

Iowa Public Employees' Retirement System
Investment Cost Effectiveness Analysis - Summary of Results
For the 5 year period ending December 31, 2020



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Vice President

Key Takeaways

Returns

- Your 5-year net total return was 10.2%. This was above the U.S. Public median of 9.7% and above the peer median of 9.4%.
- Your 5-year policy return was 9.4%. This was above the U.S. Public median of 9.2% and above the peer median of 9.1%.

Value added

- Your 5-year net value added was 0.9%. This was above the U.S. Public median of 0.4% and above the peer median of 0.5%.

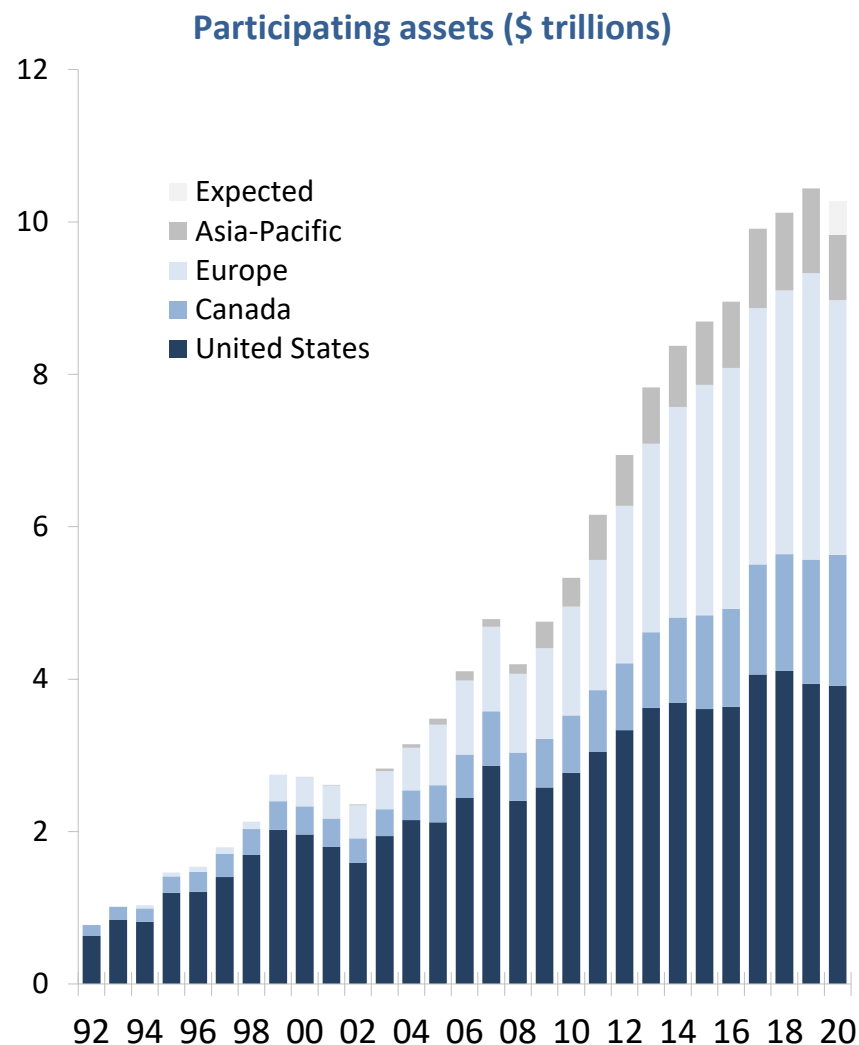
Cost

- Your investment cost of 31.2 bps was below your benchmark cost of 45.2 bps. This suggests that your fund was low cost compared to your peers.
- Your fund was low cost because it paid less than peers for similar services and it had a lower cost implementation style.

This benchmarking report compares your cost and return performance to the 247 funds in CEM's extensive pension database.

- 149 U.S. pension funds participate. The median U.S. fund had assets of \$9.9 billion and the average U.S. fund had assets of \$26.3 billion. Total participating U.S. assets were \$3.9 trillion.
- 63 Canadian funds participate with assets totaling \$1.7 trillion.
- 27 European funds participate with aggregate assets of \$3.3 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Ireland, Denmark and the U.K.
- 5 Asia-Pacific funds participate with aggregate assets of \$857.6 billion. Included are funds from Australia, New Zealand, China and South Korea.
- 3 funds from other regions participate.

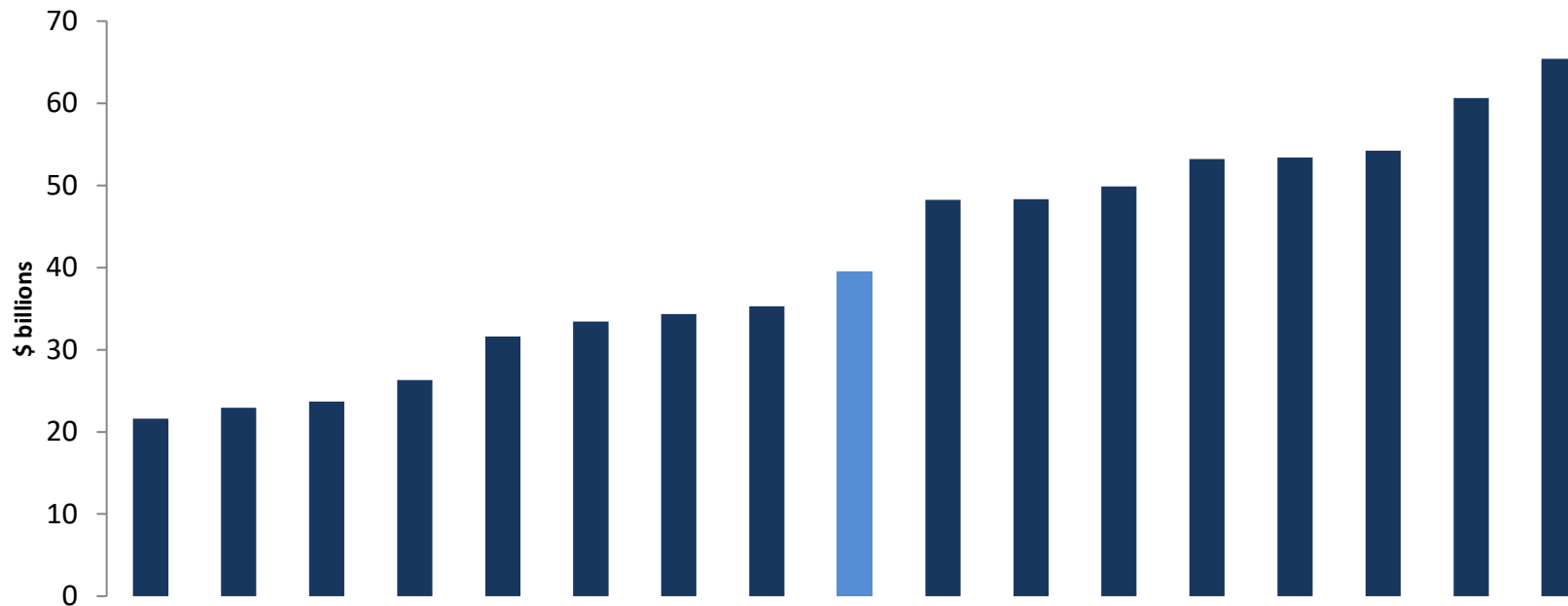
The most meaningful comparisons for your returns and value added are to the U.S. Public universe, which consists of 44 funds.



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

Peer group for Iowa Public Employees' Retirement System

- 17 U.S. sponsors from \$21.6 billion to \$65.4 billion
- Median size of \$39.5 billion versus your \$39.5 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, 2019 cost data was used as a proxy for 2020.

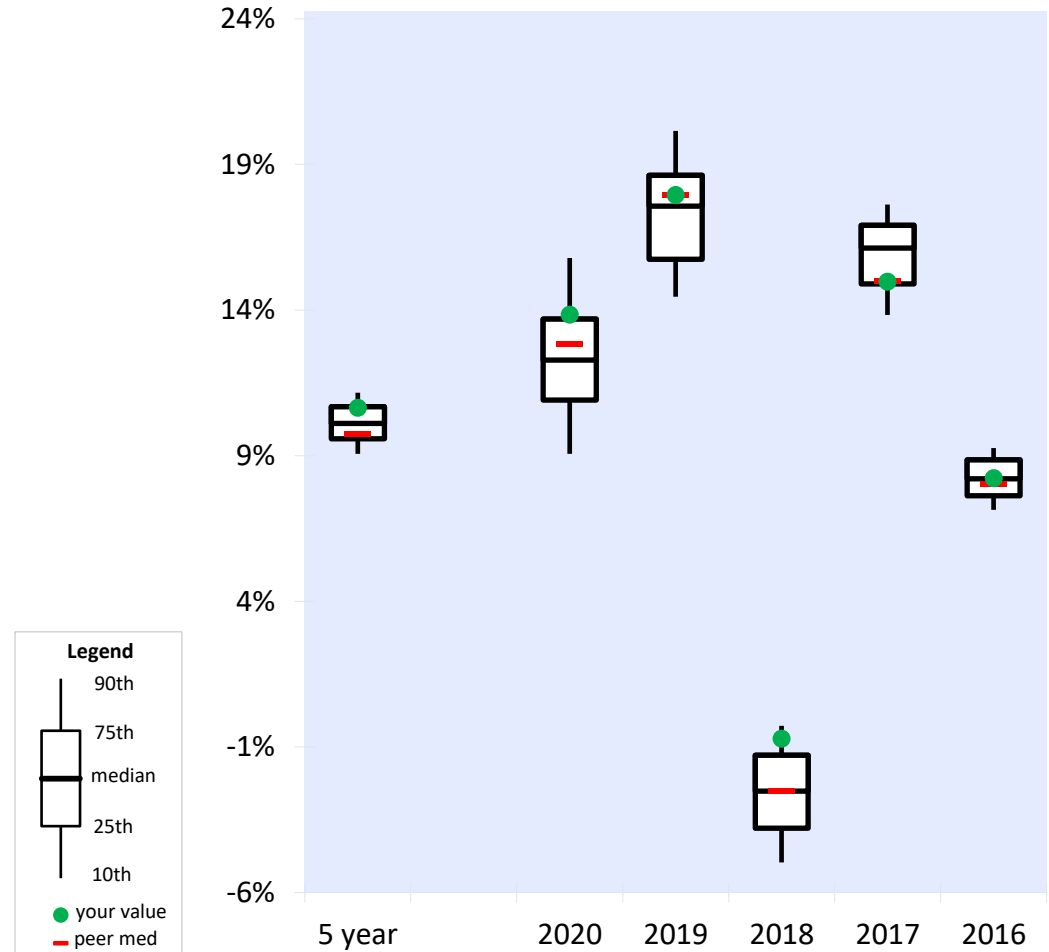
Your 5-year net total return of 10.2% was above both the U.S. Public median of 9.7% and the peer median of 9.4%.

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	10.2%
- Policy return	9.4%
= Net value added	0.9%

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



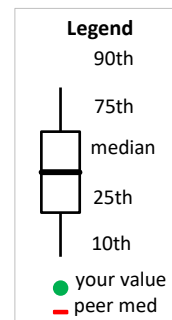
Your 5-year policy return of 9.4% was above both the U.S. Public median of 9.2% and the peer median of 9.1%.

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

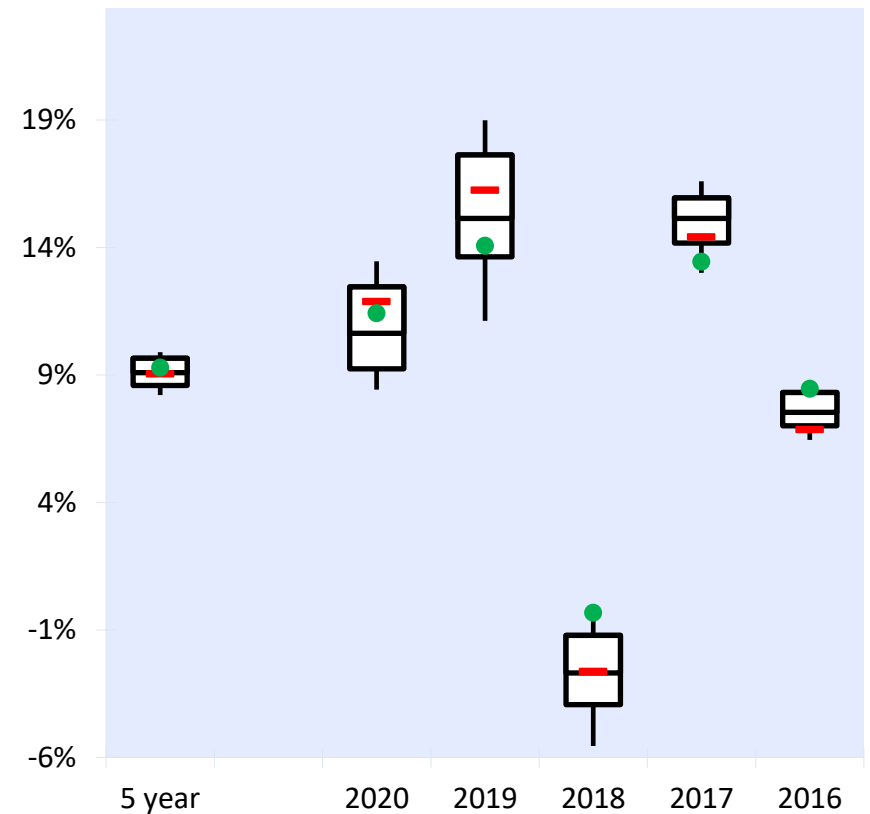
Having a higher or lower relative policy return is not necessarily good or bad. Your policy return reflects your investment policy, which should reflect your:

- 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.



U.S. Public policy returns - quartile rankings



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 10.4%, 1.0% higher than your adjusted 5-year policy return of 9.4%. Mirroring this, your 5-year total fund net value added would be 1.0% lower.

Your 5-year policy return of 9.4% was slightly above the U.S. Public median of 9.2% primarily because of:

The positive impacts of:

- Your higher weight to U.S. stock with a 5-year average allocation of 25% compared to the 20% allocation for the U.S. Public universe. U.S. stock had strong performance over the past 5 years.
- Your better 5-year average benchmark returns for Fixed Income - U.S., where you had higher policy weight than the U.S. Public average. Your weight in Fixed Income - U.S. was 28% versus the U.S. Public average of 17%.

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

2. Other stock includes: Stock - Emerging. Other fixed income includes: Fixed Income - U.S., Fixed Income - U.S. Gov't and Fixed Inc. - U.S. Credits. Other real assets include: Commodities and Infrastructure.

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 ¹			5-year benchmark return	
	Your Fund	U.S. Publ Avg.	More/ Less	Your Fund	U.S. Publ Avg.
Stock - U.S.	25%	20%	5%	15.5%	15.2%
Stock - EAFE	0%	5%	-5%	n/a ³	8.0%
Stock - ACWI x U.S.	17%	7%	10%	9.1%	9.2%
Stock - Global	0%	11%	-11%	n/a ³	12.4%
Other Stock	0%	6%	-6%	n/a ³	n/a ³
Total Stock	42%	49%	-7%	12.9%	12.5%
Fixed Income - U.S.	28%	17%	11%	4.9%	4.6%
Fixed Income - Long Bonds	0%	2%	-2%	n/a ³	7.9%
Fixed Inc. - Inflation Indexed	4%	3%	1%	n/a ³	5.0%
Cash	1%	-1%	2%	1.2%	1.2%
Other Fixed Income	4%	5%	-2%	n/a ³	n/a ³
Total Fixed Income	36%	25%	11%	5.0%	5.5%
Hedge Funds	0%	4%	-4%	n/a ³	4.1%
Natural Resources	1%	1%	0%	7.0%	2.0%
Real Estate incl. REITs	7%	9%	-1%	5.5%	5.6%
Other Real Assets ²	1%	2%	-2%	n/a ³	n/a ³
Private Equity	11%	9%	3%	8.3%	6.9%
Private Debt	2%	1%	1%	8.0%	6.7%
Total	100%	100%			

Net value added is the component of total return from active management. Your 5-year net value added was 0.9%.

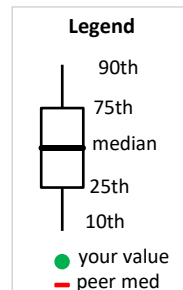
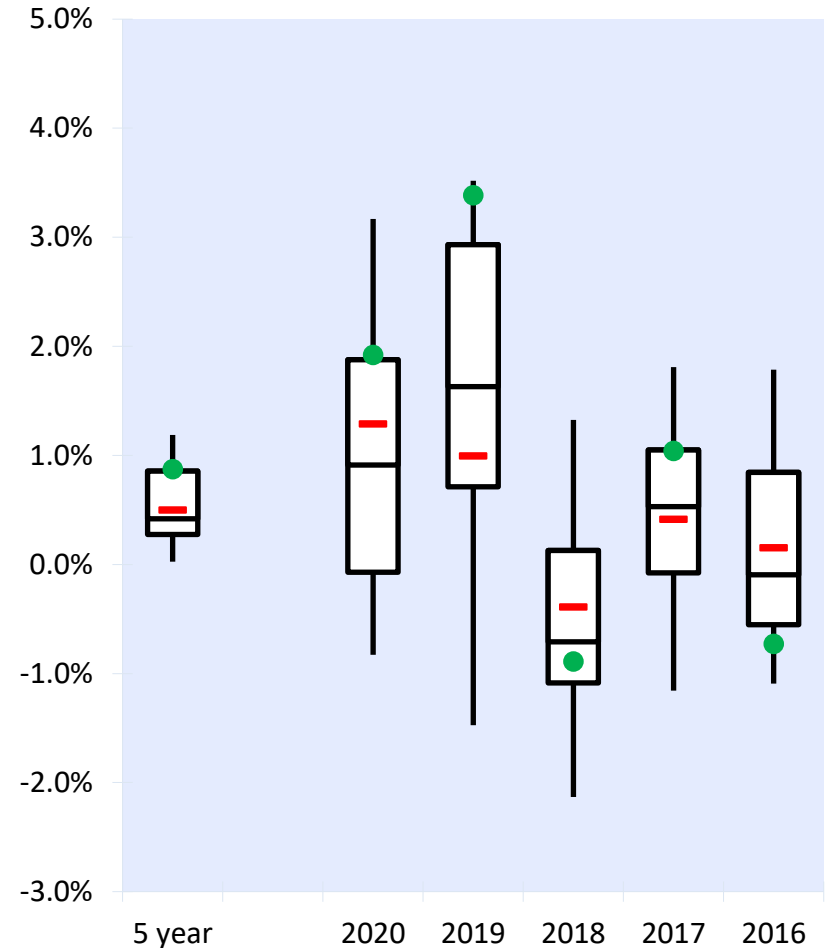
Net value added equals total net return minus policy return.

Value added for Iowa Public Employees' Retirement System

Year	Net return	Policy return	Net value added
2020	13.4%	11.5%	1.9%
2019	17.5%	14.1%	3.4%
2018	-1.1%	-0.2%	-0.9%
2017	14.6%	13.5%	1.0%
2016	7.8%	8.5%	-0.7%
5-Year	10.2%	9.4%	0.9%

Your 5-year net value added of 0.9% compares to a median of 0.5% for your peers and 0.4% for the U.S. Public universe.

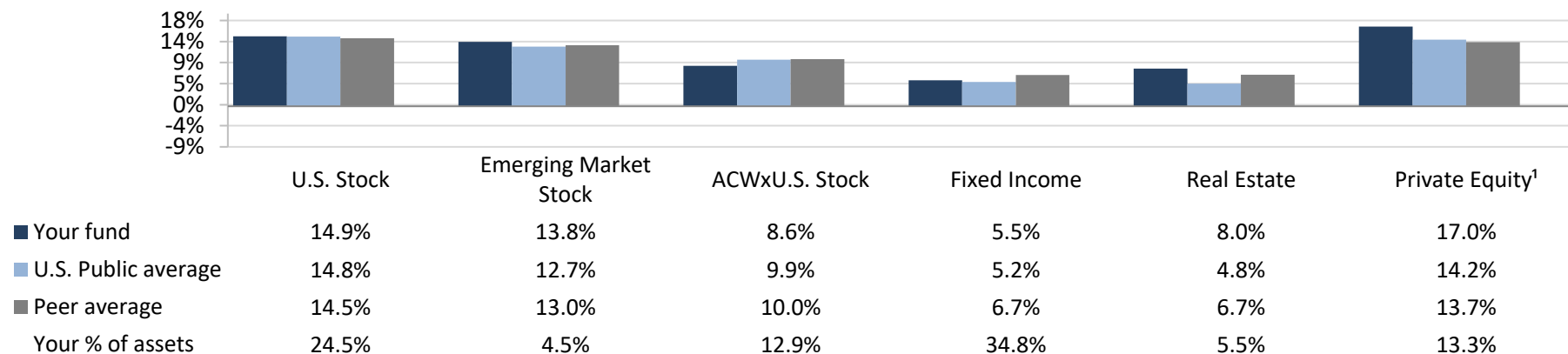
U.S. Public net value added - quartile rankings



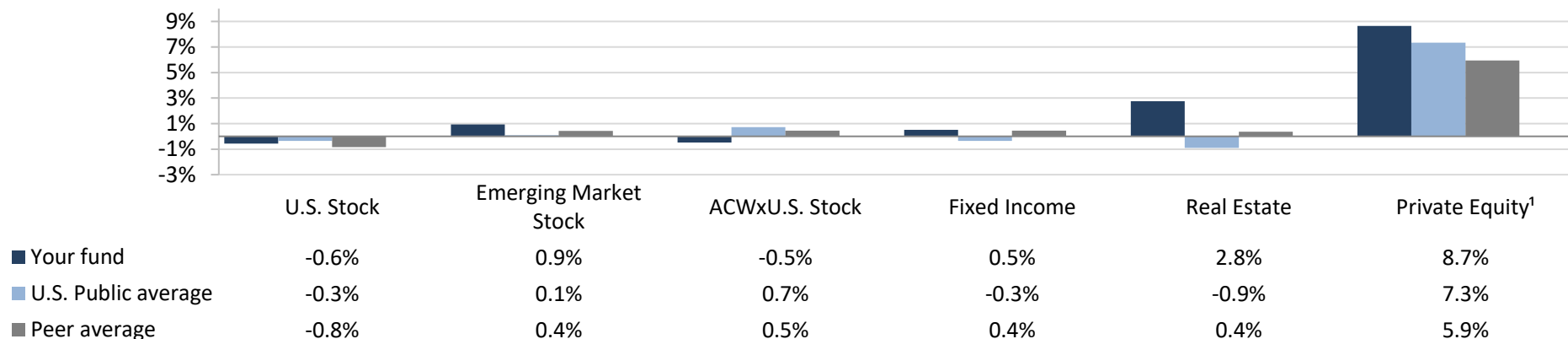
To enable fairer comparisons, the value added for each participant including your fund was adjusted to reflect private equity benchmarks based on lagged, investable public market indices. Prior to this adjustment, your fund's 5-year total fund net value added was -0.1%.

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. 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 -1.6%.

Your investment costs, excluding private asset performance fees, were \$116.7 million or 31.2 basis points in 2020.

Asset management costs by asset class and style (\$000s)	Internal Overseeing of external	External Management			Total	
		Passive fees	Active base fees	Perform. fees ²		
Stock - U.S. Broad/All		-33	595		562	
Stock - Emerging		48	1,598	4,395	6,041	
Stock - ACWI x U.S.		591	664		1,255	
Fixed Income - U.S.		-8	2,085	92	2,168	
Fixed Income - High Yield			525		525	
Cash			316		316	
Natural Resources ²			1,678		1,678	
Real Estate ex-REITs ²			8,989		8,989	
Diversified Private Equity - LP ^{1 2}	7,876		70,289		78,165	
Diversified Private Equity - Co-Invest. ²	1,109				1,109	
Private Credit - External ²			8,764		8,764	
Derivatives/Overlays	32	286	1,429	2,377	4,124	
Total excluding private asset performance fees					113,693	30.4bp
Oversight, custodial and other costs ³						
Oversight of the fund					1,563	
Trustee & custodial					699	
Consulting and performance measurement					377	
Audit					159	
Other					244	
Total oversight, custodial & other costs					3,042	0.8bp
Total investment costs (excl. transaction costs & private asset performance fees)					116,735	31.2bp

Footnotes

1. Fees are the weighted average management cost calculated using the detailed limited partnership survey provided.

Refer to Appendix A for full details regarding defaults.

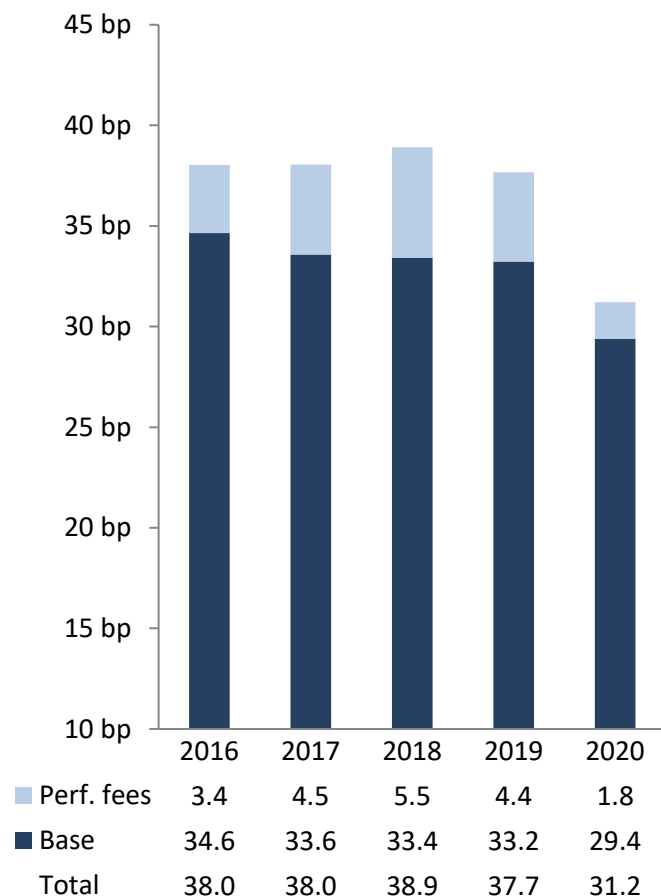
2. Total cost excludes carry/performance fees for real estate, infrastructure, natural resources and private equity. Performance fees are included for the public market asset classes and hedge funds.

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

Your costs decreased by 6.8 bps, from 38.0 bps in 2016 to 31.2 bps in 2020, because you paid less in 2020 for similar investment styles and had a lower cost implementation style. This was partly offset by a higher cost asset mix.

Trend in cost

Reasons why your costs decreased by 6.8 bps



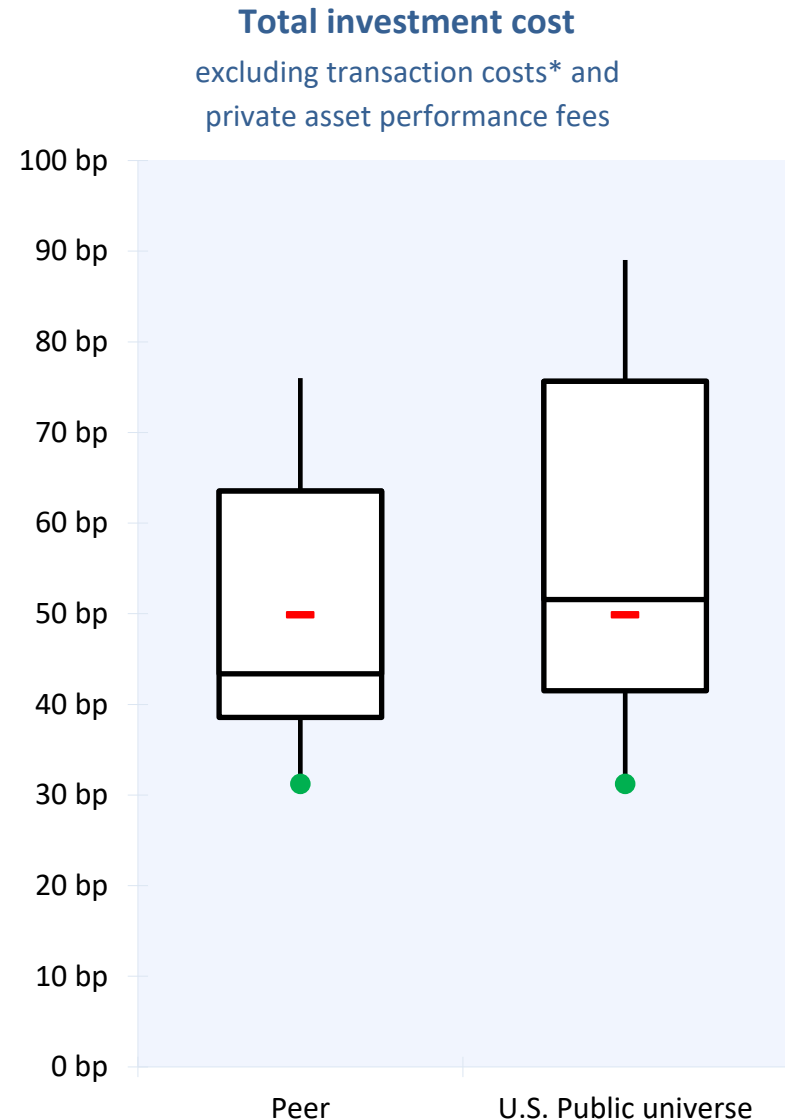
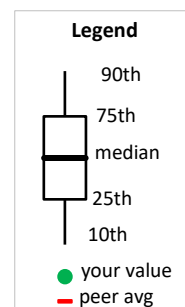
	Impact in bps
1. Higher cost asset mix	
• Less REITs & Natural Resources & Other Real Assets: 2016 3% vs 2020 1%	(1.6)
• More Private Debt: 2016 0% vs 2020 3%	6.6
• All other mix changes	0.5
	<hr/>
	5.5
2. Lower cost implementation style	
• More passive, less active	(1.5)
• More co-investment as a % of LP/Co	(2.5)
	<hr/>
	(4.0)
3. Paid less, net, for similar investment styles	
• Lower private asset base fees	(4.0)
• Lower public asset base fees	(3.6)
• Higher overlays and unfunded strategies costs	1.1
• Lower oversight, custodial & other costs	(0.2)
• All other differences	(1.6)
	<hr/>
	(8.3)
Total decrease	<hr/>
	(6.8)

Your total investment cost of 31.2 bps was below the peer median of 43.4 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 25% of your funds assets at the end of 2020 versus a peer average of 21%.
- 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 14.0 basis points in 2020.

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 31.2 bp was below your benchmark cost of 45.2 bp. Thus, your cost savings were 14.0 bp.

Your cost versus benchmark

	\$000s	basis points
Your total investment cost	116,735	31.2 bp
Your benchmark cost	169,105	45.2 bp
Your excess cost	(52,370)	(14.0) bp

Your fund was low cost because it paid less than peers for similar services and 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	(6,901)	(1.8)
• More external management, less lower cost internal	2,332	0.6
• Less LPs as a percentage of external	(8,318)	(2.2)
• Less fund of funds	(6,167)	(1.6)
• More co-investment as a percentage of LP/Co	(5,879)	(1.6)
• More overlays	2,774	0.7
	<u>(22,159)</u>	<u>(5.9)</u>
2. Paying less than peers for similar services		
• External investment management costs	(24,262)	(6.5)
• Oversight, custodial & other costs	(5,949)	(1.6)
	<u>(30,211)</u>	<u>(8.1)</u>
Total savings	(52,370)	(14.0)

Your implementation style was 5.9 bps lower cost than the peer average.

