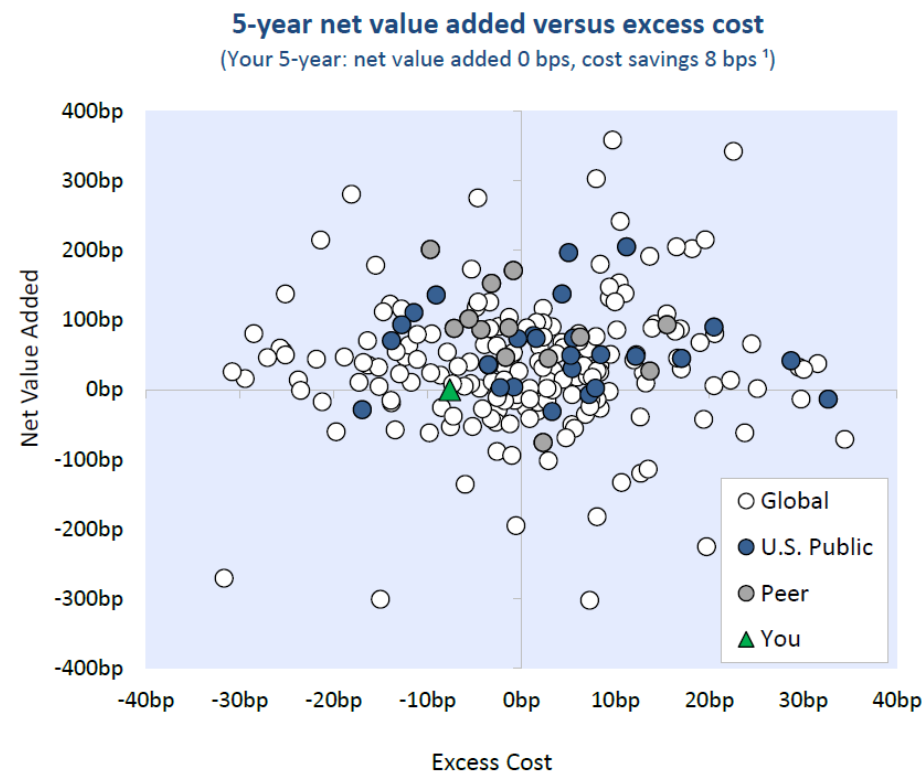
This table summarizes where and why your fund is high/low cost relative to the peer median by asset class.

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

Asset class/category	Style weighted cost			Your average assets (or fee basis) <sup>2</sup>	Due to impl. style	Due to paying more/(less) <sup>3</sup>	Total more/(less)
	Your cost	Peer median <sup>1</sup> = Benchmark	More/(less)				
Asset class/category	(A)	(B)	(C = A - B)	(D)			(C x D)
<b>Asset management costs</b>							
Stock - U.S. broad/all	31.6 bp	8.0 bp	23.6 bp	1,733	4,747	(662)	4,085
Stock - U.S. large cap	0.1 bp	3.0 bp	(2.9) bp	13,065	(3,228)	(531)	(3,759)
Stock - U.S. mid cap	14.0 bp	10.4 bp	3.6 bp	5,207	1,981	(115)	1,866
Stock - U.S. small cap	44.1 bp	39.7 bp	4.5 bp	1,341	3,598	(3,001)	597
Stock - EAFE	26.3 bp	26.6 bp	(0.3) bp	4,888	5,466	(5,612)	(146)
Stock - Emerging	20.7 bp	39.8 bp	(19.1) bp	984	1,486	(3,362)	(1,876)
Stock - ACWI x U.S.	19.6 bp	25.2 bp	(5.6) bp	15,381	(7,029)	(1,607)	(8,636)
Stock - Other	305.2 bp	305.2 bp	0.0 bp	30	0	0	0
Fixed income - U.S.	0.5 bp	4.1 bp	(3.6) bp	29,827	(4,276)	(6,468)	(10,743)
Fixed income - Inflation indexed	33.5 bp	2.4 bp	31.1 bp	1,365	680	3,562	4,242
Commodities	7.9 bp	26.5 bp	(18.6) bp	246	483	(940)	(457)
REITs	27.3 bp	22.9 bp	4.4 bp	929	2,428	(2,016)	411
Real estate ex-REITs	83.7 bp	86.0 bp	(2.4) bp	7,742	8,940	(10,778)	(1,838)
Infrastructure	147.0 bp	117.0 bp	30.0 bp	431	1,304	(9)	1,294
Natural resources	85.5 bp	110.6 bp	(25.1) bp	2,900	6,960	(14,230)	(7,270)
Hedge funds	106.9 bp	99.2 bp	7.7 bp	3,828	3,583	(16,188)	(12,605)
Global TAA	11.8 bp	27.6 bp	(15.8) bp	1,809	2,936	(5,802)	(2,866)
Private equity - Diversified	150.5 bp	145.6 bp	4.9 bp	563	3,825	(3,546)	279
Venture capital	131.2 bp	156.0 bp	(24.8) bp	992	203	(2,664)	(2,461)
LBO	152.6 bp	157.8 bp	(5.2) bp	1,545	1,550	(2,354)	(804)
Private equity - Other	56.9 bp	56.9 bp	(0.0) bp	2,439	0	0	(0)
Private credit	69.4 bp	101.8 bp	(32.4) bp	3,098	3,293	(13,342)	(10,049)
Derivatives/Overlays	0.0 bp	0.2 bp	(0.2) bp	119,931	(2,471)	0	(2,471)
Total asset management	28.0 bp	32.4 bp	(4.4) bp	119,931	36,459	(89,665)	(53,206)
<b>Oversight, custody and other costs<sup>4</sup></b>							
Oversight of the Fund	0.2 bp	0.3 bp	(0.2) bp				
Trustee & Custodial	0.1 bp	0.2 bp	(0.1) bp				
Consulting	0.0 bp	0.0 bp	0.0 bp				
Audit	0.0 bp	0.0 bp	(0.0) bp				
Other	0.0 bp	0.1 bp	(0.1) bp				
Total oversight, custody & other	0.3 bp	0.9 bp	(0.6) bp	119,931	n/a	(6,830)	(6,830)
<b>Total</b>	<b>28.3 bp</b>	<b>33.3 bp</b>	<b>(5.0) bp</b>	<b>119,931</b>	<b>36,459</b>	<b>(96,494)</b>	<b>(60,036)</b>

1. The weighted peer median cost for asset management is the style-weighted average of the peer median costs for all implementation styles (e.g., internal passive, external active, fund of fund, etc.). It excludes performance fees on private assets.
2. Total fund average holdings is used as the base when calculating the relative cost impact of the overlay programs.
3. Total more/less differences include the impact of performance fees, which are not shown separately on this page. Refer to section 4 for a comprehensive breakdown of your differences versus benchmark cost.
4. Benchmarks for oversight total and individual lines are based on peer medians. Sum of the lines may be different from the total.

Your fund achieved a 5-year net value added of 0 bps and cost savings of 8 bps on the cost effectiveness chart.



1. Your 5-year savings of 7.6 basis points is the average of your peer-based savings for the past 5 years.

	2021	2020	2019	2018	2017	5-year
Net value added	(310.5) bp	79.5bp	22.0bp	141.0bp	48.4bp	(0.3) bp
Excess cost	(5.0) bp	(7.9) bp	(8.0) bp	(10.3) bp	(7.0) bp	(7.6) bp