

# Iowa Public Employees' Retirement System

## Investment Cost Effectiveness Analysis - Summary of Results

For the 5 year period ending December 31, 2016



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Director  
September 21, 2017

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

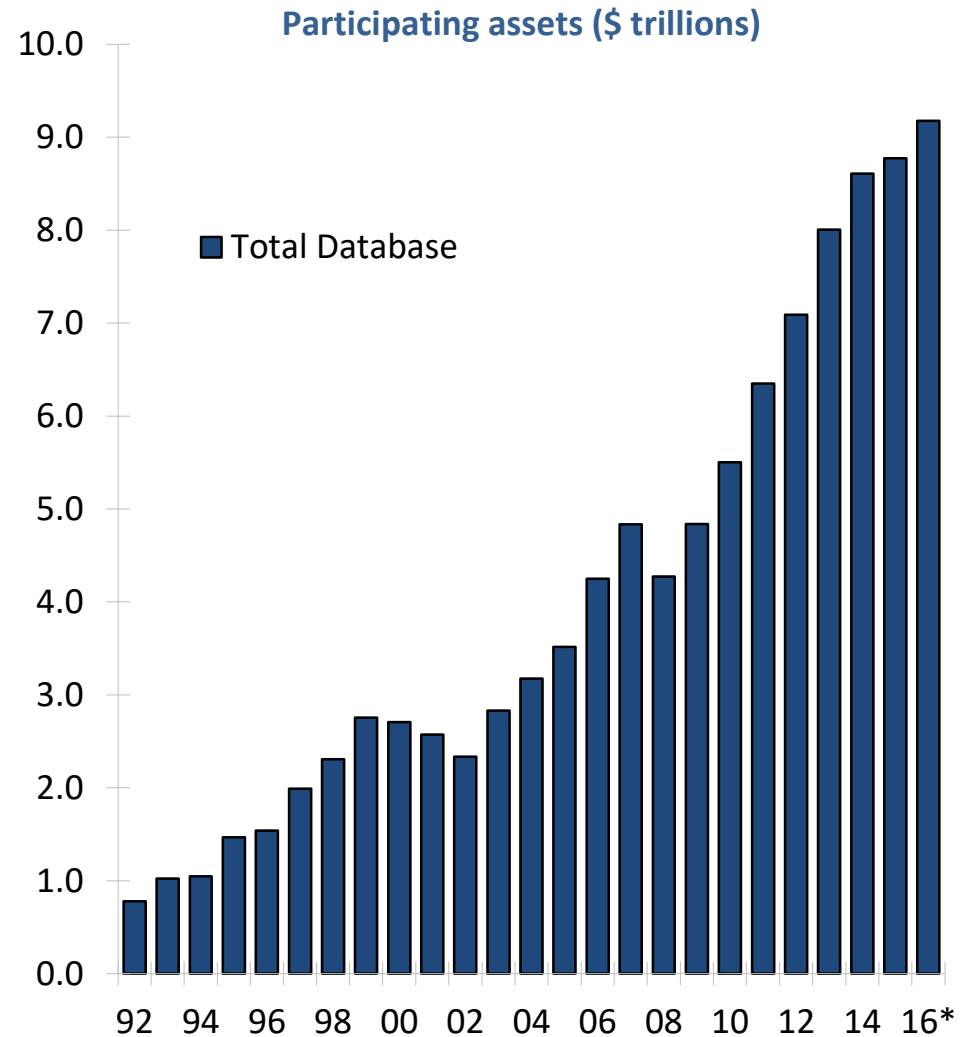
- 153 U.S. pension funds participate. The median U.S. fund had assets of \$9.7 billion and the average U.S. fund had assets of \$21.3 billion. Total participating U.S. assets were \$3.3 trillion.

- 71 Canadian funds participate with assets totaling \$1,093 billion.

- 32 European funds participate with aggregate assets of \$2.0 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Denmark, Switzerland and the U.K.

- 6 Asia-Pacific funds participate with aggregate assets of \$188 billion. Included are funds from Australia, New Zealand, China and South Korea.

The most meaningful comparisons for your returns and value added are to the U.S. universe.

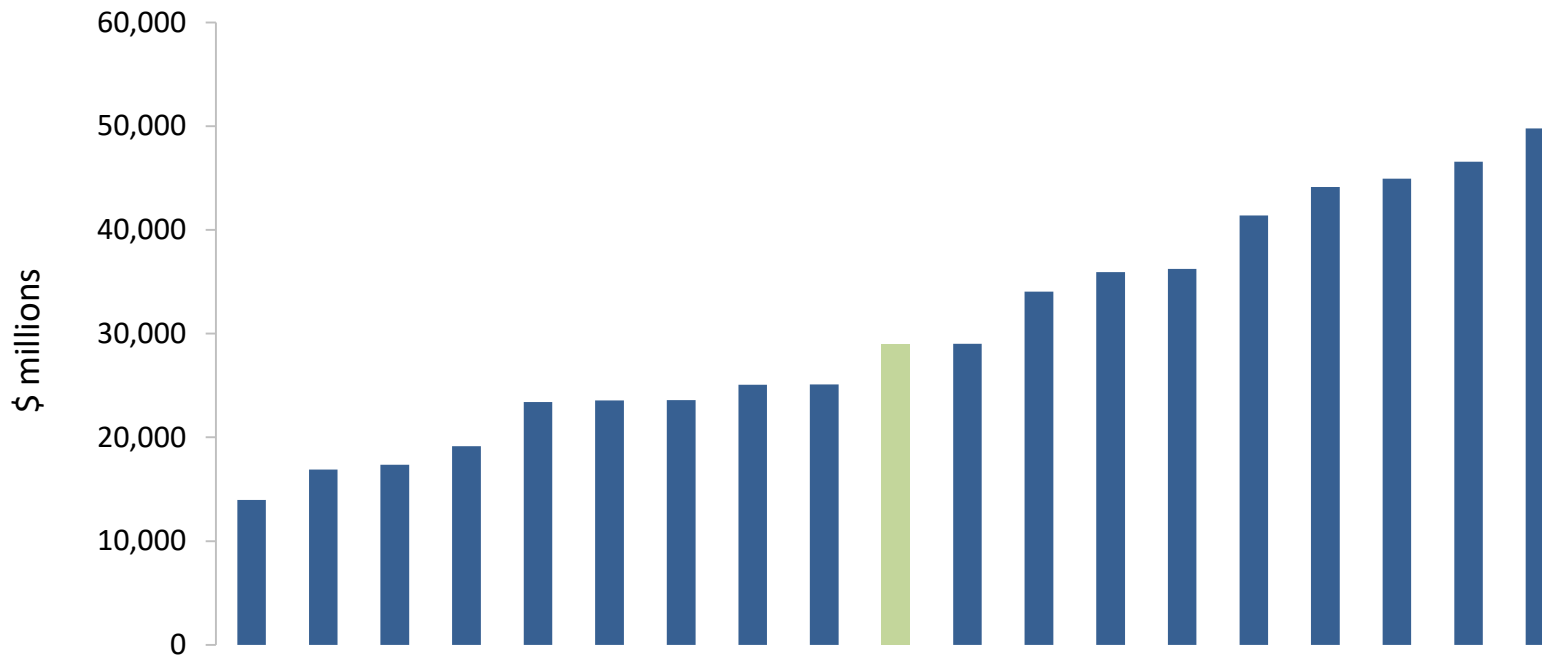


\* 2016 reflects both received and expected data.