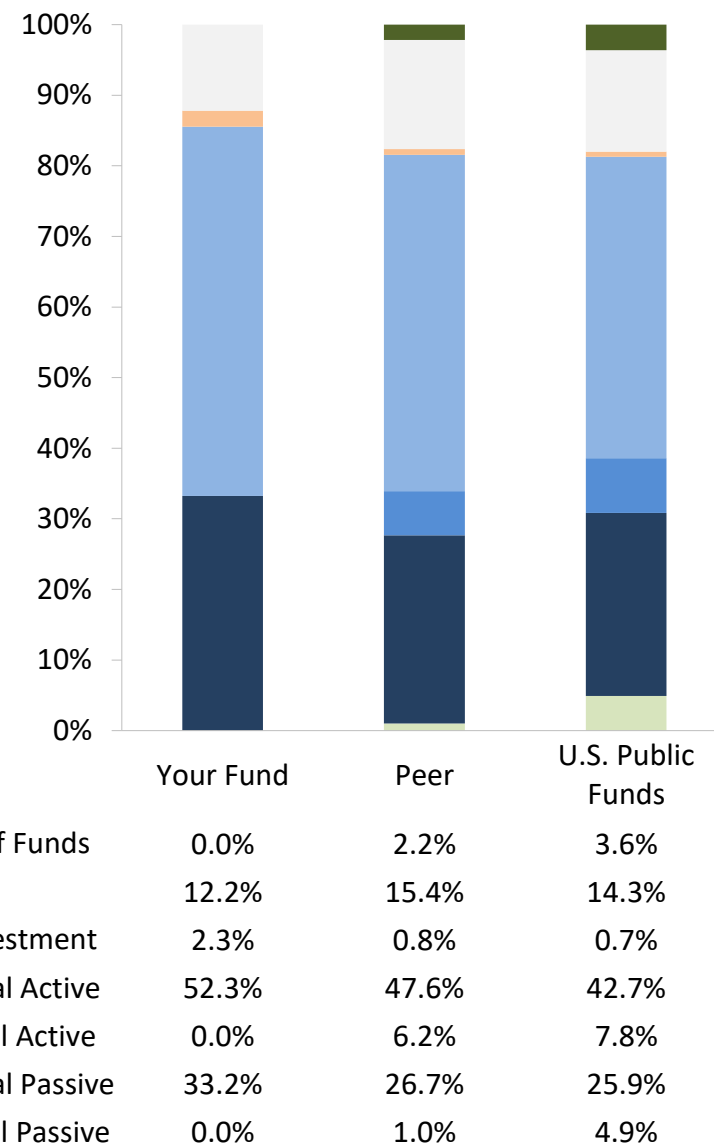
Implementation style is the way in which your fund implements asset allocation. Each implementation choice has a cost. Your first choice is how much to implement passively or actively. The table below summarizes your aggregate choices versus peers and their cost impact.

Implementation choices	Impact
More passive (31% vs 26%), less active	(1.8) bp
Less internal as a % of passive (0% vs 4%)	0.0 bp
Less internal as a % of active (0% vs 12%)	0.6 bp
More evergreen as % of privates excl. PE (100% vs 51%)	(2.2) bp
Less fund of funds % of LP/Co/FoF (0% vs 12%)	(1.6) bp
More co-investment % of LP/Co (16% vs 5%)	(1.6) bp
More overlays	0.7 bp
Total impact	(5.9) 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.

Implementation style¹



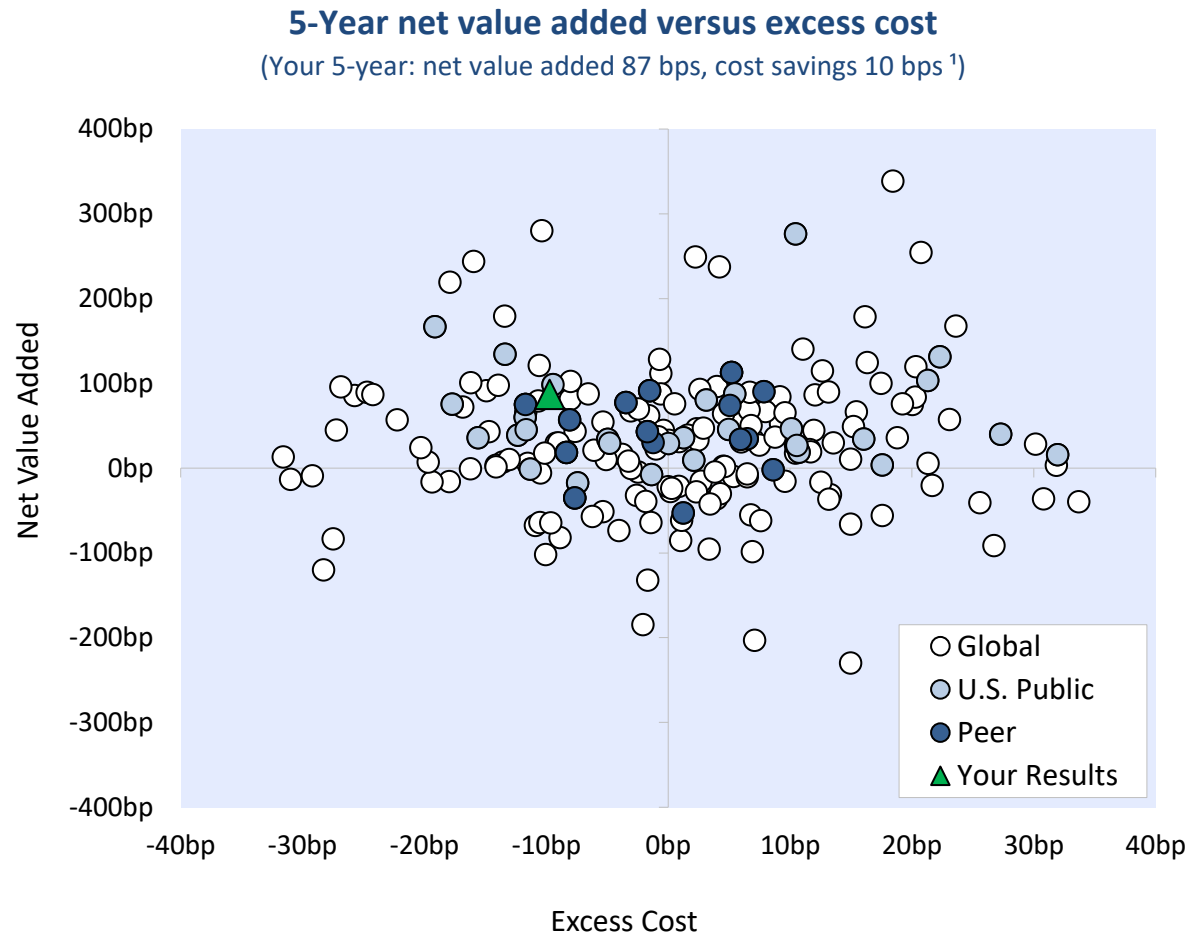
The table below summarizes why your fund is high/low cost relative to the peer-median by asset class.

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

Asset class/category	Style weighted cost			Your average assets (or fee basis) ²	Due to impl. style	Due to paying more/(less)	Total more/(less)
	Your cost	Peer median ¹ = Benchmark	More/(less)				
Asset management costs	(A)	(B)	(C = A - B)	(D)			(C x D)
Stock - U.S. Broad/All	0.6 bp	10.8 bp	(10.2) bp	9,195	-3,242	-6,107	-9,350
Stock - Emerging	30.7 bp	44.9 bp	(14.2) bp	1,970	-1,055	-1,748	-2,804
Stock - ACWI x U.S.	2.5 bp	26.0 bp	(23.5) bp	5,009	-2,562	-9,221	-11,783
Fixed Income - U.S.	2.3 bp	8.3 bp	(6.0) bp	9,465	1,958	-7,608	-5,651
Fixed Income - Emerging	0.0 bp	32.6 bp	(32.6) bp	474	74	-1,619	-1,545
Fixed Income - High Yield	5.6 bp	31.1 bp	(25.5) bp	932	33	-2,410	-2,377
Real Estate ex-REITs	48.1 bp	98.7 bp	(50.7) bp	1,870	-4,255	-5,225	-9,479
Natural Resources	71.1 bp	73.9 bp	(2.8) bp	236	0	-67	-67
Diversified Private Equity	155.5 bp	161.7 bp	(6.3) bp	5,099	-12,046	8,857	-3,189
Private Credit	85.6 bp	114.4 bp	(28.8) bp	1,024	-3,837	888	-2,950
Derivatives/Overlays	1.1 bp	0.4 bp	0.7 bp	37,400	2,774	0	2,774
Total asset management	30.4 bp	42.8 bp	(12.4) bp	37,400	-22,159	-24,262	-46,421
Oversight, custody and other costs³							
Oversight of the Fund	0.4 bp	1.0 bp	(0.6) bp				
Trustee & Custodial	0.2 bp	0.5 bp	(0.3) bp				
Consulting	0.1 bp	0.2 bp	(0.1) bp				
Audit	0.0 bp	0.1 bp	(0.0) bp				
Other	0.1 bp	0.2 bp	(0.1) bp				
Total oversight, custody & other	0.8 bp	2.4 bp	(1.6) bp	37,400	n/a	-5,949	-5,949
Total	31.2 bp	45.2 bp	(14.0) bp	37,400	-22,159	-30,211	-52,370

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, internal active, external passive, external active, fund of fund). 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. Benchmarks for oversight total and individual lines are based on peer medians. Sum of the lines may be different from the total.

Your 5-year performance placed in the positive value added, low cost quadrant of the cost effectiveness chart.



1. Your 5-year cost savings of 10 basis points is the average of your cost savings for the past 5 years.

	2020	2019	2018	2017	2016	5-year
Net value added	192.1bp	338.5bp	(89.1) bp	104.0bp	(72.8) bp	87.2bp
Excess cost	(14.0) bp	(10.3) bp	(8.4) bp	(7.6) bp	(8.4) bp	(9.7) bp

Summary of key takeaways

Returns

- Your 5-year net total return was 10.2%. This was above the U.S. Public median of 9.7% and above the peer median of 9.4%.
- Your 5-year policy return was 9.4%. This was above the U.S. Public median of 9.2% and above the peer median of 9.1%.

Value added

- Your 5-year net value added was 0.9%. This was above the U.S. Public median of 0.4% and above the peer median of 0.5%.

Cost and cost effectiveness

- Your investment cost of 31.2 bps was below your benchmark cost of 45.2 bps. This suggests that your fund was low cost compared to your peers.
- Your fund was low cost because it paid less than peers for similar services and it had a lower cost implementation style.