

Iowa Public Employees' Retirement System Investment Cost Effectiveness Analysis - Summary of Results For the 5 year period ending December 31, 2021



Michael Reid
Relationship Manager

Key Takeaways

Returns

- Your 5-year net total return was 12.4%. This was above both the U.S. Public median of 11.1% and the peer median of 10.6%.
- Your 5-year policy return was 11.1%. This was above both the U.S. Public median of 10.7% and the peer median of 10.2%.

Value added

- Your 5-year net value added was 1.4%. This was above both the U.S. Public median of 0.5% and the peer median of 0.5%.

Cost

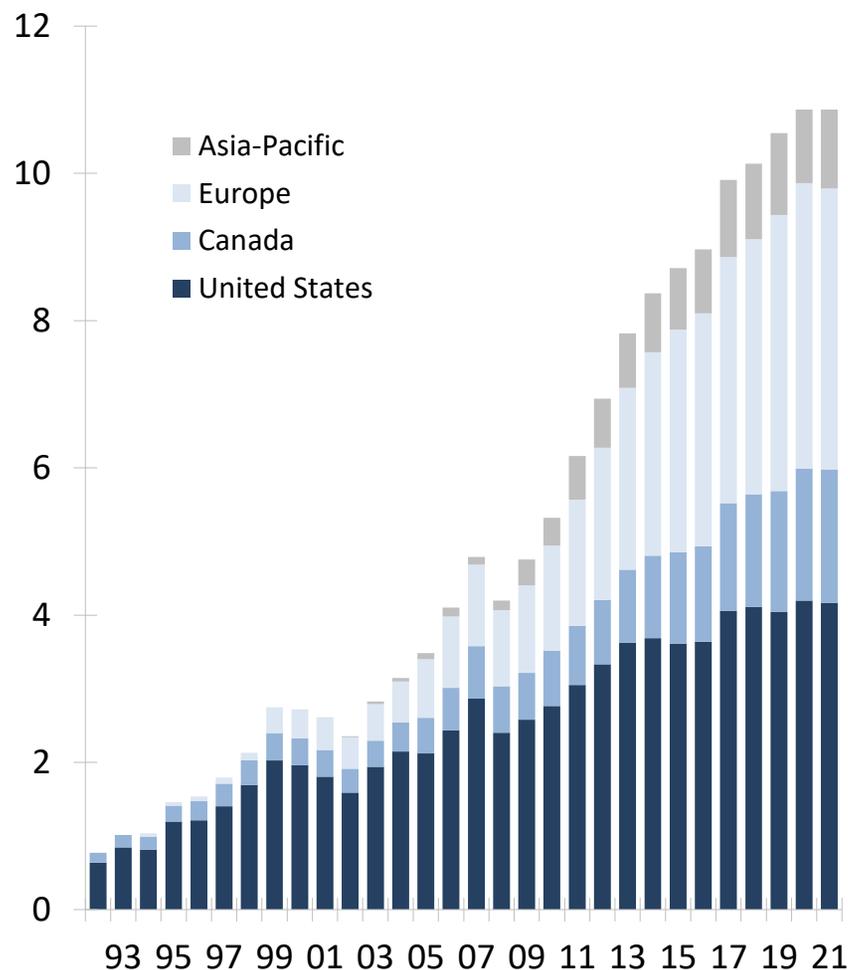
- Your investment cost of 34.3 bps was below your benchmark cost of 43.3 bps. This suggests that your fund was low cost compared to your peers.
- Your fund was low cost because it had a lower cost implementation style and it paid less than peers for similar services.
- Your costs decreased by 3.8 bps, from 38.0 bps in 2017 to 34.3 bps in 2021, because you had a lower cost implementation style and paid less in total for similar investment styles. This was partly offset by a higher cost asset mix.

This benchmarking report compares your cost and return performance to the 245 funds in CEM's extensive pension database.

- 140 U.S. pension funds participate. The median U.S. fund had assets of \$11.9 billion and the average U.S. fund had assets of \$29.8 billion. Total participating U.S. assets were \$4.2 trillion.
- 64 Canadian funds participate with assets totaling \$1.8 trillion.
- 33 European funds participate with aggregate assets of \$3.8 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 42 funds.

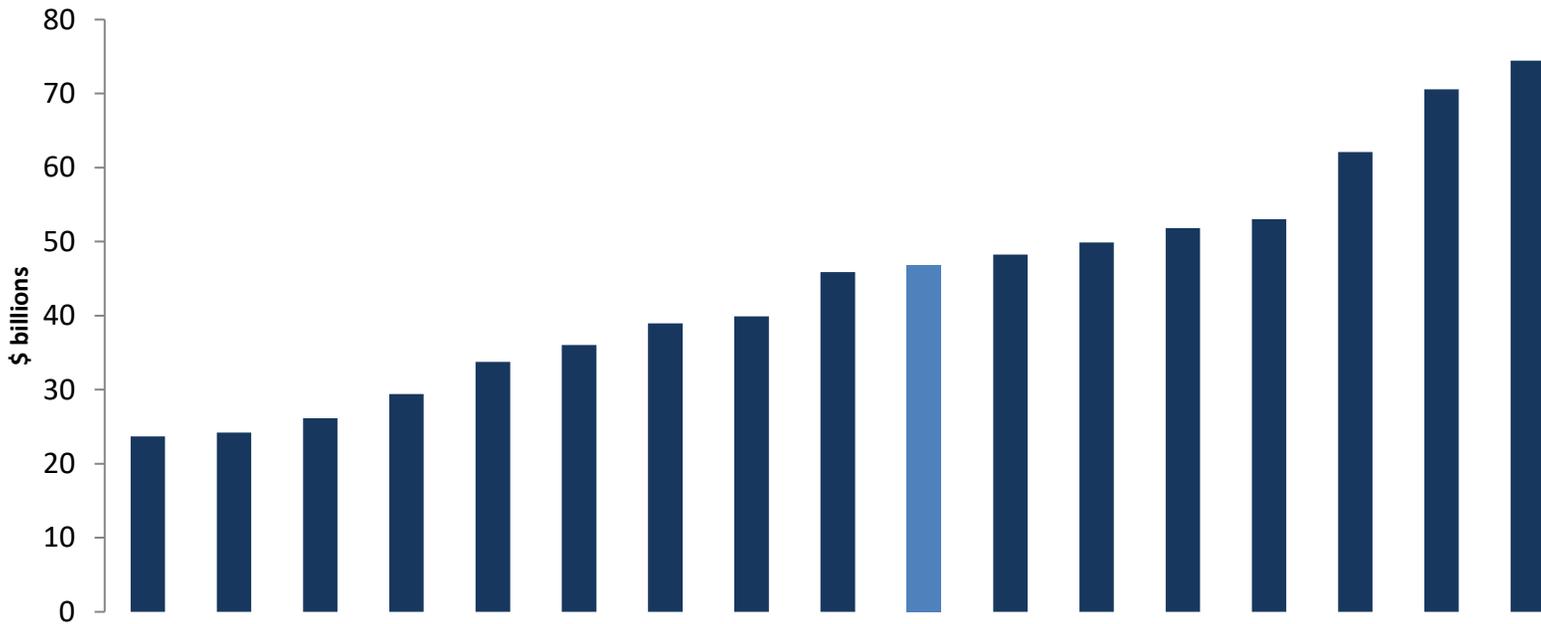
Participating assets (\$ trillions)



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. Public sponsors from \$23.7 billion to \$74.4 billion
- Median size of \$45.9 billion versus your \$46.9 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.

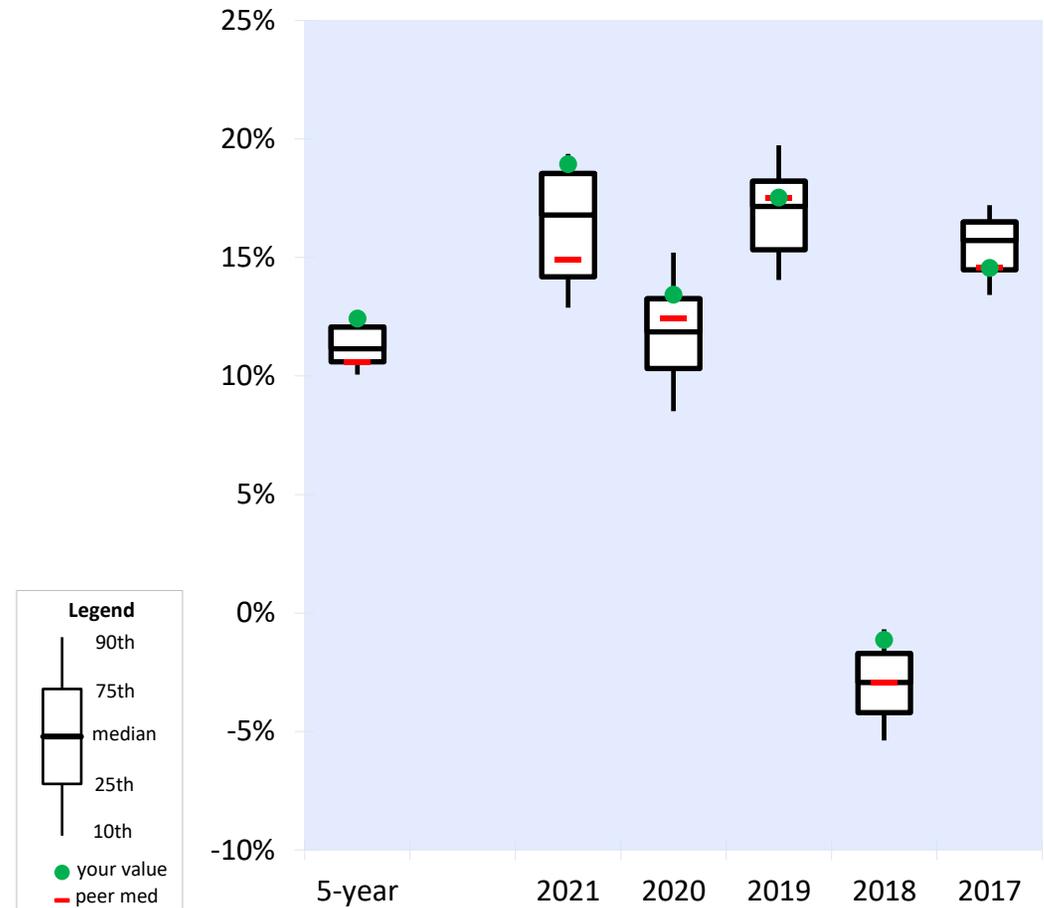
Your 5-year net total return of 12.4% was above both the U.S. Public median of 11.1% and the peer median of 10.6%.

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	12.4%
- Policy return	11.1%
= Net value added	1.4%

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



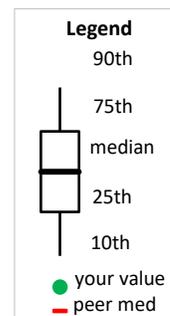
Your 5-year policy return of 11.1% was above both the U.S. Public median of 10.7% and the peer median of 10.2%.

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

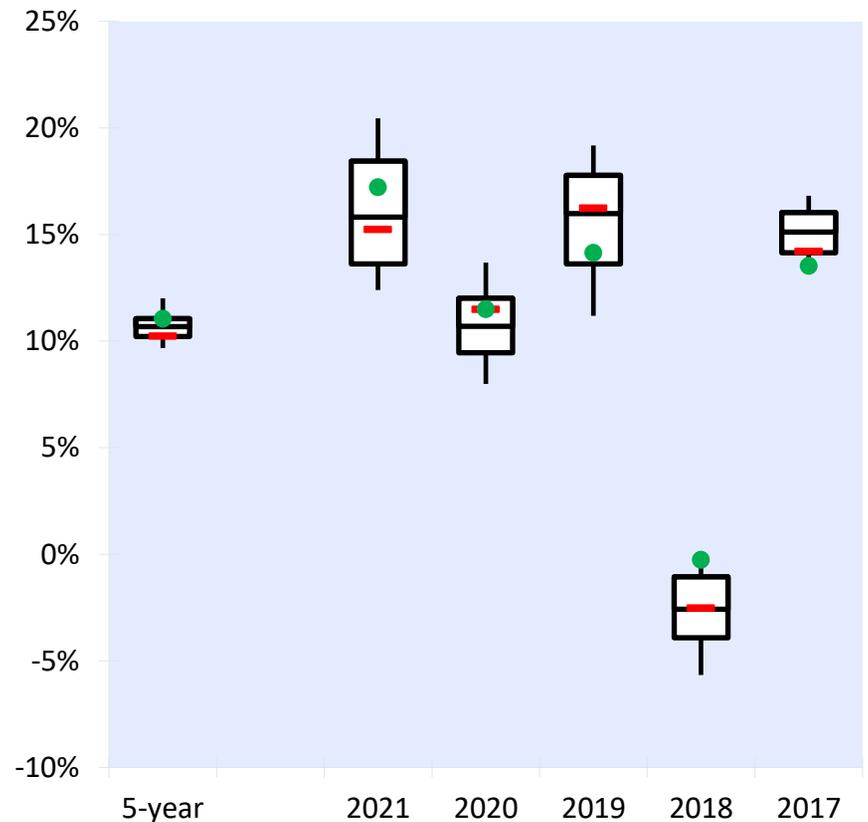
Having a higher or lower relative policy return is not necessarily good or bad. Your policy return reflects your investment policy, which should reflect your:

- 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 12.3%, 1.3% higher than your adjusted 5-year policy return of 11.1%. Mirroring this, your 5-year total fund net value added would be 1.3% lower.

Your 5-year policy return of 11.1% was above the U.S. Public median of 10.7% primarily because of:

- Your higher weight to U.S. Stock (your 25% versus a U.S. Public average of 18%), which was one of the better performing asset classes over the past 5 years.
- This was partly offset by your higher weight to U.S. Fixed Income (your 27% versus a U.S. Public average of 18%), which was one of the poorer performing asset classes over the past 5 years.

	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%	18%	7%	18.1%	17.6%
Stock - EAFE	0%	5%	-5%	n/a ³	9.8%
Stock - ACWI x U.S.	18%	7%	11%	9.7%	10.0%
Stock - Global	0%	12%	-12%	n/a ³	14.3%
Other Stock	0%	6%	-6%	n/a ³	n/a ³
Total Stock	42%	47%	-5%	14.6%	14.3%
Fixed income - U.S.	27%	18%	10%	3.8%	3.8%
Fixed income - Long bonds	0%	2%	-2%	n/a ³	7.1%
Fixed income - Inflation indexed	3%	3%	-1%	n/a ³	5.4%
Cash	1%	-2%	3%	1.1%	1.3%
Other Fixed Income ²	4%	6%	-2%	n/a ³	n/a ³
Total Fixed Income	35%	27%	8%	3.9%	4.1%
Hedge funds	0%	3%	-3%	n/a ³	5.5%
Natural resources	1%	1%	1%	8.1%	5.8%
REITs	1%	1%	0%	n/a ³	9.4%
Real estate ex-REITs	6%	8%	-2%	7.7%	7.8%
Other Real Assets ²	0%	3%	-2%	n/a ³	n/a ³
Private equity	12%	9%	3%	14.5%	14.4%
Private debt	3%	2%	1%	7.7%	6.5%
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 - U.S. gov't, Fixed income - U.S. credits and Fixed income - High yield. 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.

Net value added is the component of total return from active management. Your 5-year net value added was 1.4%.

Net value added equals total net return minus policy return.

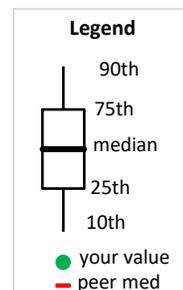
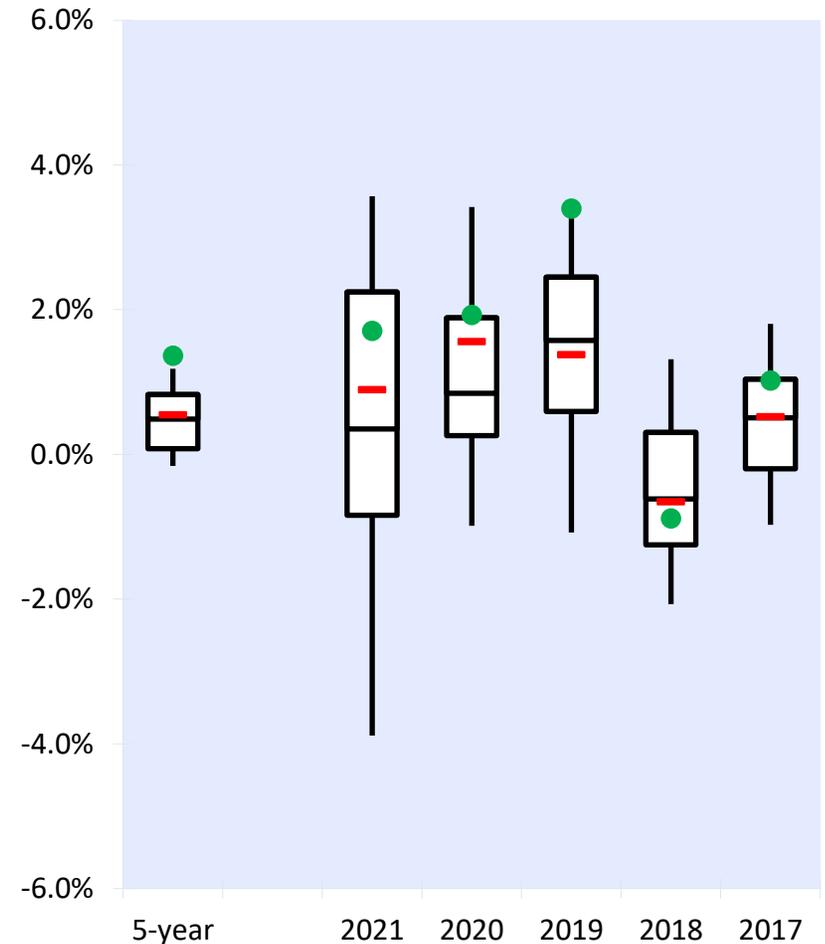
Value added for Iowa Public Employees' Retirement System

Year	Net return	Policy return	Net value added
2021	18.9%	17.2%	1.7%
2020	13.4%	11.5%	1.9%
2019	17.5%	14.1%	3.4%
2018	-1.1%	-0.3%	-0.9%
2017	14.6%	13.5%	1.0%
5-Year	12.4%	11.1%	1.4%

Your 5-year net value added of 1.4% compares to a median of 0.5% for your peers and 0.5% for the U.S. Public universe.

Net value added shown is in respect of the entire fund including value added for private asset classes.

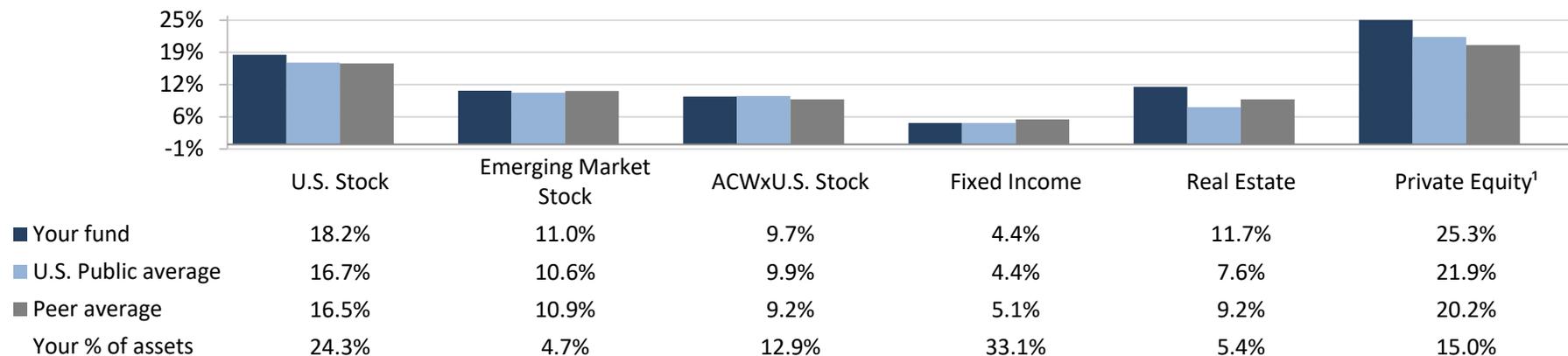
U.S. Public net value added - quartile rankings



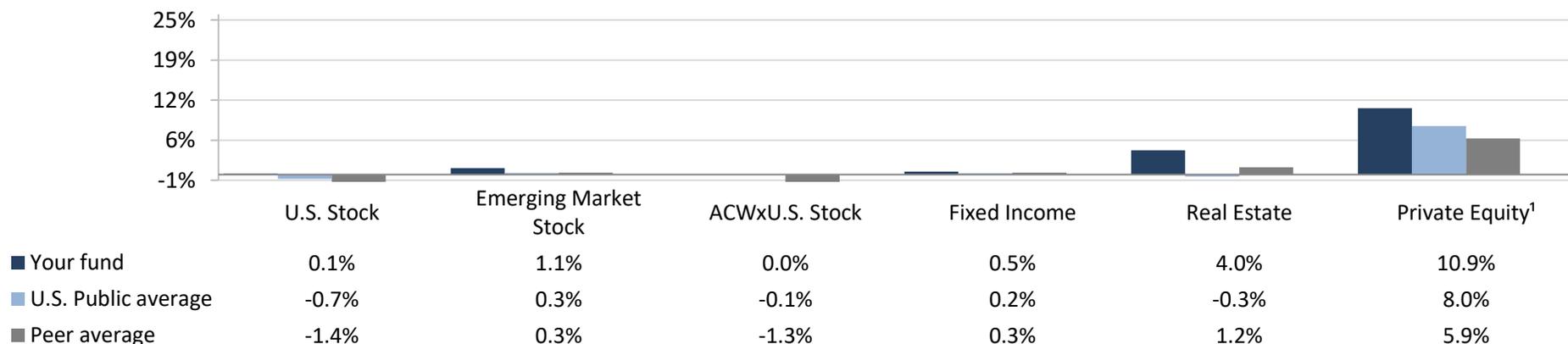
To enable fairer comparisons, the value added for each participant including your fund was adjusted to reflect private equity benchmarks based on lagged, investable public market indices. Prior to this adjustment, your fund's 5-year total fund net value added was 0.1%.

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 -1.8%.

Your investment costs, excluding private asset performance fees, were \$148.1 million or 34.3 basis points in 2021.

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		505	729	1,579	2,813	
Stock - Emerging		42	2,102	6,474	8,618	
Stock - ACWI x U.S.		659	848	1,498	3,005	
Fixed income - U.S.		12	1,918	9,913	11,843	
Fixed income - Emerging				671	671	
Fixed income - High yield			648	2,493	3,141	
Cash			375		375	
Natural resources ²			1,714		1,714	
Real estate ex-REITs ²			9,573		9,573	
Private equity - Diversified - LP ^{1 2}	8,181		76,711	184,308	84,892	
Private equity - Diversified - Co-invest. ²	1,723				1,723	
Private credit - Evergreen ²			10,052		10,052	
Derivatives/Overlays	290	205	224	4,878	5,597	
Total excluding private asset performance fees					144,016	33.3bp
Oversight, custodial and other costs ³						
Oversight of the fund					2,254	
Trustee & custodial					856	
Consulting and performance measurement					455	
Audit					160	
Other					338	
Total oversight, custodial & other costs					4,064	0.9bp
Total investment costs (excl. transaction costs & private asset performance fees)					148,080	34.3bp

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 3.8 bps, from 38.0 bps in 2017 to 34.3 bps in 2021, because you had a lower cost implementation style and paid less in total for similar investment styles. This was partly offset by a higher cost asset mix.

Trend in cost



Reasons why your costs decreased by 3.8 bps

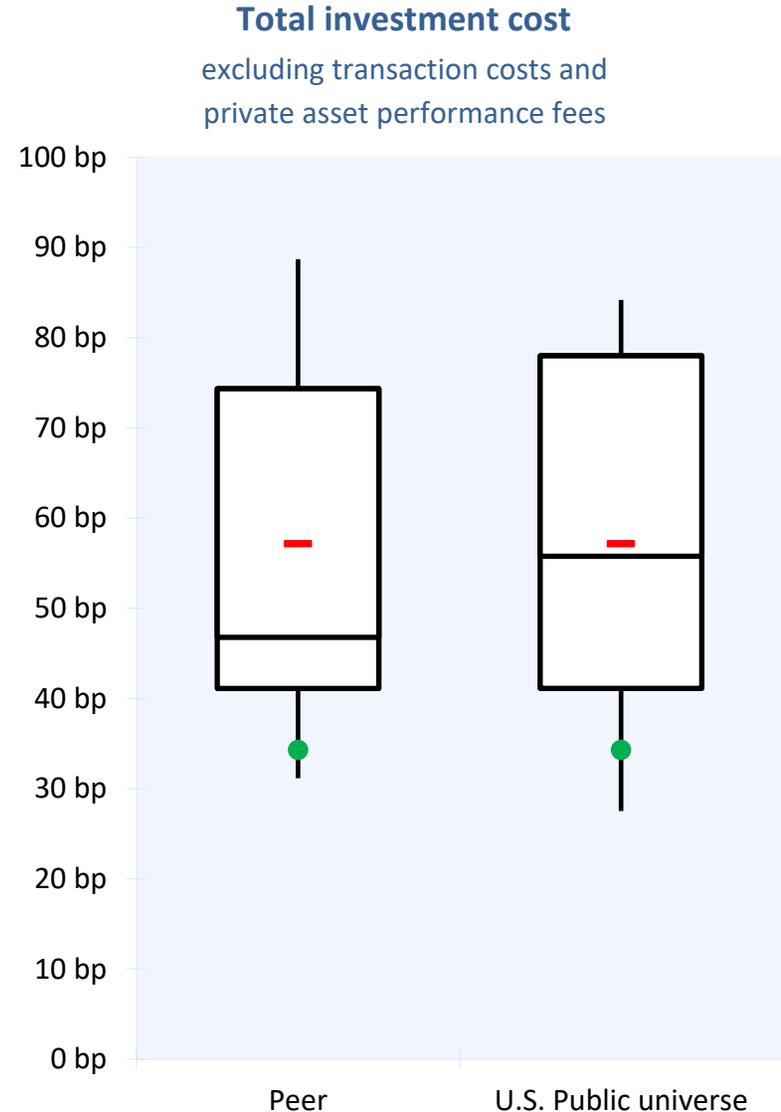
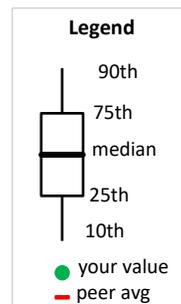
	Impact in bps
1. Higher cost asset mix	
• More Private debt: 2017 1% vs 2021 3%	2.2
• All other mix changes	(0.3)
	<hr/> 1.9
2. Lower cost implementation style	
• More passive, less active	(2.6)
• More co-investment as a % of LP/Co	(2.2)
	<hr/> (4.7)
3. Paid less in total for similar investment styles	
• Lower public asset base fees	(1.8)
• Higher public asset performance fees	0.8
• Lower private asset base fees	(0.7)
• Higher overlays and unfunded strategies costs	0.7
• Higher oversight, custodial & other costs	0.1
• All other differences	0.0
	<hr/> (0.9)
Total decrease	<hr/> <hr/> (3.8)

Your total investment cost of 34.3 bps was below the peer median of 46.8 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 30% of your funds assets at the end of 2021 versus a peer average of 23%.
- 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 9.0 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 34.3 bp was below your benchmark cost of 43.3 bp. Thus, your cost savings were 9.0 bp.

Your cost versus benchmark

	\$000s	basis points
Your total investment cost	148,080	34.3 bp
Your benchmark cost	187,036	43.3 bp
Your excess cost	(38,956)	(9.0) bp

Your fund was low cost because it had a lower cost implementation style and it paid less than peers for similar services.

Reasons for your low cost status

	Excess Cost/ (Savings)	
	\$000s	bps
1. Lower cost implementation style		
• Less active management, more lower cost passive	(6,888)	(1.6)
• More external management, less lower cost internal	2,915	0.7
• Less LPs as a percentage of external	(8,897)	(2.1)
• Less fund of funds	(6,584)	(1.5)
• More co-investment as a percentage of LP/Co	(9,432)	(2.2)
• More overlays	1,184	0.3
	<u>(27,703)</u>	<u>(6.4)</u>
2. Paying less than peers for similar services		
• External investment management costs	(6,559)	(1.5)
• Oversight, custodial & other costs	(4,694)	(1.1)
	<u>(11,253)</u>	<u>(2.6)</u>
Total savings	(38,956)	(9.0)

Your implementation style was 6.4 bps lower cost than the peer average.

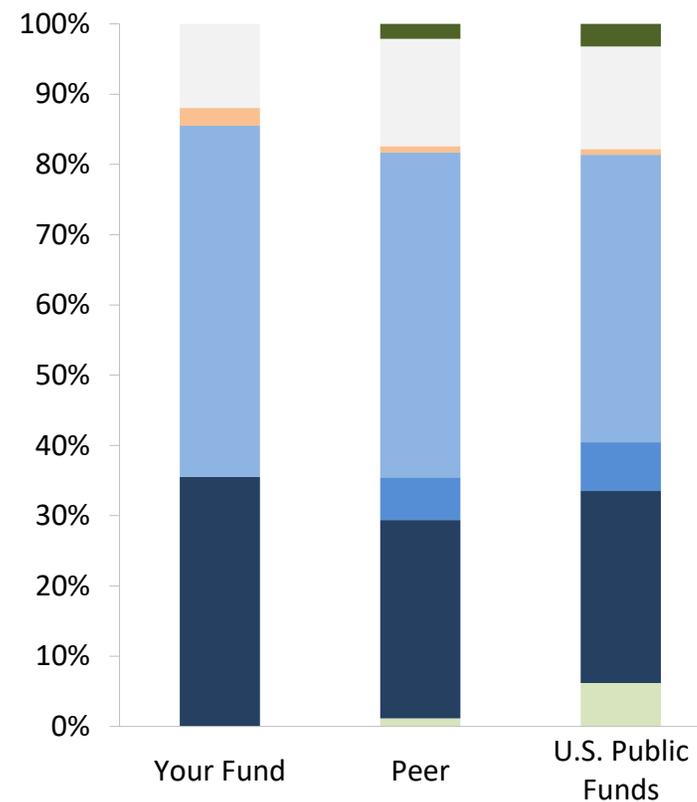
Implementation style is the way in which your fund implements asset allocation. Each implementation choice has a cost. Your first choice is how much to implement passively or actively. The table below summarizes your aggregate choices versus peers and their cost impact.

Implementation choices	Impact
More passive, less active	(1.6) bp
Less internal as a % of passive	0.0 bp
Less internal as a % of active	0.7 bp
More evergreen % in private assets, excl. PE	(2.1) bp
Less fund of funds % of LP/Co/FoF	(1.5) bp
More co-investment % of LP/Co	(2.2) bp
More overlays	0.3 bp
Total impact	(6.4) 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



Fund of funds	0.0%	2.1%	3.2%
LP	12.0%	15.3%	14.6%
Co-investment	2.5%	0.9%	0.8%
External active	50.0%	46.2%	41.0%
Internal active	0.0%	6.1%	6.9%
External passive	35.5%	28.2%	27.3%
Internal passive	0.0%	1.2%	6.2%

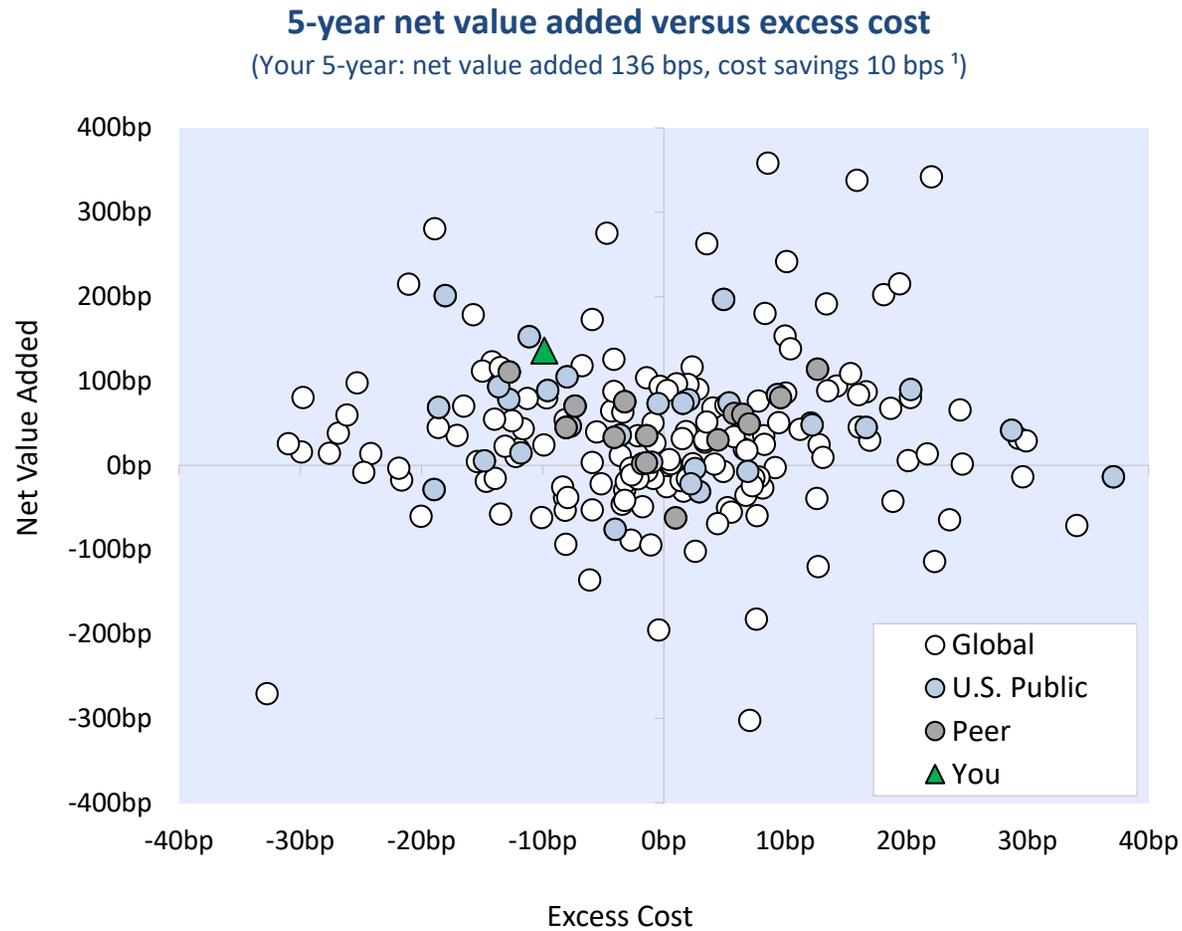
The table below summarizes why your fund is high/low cost relative to the peer-median by asset class.

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) ³	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	2.7 bp	8.0 bp	(5.3) bp	10,506	(1,709)	(3,838)	(5,548)
Stock - Emerging	37.2 bp	40.9 bp	(3.7) bp	2,315	(1,269)	422	(847)
Stock - ACWI x U.S.	5.2 bp	26.3 bp	(21.1) bp	5,803	(3,568)	(8,682)	(12,250)
Fixed income - U.S.	11.6 bp	9.6 bp	1.9 bp	10,244	2,156	(196)	1,960
Fixed income - Emerging	12.7 bp	29.2 bp	(16.5) bp	529	146	(1,019)	(873)
Fixed income - High yield	29.1 bp	30.1 bp	(0.9) bp	1,078	28	(130)	(102)
Real estate ex-REITs	47.4 bp	98.5 bp	(51.1) bp	2,020	(4,478)	(5,852)	(10,330)
Natural resources	69.9 bp	100.5 bp	(30.6) bp	245	(583)	(167)	(749)
Private equity - Diversified	150.9 bp	159.9 bp	(9.1) bp	5,741	(16,017)	10,820	(5,196)
Private credit	86.3 bp	99.3 bp	(13.0) bp	1,165	(3,593)	2,083	(1,510)
Derivatives/Overlays	1.3 bp	1.0 bp	0.3 bp	43,184	1,184	0	1,184
Total asset management	33.3 bp	41.3 bp	(7.9) bp	43,184	(27,703)	(6,559)	(34,262)
Oversight, custody and other costs⁴							
Oversight of the Fund	0.5 bp	0.7 bp	(0.2) bp				
Trustee & Custodial	0.2 bp	0.5 bp	(0.3) bp				
Consulting	0.1 bp	0.2 bp	(0.0) 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	0.9 bp	2.0 bp	(1.1) bp	43,184	n/a	(4,694)	(4,694)
Total	34.3 bp	43.3 bp	(9.0) bp	43,184	(27,703)	(11,253)	(38,956)

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



1. Your 5-year savings of 9.9 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	170.9bp	192.7bp	339.7bp	(88.3) bp	102.0bp	136.3bp
Excess cost	(9.0) bp	(14.0) bp	(10.3) bp	(8.4) bp	(7.6) bp	(9.9) bp

Summary of key takeaways

Returns

- Your 5-year net total return was 12.4%. This was above both the U.S. Public median of 11.1% and the peer median of 10.6%.
- Your 5-year policy return was 11.1%. This was above both the U.S. Public median of 10.7% and the peer median of 10.2%.

Value added

- Your 5-year net value added was 1.4%. This was above both the U.S. Public median of 0.5% and the peer median of 0.5%.

Cost and cost effectiveness

- Your investment cost of 34.3 bps was below your benchmark cost of 43.3 bps. This suggests that your fund was low cost compared to your peers.
- Your fund was low cost because it had a lower cost implementation style and it paid less than peers for similar services.
- Your costs decreased by 3.8 bps, from 38.0 bps in 2017 to 34.3 bps in 2021, because you had a lower cost implementation style and paid less in total for similar investment styles. This was partly offset by a higher cost asset mix.