

Investment
Cost Effectiveness Analysis
(for the 5 years ending December 31, 2016)

Norwegian Government Pension Fund
Global



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Prepared December 14, 2017. Although the information in this report has been based upon and obtained from sources we believe to be reliable, Cost Effectiveness Measurement Inc. ("CEM") does not guarantee its accuracy or completeness. The information contained herein is proprietary and confidential and may not be disclosed to third parties without the express written mutual consent of both CEM and Norwegian Government Pension Fund Global.

Key takeaways

Returns

- All returns have been converted using the GPFG currency basket. However, differences in total returns reflect in large part home-market biases and the relative performance of currencies. So they are not the primary focus of this report.
- Your 10-year net total return was 5.2%. This compares to the Global median of 6.3% and the peer median of 5.9%.
- Your 10-year policy return was 5.2%. This compares to the Global median of 6.2% and the peer median of 6.0%.

Value added*

- Your 10-year net value added was 0.0%. This was close to the Global median of 0.1% and close to the peer median of 0.1%.

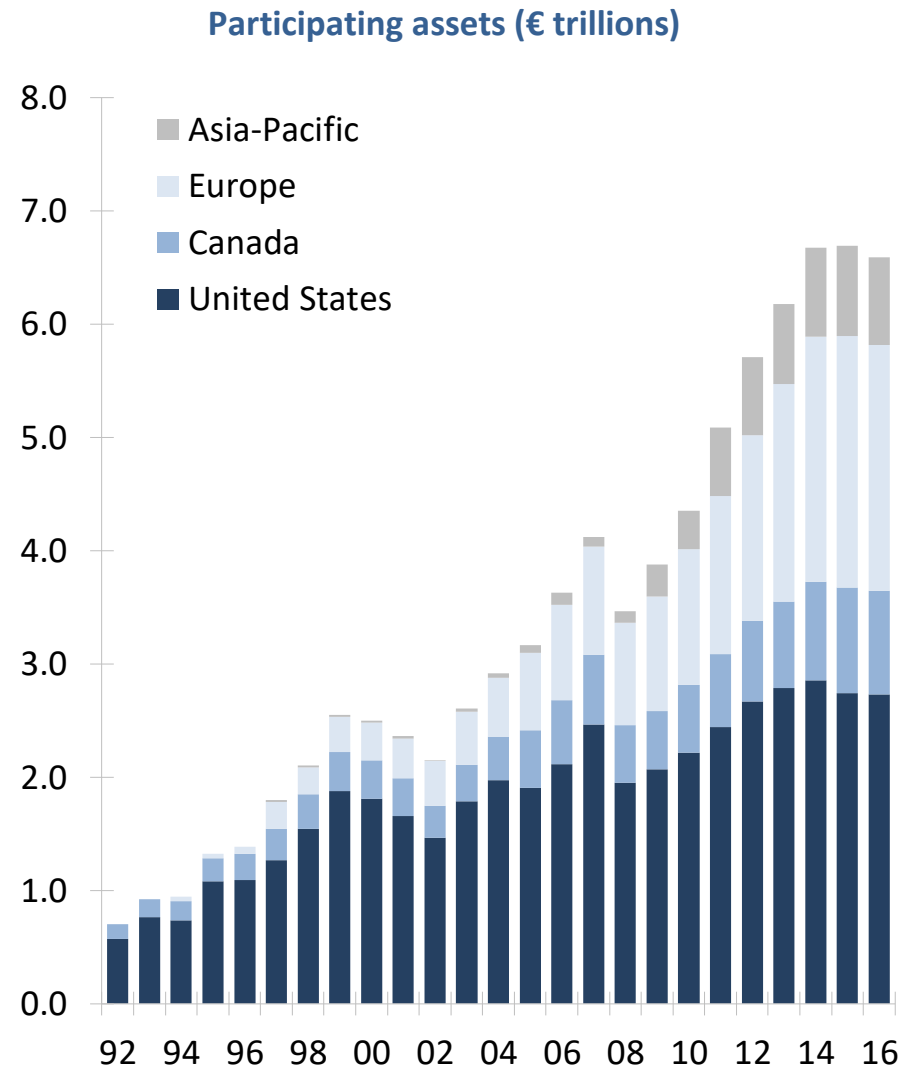
Cost

- Your investment cost of 5.3 bps was below your benchmark cost of 18.6 bps. This suggests that your fund was low cost compared to your peers.
- Your fund was low cost in 2016 because you had a lower cost implementation style and you paid less than peers for similar services.
- Your fund achieved 10-year net value added of -2 bps and cost savings of 13 bps on the cost effectiveness chart.

* The median value added is the mid-point of the data series and is not directly derived from the median points for total return and policy return.

This benchmarking report compares your cost and return performance to the 285 funds in CEM's extensive pension database.

- 166 U.S. funds participate with assets totaling €2.6 trillion.
- 75 Canadian funds participate with assets totaling €0.9 trillion.
- 37 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.
- 7 Asia-Pacific funds participate with aggregate assets of €774 billion. Included are funds from Australia, New Zealand, China and South Korea.



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

Peer group for Norwegian Government Pension Fund Global

- 16 global sponsors from €29 billion to €776 billion
- Median size of €138 billion versus your €776 billion

- 3 Canadian funds, 5 European funds, 3 Asia-Pacific funds and 5 U.S. funds make up the Global peer group.
- In the report there are also comparisons to CEM's Global database of participants.

Your 10-year net total return of 5.2% compares to the peer median of 5.9%.

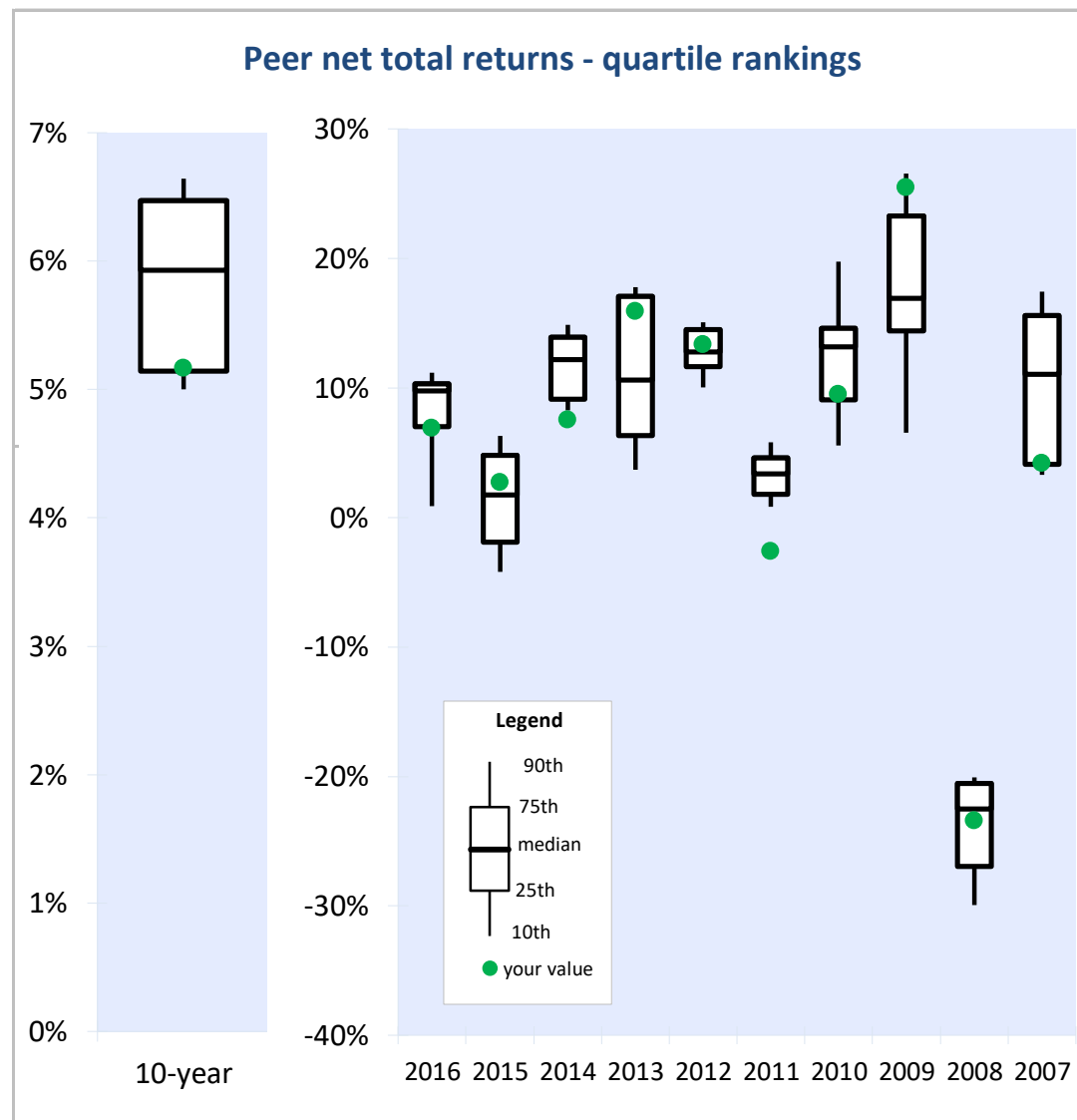
Total returns, by themselves, provide little insight into the reasons behind relative performance. Therefore, we separate total return into its more meaningful components: policy return and value added.

	Your 10-year
Net total fund return	5.2%
- Policy return	5.2%
= 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).

Actual and policy returns have been converted to your currency using unhedged currency returns.

The fund return consists of Equity, Fixed Income and Real Estate. The fund benchmark is the weighted benchmark of Equity and Fixed Income, the benchmark for Real Estate used in the report is the actual portfolio return.



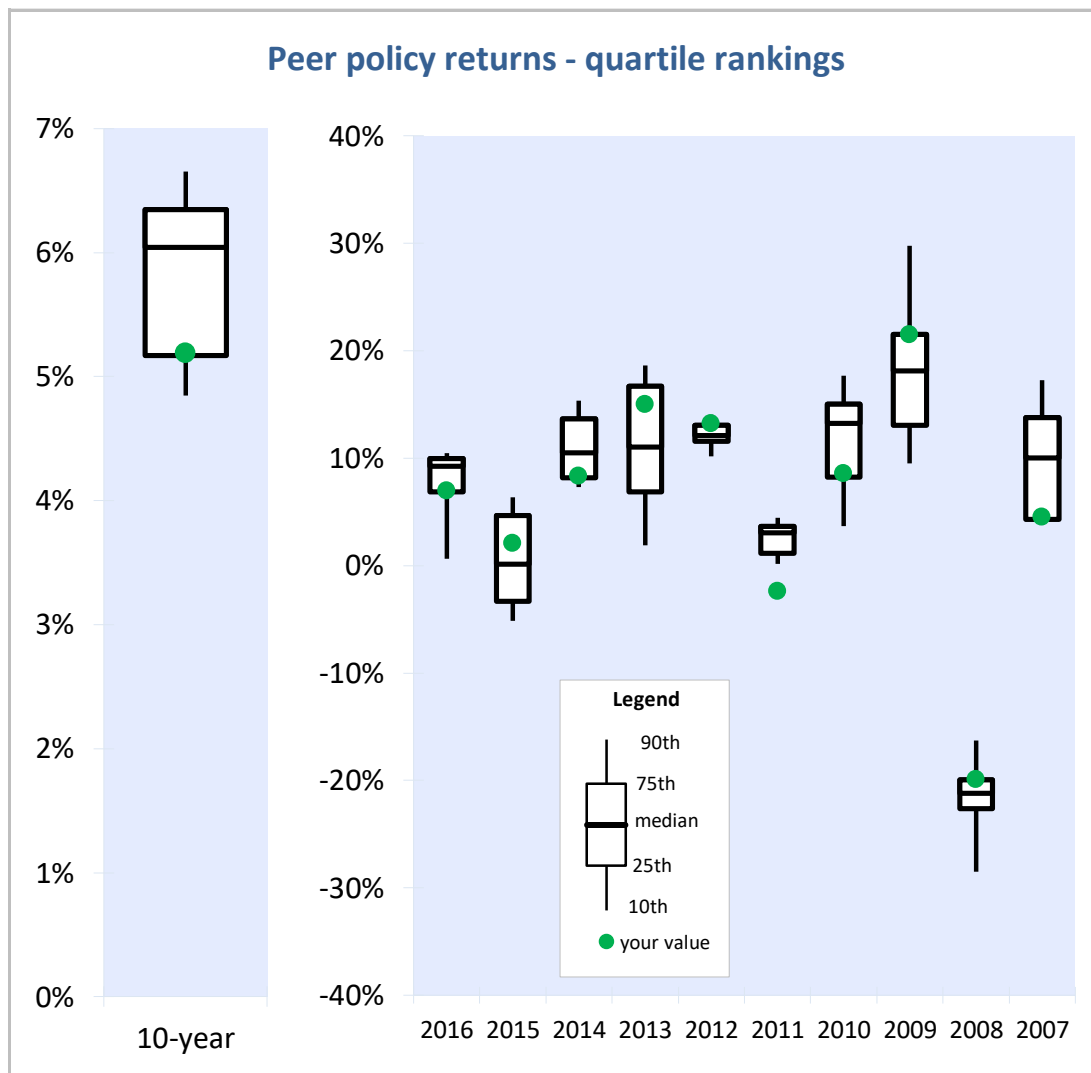
Your 10-year policy return of 5.2% compares to the peer median of 6.0%.

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.

Your 10-year policy return was below the Global median primarily because of:

- Your fund is in the early stages of the allocation to real assets (with a 2.5% allocation in 2016), and has no hedge funds or private equity whereas the peer funds had allocations of 12%, 2% and 6% respectively. The Global funds' allocations were 8%, 3% and 4%.
- Your policy asset mix is more globally diversified than the average Peer or Global fund.

10-year average policy mix

	Your Fund	Peer Avg.	Global Avg.
Stock	59%	46%	48%
Fixed Income	40%	34%	37%
Hedge Funds	0%	2%	3%
Real Assets ¹	1%	12%	8%
Private Equity	0%	6%	4%
Total	100%	100%	100%

1. Real assets includes commodities, natural resources, infrastructure, REITS and real estate.

Regional allocations can significantly influence the policy return. GPF's overweight in European securities and the peer group's overweight in North American securities would cause a difference in the policy returns. Variations in the fixed income portfolios, such as duration, credit quality and country allocation within regions would have an impact as well. Not being invested in asset classes like private equity and having a lower allocation to real estate also had an impact on GPF's policy return.

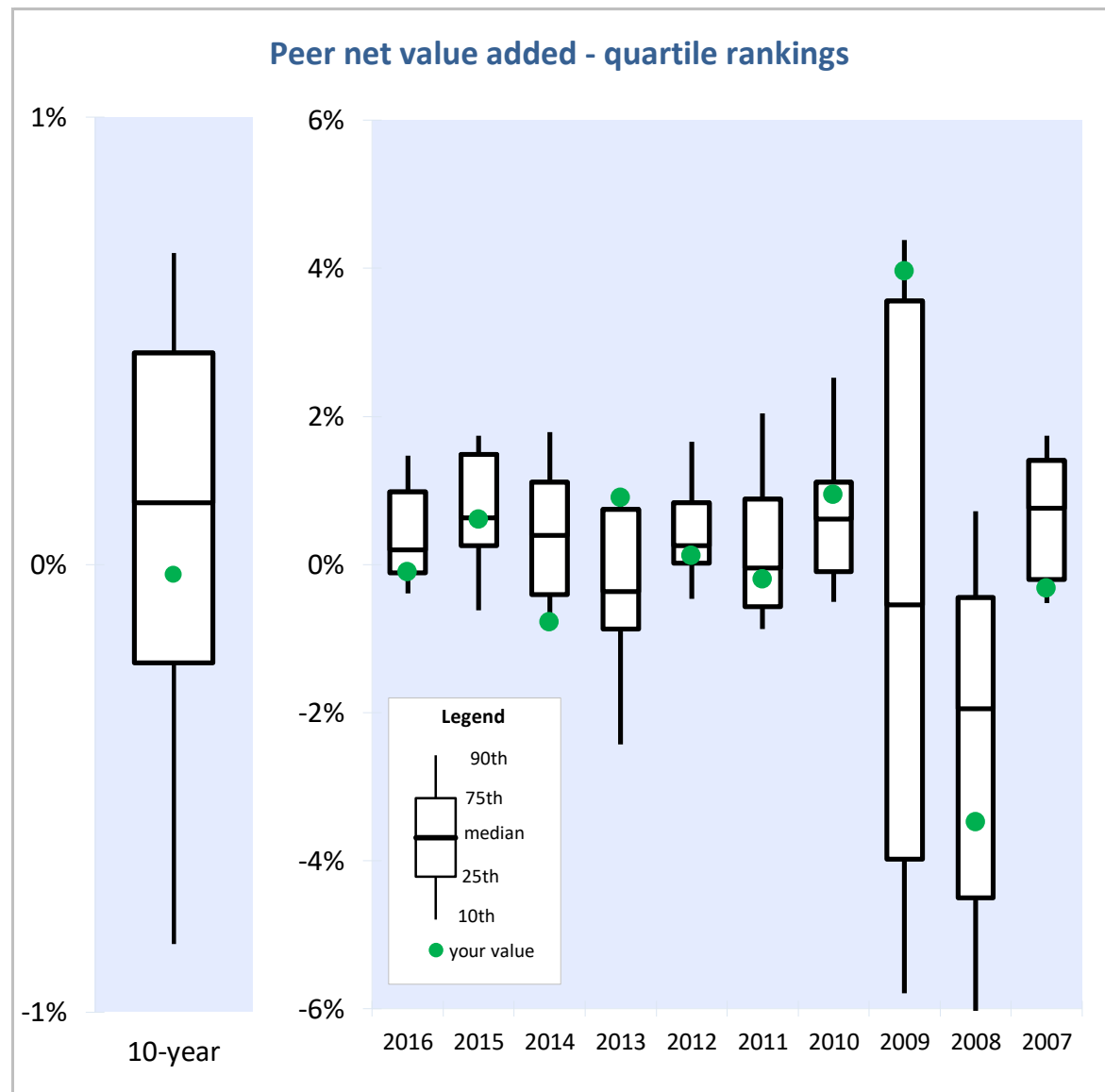
Net value added is the component of total return from active management. Your 10-year net value added was 0.0%.

Net value added equals total net return minus policy return.

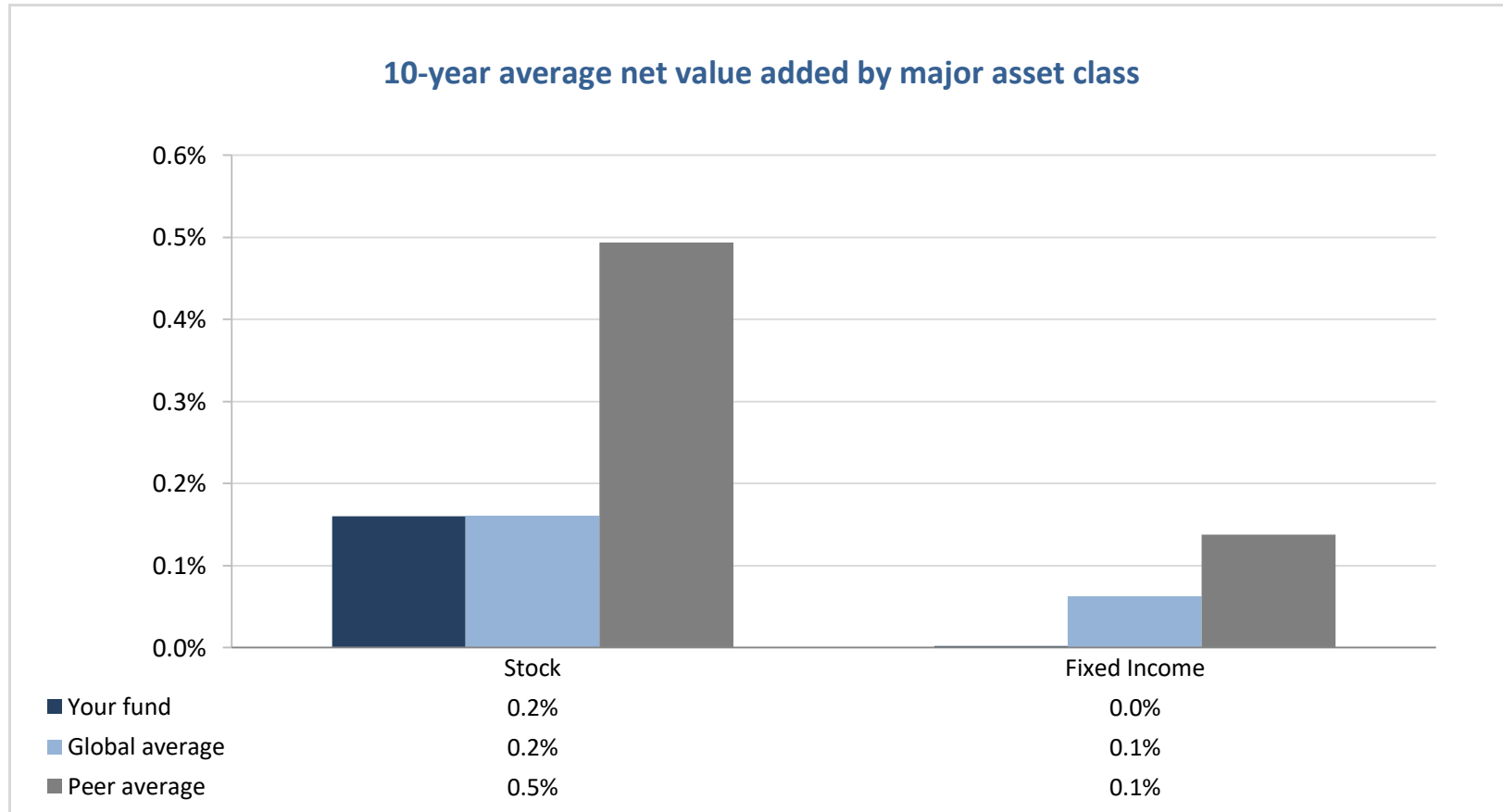
Value added for Norwegian Government Pension Fund Global

Year	Net Return	Policy Return	Net value Added
2016	6.9%	7.0%	(0.1%)
2015	2.7%	2.1%	0.6%
2014	7.5%	8.3%	(0.8%)
2013	15.9%	15.0%	0.9%
2012	13.4%	13.2%	0.1%
2011	(2.6%)	(2.4%)	(0.2%)
2010	9.5%	8.6%	0.9%
2009	25.5%	21.5%	4.0%
2008	(23.4%)	(19.9%)	(3.5%)
2007	4.2%	4.5%	(0.3%)
10-year	5.2%	5.2%	(0.0%)

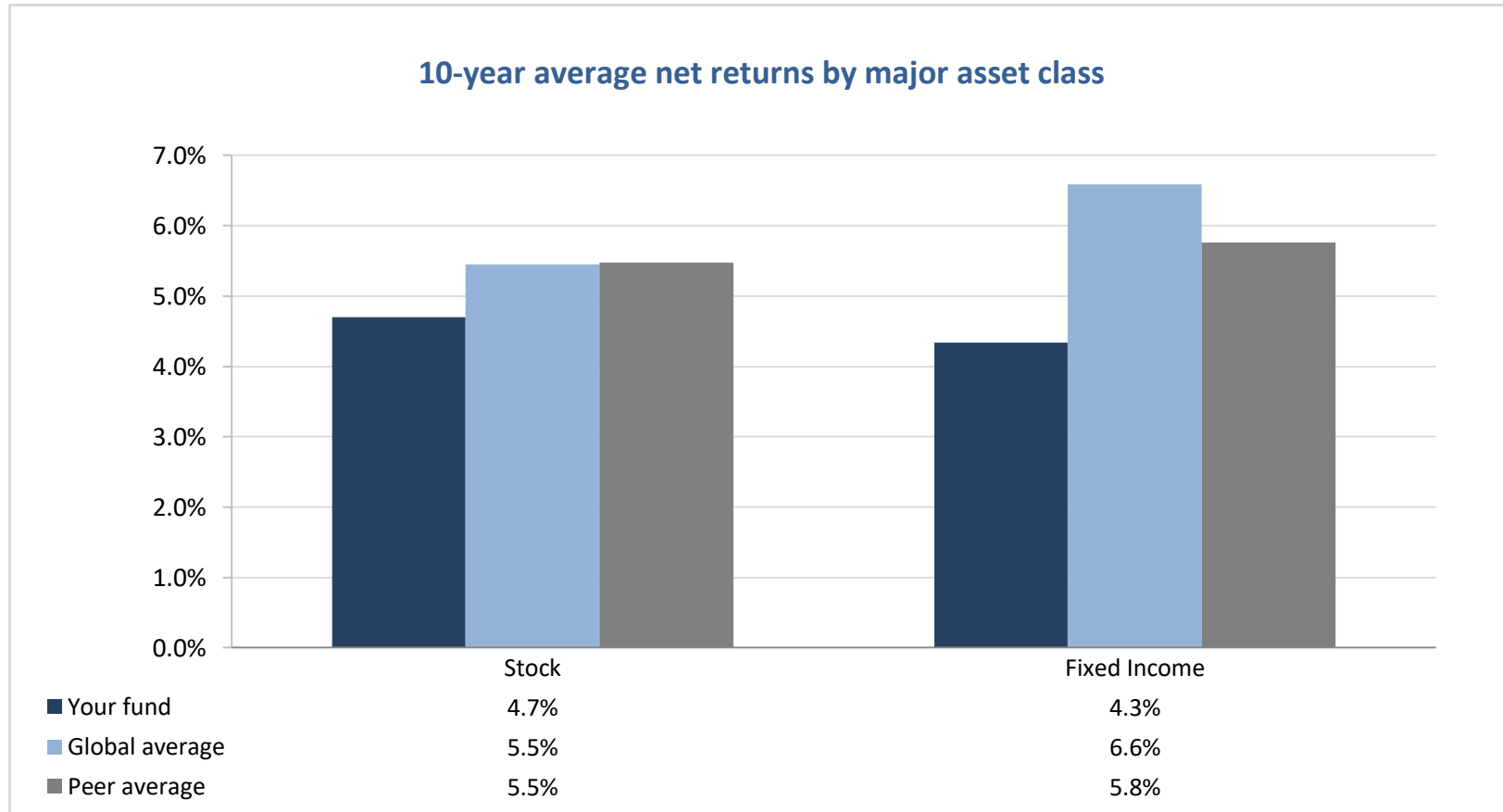
Your 10-year net value added of 0.0% compares to a median of 0.1% for your peers and 0.1% for the Global universe.



You had positive 10-year net value added in Stock and Fixed Income.



Your 10-year net returns vs Peer and Global averages



Your investment costs were €412.1 million or 5.3 basis points in 2016.

Asset management costs by asset class and style (€000s)	Internal Mgmt		External Management			Total
	Active	Overseeing of external	Passive fees	Active base fees	Perform. fees ¹	
Stock - U.S.		156		1,333	338	1,827
Stock - EAFE		4,543		16,996	3,584	25,123
Stock - Emerging		1,649		45,509	19,998	67,156
Stock - Global	102,953					102,953
Fixed Income - Emerging		287		4,755		5,042
Fixed Income - Global	40,473					40,473
Real Estate Operating Sub.	47,438					47,438
Total excluding private asset performance fees						290,012 3.7bp
Oversight, custodial and other costs ²						
Oversight of the fund						66,954
Trustee & custodial						39,503
Consulting and performance measurement						9,570
Audit						6,110
Total oversight, custodial & other costs						122,137 1.6bp
Total investment costs (excl. transaction costs & private asset performance fees)						412,149 5.3bp

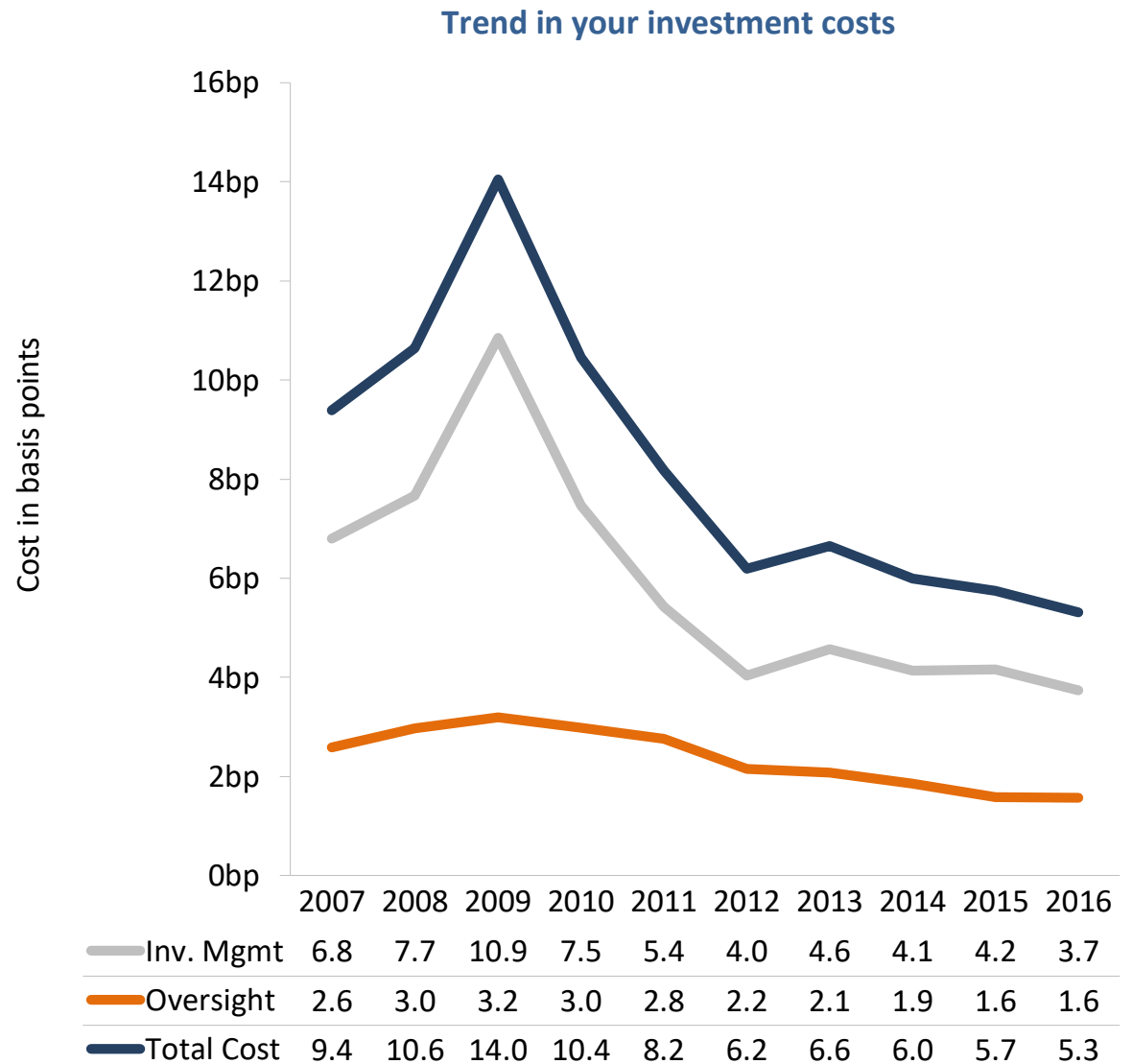
Footnotes

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.

Your costs decreased between 2007 and 2016.

Your costs decreased primarily because you increased your use of lower cost internal management from 80% of assets in 2012 to 96% in 2016.

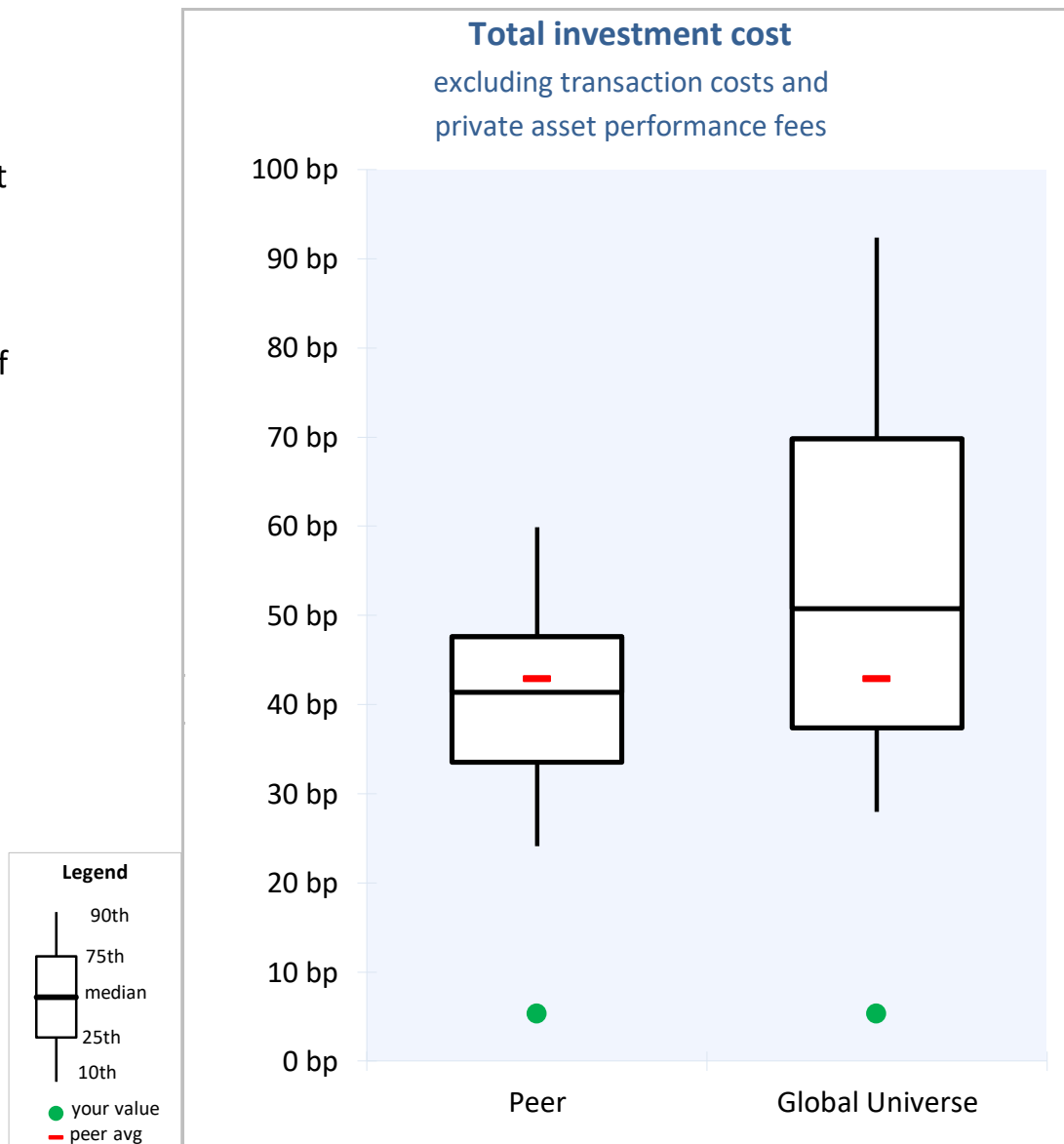


Your 2016 total investment cost of 5.3 bps was the lowest of the peers and was substantially below the peer median of 41.4 bps.

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 and private equity. These high cost assets equaled 3% of your fund's assets at the end of 2016 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 13.3 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 5.3 bp was below your benchmark cost of 18.6 bp. Thus, your cost savings was 13.3 bp.

Your cost versus benchmark

	€000s	basis points
Your total investment cost	412,149	5.3 bp
Your benchmark cost	1,443,405	18.6 bp
Your excess cost	(1,031,256)	(13.3) bp

Your fund was low cost in 2016 because you had a lower cost implementation style and you paid less than peers for similar services.

Reasons for your low cost status

	Excess Cost/ (Savings)	
	€000s	bps
1. Lower cost implementation style		
• Less external active management (more lower cost internal)	(708,083)	(9.1)
• Less overlays	(143,570)	(1.8)
• Other style differences	63,367	0.8
	<u>(788,286)</u>	<u>(10.2)</u>
2. Paying less than peers for similar services		
• External investment management costs	(51,315)	(0.7)
• Internal investment management costs	(131,939)	(1.7)
• Oversight, custodial & other costs	(59,715)	(0.8)
	<u>(242,969)</u>	<u>(3.1)</u>
Total savings	(1,031,256)	(13.3)

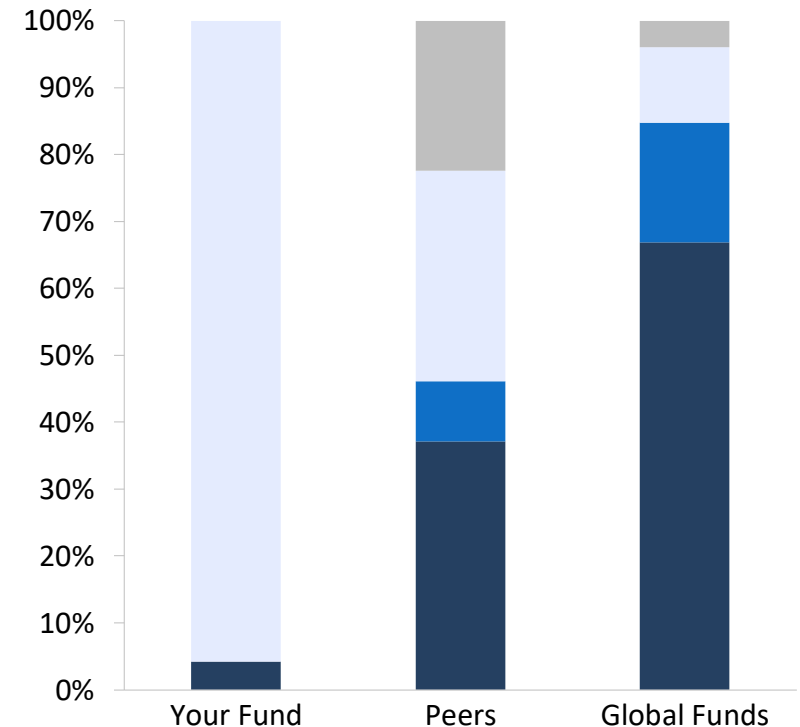
Differences in cost performance are often caused by differences in implementation style.

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 4% versus 37% for your peers).
- Within external active holdings, fund of funds usage because it is more expensive than direct fund investment.

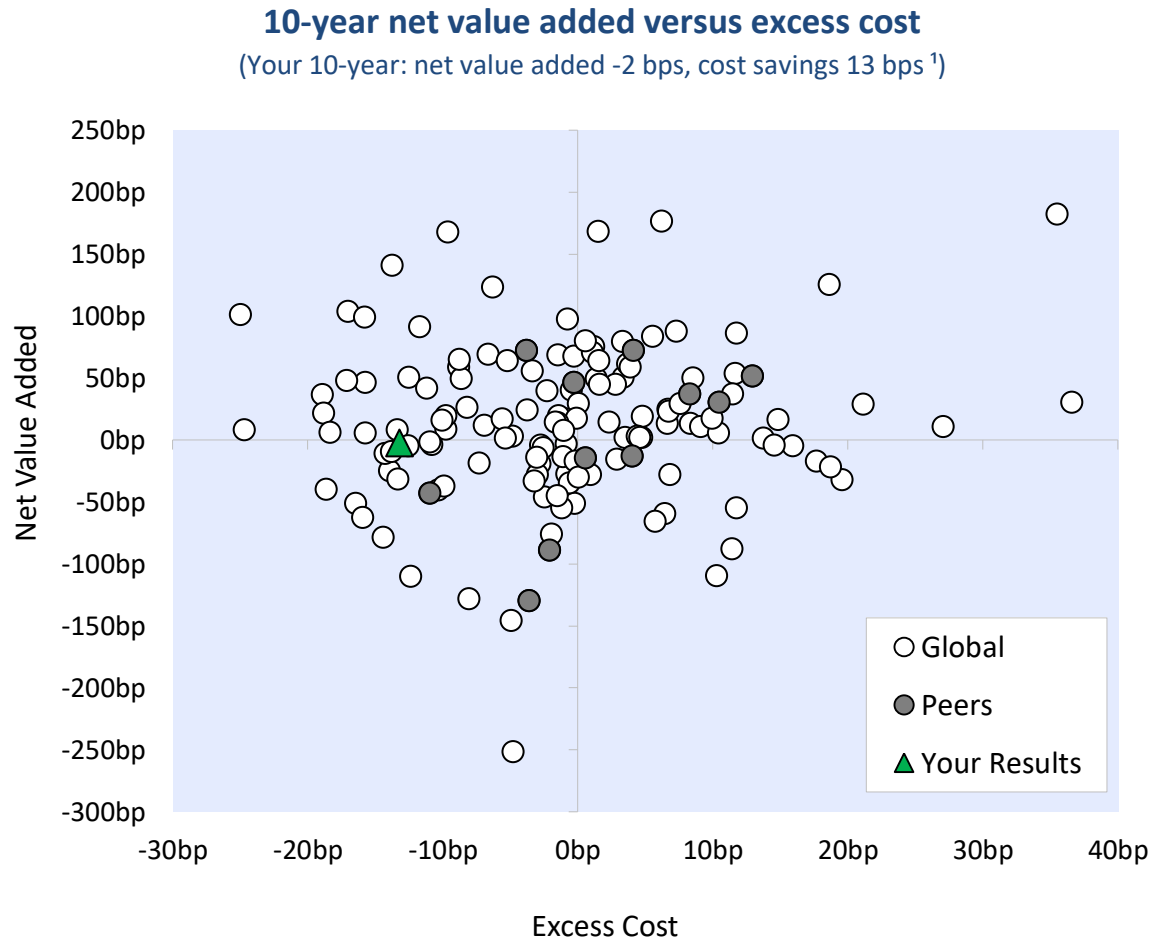
Implementation style¹



■ Internal passive	0%	22%	4%
■ Internal active	96%	31%	11%
■ External passive	0%	9%	18%
■ External active	4%	37%	67%

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

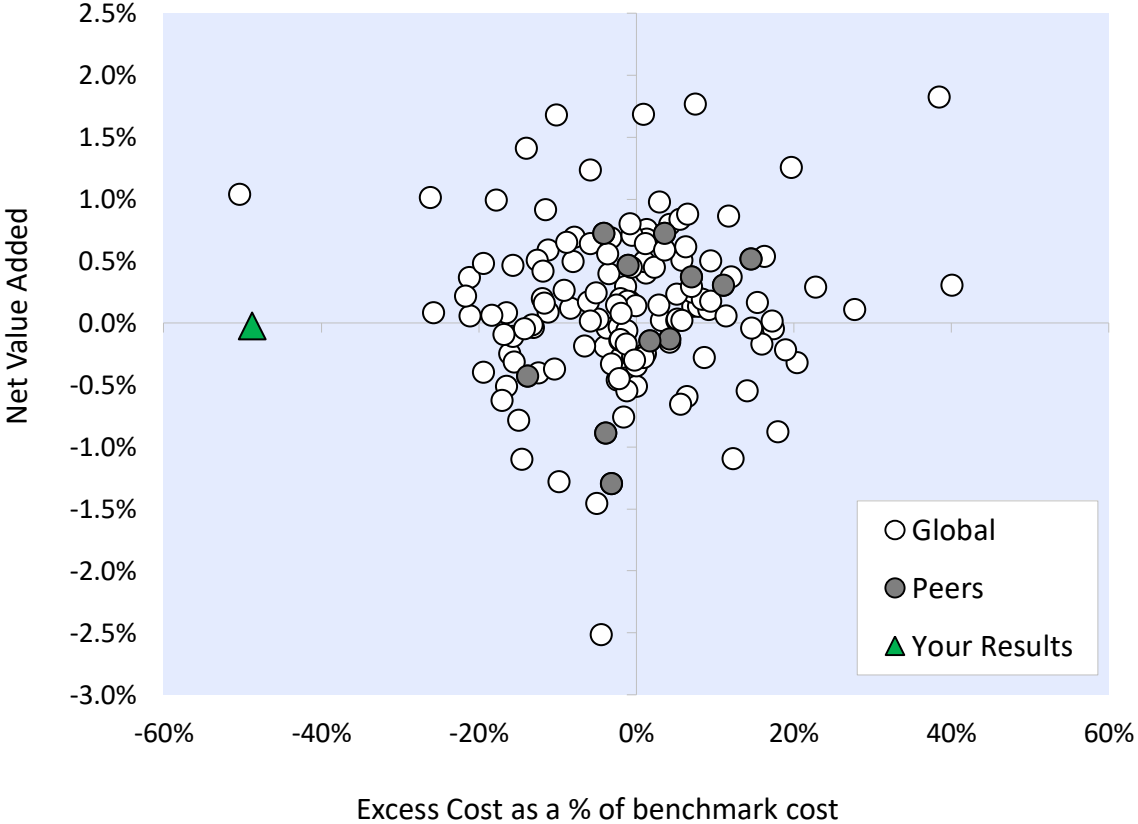
Your fund achieved 10-year net value added of -2 bps and cost savings of 13 bps on the cost effectiveness chart.



1. Your 10-year cost savings of 13 basis points is the average of your cost savings for the past 10 years.

10-year net value added versus excess cost as a percentage of benchmark cost.

10-year net value added versus excess cost as a % of benchmark cost



2

Research and Trends

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The region with the highest net value added was Europe.

Value added by region¹ (period ending December 31, 2016)

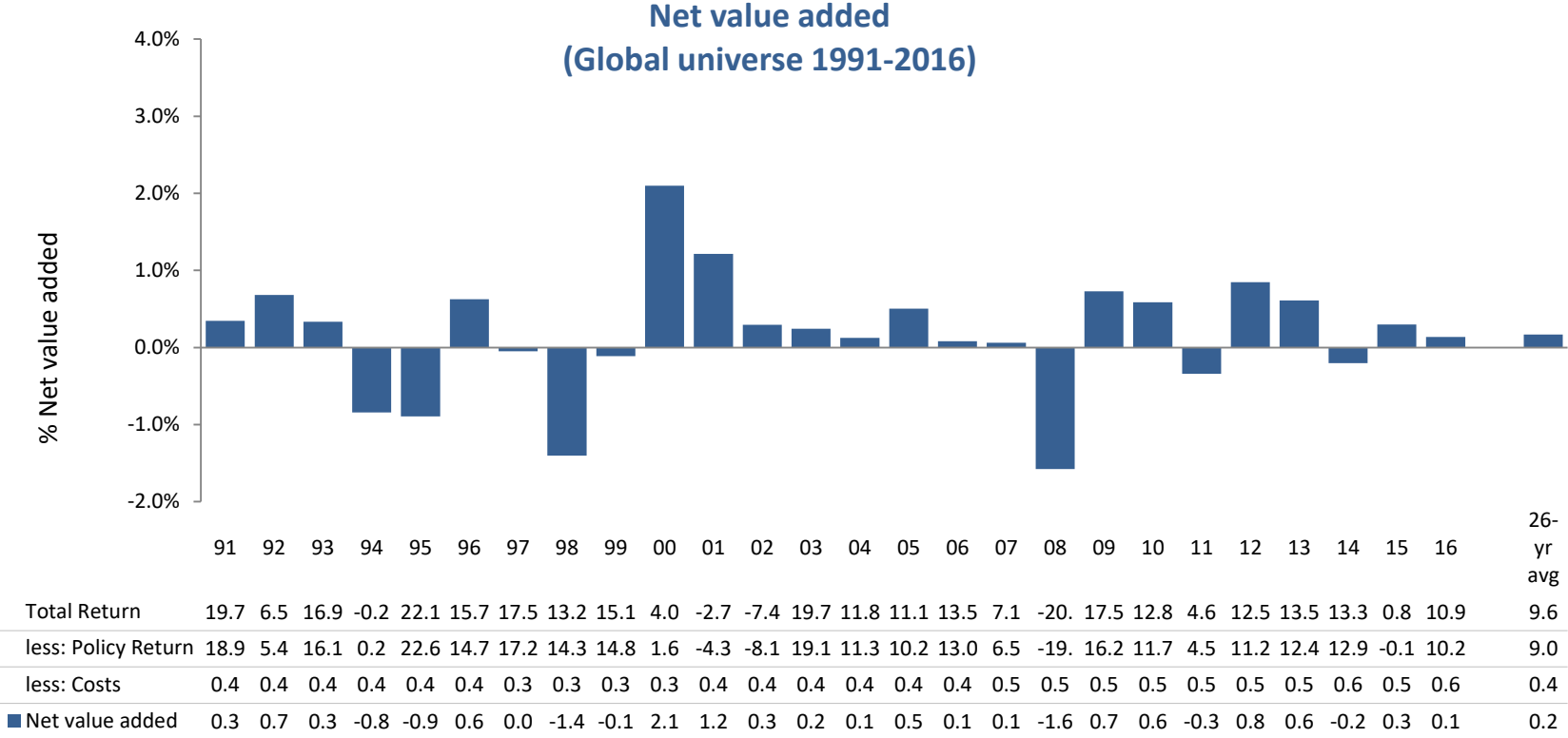
	All funds	U.S. funds	Canadian funds	European funds	Asia-Pacific funds
	26-year average ³	26-year average ³	26-year average ³	23-year ² average ³	17-year ² average ³
Total return	9.58%	10.14%	8.62%	8.01%	7.96%
- Policy return	8.98%	9.48%	8.07%	7.27%	7.59%
<u>- Costs</u>	<u>0.43%</u>	<u>0.48%</u>	<u>0.38%</u>	<u>0.31%</u>	<u>0.47%</u>
= Net value added	0.17%	0.18%	0.17%	0.43%	-0.10%
# of annual observations	7,988	4,431	2,436	964	129
Median fund size (€ billion)	7.0	8.0	2.9	31.8	40.0

1. Only regions with more than four participating funds are separately disclosed. Funds from regions with fewer than four participating funds are included in Global/ All Funds.

2. The shorter time periods for European and Asia-Pacific funds reflect the dates that CEM started collecting data in those regions.

3. Averages are the arithmetic average of annual averages.

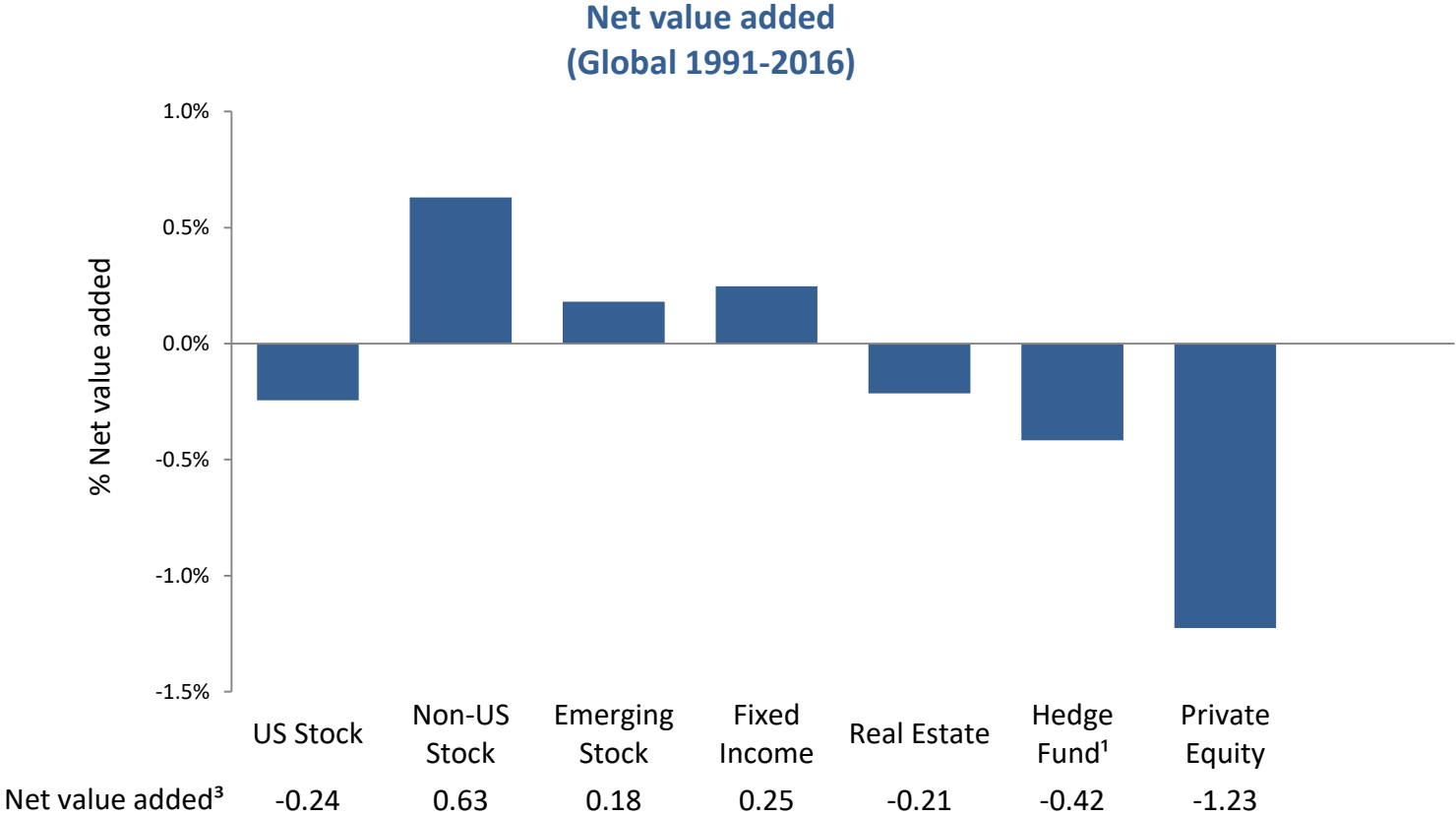
In the Global universe, net value added averaged 0.2% over the past 26 years ending 2016.



Total Return	19.7	6.5	16.9	-0.2	22.1	15.7	17.5	13.2	15.1	4.0	-2.7	-7.4	19.7	11.8	11.1	13.5	7.1	-20.	17.5	12.8	4.6	12.5	13.5	13.3	0.8	10.9	9.6
less: Policy Return	18.9	5.4	16.1	0.2	22.6	14.7	17.2	14.3	14.8	1.6	-4.3	-8.1	19.1	11.3	10.2	13.0	6.5	-19.	16.2	11.7	4.5	11.2	12.4	12.9	-0.1	10.2	9.0
less: Costs	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.6	0.4
■ Net value added	0.3	0.7	0.3	-0.8	-0.9	0.6	0.0	-1.4	-0.1	2.1	1.2	0.3	0.2	0.1	0.5	0.1	0.1	-1.6	0.7	0.6	-0.3	0.8	0.6	-0.2	0.3	0.1	0.2

Value added analysis is based on 7,988 annual fund total performance observations from the CEM Global universe for the 26-year period ending 2016. The 26-year average is an arithmetic average of the annual averages.

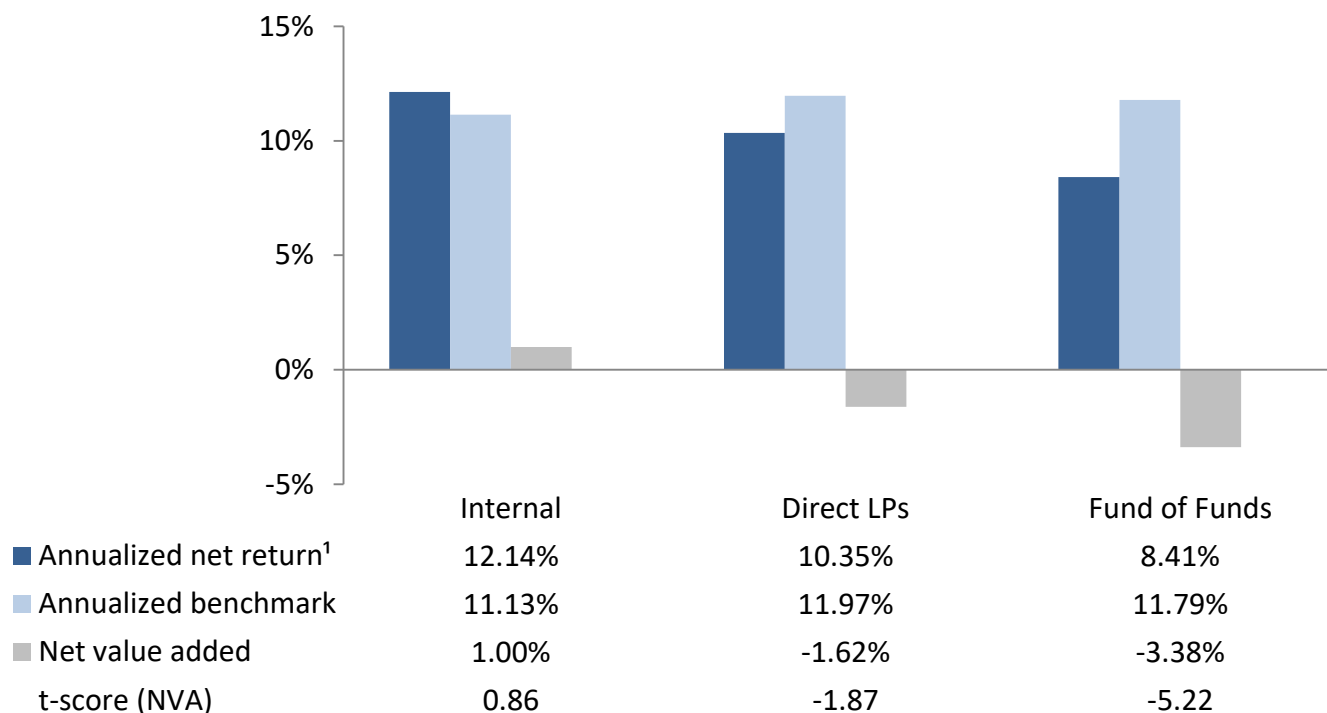
The asset class that had the highest net value added in the Global universe over the past 26 years was Non-US Stock.



1. Hedge Fund gross value added performance reflect data for the 17 year period from 2000 to 2016.
 2. The net value added calculation for private equity uses the average benchmark of all Global participants.
 3. Value added analysis is from 7,988 annual fund performance observations from the CEM Global universe for the 26-year period ending 2016. Value added reflects the asset weighted value added of all mandates in each asset category including indexed holdings. Averages shown above are the arithmetic average of the annual averages of all observations of funds with holdings in the asset category for each year.

Costs matter - Lower cost internal investment in private equity outperformed direct LPs. Direct LPs outperformed fund of funds.

Private equity net returns and value added¹ (1996-2016)



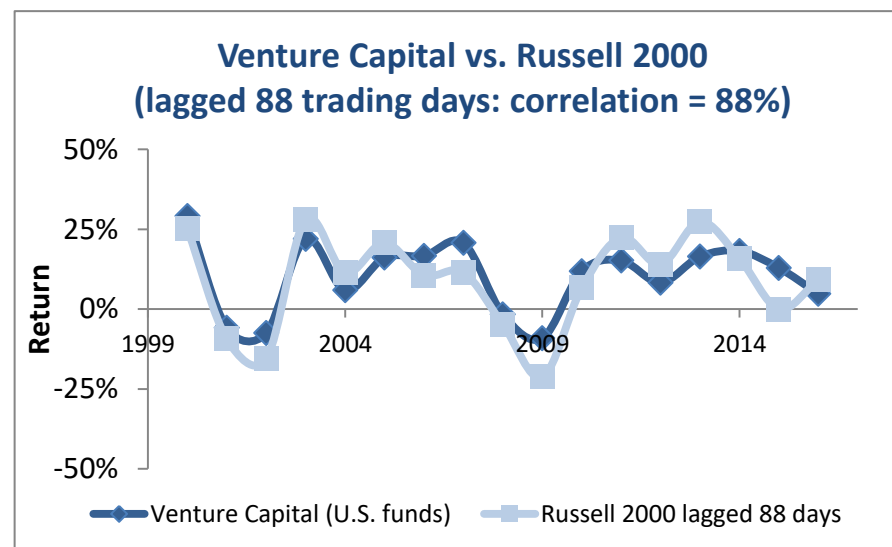
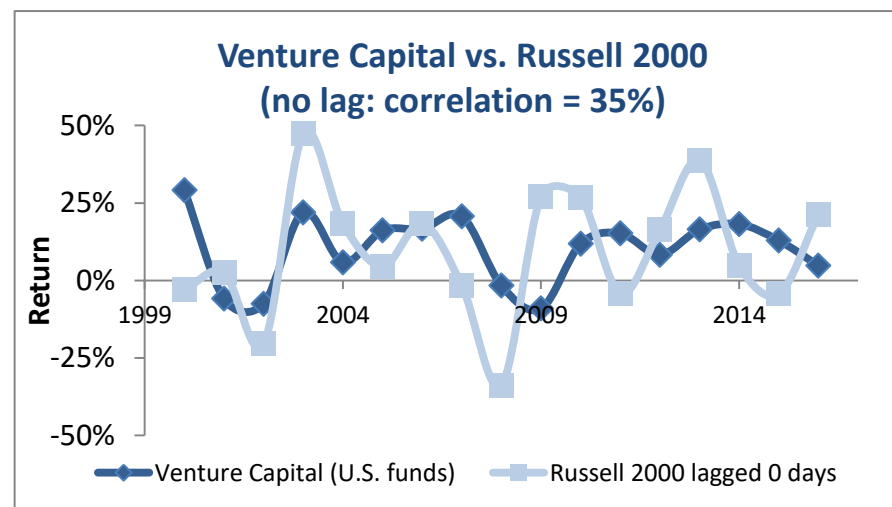
1. Private equity performance by investment style research was updated on June 27 2017. Net value added has dropped by a significant margin since the original research spanning 1996-2012. The reason for the drop was the 2013 bull market in small cap equities which is the basis of the benchmark.

2. To compare the performance of private equity implementation styles over long periods, Monte Carlo simulations were used to capture differences in risk between styles. For details, see "How Implementation Style and Costs Affect Private Equity Performance", Alex Beath, Chris Flynn, and Jody MacIntosh, International Journal of Pension Management pp. 50, vol. 7, issue 1, Spring 2014.

Private equity benchmarks used by most funds are flawed.

A high proportion of the benchmarks used for illiquid assets by participants in the CEM universe are flawed. Flaws include:

- Timing mismatches due to lagged reporting. For example, as the graphs on the right demonstrate, reported venture capital returns clearly lag the returns of stock indices. Yet most funds that use stock indices to benchmark their private equity do not use lagged benchmarks. The result is substantial noise when interpreting performance. For example, for 2009 the Russell 2000 index return was 27.2% versus -21.3% if lagged 88 trading days. Thus if a fund earned the average reported venture capital return for 2008 of -9.1%, they would have mistakenly believed that their value added from venture capital was -36.2% using the un-lagged benchmarks versus 12.2% using the same benchmark lagged to match the average 88 day reporting lag of venture capital funds.
- Un-investable peer-based benchmarks. Peer based benchmarks reflect the reporting lags in peer portfolios so they have much better correlations than un-lagged investable benchmarks. But their relationship statistics are not as good as for lagged investable benchmarks.
- Aspirational premiums (i.e., benchmark + 2%). Premiums cannot be achieved passively, and evidence suggests that a fund has to be substantially better than average to attain them. More importantly, when comparing performance to other funds, they need to be excluded to ensure a level playing field.



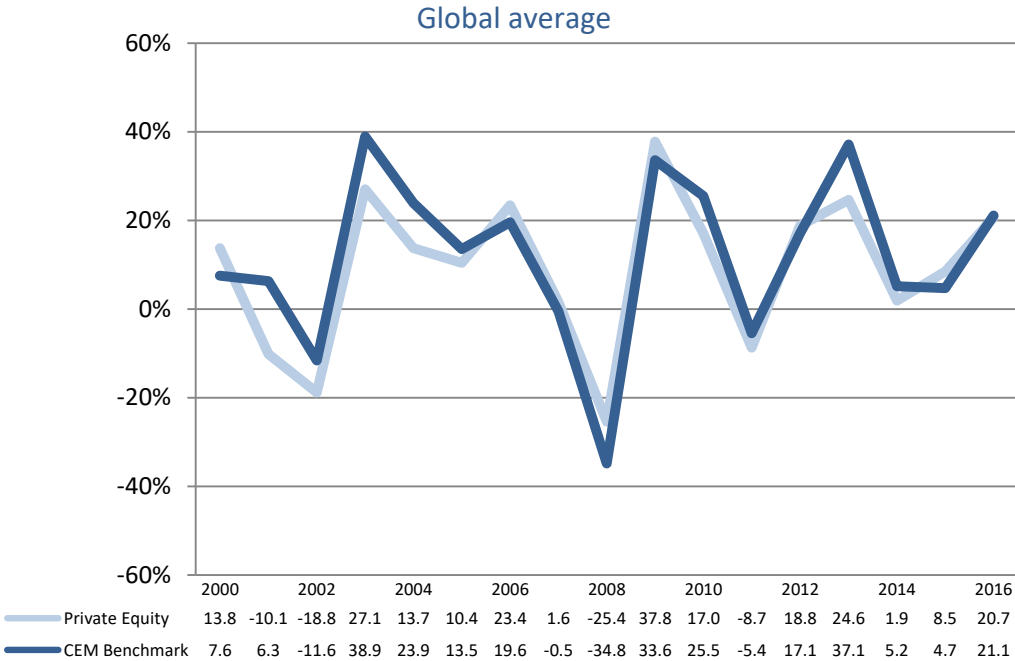
To enable fairer comparisons, CEM uses default private equity benchmarks.

Benchmarks used for private equity by most participants in the CEM universe are flawed (see previous page). So to enable fairer comparisons, CEM replaced the reported private equity benchmarks of all funds except yours with defaults. The defaults are:

- Investable. They are comprised of lagged small cap benchmarks.
- Custom lagged for each participant. Different portfolios had different lags. CEM estimated the lag on private equity portfolios by comparing annual private equity returns to public market proxies with 1 day of lag, 2 days of lag, 3 days of lag, etc. At some number of days lag, correlation between the two series is maximized. The median lag was 101 trading days (i.e., approximately 142 calendar days or 4.7 calendar months)
- Regional mix adjusted based on the average estimated mix of regions in private equity portfolios for a given country.

The result is the default benchmarks are superior to most self-reported benchmarks. Correlations improve to a median of 84% for the default benchmarks versus 48% for self-reported benchmarks. Other statistics such as volatility were also much better.

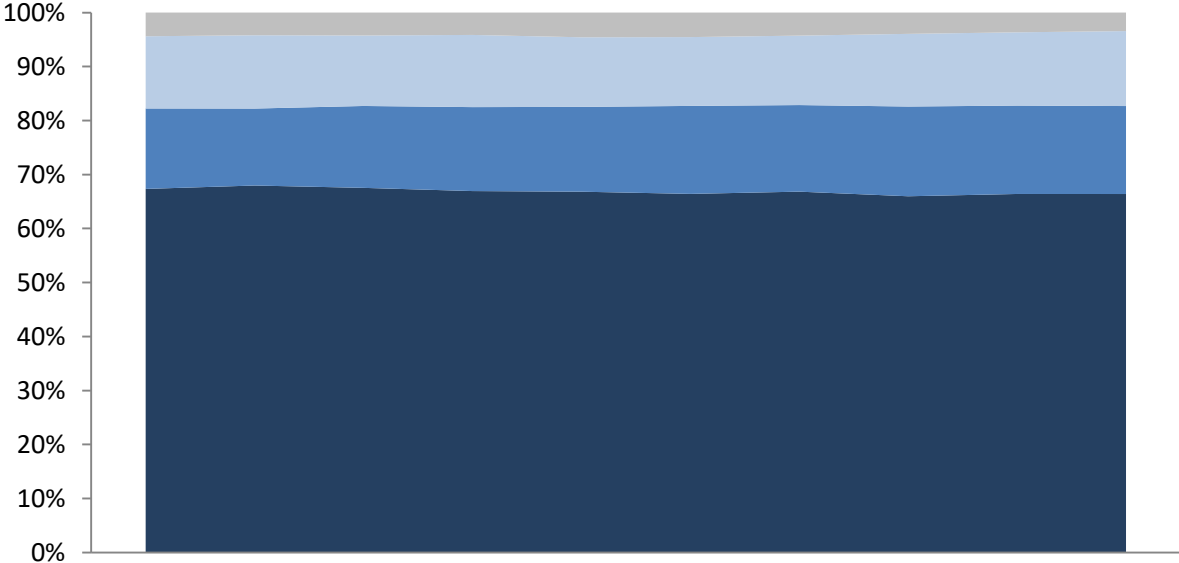
Private equity returns versus default benchmark returns¹



1. To enable better comparison between lagged returns and lagged benchmarks, lags have been removed from both. See "Asset allocation and fund performance of defined benefit pension funds in the United States, 1998-2014" by Alexander D. Beath and Chris Flynn for details.

For global plans, external active management has remained stable at 67% over the past 10 years.

Implementation style by year - Global funds

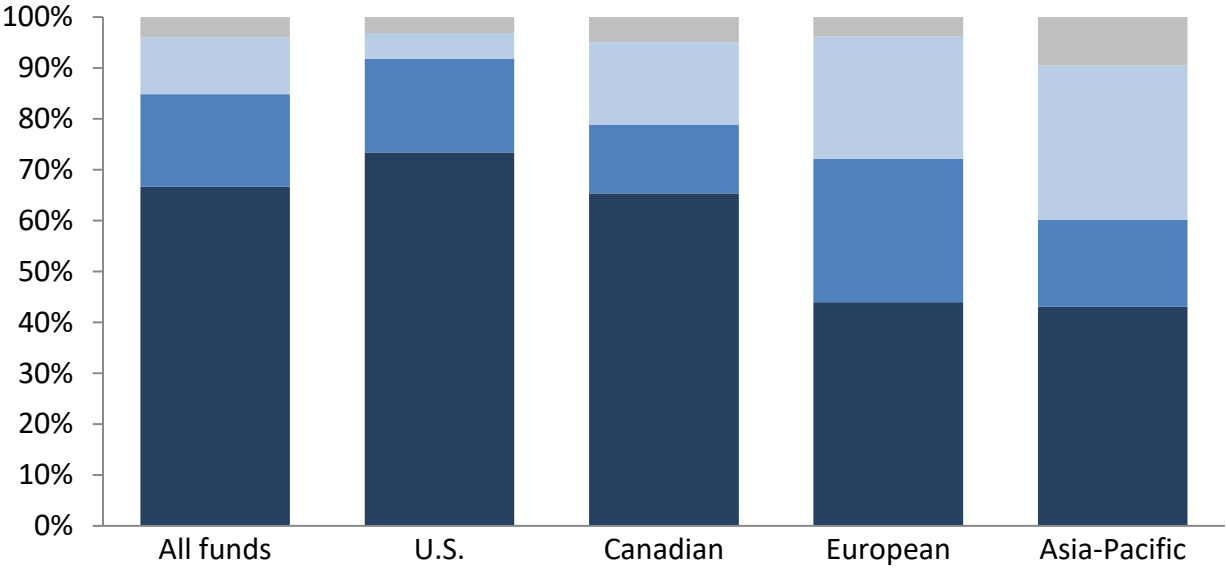


	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
■ % Internal passive	4%	4%	4%	4%	5%	5%	4%	4%	4%	3%
■ % Internal active	13%	14%	13%	13%	13%	13%	13%	13%	14%	14%
■ % External passive	15%	14%	15%	16%	16%	16%	16%	17%	16%	16%
■ % External active	67%	68%	68%	67%	67%	66%	67%	66%	66%	66%

• This analysis is based on 129 global funds with 10 consecutive years of data.

European funds have less externally managed active assets than funds in most other regions.

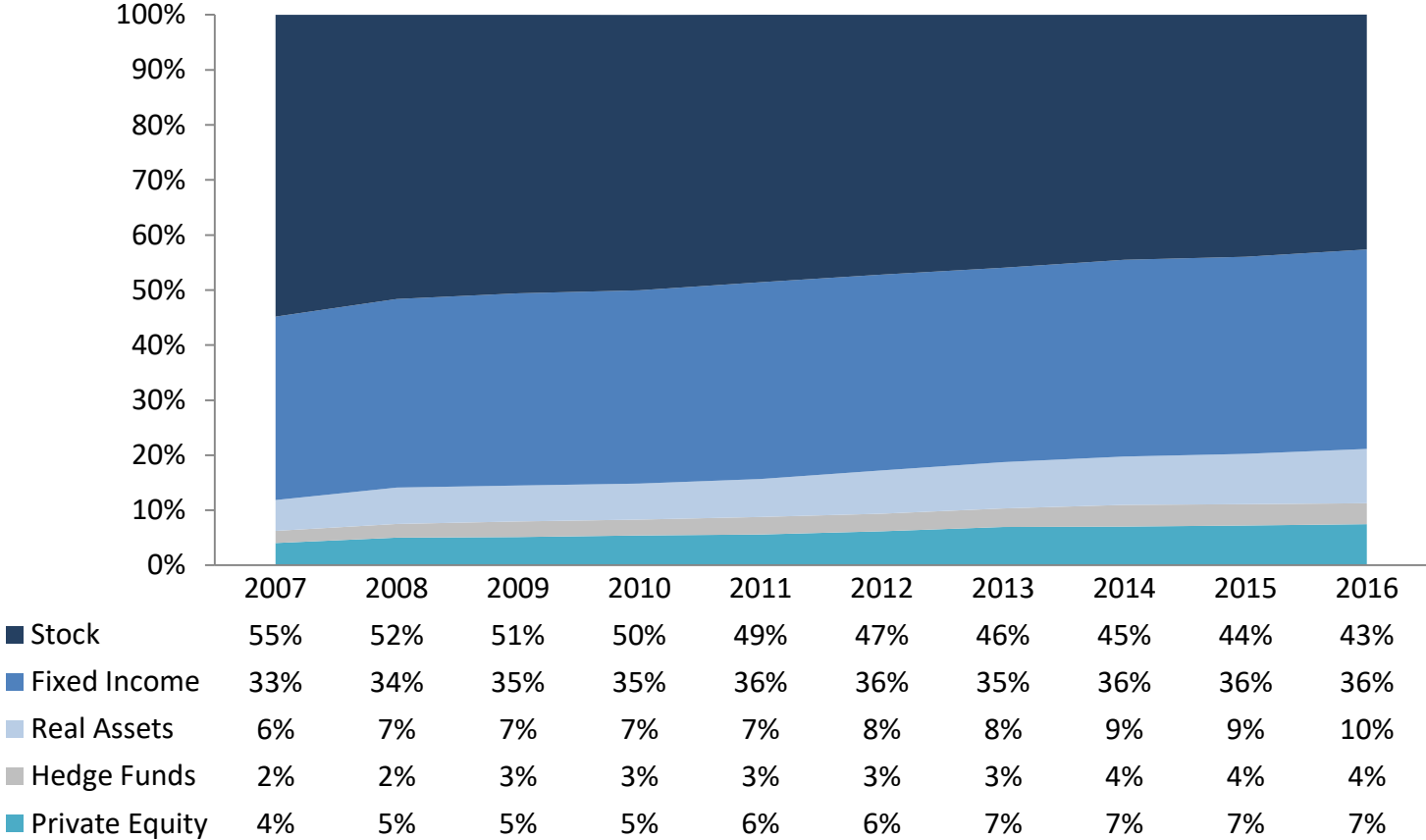
Implementation style by region - 2016 average



■ % Internal passive	4%	3%	5%	4%	10%
■ % Internal active	11%	5%	16%	24%	30%
■ % External passive	18%	18%	14%	28%	17%
■ % External active	67%	73%	65%	44%	43%
Number of funds	285	166	75	37	5
Median fund in € billions	7.0	8.0	2.9	31.8	40.0

For Global plans, combined policy weights for real assets, private equity and hedge funds increased from 12% in 2007 to 21% in 2016.

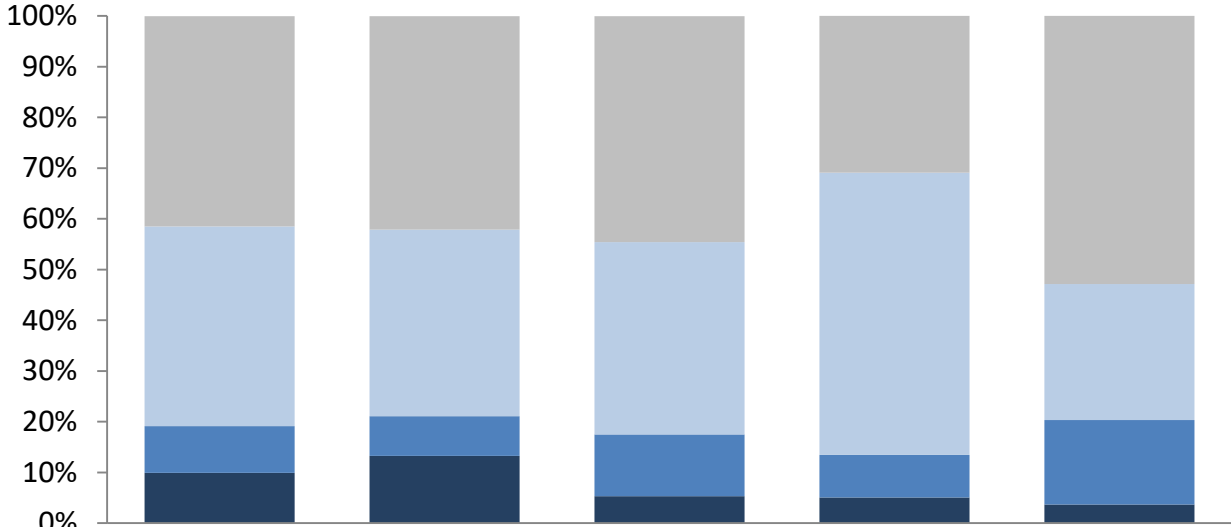
Policy mix by year - Global



• This analysis is based on 129 global funds with 10 consecutive years of data.

European funds have more fixed income.

Policy asset mix by region - 2016 average

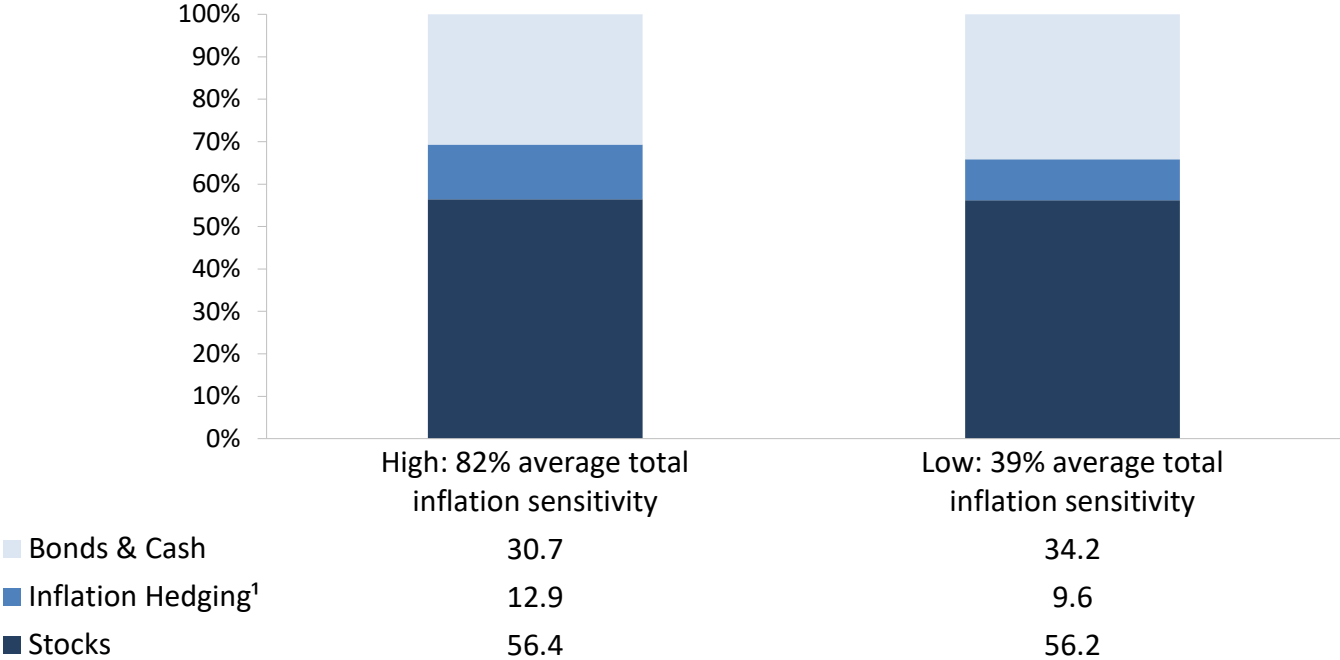


Stock	41%	42%	45%	31%	53%
Fixed Income	39%	37%	38%	56%	27%
Real Assets	9%	8%	12%	8%	17%
Priv. Equity & Hedge Funds	10%	13%	5%	5%	4%
Number of funds	285	166	75	37	5
Median fund in € billions	7.0	8.0	2.9	31.8	40.0

Impact of inflation sensitivity on policy asset mix decisions

One would expect plans with more inflation sensitivity to have more inflation hedging assets and fewer nominal bonds than plans with less inflation sensitivity. Although this is true, the difference is small: inflation hedging assets represent 12.9% of assets at plans with high inflation sensitivity versus 9.6% at plans with lower inflation sensitivity.

**Average policy asset mix:
Plans with above vs. below average inflation sensitivity**

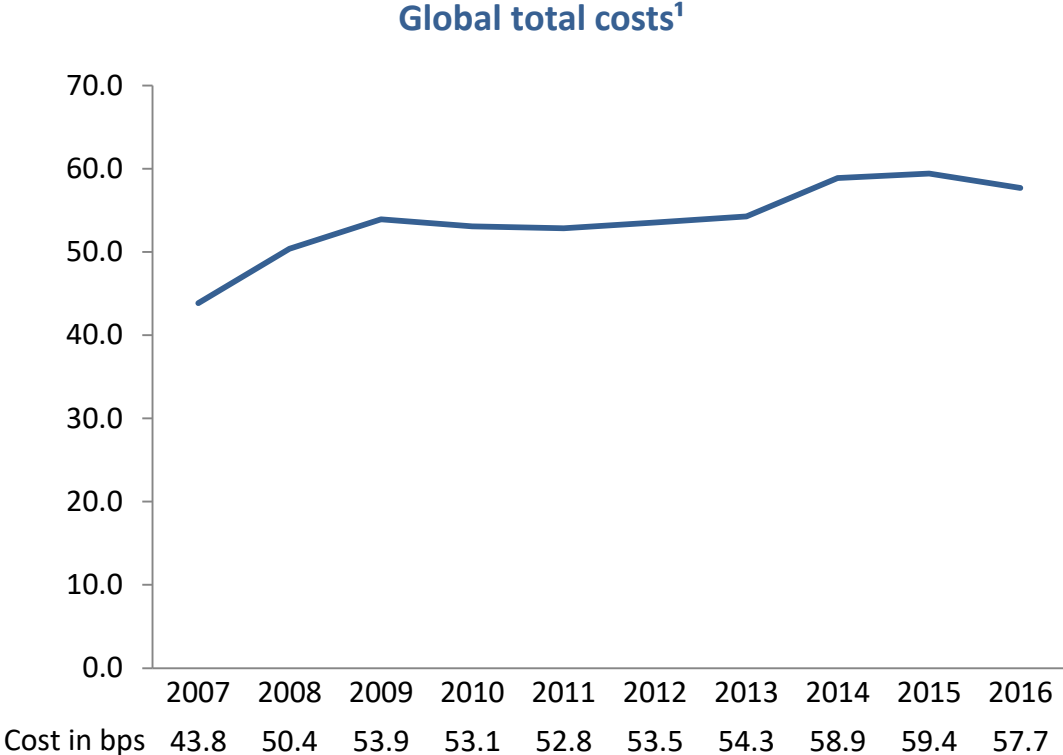


1. Inflation hedge assets include inflation-indexed bonds, commodities, real estate & REITs, infrastructure and natural resources.

Global fund costs have grown by 14 basis points on average over the last 10 years.

Reasons for the increase in costs include:

- Allocation to the more expensive asset classes - hedge funds, real assets and private equity- increased from 12% to 21% on average.
- Changes in implementation style have had a minor impact.



1. This analysis is based on 129 global funds with 10 consecutive years of data.

3

Description of peer group and universe

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Implementation style, actual mix and policy mix:	
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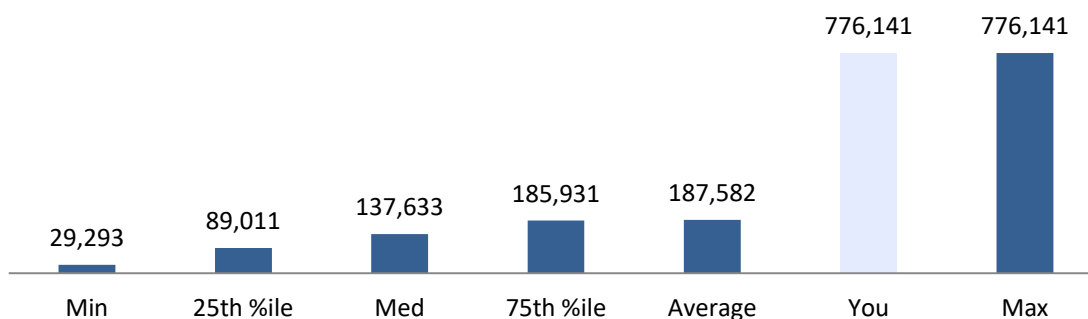
Peer group

Your peer group is comprised of 16 global funds, with assets ranging from €29.3 billion to €776.1 billion versus your €776.1 billion. The median size is €137.6 billion.

Peer Group Characteristics - 2016

	Your Plan	Peers	Global
<u>Plan Assets (\$ billions)</u>			
Range	776.1	29.3 - 776.1	0.1 - 776.1
Median		137.6	5.2
<u># of Plans</u>			
Corporate		1	141
Public	1	12	100
<u>Implementation style</u>			
% External active	4.3	37.2	57.8
% External passive	0.0	9.0	15.3
% Internal active	95.7	31.4	20.2
% Internal passive	0.0	22.4	6.8
<u>Asset mix</u>			
% Stock	60.3	41.1	41.2
% Fixed Income	36.6	34.5	39.5
% Real Assets	3.1	14.1	9.1
% Private Equity	0.0	7.3	4.7
% Hedge Funds & Other	0.0	3.1	4.2

Total fund assets (€ millions) - you versus peers

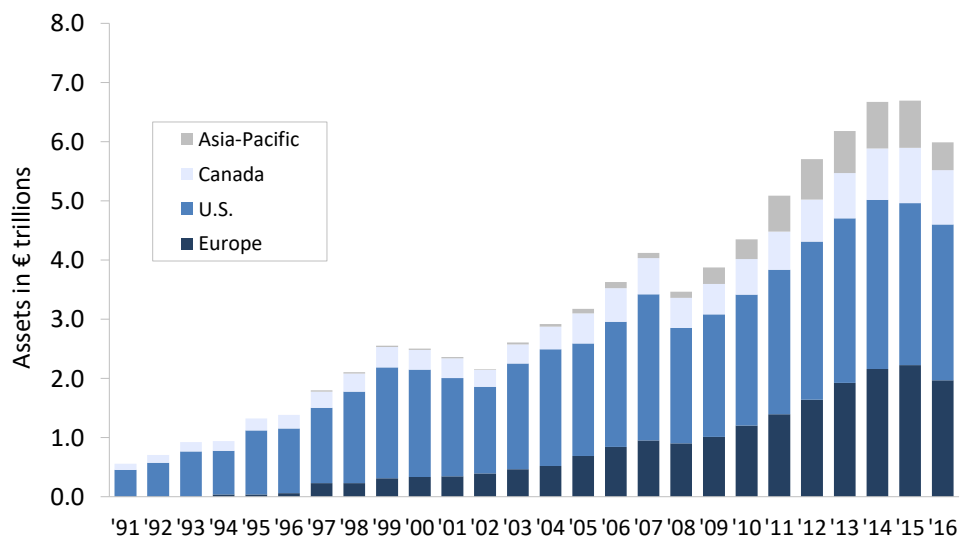


CEM global universe

CEM has been providing investment benchmarking solutions since 1991. The 2016 survey universe is comprised of 285 funds representing €6.0 trillion in assets. The breakdown by region is as follows:

- 166 U.S. pension funds with aggregate assets of €2.6 trillion.
- 75 Canadian pension funds with aggregate assets of €915 billion.
- 37 European pension funds with aggregate assets of €2.0 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Denmark, Switzerland and the UK.
- 7 Asia-Pacific pension funds with aggregate assets of €474 billion.

CEM global universe



Universe subsets

CEM's global survey universe is comprised of 285 funds with total assets of €6.0 trillion. Your fund's returns and costs are compared to the following two subsets of the global universe:

- Peers - Your peer group is comprised of 16 global funds ranging in size from €29.3 - €776.1 billion. The peer median of €137.6 billion compares to your €776.1 billion.
- Global - The global universe is comprised of 285 funds ranging in size from €0.1 - €776.1 billion. The median fund is €5.2 billion.

Universe subsets by number of funds and assets

	Peer group ¹	Global by type				Global by country				
		Corp.	Public	Other	Total	U.S.	Canada	Europe	Asia-Pacific	Total
# of funds										
2016	16	141	100	44	285	166	75	37	7	285
2015	16	157	111	56	324	174	80	58	12	324
2014	16	163	203	56	423	177	89	145	12	423
2013	16	182	198	65	445	192	90	153	10	445
2012	16	187	202	59	448	202	89	143	14	448
# of funds with uninterrupted data for:										
1 yr	16	141	100	44	285	166	75	37	7	285
2 yrs	16	117	91	40	248	145	61	35	7	248
3 yrs	16	106	88	37	231	136	57	31	7	231
4 yrs	16	99	81	35	215	125	54	30	6	215
5 yrs	16	91	80	29	200	120	52	22	6	200
6 yrs	16	87	76	28	191	117	47	21	6	191
Total assets (€ billions)										
2016	3,001	982	4,279	730	5,991	2,632	915	1,970	474	5,991
2015	2,993	1,021	4,708	964	6,693	2,740	934	2,222	797	6,693
2014	2,762	1,122	4,708	874	6,673	2,855	871	2,162	785	6,673
2013	2,482	1,048	4,321	810	6,179	2,785	765	1,921	707	6,179
2012	2,250	1,055	4,018	632	5,706	2,670	708	1,643	685	5,706
2016 asset distribution (€ billions)										
Avg	187.6	7.0	42.8	16.6	21.0	15.9	12.2	53.2	67.7	21.0
Max	776.1				776.1					776.1
75th %ile	185.9				17.2					17.2
Median	137.6				5.2					5.2
25th %ile	89.0				1.6					1.6
Min	29.3				0.1					0.1

1. Peer group statistics are for your 2016 peer group only as your peer group may have included different funds in prior years.

Implementation style, actual mix and policy mix by universe subset

Implementation style, actual mix and policy mix - 2016 (as a % of year-end assets)

	Your fund ¹	Peer group	Global by type				Global by country					
			Corp.	Public	Other	Total	U.S.	Canada	Europe	Asia-Pacific	Total	
Implementation style												
External active	4.3	34.9	70.2	55.3	63.1	63.9	70.2	63.4	40.9	38.8	63.9	
Fund of funds	0.0	2.2	2.9	2.5	3.1	2.8	3.2	1.9	3.0	1.9	2.8	
External passive	0.0	9.0	19.9	15.3	19.3	18.2	18.3	13.5	28.2	12.2	18.2	
Internal active	95.7	31.4	5.0	20.2	10.4	11.2	5.1	16.1	24.1	33.1	11.2	
Internal passive	<u>0.0</u>	<u>22.4</u>	<u>2.0</u>	<u>6.8</u>	<u>4.0</u>	<u>4.0</u>	<u>3.1</u>	<u>5.0</u>	<u>3.8</u>	<u>13.9</u>	<u>4.0</u>	
Total	100	100	100	100	100	100	100	100	100	100	100	
Actual asset mix												
Stock	60.3	41.1	38.6	45.4	39.9	41.2	41.9	45.2	30.0	40.1	41.2	
Fixed income	36.6	34.5	46.1	29.2	41.8	39.5	37.1	36.5	56.8	36.5	39.5	
Global TAA	0.0	0.4	1.4	1.6	0.7	1.4	1.9	0.7	0.2	0.7	1.4	
Real assets	3.1	14.1	5.8	12.7	11.5	9.1	7.7	11.9	8.3	16.0	9.1	
Hedge funds	0.0	2.7	4.7	4.2	2.7	4.2	5.4	2.6	2.2	2.4	4.2	
Private equity	<u>0.0</u>	<u>7.3</u>	<u>3.5</u>	<u>6.9</u>	<u>3.5</u>	<u>4.7</u>	<u>5.9</u>	<u>3.1</u>	<u>2.6</u>	<u>4.3</u>	<u>4.7</u>	
Total	100	100	100	100	100	100	100	100	100	100	100	
Policy asset mix												
Stock	62.2	44.7	38.7	45.6	40.9	41.5	42.1	44.6	30.9	48.4	41.5	
Fixed income	35.3	33.0	46.2	29.1	40.9	39.4	36.8	37.9	55.7	31.0	39.4	
Global TAA	0.0	0.3	1.3	1.6	0.9	1.3	1.8	0.9	0.2	0.7	1.3	
Real assets	2.5	13.7	5.8	13.1	11.6	9.3	7.9	12.2	8.4	15.0	9.3	
Hedge funds	0.0	1.8	4.2	3.4	2.4	3.6	5.0	1.5	2.2	1.2	3.6	
Private equity	<u>0.0</u>	<u>6.5</u>	<u>3.9</u>	<u>7.1</u>	<u>3.4</u>	<u>5.0</u>	<u>6.5</u>	<u>2.9</u>	<u>2.7</u>	<u>3.7</u>	<u>5.0</u>	
Total	100	100	100	100	100	100	100	100	100	100	100	

1. Due to the fact that your fund provided average assets, the above tables show your implementation style and asset mix using average assets rather than year-end.

Implementation style, actual mix and policy mix trends

Implementation style, actual mix and policy mix - 2012 to 2016 (as a % of year-end assets)

	Your fund ¹					Peer average ²					Global average ²				
	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012
Implementation style															
External active	4.3	4.1	4.1	3.7	3.8	37.2	37.7	37.8	47.0	48.5	64.5	65.1	64.6	65.6	65.6
External passive	0.0	0.0	0.0	0.0	0.0	9.0	9.4	10.2	10.1	12.4	17.5	17.0	17.4	17.1	17.7
Internal active	95.7	95.9	95.9	96.3	96.2	31.4	30.9	28.9	19.4	17.6	13.3	13.2	13.0	12.1	11.7
Internal passive	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>22.4</u>	<u>22.0</u>	<u>23.1</u>	<u>23.6</u>	<u>21.5</u>	<u>4.8</u>	<u>4.7</u>	<u>5.0</u>	<u>5.3</u>	<u>4.9</u>
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Actual asset mix															
Stock	60.3	61.9	61.2	62.7	60.2	41.1	42.0	42.5	42.1	40.9	41.3	42.3	43.5	45.6	44.1
Fixed income	36.6	35.4	37.4	36.4	39.4	34.5	34.5	35.0	35.0	35.8	38.0	37.5	37.7	36.1	37.8
Global TAA	0.0	0.0	0.0	0.0	0.0	0.4	0.5	0.6	0.5	0.1	1.5	1.6	1.6	1.4	1.3
Real assets	3.1	2.7	1.4	0.9	0.4	14.1	13.2	12.6	12.7	13.3	9.9	9.3	8.4	8.3	8.3
Hedge funds	0.0	0.0	0.0	0.0	0.0	2.7	2.6	2.2	2.5	2.5	4.0	4.2	3.9	3.7	3.5
Private equity	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>7.3</u>	<u>7.2</u>	<u>7.0</u>	<u>7.1</u>	<u>7.5</u>	<u>5.4</u>	<u>5.2</u>	<u>4.8</u>	<u>4.8</u>	<u>5.0</u>
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Policy asset mix															
Stock	62.2	61.6	61.1	60.9	60.9	44.7	44.0	43.6	42.8	42.5	41.6	42.6	43.1	44.2	45.0
Fixed income	35.3	35.3	36.7	38.1	38.4	33.0	33.2	34.3	35.5	36.1	37.8	37.5	37.5	37.3	37.5
Global TAA	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.6	0.6	0.0	1.4	1.5	1.5	1.4	1.1
Real assets	2.5	3.1	2.2	1.0	0.7	13.7	13.5	12.9	12.5	12.7	10.1	9.4	9.1	8.8	8.5
Hedge funds	0.0	0.0	0.0	0.0	0.0	1.8	2.1	2.1	2.5	2.5	3.5	3.6	3.6	3.1	2.9
Private equity	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>6.5</u>	<u>6.9</u>	<u>6.5</u>	<u>6.2</u>	<u>6.2</u>	<u>5.6</u>	<u>5.5</u>	<u>5.3</u>	<u>5.2</u>	<u>5.0</u>
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

1. Due to the fact that your fund provided average assets, the above tables show your trend in implementation style and asset mix using average assets rather than year-end.

2. Trends are based on the 200 Global and 16 peer funds with 5 consecutive years of data ending 2016.

Implementation style by asset class

Implementation style impacts your costs, because external active management tends to be more expensive than internal or passive (or indexed) management and fund-of-funds usage is more expensive than direct fund investment.

Implementation style by asset class - 2016 (as a % of average assets)

	Your fund %					Peer average %					Global average %				
	External			Internal		External			Internal		External			Internal	
	Active	FOFs	Index	Active	Index	Active	FOFs	Index	Active	Index	Active	FOFs	Index	Active	Index
Stock - U.S.	100.0		0.0	0.0	0.0	17.7		23.2	2.0	57.1	45.7		40.8	6.2	7.3
Stock - EAFE	100.0		0.0	0.0	0.0	47.1		22.6	2.1	28.2	62.4		20.6	13.1	3.9
Stock - ACWIxU.S.						18.8		81.2	0.0	0.0	67.9		31.6	0.5	0.0
Stock - Emerging	100.0		0.0	0.0	0.0	64.4		8.5	6.8	20.4	82.7		10.6	3.4	3.3
Stock - Global	0.0		0.0	100.0	0.0	30.4		10.9	45.9	12.8	66.8		19.9	10.6	2.7
Stock - Other						33.0		20.7	34.3	12.0	70.0		5.9	16.2	8.0
Total Stock	6.6		0.0	93.4	0.0	32.7		17.1	23.2	27.0	60.1		26.2	8.7	5.0
Fixed Income - US						37.2		0.0	58.3	4.5	62.8		18.6	15.6	2.9
Fixed Income - EAFE						14.1		0.0	57.7	28.2	28.4		42.6	24.7	4.3
Fixed Income - Emerging	100.0		0.0	0.0	0.0	73.6		0.0	22.2	4.2	87.3		2.0	8.9	1.8
Fixed Income - Global	0.0		0.0	100.0	0.0	20.3		0.4	52.7	26.7	61.9		9.3	23.9	4.9
Fixed Income - Inflation Indexed						4.0		37.8	24.0	34.1	14.4		51.0	15.8	18.8
Fixed Income - High Yield						95.0		0.0	5.0	0.0	93.3		1.1	5.7	0.0
Fixed Income - Mortgages						31.1		0.0	66.0	3.0	66.6		4.1	20.0	9.3
Fixed Income - Private Debt						43.0		0.0	57.0	0.0	75.6		0.0	19.4	5.0
Fixed Income - Other						11.5		0.1	22.7	65.6	71.4		13.9	10.4	4.3
Cash						79.5		0.0	20.5	0.0	67.2		0.0	32.8	0.0
Total Fixed Income	0.7		0.0	99.3	0.0	23.8		5.2	39.9	31.1	63.6		17.2	14.8	4.4
Commodities						1.8		0.5	76.0	21.6	73.5		8.7	12.2	5.5
Infrastructure			n/a		n/a	44.7	1.7	n/a	53.5	n/a	70.3	4.5	n/a	25.2	n/a
Natural Resources			n/a		n/a	27.2	0.0	n/a	72.8	n/a	78.4	2.0	n/a	19.6	n/a
REITs						33.3	0.0	0.0	66.7	0.0	71.0	0.0	14.9	10.9	3.2
Real Estate ex-REITs	0.0	0.0	n/a	100.0	n/a	54.0	5.5	n/a	40.5	0.0	82.2	3.8	n/a	14.1	0.0
Other Real Assets			n/a		n/a	63.6	0.0	n/a	36.4	n/a	97.2	0.0	n/a	2.8	n/a
Total Real Assets	0.0	0.0	0.0	100.0	0.0	50.4	0.0	0.0	48.5	1.0	82.8	0.0	1.4	15.4	0.4
Hedge Funds			n/a		n/a	87.3	12.7	n/a	0.0	n/a	64.5	35.5	n/a	0.0	n/a
Global TAA			n/a		n/a	100.0	0.0	n/a	0.0	n/a	86.4	0.0	n/a	13.6	n/a
Diversified Private Equity			n/a		n/a	46.9	24.5	n/a	28.6	n/a	67.8	27.1	n/a	5.1	n/a
Venture Capital			n/a		n/a	54.3	44.5	n/a	1.2	n/a	65.3	32.7	n/a	2.0	n/a
LBO			n/a		n/a	79.1	4.2	n/a	16.7	n/a	89.3	7.9	n/a	2.8	n/a
Other Private Equity			n/a		n/a	98.5	0.0	n/a	1.5	n/a	89.6	0.0	n/a	10.4	n/a
Total Private Equity			n/a		n/a	64.5	15.9	n/a	19.6	n/a	77.6	18.4	n/a	4.0	n/a
Total Fund - Avg. Holdings	4.3	0.0	0.0	95.7	0.0	34.9	2.2	9.0	31.4	22.4	64.0	2.8	18.0	11.2	4.0

Actual mix

Actual asset mix - 2012 to 2016 (as a % of year-end assets)

	Your fund % ¹					Peer average %					Global average %				
	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012
Stock - U.S.	0.1					10.9	11.4	11.8	11.7	11.0	14.9	14.4	12.8	14.5	15.0
Stock - EAFE	1.0					5.0	5.0	5.7	6.1	5.7	6.4	6.6	10.0	11.0	11.1
Stock - ACWIxU.S.						0.4	0.4	0.4	0.4	0.4	3.1	3.0	2.3	2.5	2.4
Stock - Emerging	2.8					4.1	4.1	4.1	4.2	4.1	3.0	3.0	3.0	3.0	2.9
Stock - Global	56.3	61.9	61.2	62.7	60.2	15.8	15.7	14.8	13.7	13.3	9.2	9.8	13.4	12.2	11.3
Stock - Other						4.8	5.3	5.8	6.1	6.5	4.7	4.7	4.4	4.6	4.8
Total Stock	60.3	61.9	61.2	62.7	60.2	41.1	42.0	42.5	42.1	40.9	41.2	41.4	46.0	47.8	47.6
Fixed Income - US						5.0	5.0	4.9	5.1	5.3	7.0	7.3	5.5	5.8	6.7
Fixed Income - EAFE						5.1	4.9	4.6	4.5	4.4	3.6	4.3	4.8	5.1	3.9
Fixed Income - Emerging	0.3					1.2	1.1	1.1	1.2	1.1	1.1	1.2	1.1	1.1	0.8
Fixed Income - Global	36.3	35.4	37.4	36.4	39.4	5.9	5.6	5.5	6.1	5.8	2.3	2.6	3.2	3.2	3.5
Fixed Income - Inflation Indexed						4.5	4.4	4.3	4.3	4.6	1.9	1.9	2.0	2.1	2.4
Fixed Income - High Yield						0.9	1.2	1.2	1.1	1.2	1.5	1.4	1.1	1.3	1.2
Fixed Income - Mortgages						1.0	0.9	0.8	0.8	0.9	0.5	0.4	0.3	0.3	0.3
Fixed Income - Private Debt						0.4	0.4	0.3	0.3	0.3	0.7	0.6	0.4	0.3	0.2
Fixed Income - Other						8.4	8.5	9.1	9.2	9.5	18.8	17.7	14.6	13.0	13.7
Cash						2.2	2.5	3.2	2.4	2.6	2.3	2.5	2.6	2.6	2.8
Total Fixed Income	36.6	35.4	37.4	36.4	39.4	34.5	34.5	35.0	35.0	35.8	39.5	40.0	35.7	34.7	35.5
Commodities						0.7	0.8	1.1	1.2	1.2	0.4	0.4	0.4	0.5	0.5
Infrastructure						3.5	3.1	2.8	2.7	2.6	1.7	1.3	1.1	0.9	0.9
Natural Resources						0.4	0.3	0.2	0.2	0.2	0.4	0.4	0.3	0.2	0.2
REITs						1.2	1.2	1.0	1.1	1.0	0.6	0.6	0.6	0.5	0.5
Real Estate ex-REITs	3.1	2.7	1.4	0.9	0.4	8.1	7.8	7.3	7.5	7.6	5.7	5.3	5.1	4.8	4.7
Other Real Assets						0.1	0.1	0.1	0.1	0.5	0.3	0.3	0.3	0.3	0.3
Total Real Assets	3.1	2.7	1.4	0.9	0.4	14.1	13.2	12.6	12.7	13.3	9.1	8.3	7.7	7.3	7.2
Hedge Funds						2.7	2.6	2.2	2.5	2.5	4.2	4.1	3.7	3.6	3.3
Global TAA						0.4	0.5	0.6	0.5	0.1	1.4	1.7	2.9	2.6	2.3
Div. Private Equity						5.2	4.9	4.5	4.6	4.9	3.5	3.3	3.1	3.2	3.3
Venture Capital						0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2
LBO						1.6	1.8	2.0	2.0	2.1	0.5	0.6	0.5	0.4	0.4
Other Private Equity						0.3	0.3	0.2	0.2	0.2	0.4	0.3	0.2	0.2	0.2
Total Private Equity						7.3	7.2	7.0	7.1	7.5	4.7	4.4	4.0	4.0	4.1
Total Fund	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Count	1	1	1	1	1	16	16	16	16	16	285	324	423	445	448
Median Assets (€ billions)	776.1	783.2	655.7	568.2	483.6	179.1	173.4	168.4	156.8	139.2	7.2	6.7	4.0	3.4	3.1

1. Your asset mix is based on average assets rather than year-end.

Policy mix

Policy asset mix - 2012 to 2016 (as a % of average assets)

	Your fund %					Peer average %					Global average %				
	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012	2016	2015	2014	2013	2012
Stock - U.S.						7.4	7.9	7.9	8.0	7.9	13.6	13.3	11.5	12.9	14.6
Stock - EAFE						2.7	2.7	2.6	3.4	3.4	5.6	5.8	9.2	10.0	10.7
Stock - ACWIxU.S.						0.8	0.8	0.8	1.0	1.0	3.4	3.3	2.6	2.5	2.5
Stock - Emerging						2.6	2.7	2.8	2.9	3.0	2.7	2.8	2.6	2.7	2.4
Stock - Global	62.2	61.6	61.1	60.9	60.9	27.2	25.6	24.0	21.4	21.1	11.9	11.9	14.9	13.6	12.6
Stock - Other						4.0	4.4	5.6	6.1	6.1	4.3	4.8	4.2	4.5	4.9
Total Stock	62.2	61.6	61.1	60.9	60.9	44.7	44.0	43.6	42.8	42.5	41.5	41.8	45.1	46.2	47.8
Fixed Income - US						5.7	6.2	6.1	6.2	6.4	7.2	7.6	5.9	6.7	7.3
Fixed Income - EAFE						5.2	5.1	5.0	5.3	5.4	3.3	4.4	4.8	5.3	4.0
Fixed Income - Emerging						1.2	1.2	1.1	1.3	1.3	1.0	1.2	1.0	1.2	0.8
Fixed Income - Global	35.3	35.3	36.7	38.1	38.4	5.0	5.1	5.6	5.7	5.8	2.5	2.7	3.5	3.4	3.8
Fixed Income - Inflation Indexed						4.1	4.3	4.4	4.9	4.5	2.0	2.1	2.1	2.1	2.3
Fixed Income - High Yield						0.9	0.7	1.0	0.8	0.9	1.5	1.5	1.2	1.4	1.1
Fixed Income - Mortgages						0.8	0.5	0.4	0.5	0.5	0.5	0.5	0.2	0.2	0.3
Fixed Income - Private Debt						0.2	0.0	0.0	0.1	0.0	0.6	0.6	0.4	0.3	0.2
Fixed Income - Other						9.1	9.3	9.9	9.6	9.9	19.6	18.6	15.5	14.3	14.3
Cash						0.7	0.9	0.8	1.1	1.4	1.0	0.7	0.8	0.8	0.9
Total Fixed Income	35.3	35.3	36.7	38.1	38.4	33.0	33.2	34.3	35.5	36.1	39.4	39.7	35.5	35.6	34.8
Commodities						0.7	0.7	1.0	1.3	1.4	0.5	0.6	0.5	0.6	0.6
Infrastructure						3.7	3.4	3.0	2.6	2.4	1.9	1.5	1.4	1.1	1.0
Natural Resources						0.3	0.3	0.2	0.2	0.2	0.4	0.3	0.2	0.2	0.2
REITs						1.1	1.2	1.0	1.1	1.1	0.5	0.5	0.5	0.5	0.4
Real Estate ex-REITs	2.5	3.1	2.2	1.0	0.7	7.7	7.6	7.4	7.2	7.0	5.5	5.3	5.6	5.4	5.3
Other Real Assets						0.3	0.3	0.3	0.1	0.6	0.4	0.4	0.4	0.3	0.4
Total Real Assets	2.5	3.1	2.2	1.0	0.7	13.7	13.5	12.9	12.5	12.7	9.3	8.6	8.7	8.2	7.9
Hedge Funds						1.8	2.1	2.1	2.5	2.5	3.6	3.4	3.5	3.3	3.1
Global TAA						0.3	0.4	0.6	0.6	0.0	1.3	1.6	2.7	2.4	2.2
Div. Private Equity						5.9	6.2	5.8	5.7	5.6	4.2	4.0	3.6	3.6	3.4
Venture Capital						0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
LBO						0.3	0.4	0.4	0.4	0.4	0.3	0.4	0.2	0.2	0.2
Other Private Equity						0.2	0.2	0.2	0.0	0.0	0.3	0.2	0.2	0.1	0.1
Total Private Equity						6.5	6.9	6.5	6.2	6.2	5.0	4.8	4.2	4.1	4.0
Total Fund	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Count	1	1	1	1	1	16	16	16	16	16	285	324	423	445	448

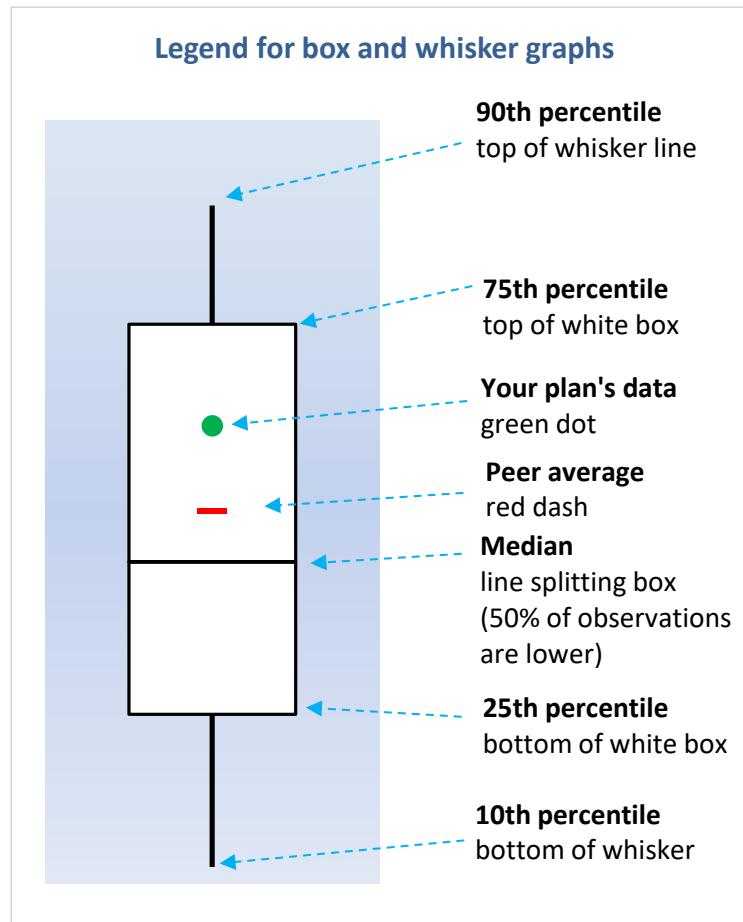
4

Returns, Benchmarks and Value Added

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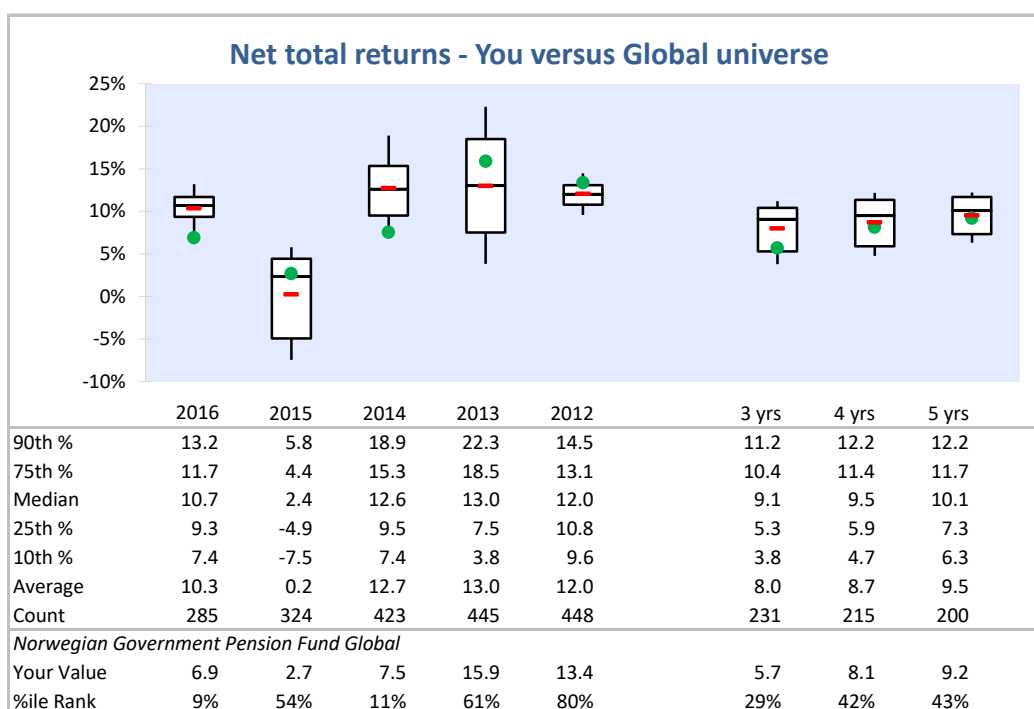
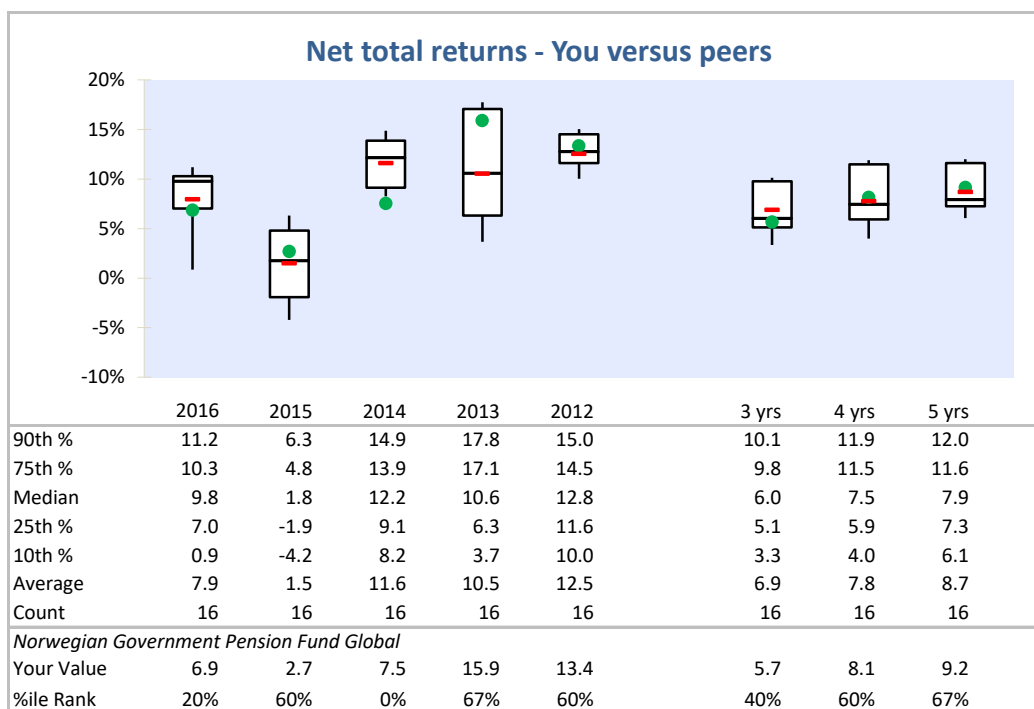
Interpreting box and whisker graphs

Box and whisker graphs are used extensively in this report because they show visually where you rank relative to all observations. At a glance you can see which quartile your data falls in.



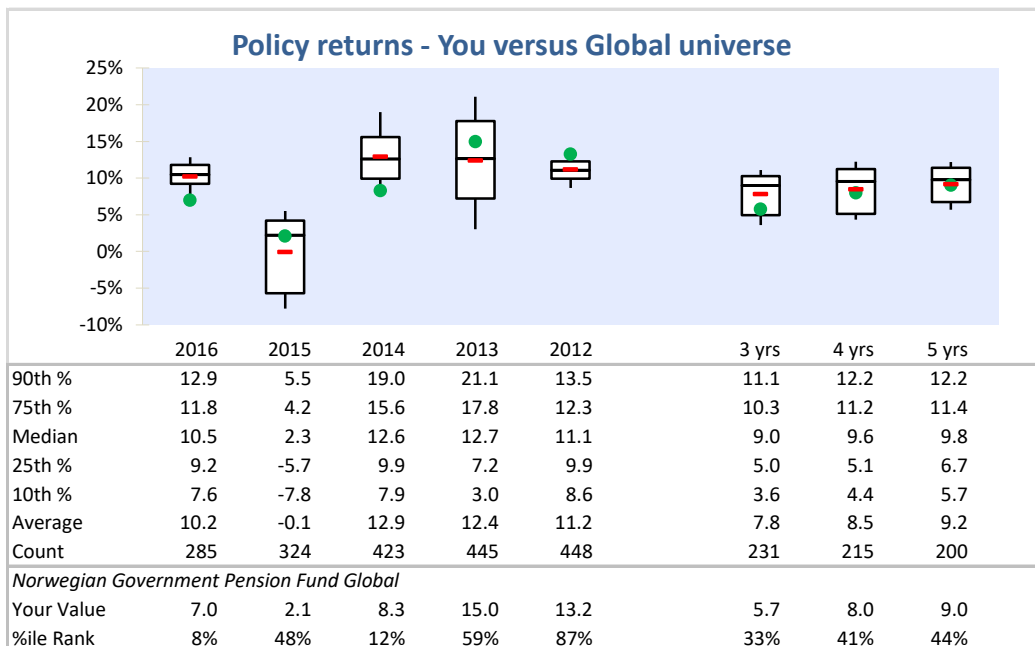
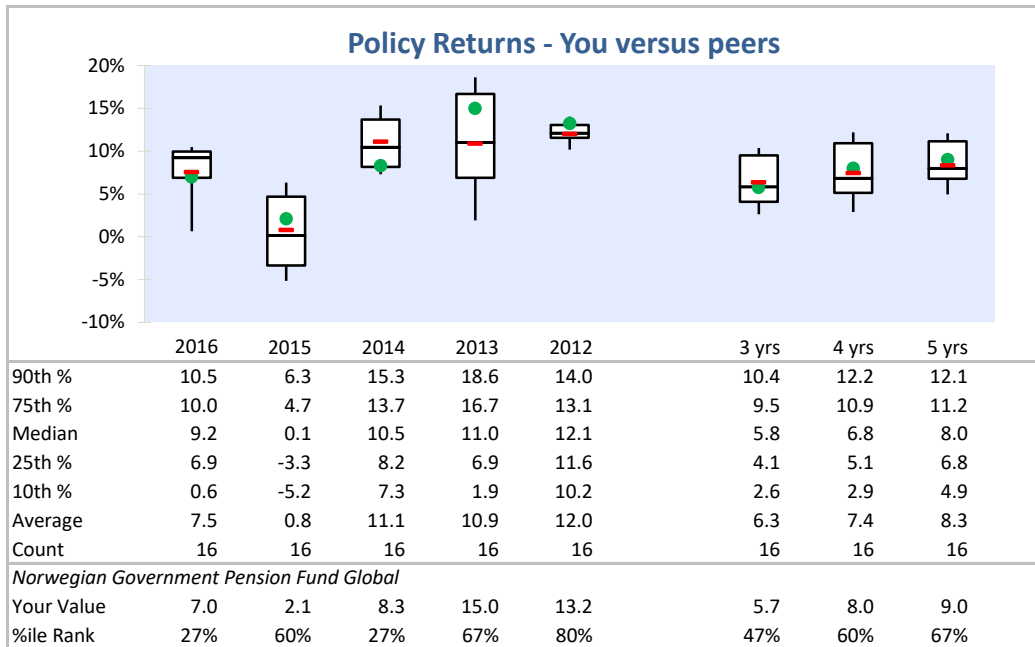
Net total returns

Your 5-year net total return of 9.2% was above the peer median and below the median of the Global universe. Comparisons of total return do not help you understand the reasons behind relative performance. To understand the relative contributions from policy asset mix decisions and implementation decisions we separate total return into its more meaningful components - policy return and implementation value added.



Policy returns

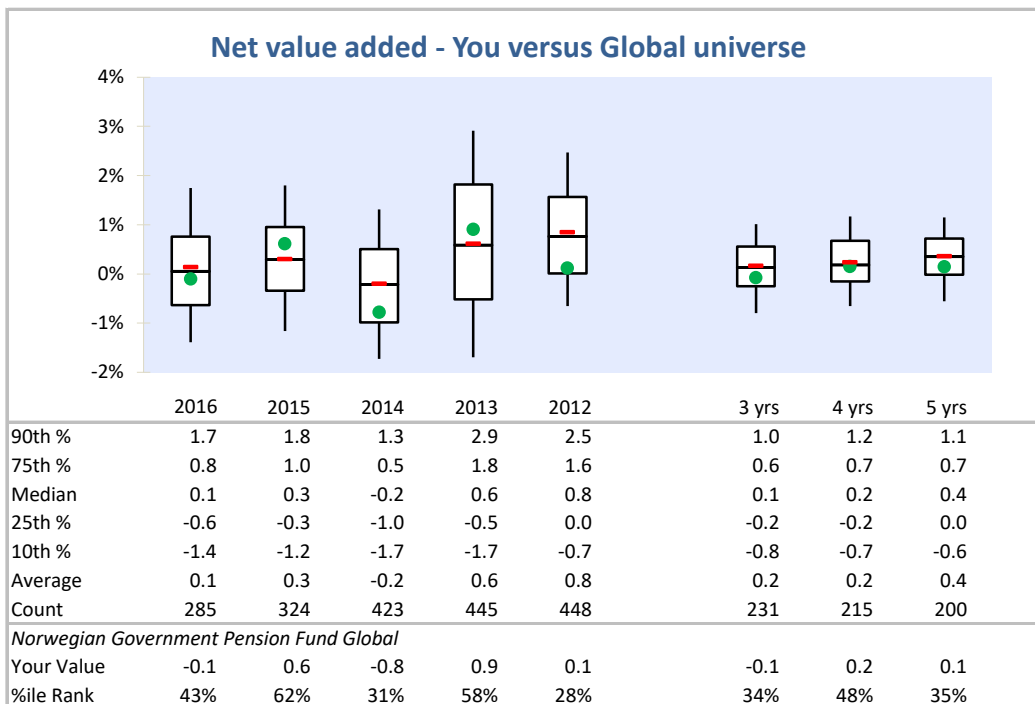
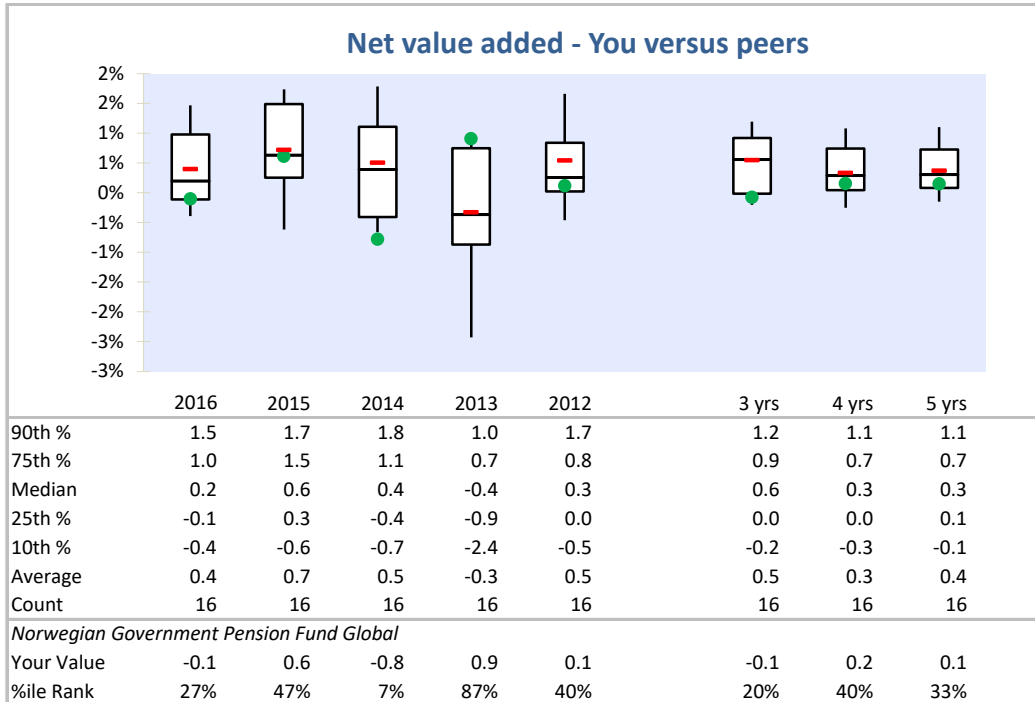
Your 5-year policy return of 9.0% was above the peer median and below the median of the Global universe. Policy return is the return you would have earned had you passively implemented your policy asset mix decision through your benchmark portfolios.



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.

Net value added

Your 5-year net value added of 0.1% was below the peer median and below the median of the Global universe. Net value added is the difference between your net total return and your policy return.



Net returns by asset class

Asset class	Your fund %						Peer average %						Global average %					
	2016	2015	2014	2013	2012	5-yr	2016	2015	2014	2013	2012	5-yr	2016	2015	2014	2013	2012	5-yr
Stock - U.S.	22.7						16.3	4.6	16.2	35.2	16.9	17.4	15.1	3.8	18.5	35.0	15.3	17.1
Stock - EAFE	2.1						1.4	5.3	1.8	23.8	18.9	9.8	4.2	3.9	2.5	25.7	17.1	10.3
Stock - Emerging	11.0						12.0	-10.4	6.1	-0.7	17.6	4.4	12.6	-10.1	5.1	-0.2	17.1	4.4
Stock - ACWIXU.S.							7.0	-0.2	3.3	17.4	16.6	8.6	5.7	2.0	3.3	19.3	16.7	9.2
Stock - Global	8.7	3.8	7.9	26.3	18.0	12.6	8.0	4.8	10.9	26.9	15.4	13.0	8.9	3.3	11.3	26.5	14.8	12.7
Stock - Other							12.7	-5.9	7.8	8.7	13.0	7.0	19.9	-10.7	8.7	14.6	11.1	8.2
Stock - Total	8.7	3.8	7.9	26.3	18.0	12.6	9.9	1.6	9.8	22.7	16.0	11.8	11.9	0.7	10.4	25.7	15.6	12.6
Fixed Income - US							3.5	3.1	15.4	-0.8	4.9	5.1	6.4	3.9	13.8	-0.7	6.5	5.9
Fixed Income - EAFE							3.9	-4.7	8.8	2.9	9.2	3.9	5.0	-5.0	14.4	3.9	9.5	5.4
Fixed Income - Emerging	13.1						12.7	-4.0	3.1	-4.5	16.5	4.4	13.1	-3.3	4.9	-5.3	15.6	4.7
Fixed Income - Global	4.2	0.3	6.9	0.1	6.7	3.6	1.9	0.9	8.7	-1.4	9.8	3.9	6.3	-1.2	8.8	3.1	9.0	5.1
Fixed Income - Inflation Indexed							7.0	-2.6	10.4	-6.8	7.6	2.9	7.7	-2.1	14.0	-3.8	6.6	4.3
Fixed Income - High Yield							12.9	-3.1	5.0	8.9	14.6	7.5	13.8	-0.9	6.9	8.9	14.2	8.4
Fixed Income - Mortgages							5.7	0.5	7.3	2.1	5.2	4.1	5.6	-1.1	7.2	3.0	8.6	4.6
Fixed Income - Private Debt							11.0	-0.7	4.5	6.4	8.5	5.8	7.6	1.7	6.6	7.3	8.8	6.4
Fixed Income - Other							0.7	-2.1	4.0	-3.3	3.5	0.5	0.4	-0.2	1.0	-0.2	0.5	0.3
Cash							0.4	-2.3	2.2	-0.4	1.6	0.3	3.2	-1.2	1.6	1.2	0.9	1.1
Fixed Income - Total	4.3	0.3	6.9	0.1	6.7	3.6	5.2	-1.4	10.2	-3.2	8.1	3.6	8.0	-1.4	13.4	-1.3	7.8	5.2
Commodities							15.4	-27.3	-22.7	-0.7	0.9	-8.3	14.4	-23.3	-11.7	-4.2	-0.2	-5.8
Infrastructure							8.4	7.1	19.5	8.8	8.1	10.3	10.9	6.9	12.0	8.7	7.2	9.1
REITs							6.1	7.9	22.6	9.6	26.2	14.2	7.3	3.7	24.7	5.7	18.8	11.8
Natural Resources							10.9	0.5	15.5	8.6	3.1	7.6	8.8	-2.8	14.8	7.0	3.7	6.1
Real Estate ex-REITs	0.6	9.8	10.1	11.3	5.0	7.3	7.9	10.5	13.8	9.1	9.7	10.2	10.5	10.3	14.2	11.0	7.6	10.7
Other Real Assets							7.4	-4.6	1.8	-4.1	7.4	1.4	10.5	-3.8	9.6	4.4	1.3	4.3
Real Assets - Total	0.8	10.0	10.4	11.8	5.8	7.7	8.1	8.0	12.8	8.9	10.5	9.7	10.8	7.1	13.2	9.3	7.7	9.6
Hedge Funds							0.2	0.8	8.0	6.5	5.0	4.1	4.1	2.2	9.8	9.8	5.5	6.2
Global TAA							7.1	-3.9	7.3	-0.5	7.2	3.3	9.6	-0.3	9.4	7.8	7.4	6.7
Diversified Private Equity							11.5	10.3	18.1	15.9	12.2	13.5	10.7	12.0	19.4	16.6	10.1	13.7
LBO							12.5	5.7	16.2	16.2	12.4	12.5	13.6	9.5	20.7	17.1	11.5	14.4
Venture Capital							7.6	13.5	23.9	16.5	5.1	13.1	6.7	14.0	21.2	16.2	6.4	12.8
Other Private Equity							17.0	10.3	15.6	14.4	-3.1	10.6	11.4	7.6	16.4	16.7	6.8	11.7
Private Equity - Total							11.1	10.6	17.6	17.4	12.3	13.8	10.8	11.6	19.4	16.4	9.7	13.5
Total Fund Return	6.9	2.7	7.5	15.9	13.4	9.2	7.9	1.5	11.6	10.5	12.5	8.7	10.3	0.2	12.7	13.0	12.0	9.5

Benchmark returns by asset class

Asset class	Your fund %						Peer average %						Global average %					
	2016	2015	2014	2013	2012	5-yr	2016	2015	2014	2013	2012	5-yr	2016	2015	2014	2013	2012	5-yr
Stock - U.S.	16.1						15.2	4.2	16.4	34.1	15.2	16.7	15.7	4.0	19.2	34.1	15.2	17.3
Stock - EAFE	3.8						1.5	3.9	2.2	25.5	16.3	9.5	4.2	3.3	2.6	24.9	16.2	9.9
Stock - Emerging	10.7						12.0	-10.9	5.7	-1.8	17.3	4.0	13.1	-10.5	5.2	-0.6	16.5	4.3
Stock - ACWIXU.S.							7.1	-1.3	2.9	16.5	15.8	8.0	6.8	0.2	3.1	17.3	16.1	8.5
Stock - Global	8.6	3.0	8.7	25.0	17.5	12.3	8.4	3.5	10.5	24.2	14.8	12.1	9.9	2.8	11.4	25.6	14.5	12.6
Stock - Other							13.5	-6.6	7.4	8.2	14.0	7.0	22.0	-12.1	9.3	14.5	10.9	8.2
Stock - Total	8.6	3.0	8.7	25.0	17.5	12.3	9.5	1.6	9.7	21.7	15.7	11.4	12.4	0.2	10.6	24.4	15.0	12.2
Fixed Income - US							3.0	3.2	15.1	-2.6	3.8	4.3	5.3	3.7	13.2	-1.5	4.4	4.9
Fixed Income - EAFE							4.0	-4.5	7.6	1.1	8.9	3.3	5.0	-4.8	15.1	3.4	8.6	5.2
Fixed Income - Emerging	13.0						11.8	-4.2	4.6	-3.9	15.5	4.4	11.9	-2.6	6.6	-4.7	15.5	5.0
Fixed Income - Global	4.2	0.6	7.6	-0.2	7.0	3.8	0.5	0.6	6.7	-1.2	6.9	2.6	5.1	-0.4	8.8	2.6	6.3	4.4
Fixed Income - Inflation Indexed							7.1	-2.7	10.6	-7.5	7.3	2.7	7.6	-2.1	15.1	-3.7	5.9	4.3
Fixed Income - High Yield							13.4	-3.6	4.0	9.1	15.0	7.3	16.7	-1.8	6.8	8.6	14.5	8.8
Fixed Income - Mortgages							5.7	-1.1	5.6	-1.1	4.4	2.7	5.3	-2.5	5.3	0.5	5.7	2.8
Fixed Income - Private Debt							11.0	-1.9	4.6	7.2	11.3	6.3	8.2	-0.6	6.3	5.4	6.3	5.1
Fixed Income - Other							4.4	-2.8	8.1	2.9	7.9	4.0	8.2	-2.5	17.7	-4.0	7.2	5.0
Cash							-0.1	-3.0	1.9	-0.4	1.3	-0.1	2.9	-1.1	3.0	1.2	0.8	1.3
Fixed Income - Total	4.2	0.6	7.6	-0.2	7.0	3.8	4.2	-1.0	10.4	-2.9	7.0	3.4	7.6	-1.3	14.4	-1.8	6.8	5.0
Commodities							12.4	-24.2	-21.7	1.1	1.1	-7.4	13.3	-22.6	-12.5	-3.0	-0.3	-5.8
Infrastructure							6.7	3.1	10.4	5.8	8.7	6.9	9.4	0.8	9.2	7.7	7.7	6.9
REITs							7.5	7.8	22.8	9.0	26.2	14.4	8.3	4.1	24.2	6.2	19.2	12.1
Natural Resources							6.2	2.4	10.5	9.6	5.0	6.7	8.8	1.6	11.4	9.3	6.2	7.4
Real Estate ex-REITs	0.8	10.0	10.4	11.8	5.8	7.7	7.4	10.1	12.0	8.6	9.2	9.5	10.3	10.0	13.9	10.7	8.2	10.6
Other Real Assets							9.9	4.7	6.3	8.6	5.2	6.9	9.8	-2.3	9.0	9.3	7.3	6.5
Real Assets - Total	0.8	10.0	10.4	11.8	5.8	7.7	7.3	6.9	11.3	7.8	10.0	8.6	10.1	5.6	12.0	8.8	7.9	8.9
Hedge Funds							2.1	-0.1	7.9	5.5	5.8	4.2	5.2	2.5	8.0	7.9	4.6	5.6
Global TAA							6.1	1.2	6.4	2.9	7.8	4.9	8.2	2.9	8.2	9.5	7.1	7.2
Diversified Private Equity ¹							9.5	6.3	14.7	28.9	13.4	14.3	9.1	8.4	22.0	28.2	7.9	14.8
LBO ¹							14.5	1.6	16.3	25.4	11.7	13.6	10.4	8.0	21.0	28.9	9.8	15.3
Venture Capital ¹							14.0	2.1	15.6	25.9	11.9	13.7	8.9	9.0	20.9	28.3	10.1	15.2
Other Private Equity ¹							17.4	3.5	14.5	32.0	15.6	16.2	9.1	8.3	19.7	29.1	8.6	14.7
Private Equity ¹ - Total							9.5	6.3	13.6	28.8	13.7	14.2	9.0	8.4	21.8	28.0	7.9	14.7
Total Policy Return	7.0	2.1	8.3	15.0	13.2	9.0	7.5	0.8	11.1	10.9	12.0	8.4	10.2	-0.1	12.9	12.4	11.2	9.2

1. 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.

Net value added by asset class

Asset class	Your fund %						Peer average %						Global average %					
	2016	2015	2014	2013	2012	5-yr	2016	2015	2014	2013	2012	5-yr	2016	2015	2014	2013	2012	5-yr
Stock - U.S.	6.6						1.0	0.4	-0.2	1.2	1.6	0.8	-0.6	-0.2	-0.6	1.0	0.1	-0.1
Stock - EAFE	-1.7						-0.1	1.4	-0.5	-1.7	2.5	0.3	0.0	0.7	0.0	0.9	0.9	0.4
Stock - Emerging	0.4						0.1	0.5	0.4	1.1	0.3	0.5	-0.5	0.4	-0.1	0.5	0.4	0.2
Stock - ACWIxU.S.							-0.1	1.1	0.4	1.0	0.8	0.6	-1.1	1.9	0.2	2.4	0.6	0.7
Stock - Global	0.1	0.8	-0.9	1.3	0.5	0.3	-0.4	1.2	0.4	2.7	0.6	0.9	-0.9	0.4	-0.2	0.9	0.4	0.1
Stock - Other							-0.8	0.8	0.4	0.5	-1.0	0.0	-1.4	1.4	-0.4	0.3	0.2	-0.1
Stock - Total	0.1	0.8	-0.9	1.3	0.5	0.3	0.4	0.0	0.1	1.0	0.3	0.3	-0.5	0.6	-0.2	1.3	0.6	0.3
Fixed Income - US							0.5	-0.1	0.3	0.2	1.2	0.8	1.2	0.2	0.3	0.8	2.1	1.0
Fixed Income - EAFE							-0.1	-0.2	1.2	1.8	0.3	0.6	0.0	-0.2	-0.7	0.5	1.0	0.1
Fixed Income - Emerging	0.1						0.9	0.2	-1.5	-0.5	1.0	0.0	1.2	-0.8	-1.8	-0.6	0.2	-0.4
Fixed Income - Global	0.1	-0.3	-0.7	0.2	-0.3	-0.2	1.5	0.3	2.0	-0.4	2.0	1.2	1.2	-0.7	-0.2	0.4	2.7	0.7
Fixed Income - Inflation Indexed							-0.1	0.1	-0.2	0.7	0.4	0.2	0.1	0.0	-1.3	-0.2	0.6	-0.1
Fixed Income - High Yield							-0.5	0.5	1.0	-0.1	-0.4	0.1	-2.9	0.9	-0.1	0.2	-0.3	-0.4
Fixed Income - Mortgages							0.4	1.6	1.7	3.3	0.8	1.5	0.3	1.4	1.9	2.6	2.9	1.8
Fixed Income - Private Debt							0.0	1.2	-0.1	-0.8	-2.9	-0.5	-0.3	2.3	0.1	2.2	2.6	1.3
Fixed Income - Other							-3.7	0.7	-4.1	-6.2	-4.4	-3.5	-7.8	2.4	-15.9	3.9	-6.8	-4.7
Cash							0.3	0.7	0.3	0.0	0.2	0.4	0.3	0.0	-1.4	0.0	0.2	-0.2
Fixed Income - Total	0.2	-0.3	-0.7	0.2	-0.3	-0.2	1.0	-0.4	-0.2	-0.3	1.0	0.2	0.4	-0.1	-1.0	0.5	1.0	0.2
Commodities							0.3	-3.1	-1.0	-1.8	-0.2	-0.9	0.9	-0.5	2.2	-1.4	0.2	0.0
Infrastructure							1.7	4.0	9.1	3.0	-0.6	3.4	1.6	6.1	2.8	1.0	-0.4	2.2
REITs							-1.4	0.1	-0.3	0.6	0.0	-0.2	-1.0	-0.3	0.7	-0.5	-0.2	-0.4
Natural Resources							6.0	-1.9	5.0	-1.0	-1.9	0.9	0.1	-4.2	3.3	-2.4	-2.5	-1.3
Real Estate ex-REITs	-0.2	-0.2	-0.3	-0.4	-0.8	-0.4	0.5	0.4	1.8	0.5	0.5	0.7	0.3	0.4	0.3	0.3	-0.5	0.1
Other Real Assets							-2.6	-9.2	-4.5	-12.7	2.3	-5.5	0.8	-2.5	-0.4	-5.3	-6.1	-2.2
Real Assets - Total	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.1	1.5	1.2	0.5	1.0	0.7	1.5	1.3	0.4	-0.2	0.7
Hedge Funds							-1.9	0.9	0.1	1.0	-0.8	-0.1	-1.0	-0.3	1.7	2.0	0.9	0.6
Global TAA							1.0	-5.1	0.9	-3.4	-0.7	-1.5	1.4	-3.2	1.2	-1.7	0.3	-0.5
Diversified Private Equity ¹							1.9	4.0	3.3	-13.1	-1.3	-0.8	1.5	3.7	-2.7	-11.5	2.2	-1.1
LBO ¹							-2.0	4.1	-0.1	-9.2	0.7	-1.1	3.2	1.5	-0.3	-11.3	1.7	-0.9
Venture Capital ¹							-6.4	11.4	8.3	-9.5	-6.7	-0.5	-2.1	5.1	0.3	-12.1	-3.7	-2.4
Other Private Equity ¹							-0.3	6.8	1.1	-17.6	-18.7	-5.6	2.1	-0.8	-3.1	-12.4	-1.8	-3.0
Private Equity ¹ - Total							1.5	4.3	4.0	-11.4	-1.5	-0.4	1.8	3.2	-2.5	-11.6	1.8	-1.2
Total fund	-0.1	0.6	-0.8	0.9	0.1	0.1	0.4	0.7	0.5	-0.3	0.5	0.4	0.1	0.3	-0.2	0.6	0.8	0.3

Total net value add is determined by both actual and policy allocation. It is the outcome of total net return (page 6) minus total benchmark return (page 7). Aggregate net returns are an asset weighted average of all categories that the fund has an actual allocation to. Aggregate benchmark returns are a policy weighted average and includes only those categories that are part of your policy fund's mix.

1. 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.

Your policy return and value added calculation - 2016

2016 Policy Return and Value Added

Asset class	Policy weight	Benchmark Description	Return	Net return	Value added
Stock - U.S.		Your Stock: U.S. Broad/All benchmark	16.1%	22.7%	6.6%
Stock - EAFE		Your Stock: Europe benchmark	3.8%	2.1%	-1.7%
Stock - Emerging		Your Stock: Emerging benchmark	10.7%	11.0%	0.4%
Stock - Global	62.2%	Your Stock: Global benchmark	8.6%	8.7%	0.1%
Fixed Income - Emerging		Custom	13.0%	13.1%	0.1%
Fixed Income - Global	35.3%	Barclays Global Aggregate + