

Investment
Cost Effectiveness Analysis
(for the 5 years ending December 31, 2014)

New Zealand Superannuation Fund



Key takeaways

Returns

- Your 5-year net total return was 14.7%. This was above the Global median of 9.9% and above the peer median of 9.5%.
- Your 5-year policy return was 11.7%. This was above the Global median of 9.7% and above the peer median of 8.7%.

Value added

- Your 5-year net value added was 3.1%. This was above the Global median of 0.3% and above the peer median of 0.7%.

Cost and cost effectiveness

- Your investment cost of 37.8 bps was below your benchmark cost of 43.2 bps. This suggests that your fund was low cost compared to your peers.
- Your fund was low cost because you had a lower cost implementation style.
- Your 5-year performance placed in the positive value added, low cost quadrant of the cost effectiveness chart.

Risk

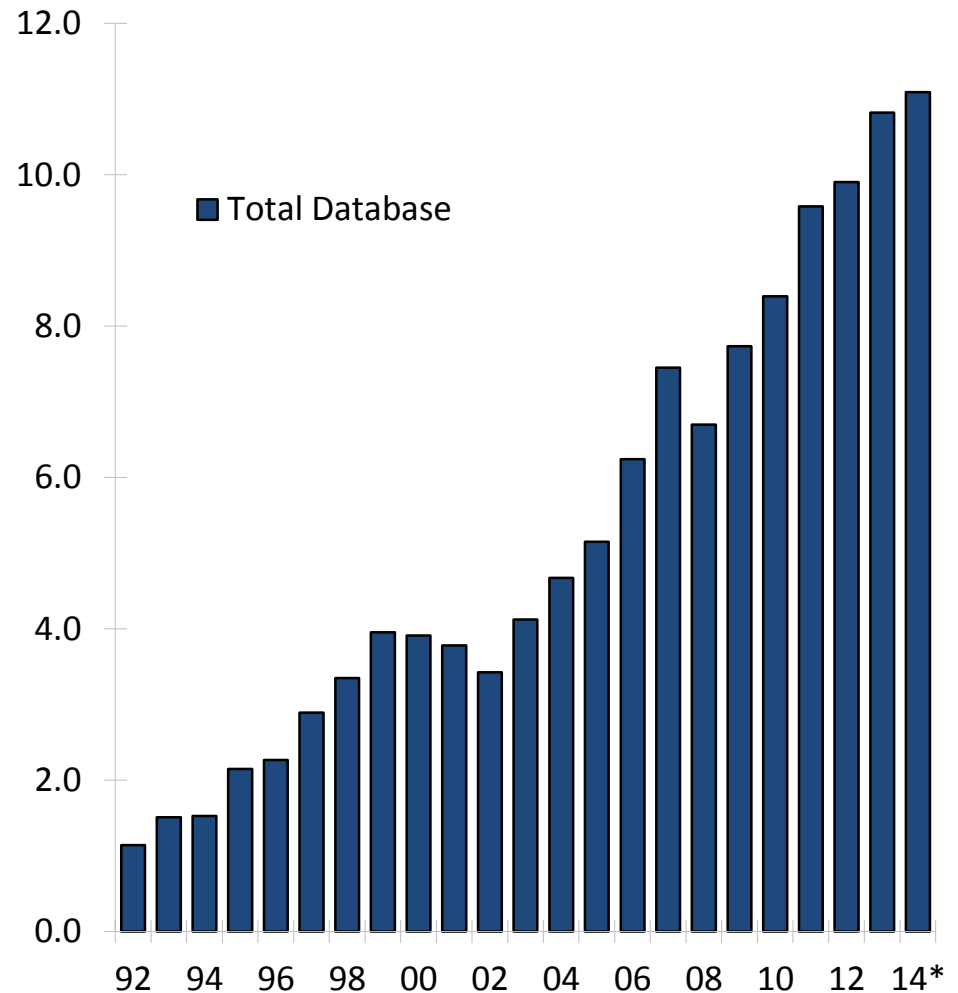
- Your asset risk of 11.8% was above the Global median of 8.8%. Your tracking error of 1.5% was above the Global median of 1.3%.

This benchmarking report compares your cost and return performance to the 277 funds in CEM's extensive pension database.

- 149 U.S. pension funds participate. The median U.S. fund had assets of \$14.2 billion and the average U.S. fund had assets of \$33.1 billion. Total participating U.S. assets were \$4.9 trillion.
- 77 Canadian funds participate with assets totaling \$1,538 billion.
- 44 European funds participate with aggregate assets of \$3.1 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Ireland, Denmark and the U.K.
- 7 Asia-Pacific funds participate with aggregate assets of \$483 billion. Included are funds from Australia, New Zealand, China and South Korea.
- 2 Gulf region funds participate.

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

Participating assets (\$ trillions)

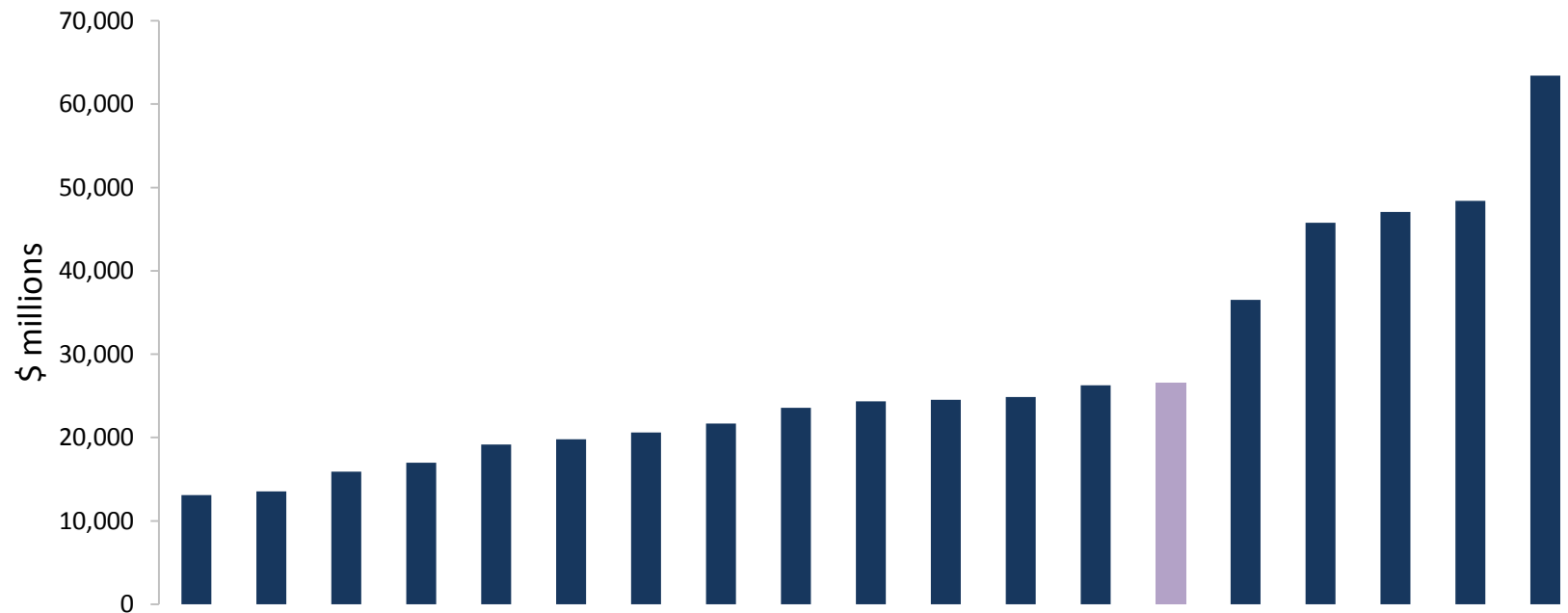


* 2014 reflects both received and expected data.

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

Peer group for New Zealand Superannuation Fund

- 19 global sponsors from \$13 billion to \$63 billion
- Median size of \$24 billion versus your \$26 billion



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 (i.e., the amount of active versus passive management) adding value?

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?

5. Risk

How much risk was taken to obtain your value added?
What is the risk of your policy mix?

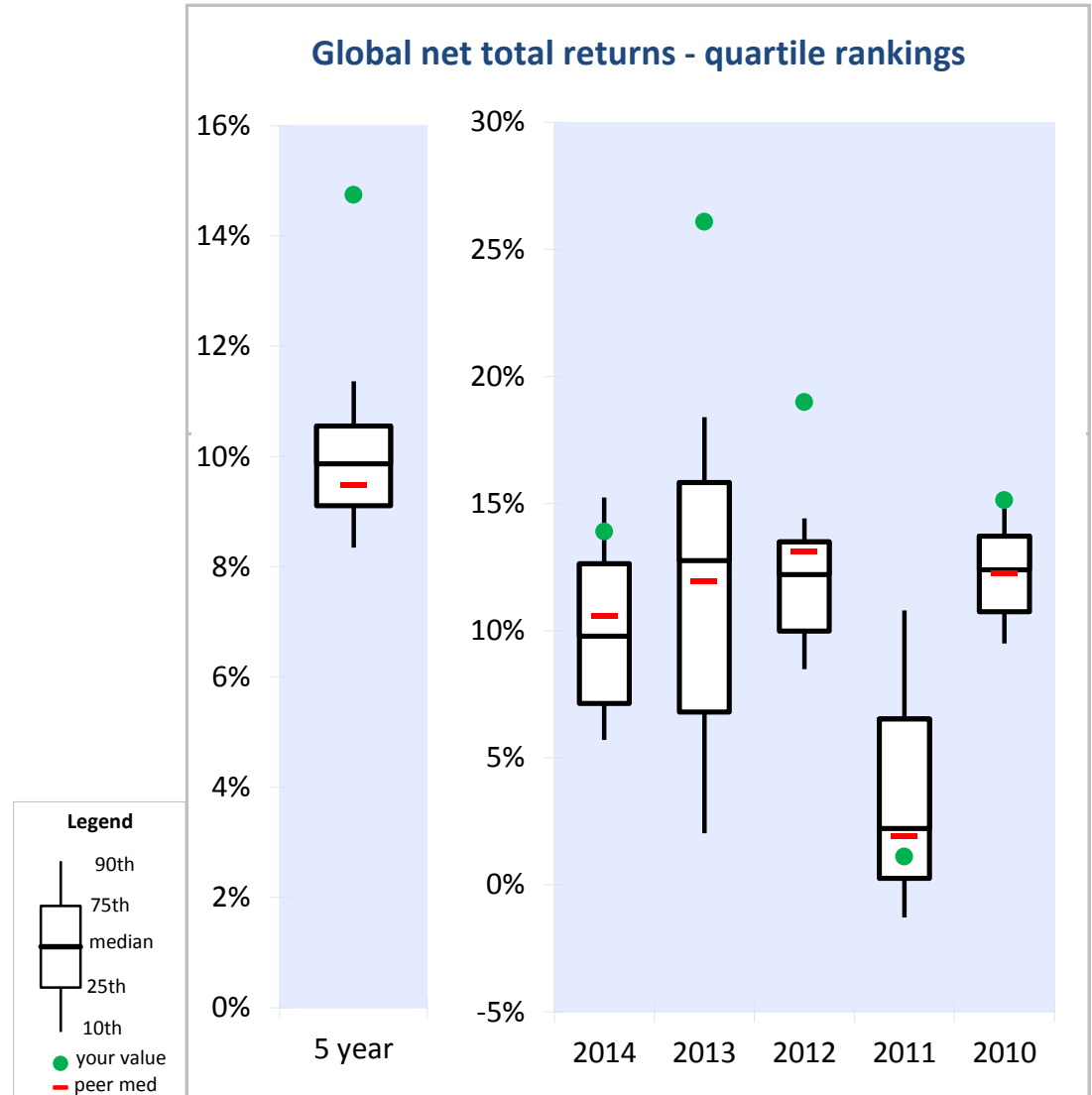
Your 5-year net total return of 14.7% was above both the Global median of 9.9% and the peer median of 9.5%.

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	14.7%
- Policy return	11.7%
= Net value added	3.1%

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).

Returns are reported in local currency.



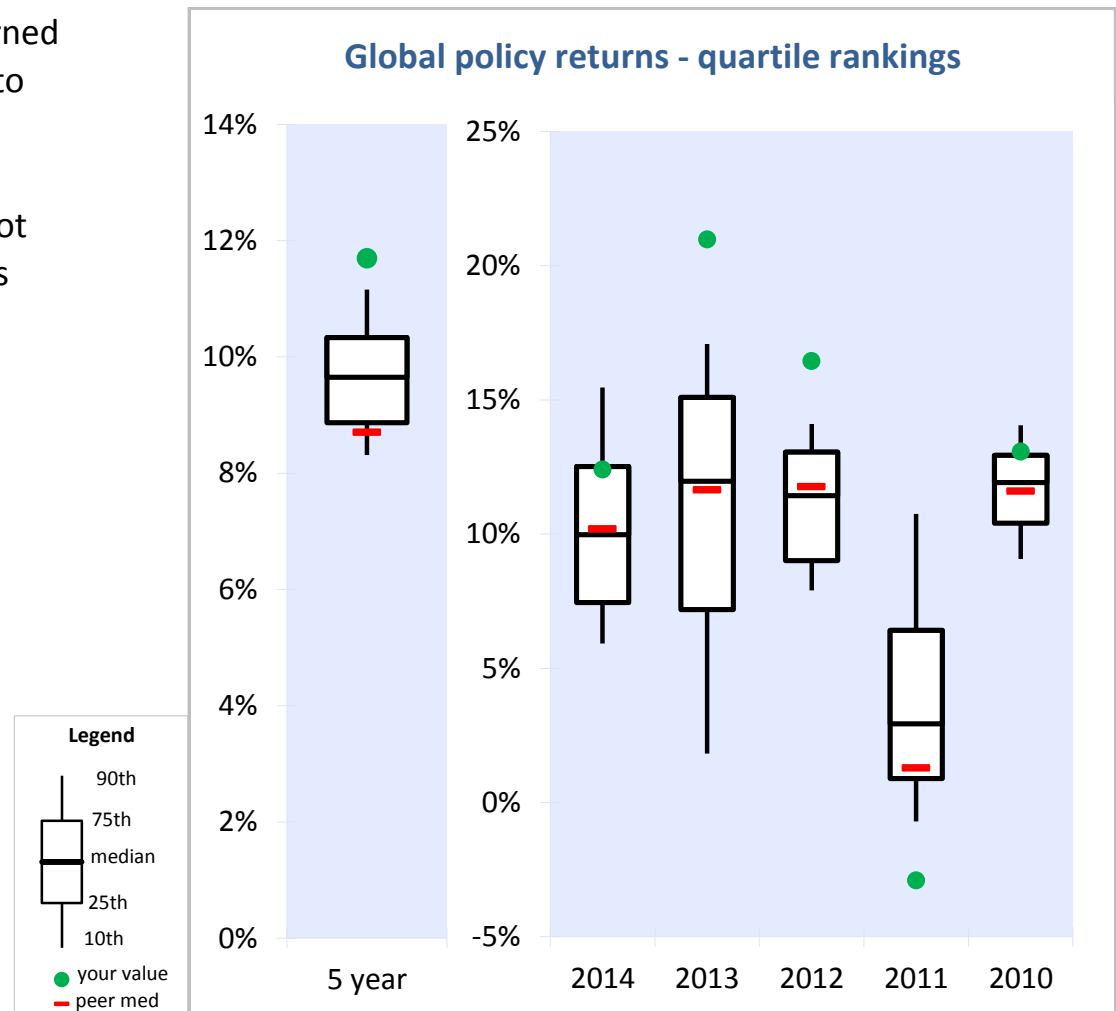
Your 5-year policy return of 11.7% was above both the Global median of 9.7% and the peer median of 8.7%.

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 with policy weight in private equity were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. Refer to the Research section pages 6-7 for details.

At the end of 2014 your policy mix compared to your peers and the Global universe as follows:

- Your fund had more stock than the peer and Global averages (your 75% versus a peer average of 42% and a Global average of 45%).

2014 Policy asset mix

Asset class	Your Fund	Peer avg.	Global avg.
Europe & Far East Stock	5%	4%	5%
U.S. Stock	0%	8%	14%
Global Stock	70%	13%	11%
Other Stock ¹	0%	18%	15%
Total Stock	75%	42%	45%
Long Bonds	0%	11%	12%
Capital Indexed Bonds	0%	4%	2%
Global Bonds	20%	3%	3%
Cash	0%	-3%	1%
Other Fixed Income ¹	0%	20%	21%
Total Fixed Income	20%	37%	38%
Hedge Funds	0%	6%	4%
Real Estate incl. REITS	5%	7%	6%
Other Real Assets ¹	0%	4%	2%
Private Equity	0%	4%	4%
Total	100%	100%	100%

1. Other stock includes Australian, Canadian, Europe, EAFE, Emerging Market and ACWIxUS stock. Other fixed income includes Canada, Euro, U.S., Europe & Far East bonds. Other real assets includes commodities, natural resources and infrastructure.

Your fund uses derivatives, to gain exposure to some asset classes.

Policy asset mix

For the purposes of comparing your costs and value added to other participants, CEM looks at investments before the impact of derivatives. This allows us to compare, for example, the cost of the global stock assets in your plan to similar assets in your peers' plans. Our report will reflect your assets as they appear in the middle column - before derivatives.

Asset class	Policy mix	Actual weights	
		excluding derivatives	including derivatives
Europe & Far East Stock	5%	5%	5%
Emerging Market Stock	0%	4%	6%
Global Stock	<u>70%</u>	<u>26%</u>	<u>56%</u>
Total Stock	75%	35%	67%
U.S. Bonds	0%	0%	0%
Fixed Income - Emerging	0%	0%	0%
Global Bonds	20%	10%	11%
Cash	<u>0%</u>	<u>29%</u>	<u>-2%</u>
Total Fixed Income	20%	40%	9%
Hedge Funds	0%	5%	5%
REITs	5%	4%	5%
Natural Resources	0%	6%	6%
Infrastructure	0%	4%	4%
Real Estate ex-REITs	0%	2%	2%
Private Equity	0%	5%	3%
Total	100%	100%	100%

Net value added is the component of total return from active management. Your 5-year net value added was 3.1%.

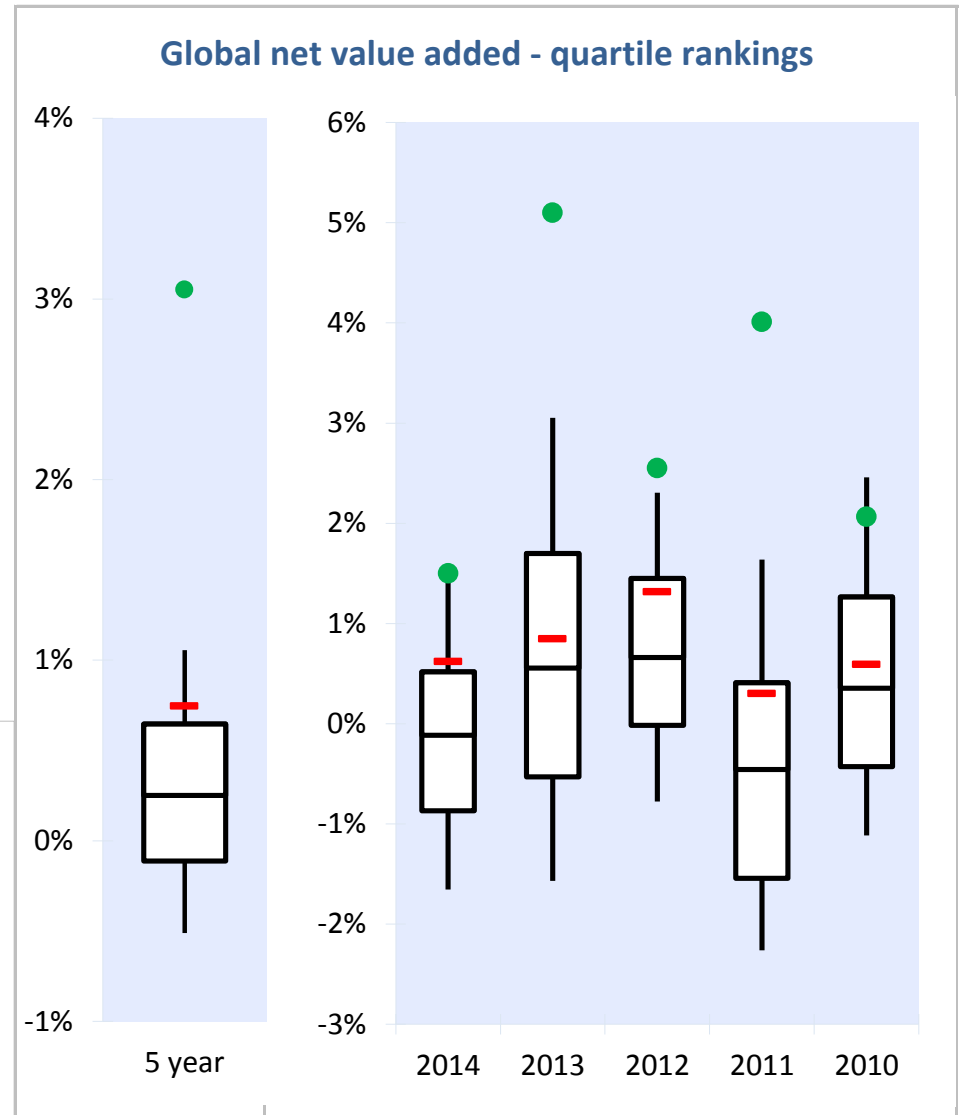
Net value added equals total net return minus policy return.

Value added for New Zealand Superannuation Fund

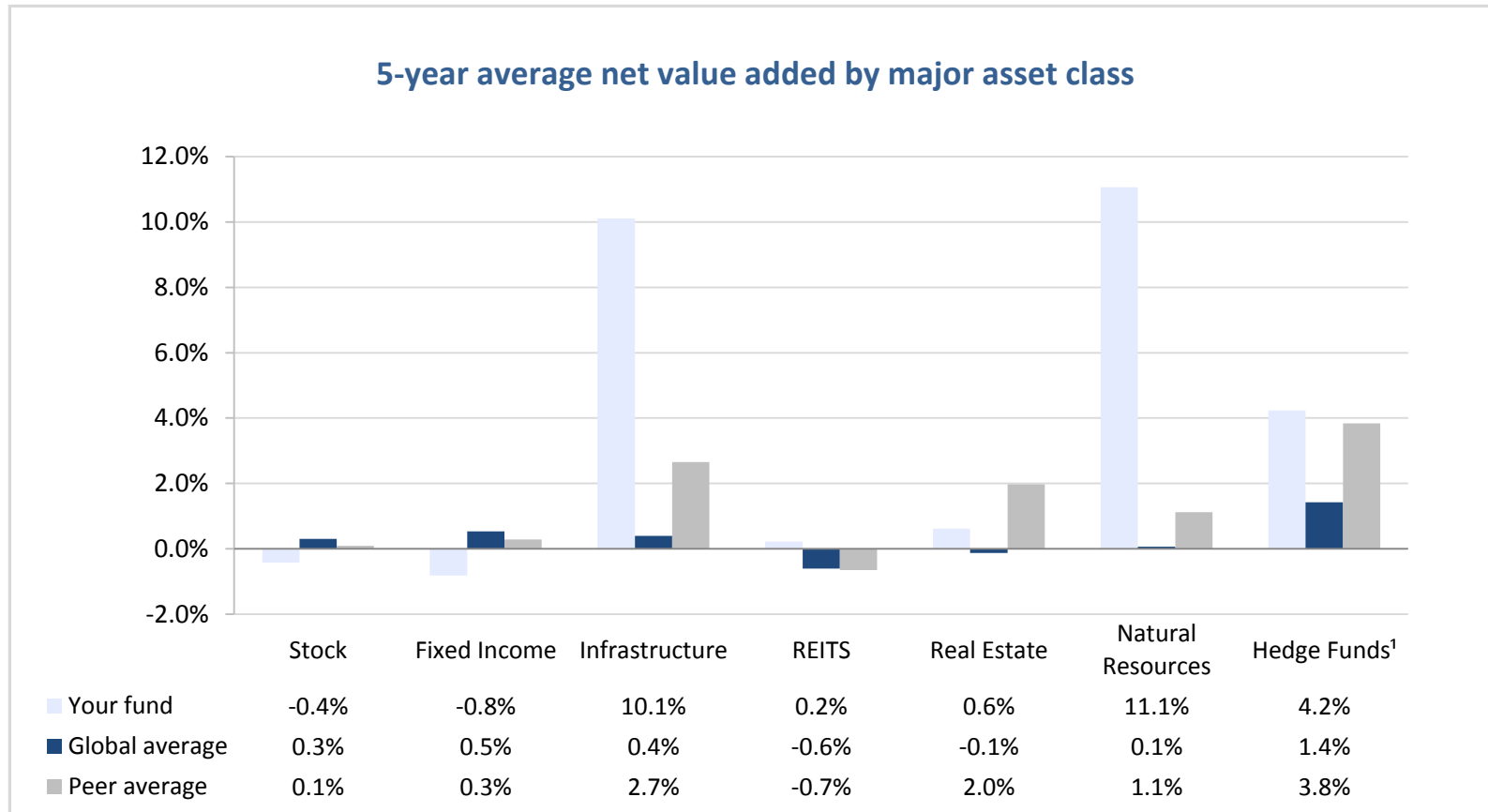
Year	Net Return	Policy Return	Net value Added
2014	13.9%	12.4%	1.5%
2013	26.1%	21.0%	5.1%
2012	19.0%	16.5%	2.5%
2011	1.1%	(2.9%)	4.0%
2010	15.1%	13.1%	2.1%
5-year	14.7%	11.7%	3.1%

Your 5-year net value added of 3.1% compares to a median of 0.7% for your peers and 0.3% for the Global universe.

Your 3.1% 5-year value added translates into approximately \$4.3 billion of cumulative value added over 5 years, or \$3.9 billion more than if you had earned the Global median of 0.3%.



You had positive 5-year value added in Infrastructure, REITS, Real Estate, Natural Resources and Hedge Funds.



1. It is also useful to compare total returns for hedge funds. Your 5-year return of 3.5% for hedge funds was below the Global average of 5.9%.

Your investment costs were \$100.0 million or 37.8 basis points in 2014.

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 ²		
Europe & Far East Stock	927		418		3,070		4,415	
Stock - Emerging			615	391	3,233		4,239	
Stock - Global			2,312	1,274	2,279		5,865	
Fixed Income - US	17						17	
Fixed Income - Emerging			76	89			165	
Fixed Income - Global			597	1,108			1,705	
Cash		3,782					3,782	
Hedge Funds - Direct			2,220		15,603	2,710 ²	20,533	
REITs			96	298			394	
Real Estate - LPs			1,040		4,154		5,194	
Infrastructure		176	1,500		4,054	10,185 ²	5,730	
Infrastructure - LPs			130		2,806		2,936	
Natural Resources			1,364		4,361	1,770 ²	5,725	
Diversified Private Equity			1,074		7,214		8,288	
Diversified Priv. Eq.- Fund of Funds			135		2,167 ¹		2,302	
Other Private Equity		2,382	767		2,806		5,955	
Overlay Programs		4,886					4,886	
Total asset management costs excluding private asset performance fees							82,131	29.2bp
Oversight, custodial and other costs ³								
Oversight of the fund							12,424	
Trustee & custodial							4,680	
Audit							397	
Other							381	
Total oversight, custodial & other costs							17,882	6.8bp
Total investment cost (excluding transaction and private asset performance fees)							100,013	37.8bp

Footnotes

¹ Default underlying costs added to provided top-layer costs.

Refer to Appendix A for full details.

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.

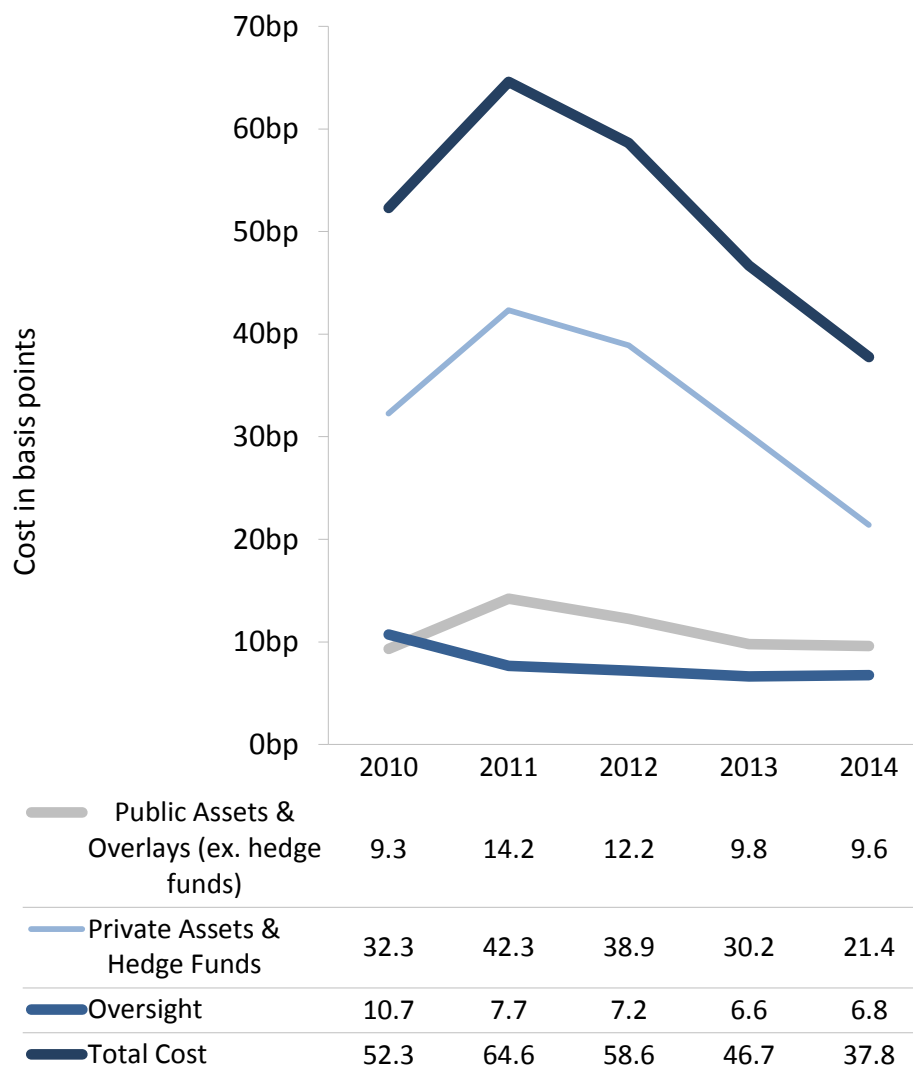
³ Excludes non-investment costs, such as benefit insurance premiums and preparing cheques for retirees.

Your costs decreased between 2010 and 2014.

Your costs decreased primarily because:

- You decreased your investment in the highest cost asset classes. Your holdings of hedge funds, real estate and private equity decreased from 31% of assets in 2010 to 20% in 2014.
- You increased your use of lower cost passive and internal management from 53% of assets in 2010 to 75% in 2014.

Trend in your investment costs

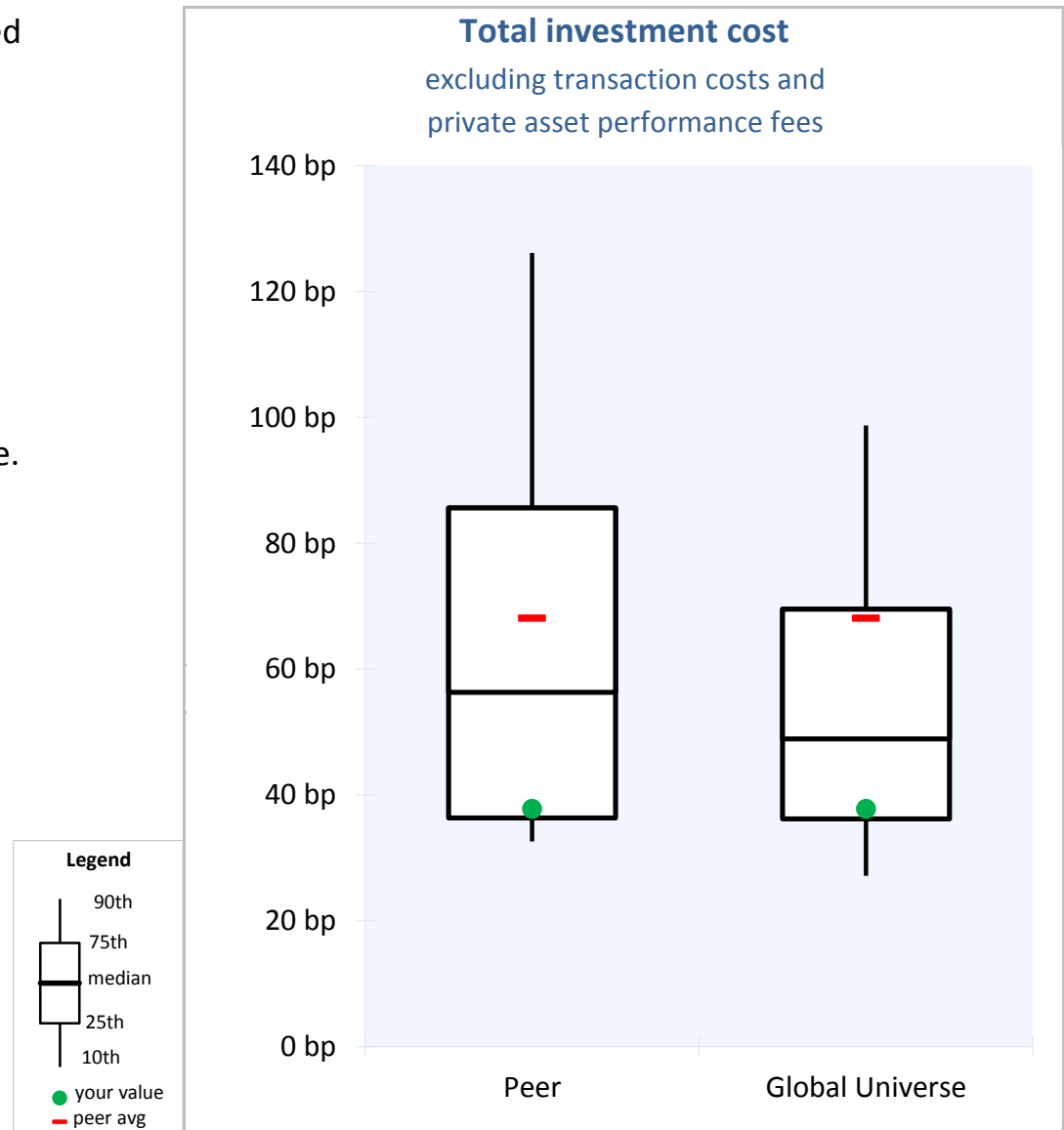


Your total investment cost of 37.8 bps was below the peer median of 56.3 bps.

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 20% of your funds assets at the end of 2014 versus a peer average of 22%.
- 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 5.4 basis points in 2014.

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 37.8 bp was below your benchmark cost of 43.2 bp. Thus, your cost savings was 5.4 bp.

Your cost versus benchmark

	\$000s	basis points
Your total investment cost	100,013	37.8 bp
Your benchmark cost	114,255	43.2 bp
Your excess cost	(14,242)	-5.4 bp

Your fund was low cost because you had a lower cost implementation style.

Reasons for your low cost status

	Excess Cost/ (Savings)	
	\$000s	bps
1. Lower cost implementation style		
• Less fund of funds	(2,420)	(0.9)
• Less external active management (more lower cost passive and internal)	(14,685)	(5.5)
• More overlays	1,446	0.5
• Other style differences	(78)	(0.0)
	<u>(15,737)</u>	<u>(5.9)</u>
2. Paying more than peers for some services		
• External investment management costs	(9,707)	(3.7)
• Internal investment management costs	2,198	0.8
• Oversight, custodial & other costs	9,004	3.4
	<u>1,494</u>	<u>0.6</u>
Total savings	(14,242)	(5.4)

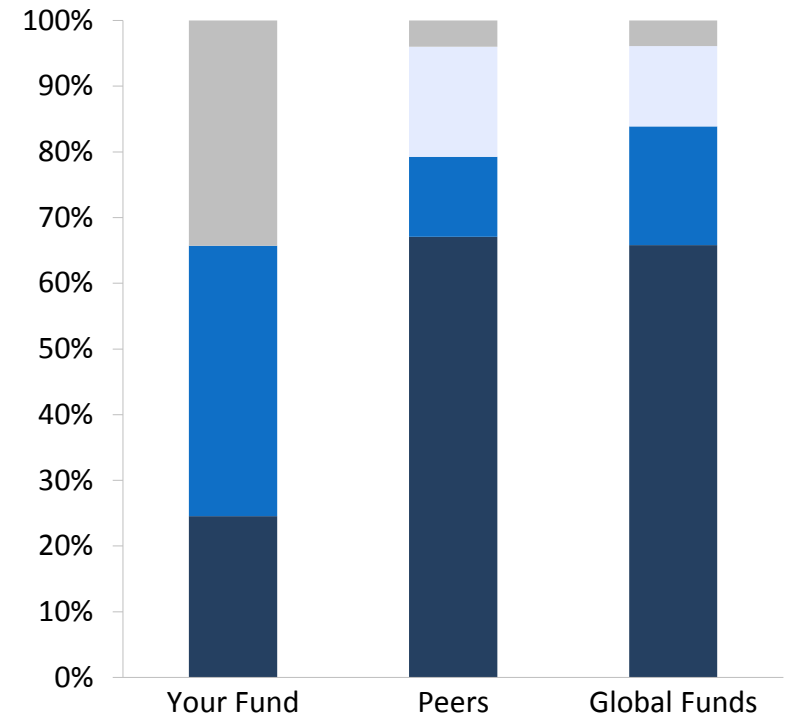
Differences in cost performance are often caused by differences in implementation style.

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 less external active management than your peers (your 25% versus 67% 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 1% of hedge funds, real estate and private equity in fund of funds compared to 12% for your peers.

Implementation style¹



■ Internal passive	34%	4%	4%
■ Internal active	0%	17%	12%
■ External passive	41%	12%	18%
■ External active	25%	67%	66%

1. The graph above has included an estimate of the impact of derivatives on your implementation style.

Differences in implementation style saved you 5.9 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 ¹ (C)	Cost/ (savings) \$000s bps (A X B X C)	
		You	Peer average	More/ (less) (B)			
Europe & Far East Stock	1,331	60.9%	61.1%	(0.2%)	39.3 bp	(9)	
Stock - Emerging	1,108	29.8%	67.0%	(37.2%)	57.7 bp	(2,376)	
Stock - Global	6,886	9.9%	54.1%	(44.1%)	35.0 bp	(10,623)	
Fixed Income - US	32	0.0%	72.1%	(72.1%)	17.2 bp	(40)	
Fixed Income - Emerging	50	0.0%	94.8%	(94.8%)	28.8 bp	(136)	
Fixed Income - Global	2,684	0.0%	34.7%	(34.7%)	22.2 bp	(2,064)	
REITs	1,187	0.0%	48.2%	(48.2%)	38.4 bp	(2,196)	
Infrastructure	1,158	94.0%	95.9%	(1.9%)	65.1 bp	(141)	
of which Ltd Partnerships represent:		20.2%	36.1%	(15.9%)	39.5 bp	(686)	
Real Estate ex-REITs	453	100.0%	76.3%	23.7%	54.5 bp	585	
of which Ltd Partnerships represent:		100.0%	36.9%	63.1%	36.0 bp	1,030	
Natural Resources	1,527	100.0%	57.0%	43.0%	30.0 bp	1,970	
Diversified Private Equity	448	100.0%	99.3%	0.7%	Insufficient ²	0	
Other private equity	1,066	38.3%	Excluded		51.4 bp	0	
Impact of less/more external active vs. lower cost styles						(14,685)	(5.5) bp
		<u>Fund of funds % of LPs</u>			<u>vs. direct LP¹</u>		
Hedge Funds	1,213	0.0%	27.2%	(27.2%)	86.4 bp	(2,853)	
Infrastructure - LPs	220	0.0%	9.0%	(9.0%)	Insufficient ²	0	
Real Estate ex-REITs - LPs	453	0.0%	1.8%	(1.8%)	Insufficient ²	0	
Diversified Private Equity - LPs	448	17.0%	7.3%	9.7%	99.9 bp	433	
Impact of less/more fund of funds vs. direct LPs						(2,420)	(0.9) bp
		<u>Overlays and other</u>					
Impact of higher use of portfolio level overlays						1,446	0.5 bp
Impact of mix of internal passive, internal active, and external passive ³						(78)	(0.0) bp
Total impact of differences in implementation style						(15,737)	(5.9) bp

Footnotes

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 'Insufficient' indicates that there was not enough peer data 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 external asset management costs saved 3.7 bps.

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

	Your avg holdings in \$mils (A)	Cost in bps			Cost/ (savings) in \$000s (A X B)
		Your Fund	Peer median	More/ (less) (B)	
Europe & Far East Stock - Active	811	43.0	45.8	(2.8)	(226)
Stock - Emerging - Passive	778	8.3	15.8	(7.5)	(587)
Stock - Emerging - Active	330	109.0	73.5	35.5	1,171
Stock - Global - Passive	6,202	5.3	4.7	0.6	393
Stock - Global - Active	684	37.3	39.7	(2.4)	(166)
Fixed Income - Emerging - Passive	50	33.0	25.4*	7.6	38
Fixed Income - Global - Passive	2,684	6.4	6.4	0.0	0
Hedge Funds - Active	1,213	169.3	266.6	(97.3)	(11,806)
Infrastructure - Active	869	63.9	74.2	(10.3)	(893)
Infrastructure - Limited Partnership	220	133.5	113.7	19.7	434
REITs - Passive	1,187	3.3	11.5	(8.2)	(976)
Real Estate ex-REITs - Limited Partnership	453	114.7	108.0	6.7	303
Natural Resources - Active	1,527	37.5	35.2	2.3	350
Diversified Private Equity - Active	372	222.8	169.0	53.7	1,999
Diversified Private Equity - Fund of Fund	76	302.9	268.9	33.9	258
Other Private Equity - Active	408	87.6	Excluded		
Total impact of paying more/less for external management					(9,707)
Total in bps					(3.7) bp

'Excluded' indicates that the asset class was excluded from this analysis due to comparability concerns with peers.

*Universe median used as peer data was insufficient.

The net impact of paying more/less for internal asset management costs added 0.8 bps.

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

	Your avg holdings in \$mils (A)	Cost in bps			Cost/ (savings) in \$000s (A X B)
		Your Fund	Peer median	More/ (less) (B)	
Europe & Far East Stock - Passive	520	17.8	5.0	12.8	668
Fixed Income - US - Passive	32	5.3	0.8*	4.6	15
Infrastructure - Active	69	25.5	23.3	2.2	15
Other Private Equity - Active	658	36.2	Excluded		
<i>Notional</i>					
Derivatives/Overlays - Currency - Hedge	16,061	0.3	0.2	0.0	70
Derivatives/Overlays - Passive Beta	8,527	2.8	1.1	1.7	1,430
Total impact of paying more/less for internal management					2,198
Total in bps					0.8 bp

'Excluded' indicates that the asset class was excluded from this analysis due to comparability concerns with peers.

*Universe median used as peer data was insufficient.

The net impact of differences in oversight, custodial & other costs added 3.4 bps.

Cost impact of differences in oversight, custodial & other costs

	Your avg holdings in \$mils (A)	Cost in bps			Cost/ (savings) in \$000s (A X B)
		Your fund	Peer median	More/ (less) (B)	
Oversight	26,475	4.7	1.7	3.0	7,942
Consulting	26,475	0.0	0.3	(0.3)	(838)
Custodial	26,475	1.8	0.9	0.9	2,284
Audit	26,475	0.1	0.1	0.1	189
Other	26,475	0.1	0.4	(0.2)	(573)
Total					9,004
Total in bps					3.4 bp

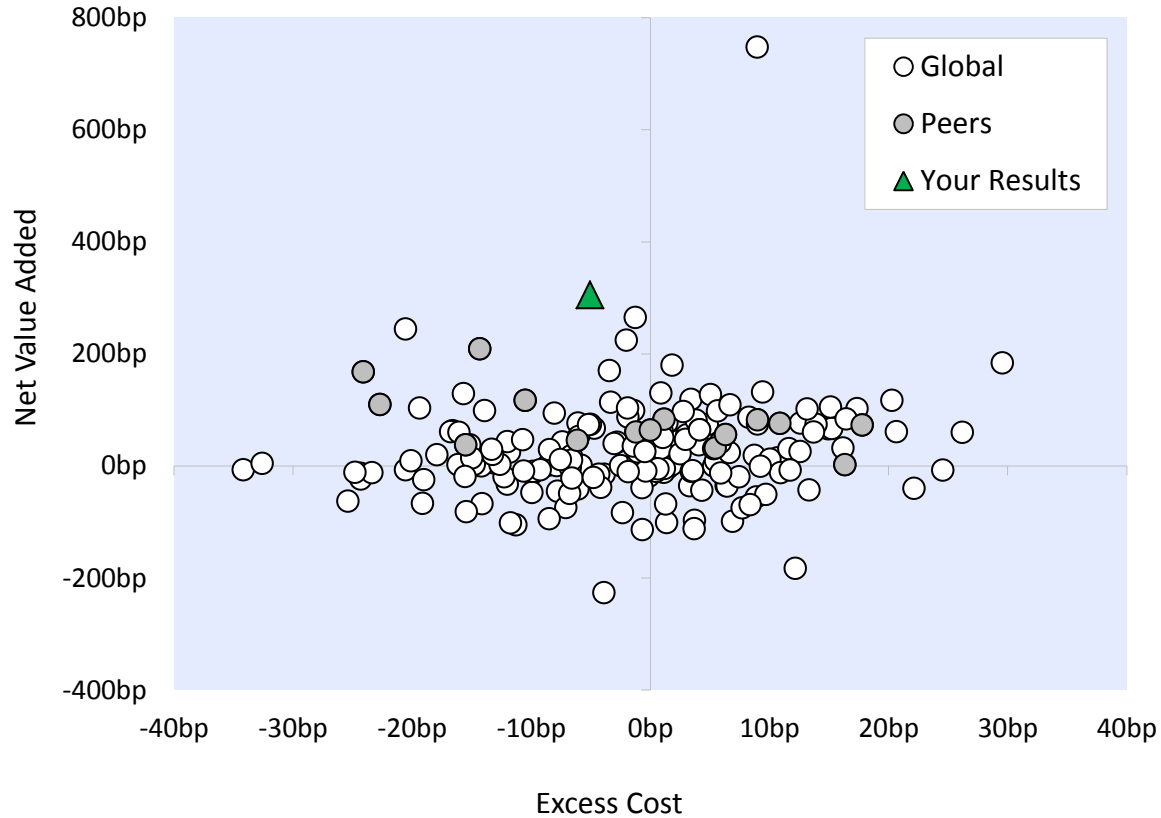
In summary, your fund was low cost because you had a lower cost implementation style.

Reasons for your low cost status

	Excess Cost/ (Savings)	
	\$000s	bps
1. Lower cost implementation style		
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2. Paying more than peers for similar services		
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Total savings	(14,242)	(5.4)

Your 5-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 305.1bps, cost savings 5.1 bps*)



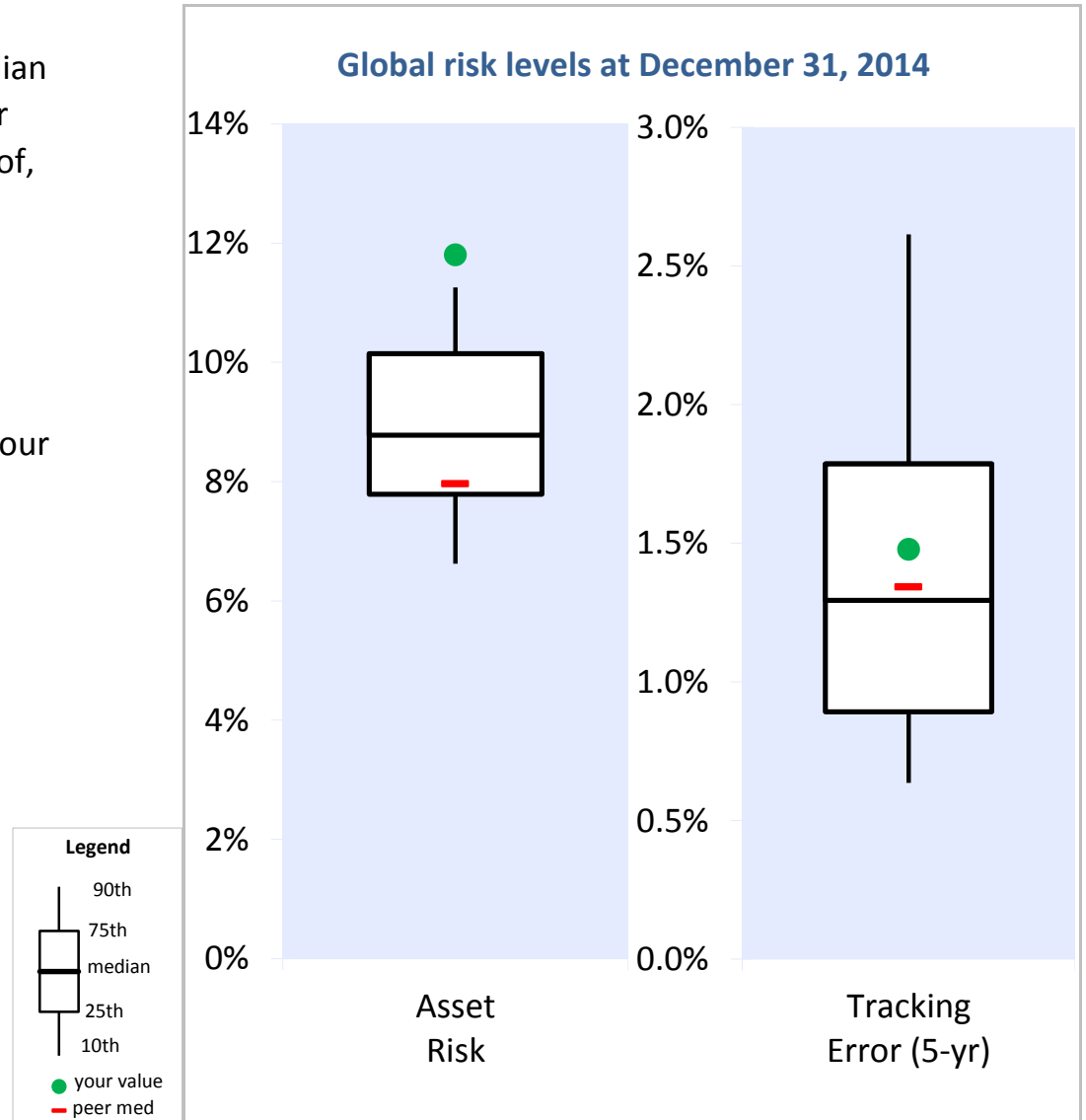
	2014	2013	2012	2011	2010	5-year
Net value add	1.5%	5.1%	2.5%	4.0%	2.1%	3.1%
Excess Cost	-5.4	2.7	0.8	-10.0	-13.5	-5.1

*Your 5-year cost savings of 5.1 basis points is the average of your cost savings for the past 5 years. Prior years' cost savings are calculated using regression analysis.

Comparison of risk levels

Your asset risk of 11.8% was above the Global median of 8.8%. 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.

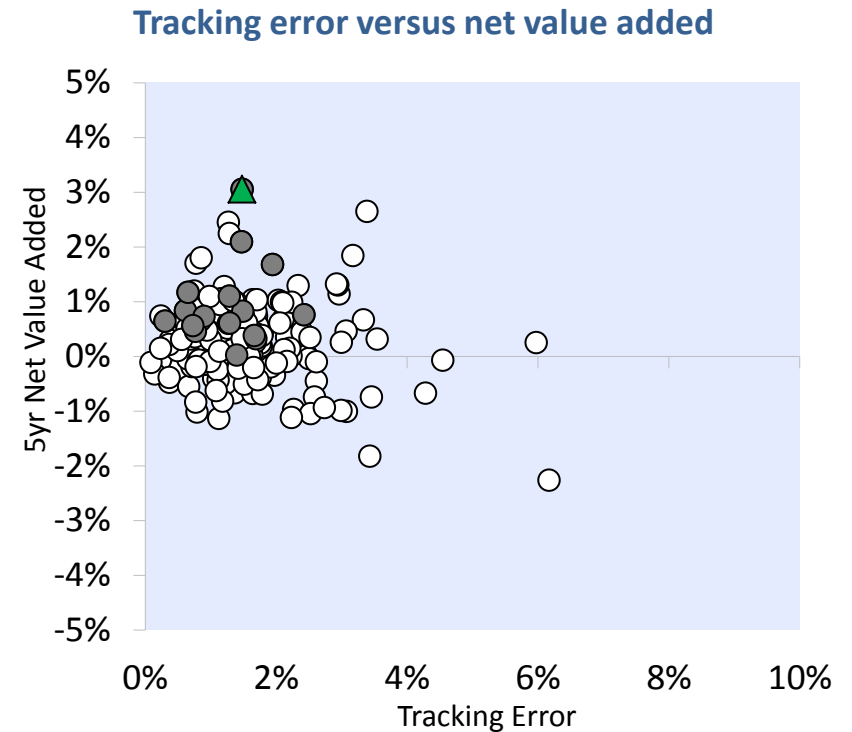
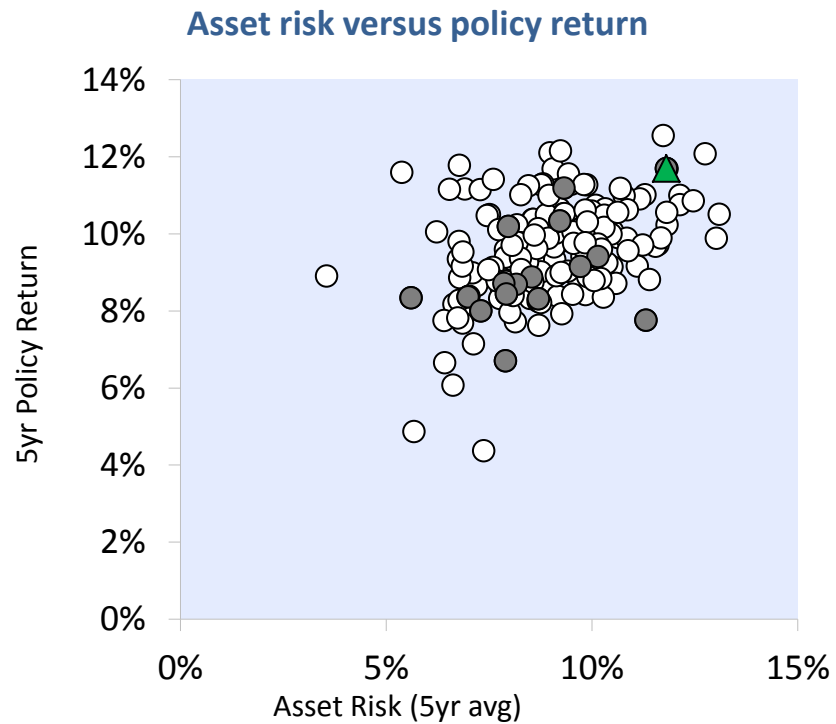
Your tracking error of 1.5% was above the Global median of 1.3%. Tracking error is the risk of active management. It equals the standard deviation of your annual net value added.



During the 5-year period ending 2014, Global funds were rewarded for taking asset risk. More risk resulted in better performance.

Higher asset risk was associated with higher policy returns.

There was no meaningful relationship between tracking error and net value added.



Summary of key takeaways

Returns

- Your 5-year net total return was 14.7%. This was above the Global median of 9.9% and above the peer median of 9.5%.
- Your 5-year policy return was 11.7%. This was above the Global median of 9.7% and above the peer median of 8.7%.

Value added

- Your 5-year net value added was 3.1%. This was above the Global median of 0.3% and above the peer median of 0.7%.

Cost and cost effectiveness

- Your investment cost of 37.8 bps was below your benchmark cost of 43.2 bps. This suggests that your fund was low cost compared to your peers.
- Your fund was low cost because you had a lower cost implementation style.
- Your 5-year performance placed in the positive value added, low cost quadrant of the cost effectiveness chart.

Risk

- Your asset risk of 11.8% was above the Global median of 8.8%. Your tracking error of 1.5% was above the Global median of 1.3%.