# 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

- 19 U.S. sponsors from \$14 billion to \$50 billion
- Median size of \$29 billion versus your \$29 billion



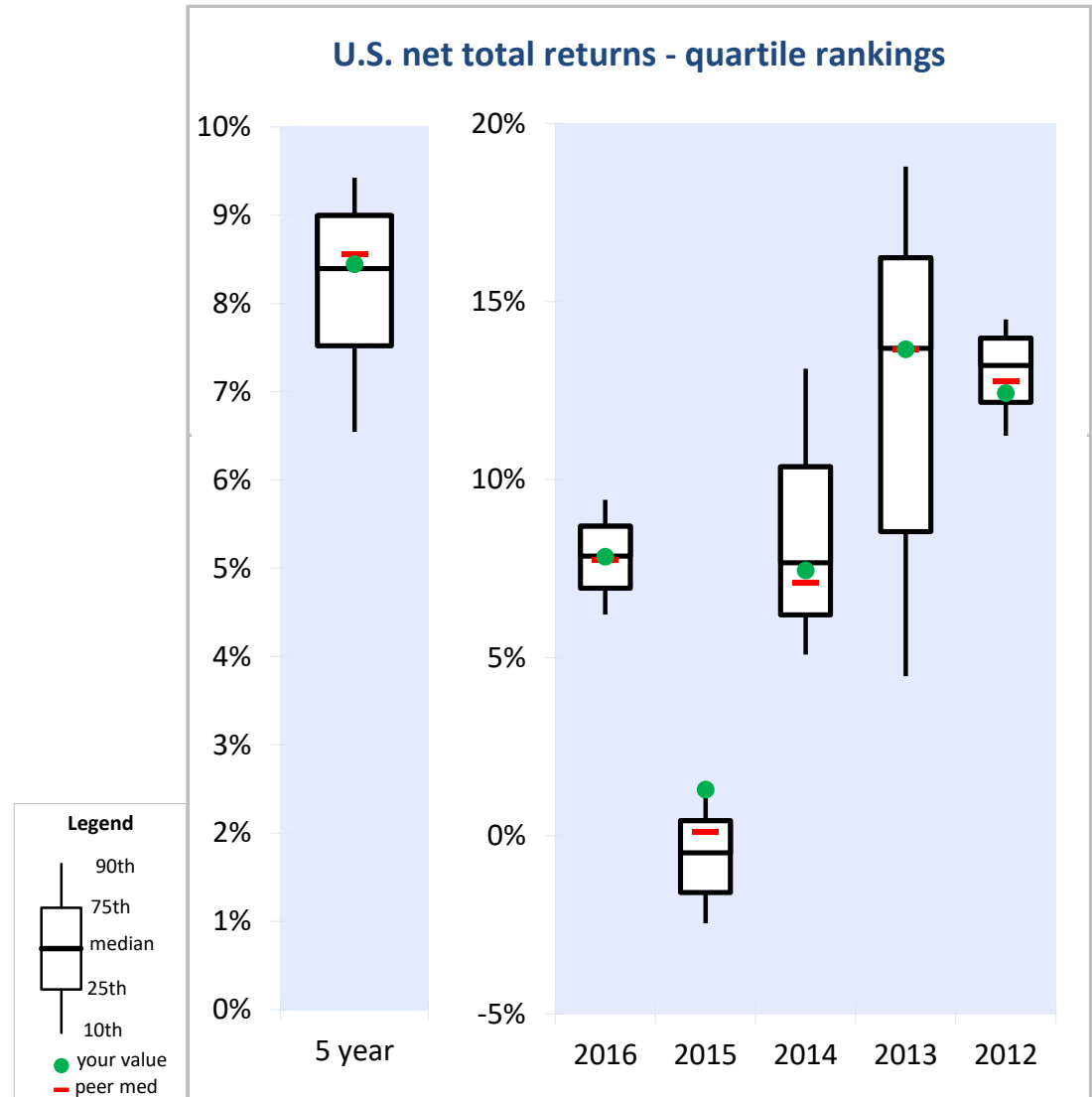
To preserve client confidentiality, given potential access to documents as permitted by the Freedom of Information Act, we do not disclose your peers' names in this document.

## Your 5-year net total return of 8.44% was equal to the U.S. median of 8.39% and close to the peer median of 8.56%.

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	8.44%
- Policy return	8.55%
= Net value added	-0.11%

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).



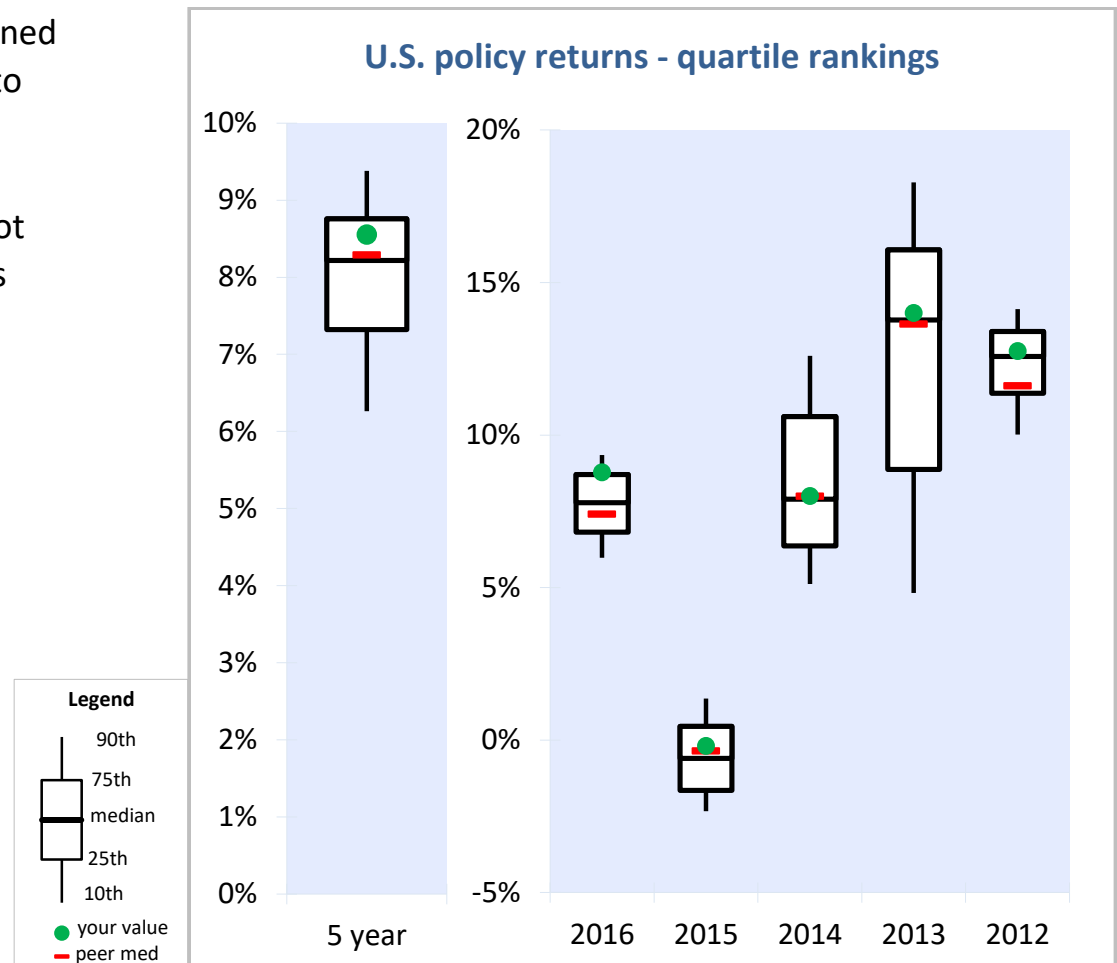
## Your 5-year policy return of 8.55% was above both the U.S. median of 8.22% and the peer median of 8.29%.

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

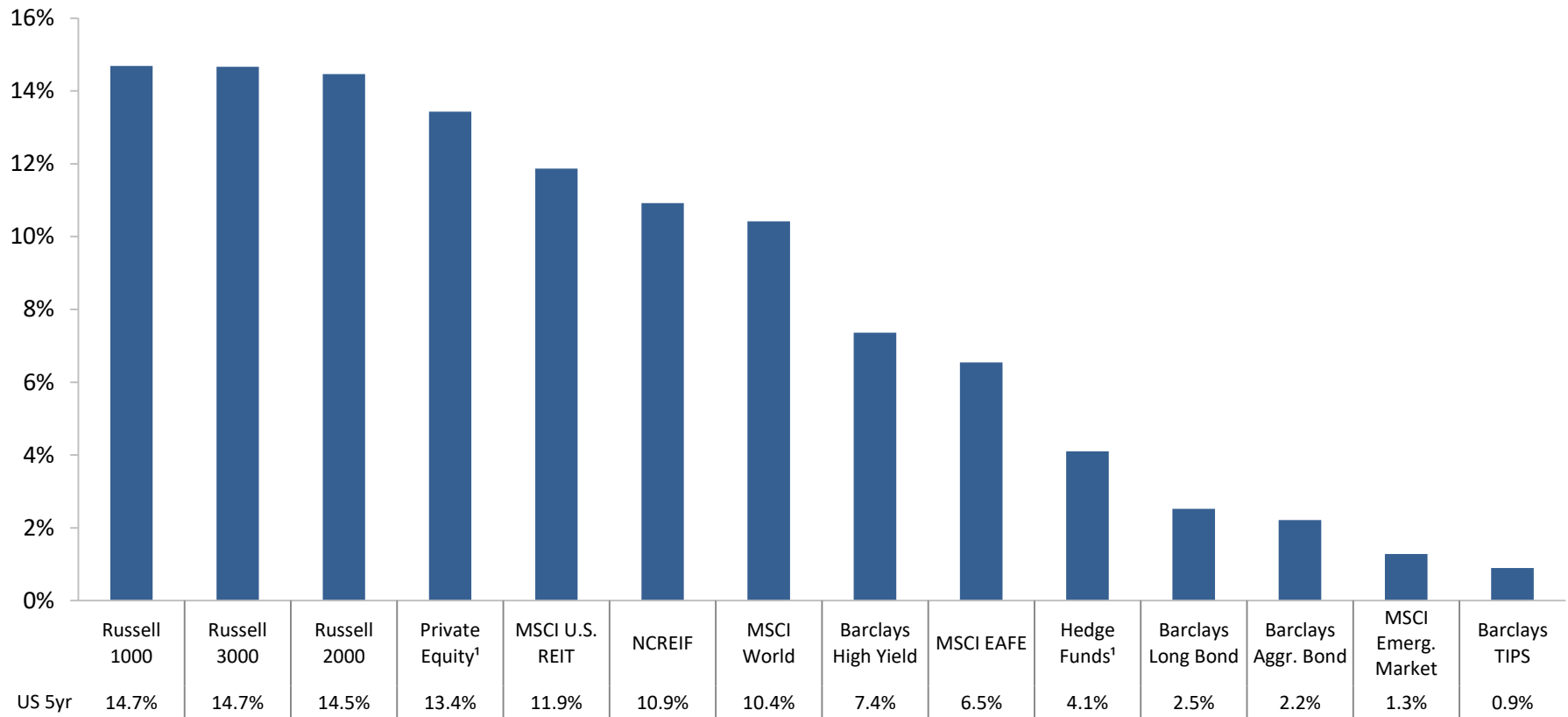
Each of these three factors is different across funds. Therefore, it is not surprising that policy returns often vary widely between funds.



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. Your custom benchmark is composed of 20% Europe ex-UK, 10% Global, 70% U.S. small cap equity with a lag of 84 days. Prior to this adjustment, your 5-year policy return was 8.9%, 0.4% higher than your adjusted 5-year policy return of 8.6%. Mirroring this, without adjustment your 5-year total fund net value added would be 0.4% lower. Refer to the Research section pages 6-7 for details.

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

5-Year returns for frequently used benchmark indices



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

## Your 5-year policy return was slightly above the U.S. median primarily because of:

- The positive impact of your lower weight in one of the poorer performing asset classes of the past 5 years: Long Bonds (your 0% 5-year average weight versus a U.S. average of 16%).
- The positive impact of your higher weight in one of the better performing asset classes of the past 5 years: Private Equity (your 12% 5-year average weight versus a U.S. average of

### 5-year average policy mix

	Your Fund	Peer Avg.	U.S. Avg.
U.S. Stock	24%	22%	21%
EAFE Stock	0%	6%	6%
ACWixUS Stock	16%	8%	6%
Other Stock <sup>1</sup>	0%	8%	12%
<b>Total Stock</b>	<b>40%</b>	<b>44%</b>	<b>46%</b>
U.S. Bonds	28%	15%	14%
Long Bonds	0%	14%	16%
Inflation Indexed Bonds	5%	2%	1%
High Yield Bonds	3%	1%	2%
Fixed Income - Emerging	1%	0%	1%
Cash	1%	1%	0%
Other Fixed Income	0%	2%	2%
<b>Total Fixed Income</b>	<b>39%</b>	<b>36%</b>	<b>36%</b>
Hedge Funds	0%	5%	5%
Real Estate incl. REITS	8%	7%	5%
Other Real Assets <sup>1</sup>	1%	1%	2%
Private Equity	12%	7%	6%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

1. Other stock includes Emerging Market and Global stock. Other real assets includes

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

### Policy asset mix

Asset class	Your fund					Peer avg.	U.S. avg.
	2012	2013	2014	2015	2016	2016	2016
U.S. Stock	23%	24%	24%	25%	25%	21%	19%
EAFE Stock	0%	0%	0%	0%	0%	5%	5%
ACWIxUS Stock	15%	15%	16%	16%	17%	8%	6%
Other Stock <sup>1</sup>	0%	0%	0%	0%	0%	10%	14%
<b>Total Stock</b>	<b>38%</b>	<b>39%</b>	<b>40%</b>	<b>41%</b>	<b>42%</b>	<b>44%</b>	<b>44%</b>
U.S. Bonds	28%	28%	28%	28%	28%	14%	13%
Long Bonds	0%	0%	0%	0%	0%	14%	17%
Inflation Indexed Bonds	5%	5%	5%	5%	5%	2%	1%
High Yield Bonds	5%	3%	3%	3%	2%	1%	2%
Fixed Income - Emerging	0%	2%	2%	2%	1%	1%	1%
Cash	1%	1%	1%	1%	1%	2%	1%
Other Fixed Income	0%	0%	0%	0%	0%	2%	3%
<b>Total Fixed Income</b>	<b>39%</b>	<b>39%</b>	<b>39%</b>	<b>39%</b>	<b>38%</b>	<b>35%</b>	<b>37%</b>
Hedge Funds	0%	0%	0%	0%	0%	5%	5%
Real Estate incl. REITS	8%	8%	8%	8%	8%	7%	6%
Other Real Assets <sup>1</sup>	2%	1%	2%	1%	1%	2%	2%
Private Equity	13%	13%	11%	11%	12%	7%	7%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

1. Other stock includes Emerging Market and Global stock. Other real assets includes commodities, natural resources and infrastructure.



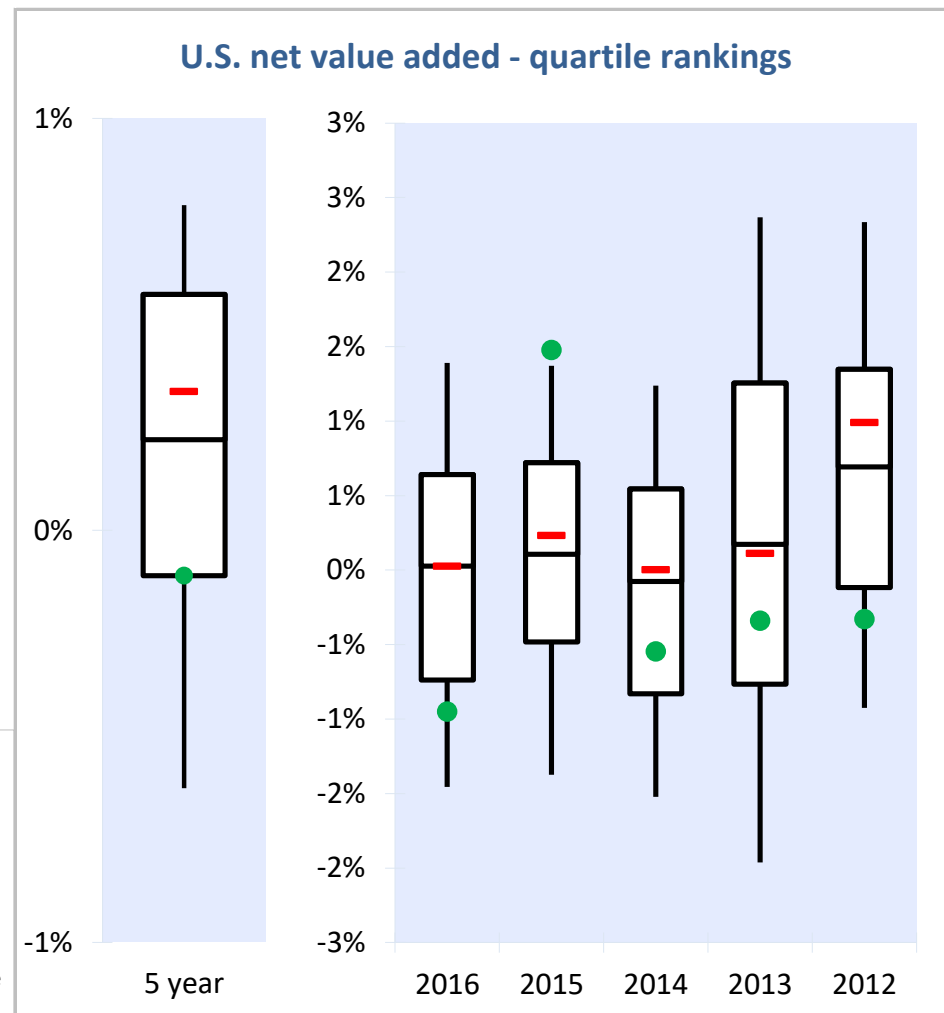
# Net value added is the component of total return from active management. Your 5-year net value added was -0.11%.

Net value added equals total net return minus policy return.

## Value added for Iowa Public Employees' Retirement System

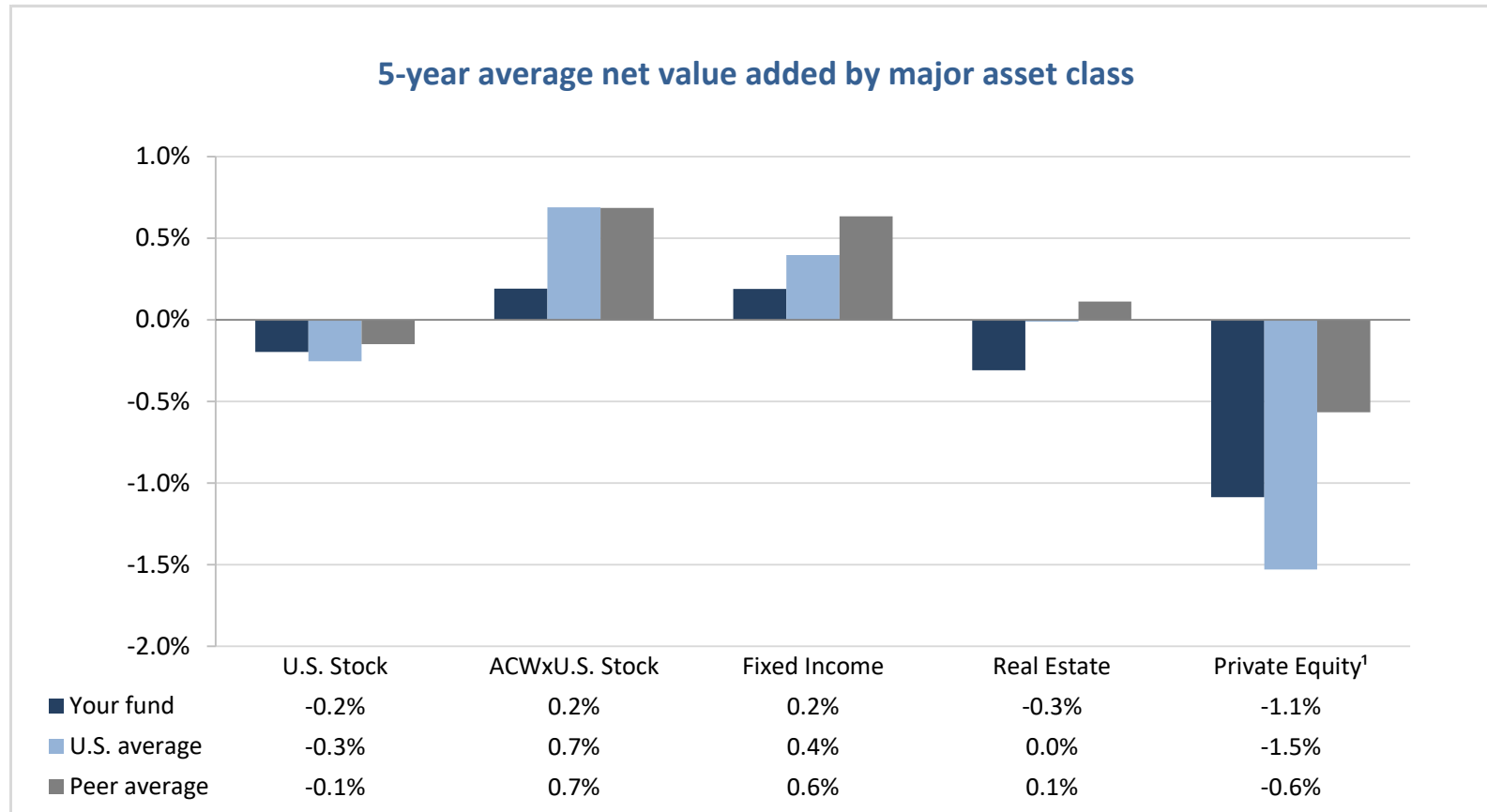
Year	Net Return	Policy Return	Net value Added
2016	7.83%	8.78%	(0.95%)
2015	1.29%	(0.19%)	1.48%
2014	7.45%	8.00%	(0.55%)
2013	13.66%	14.00%	(0.34%)
2012	12.43%	12.76%	(0.33%)
5-year	8.44%	8.55%	(0.11%)

Your 5-year net value added of -0.11% compares to a median of 0.34% for your peers and 0.22% for the U.S. universe.



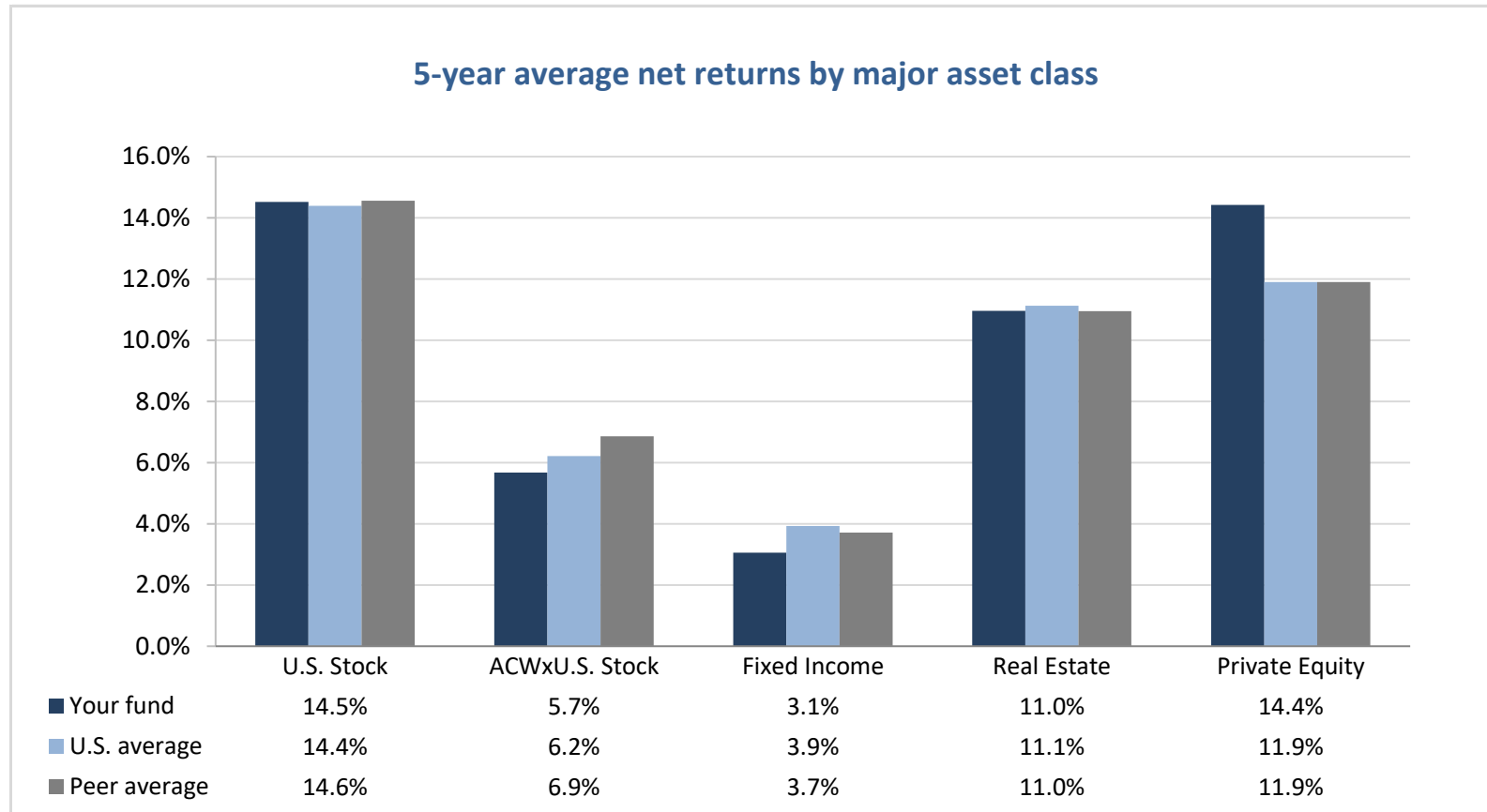
To enable fairer comparisons, the value added for each participant including your fund was adjusted to reflect private equity benchmarks based on investable public market indices. Your custom benchmark is composed of 20% Europe ex-UK, 10% Global, 70% U.S. small cap equity with a lag of 84 days. Prior to this adjustment, your fund's 5-year total fund net value added was -0.5%. Refer to the Research section, pages 6-7 for details as to why this adjustment may improve comparisons.

# You had positive 5-year net value added in ACWxU.S. Stock and Fixed Income.



1. To enable fairer comparisons, the private equity benchmarks of all participants, including your fund were adjusted to reflect lagged, investable, public-market indices. Your custom benchmark is composed of 20% Europe ex-UK, 10% Global, 70% U.S. small cap equity with a lag of 84 days. Prior to this adjustment, your fund's 5-year private equity net value added was -4.3%. It is also useful to compare total returns. Your 5-year total return of 14.4% for private equity was above the U.S. average of 11.9%.

# You had higher 5-year net returns in U.S. Stock and Private Equity relative to the U.S. average.



## Your investment costs were \$107.8 million or 38.0 basis points in 2016.

Asset management costs by asset class and style (\$000s)	Internal Overseeing of external	External Management			Total
		Passive fees	Active base fees	Perform. fees <sup>3</sup>	
U.S. Stock - Broad/All		-451	3,647	1,932	5,128
Stock - Emerging		-150	2,966		2,815
Stock - ACWIxU.S.		494	3,173	4,050	7,717
Fixed Income - U.S.		-94	4,921	2,024	6,852
Fixed Income - Emerging			546		546
Fixed Income - Inflation Indexed		104	455		558
Fixed Income - High Yield			2,101	525	2,625
Fixed Income - Private Debt			1,819		1,819
Cash			246		246
Hedge Funds - Direct	3		26	58 <sup>2</sup>	87
REITs		109	747	1,150	2,007
Real Estate			9,696		9,696
Natural Resources			1,040		1,040
Other Real Assets			2,729		2,729
Diversified Private Equity	6,393		54,794 <sup>1</sup>		61,187
Total excluding private asset performance fees					105,051 37.0bp
<b>Oversight, custodial and other costs <sup>4</sup></b>					
Oversight of the fund					1,141
Trustee & custodial					739
Consulting and performance measurement					333
Audit					142
Other					438
Total oversight, custodial & other costs					2,793 1.0bp
Total investment costs (excl. transaction costs & private asset performance fees)					107,844 38.0bp

### Footnotes

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

<sup>2</sup> Default performance fees were added. refer to Appendix A for full details.

<sup>3</sup> 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.

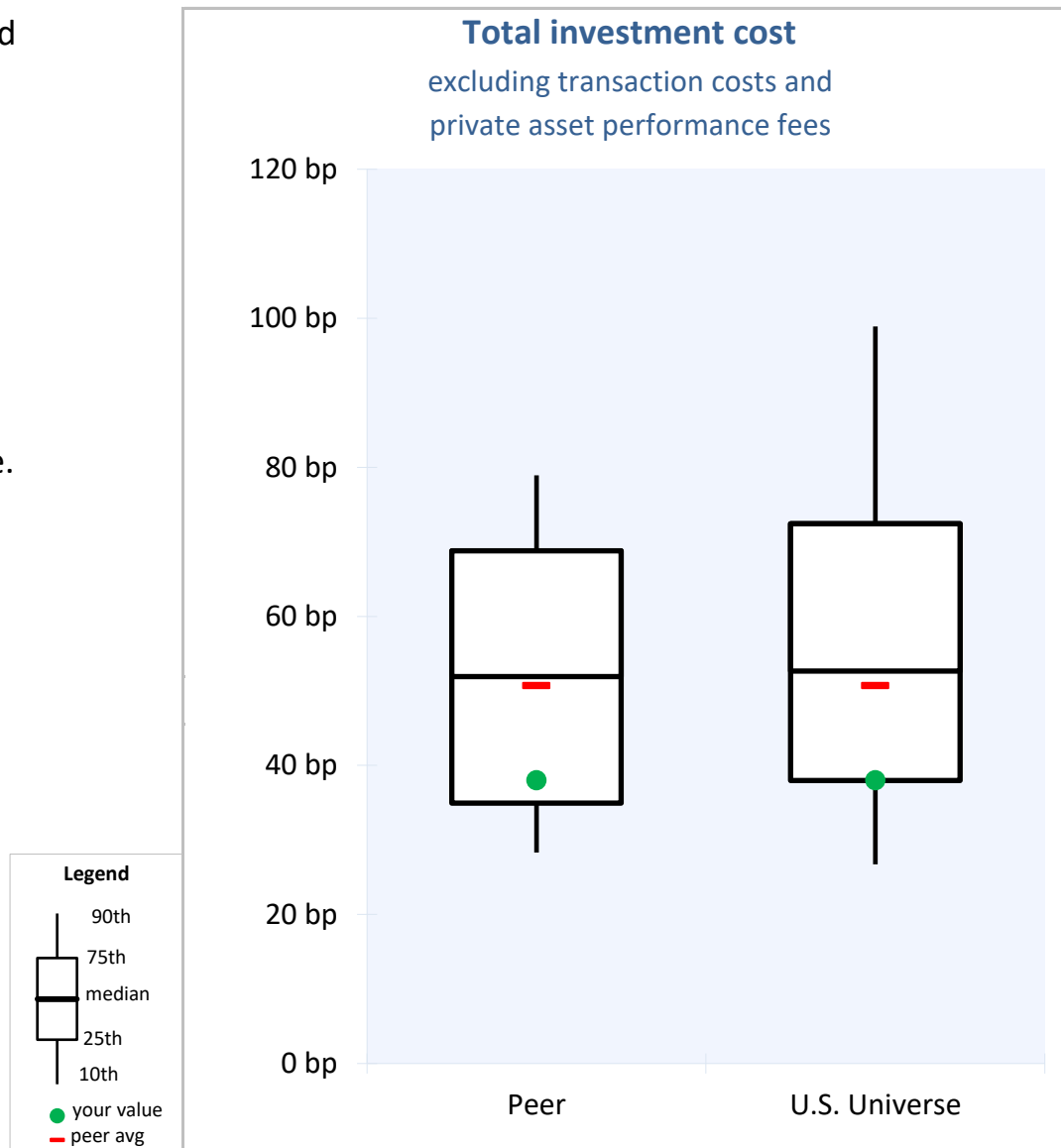
<sup>4</sup> Excludes non-investment costs, such as PBGC premiums and preparing checks for retirees.

## Your total investment cost of 38.0 bps was below the peer median of 51.9 bps.

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

- Asset mix, particularly holdings of the highest cost asset classes: real estate (excl REITS), infrastructure, hedge funds and private equity. These high cost assets equaled 18% of your fund's assets at the end of 2016 versus a peer average of 19%.
- 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 8.4 basis points in 2016.

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

Your total cost of 38.0 bp was below your benchmark cost of 46.4 bp. Thus, your cost savings was 8.4 bp.

### Your cost versus benchmark

	\$000s	basis points
Your total investment cost	107,844	38.0 bp
Your benchmark cost	131,674	46.4 bp
Your excess cost	(23,830)	(8.4) bp

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

### Reasons for your low cost status

	Excess Cost/ (Savings)	
	\$000s	bps
1. Higher cost implementation style		
• Less fund of funds	(5,881)	(2.1)
• More external active management (less lower cost passive and internal)	9,273	3.3
• Less overlays	(758)	(0.3)
• Other style differences	(14)	(0.0)
	<u>2,620</u>	<u>0.9</u>
2. Paying less than peers for similar services		
• External investment management costs	(23,347)	(8.2)
• Oversight, custodial & other costs	(3,102)	(1.1)
	<u>(26,449)</u>	<u>(9.3)</u>
<hr/> Total savings	<hr/> (23,830)	<hr/> (8.4)

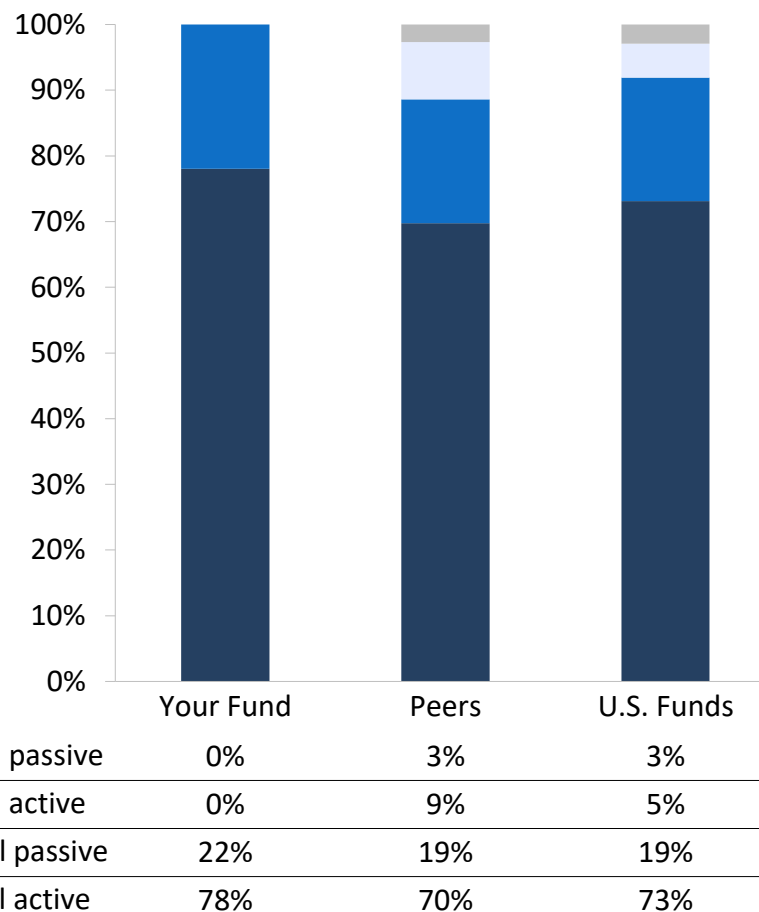
## Differences in cost performance are often caused by differences in implementation style.

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

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

- External active management because it tends to be much more expensive than internal or passive management. You used more external active management than your peers (your 78% versus 70% for your peers).
- Within external active holdings, fund of funds usage because it is more expensive than direct fund investment. You had less in fund of funds. Your 0% of hedge funds, real estate and private equity in fund of funds compared to 22% for your peers.

Implementation style<sup>1</sup>



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



# Differences in implementation style cost you 0.9 bp relative to your peers.

## Calculation of the cost impact of differences in implementation style

Asset class	Your avg holdings in \$mils (A)	% External active			Premium vs passive & internal <sup>1</sup> (C)	Cost/ (savings) \$000s bps (A X B X C)		
		You	Peer average	More/ (less) (B)				
U.S. Stock - Broad/All	6,952	61.6%	24.0%	37.5%	46.2 bp	12,051		
Stock - Emerging	981	52.5%	66.8%	(14.3%)	57.2 bp	(801)		
Stock - ACWIxU.S.	3,612	61.8%	65.5%	(3.7%)	40.9 bp	(544)		
Fixed Income - U.S.	7,853	89.1%	66.6%	22.6%	14.2 bp	2,528		
Fixed Income - Emerging	365	100.0%	80.8%	19.2%	N/A <sup>2</sup>	0		
Fixed Income - Inflation Indexed	1,315	48.7%	56.9%	(8.2%)	7.3 bp	(79)		
Fixed Income - High Yield	827	100.0%	90.1%	9.9%	N/A <sup>2</sup>	0		
Fixed Income - Private Debt	69	100.0%	49.4%	50.6%	N/A <sup>2</sup>	0		
REITs	533	65.1%	61.9%	3.2%	46.1 bp	79		
Real Estate ex-REITs	1,672	100.0%	98.1%	1.9%	N/A <sup>2</sup>	0		
Partnerships, as a proportion of external:	1,672	0.0%	38.3%	(38.3%)	61.8 bp	(3,960)		
Natural Resources	155	100.0%	100.0%	0.0%		0		
Partnerships, as a proportion of external:	155	0.0%	3.1%	(3.1%)	N/A <sup>2</sup>	0		
Other Real Assets	232	100.0%	100.0%	0.0%		0		
Diversified Private Equity	3,559	100.0%	100.0%	0.0%		0		
Impact of less/more external active vs. lower cost styles						9,273	3.3 bp	
		<u>Fund of funds % of LPs</u>			<u>vs. direct LP<sup>1</sup></u>			
Hedge Funds	10	0.0%	25.0%	(25.0%)	54.8 bp	(14)		
Performance Fee Impact:	10	0.0%	25.0%	(25.0%)	N/A <sup>2</sup>	0		
Diversified Private Equity - LPs	3,559	0.0%	17.5%	(17.5%)	94.1 bp	(5,867)		
Impact of less/more fund of funds vs. direct LPs						(5,881)	(2.1) bp	
		<u>Overlays and other</u>						
Impact of lower use of portfolio level overlays						(758)	(0.3) bp	
Impact of mix of internal passive, internal active, and external passive <sup>3</sup>						(14)	(0.0) bp	
Total impact of differences in implementation style						2,620	0.9 bp	

1. The cost premium is the additional cost of external active management relative to the average of other lower cost implementation styles - internal passive, internal active and external passive.

2. A cost premium listed as 'N/A' indicates that there was not enough peer data in one or both styles to calculate the premium.

3. The 'Impact of mix of internal passive, internal active and external passive' quantifies the net cost impact of differences in cost between, and your relative use of, these 'low-cost' styles.

# The net impact of paying more/less for similar services saved 9.3 bps.

## Cost impact of paying more/(less)

	Your avg holdings in \$mils (A)	Cost in bps			Cost/ (savings)	
		Your Fund	Peer median	More/ (less) (B)	\$000s (A X B)	bps
<b>External asset management</b>						
U.S. Stock - Broad/All - Passive	2,671	-1.7	1.1	(2.8)	(754)	
U.S. Stock - Broad/All - Active	4,281	13.0 <sup>1</sup>	47.3	(34.3)	(14,677)	
Stock - Emerging - Passive	466	-3.2	5.5	(8.8)	(408)	
Stock - Emerging - Active	514	57.6	62.7	(5.1)	(261)	
Stock - ACWIxU.S. - Passive	1,379	3.6	4.3	(0.7)	(100)	
Stock - ACWIxU.S. - Active	2,233	32.3 <sup>1</sup>	45.2	(12.8)	(2,865)	
Fixed Income - U.S. - Passive	852	-1.1	1.2	(2.3)	(199)	
Fixed Income - U.S. - Active	7,001	9.9 <sup>1</sup>	15.7	(5.7)	(4,011)	
Fixed Income - Emerging - Active	365	14.9	38.5	(23.6)	(862)	
Fixed Income - Inflation Indexed - Passive	675	1.5	3.3*	(1.7)	(115)	
Fixed Income - Inflation Indexed - Active	641	7.1	10.5	(3.4)	(221)	
Fixed Income - High Yield - Active	827	31.8 <sup>1</sup>	37.4	(5.6)	(463)	
Fixed Income - Private Debt - Active	69	265.3	157.9	107.4	736	
Hedge Funds - Active	10	28.5	132.5	(103.9)	(106)	
Performance Fees:	10	56.4	56.4*	0.0	0	
REITs - Passive	186	5.8	7.8*	(1.9)	(36)	
REITs - Active	347	54.7 <sup>1</sup>	53.9	0.8	27	
Real Estate ex-REITs - Active	1,672	58.0	64.4	(6.4)	(1,075)	
Natural Resources - Active	155	67.3	70.4	(3.1)	(48)	
Other Real Assets - Active	232	117.9	133.9	(16.1)	(372)	
Diversified Private Equity - Active	3,559	171.9	165.0	6.9	2,460	
<b>Total for external management</b>					<b>(23,347)</b>	<b>(8.2 bp)</b>
<b>Oversight, custodial, other</b>						
Oversight	28,371	0.4	1.1	(0.7)	(1,883)	
Consulting	28,371	0.1	0.3	(0.2)	(650)	
Custodial	28,371	0.3	0.4	(0.2)	(506)	
Audit	28,371	0.1	0.1	(0.0)	(40)	
Other	28,371	0.2	0.2	(0.0)	(22)	
<b>Total for oversight, custodial, other</b>					<b>(3,102)</b>	<b>(1.1 bp)</b>
<b>Total</b>					<b>(26,449)</b>	<b>(9.3 bp)</b>

Footnotes:

<sup>1</sup> You paid performance fees in these asset classes.

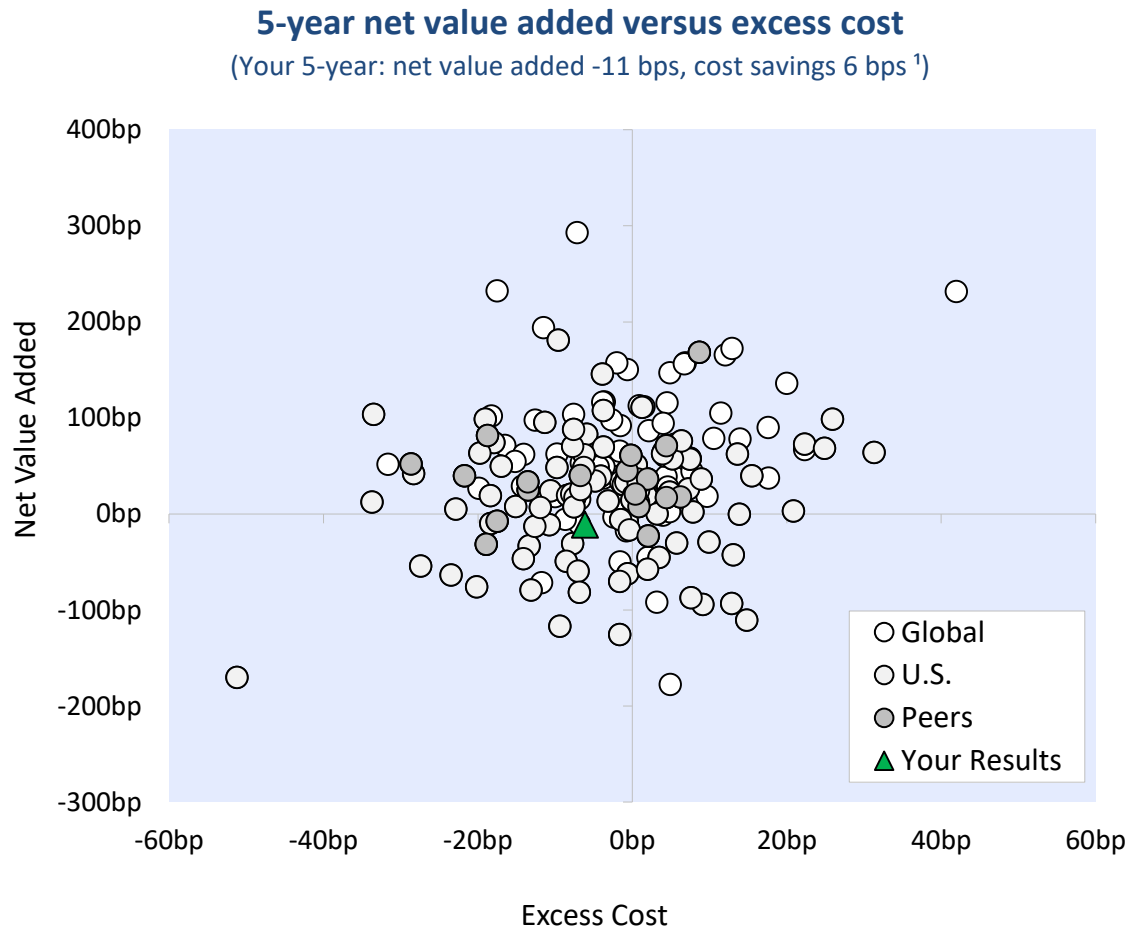
\*Universe median used as peer data was insufficient.

**In summary, your fund was low cost because you paid less than peers for similar services.**

### Reasons for your low cost status

	Excess Cost/ (Savings)	
	\$000s	bps
1. Higher cost implementation style		
• Less fund of funds	(5,881)	(2.1)
• More external active management (less lower cost passive and internal)	9,273	3.3
• Less overlays	(758)	(0.3)
• Other style differences	(14)	(0.0)
	<u>2,620</u>	<u>0.9</u>
2. Paying less than peers for similar services		
• External investment management costs	(23,347)	(8.2)
• Oversight, custodial & other costs	(3,102)	(1.1)
	<u>(26,449)</u>	<u>(9.3)</u>
<b>Total savings</b>	<b>(23,830)</b>	<b>(8.4)</b>

# Your fund achieved 5-year net value added of -11 bps and cost savings of 6 bps on the cost effectiveness chart.



1. Your 5-year cost savings of 6 basis points is the average of your cost savings for the past 5 years.

	2016	2015	2014	2013	2012	5-year
Net value added	-95 bp	148 bp	-55 bp	-34 bp	-33 bp	-11 bp
Excess Cost	-8 bp	-3 bp	-5 bp	-6 bp	-8 bp	-6 bp

# Key takeaways

## Returns

- Your 5-year net total return was 8.44%. This was equal to the U.S. median of 8.39% and close to the peer median of 8.56%.
- Your 5-year policy return was 8.55%. This was above the U.S. median of 8.22% and above the peer median of

## Value added

- Your 5-year net value added was -0.11%. This was below the U.S. median of 0.22% and below the peer median of 0.34%.

## Cost and cost effectiveness

- Your investment cost of 38.0 bps was below your benchmark cost of 46.4 bps. This suggests that your fund was low cost compared to your peers.
- Your fund was low cost because you paid less than peers for similar services.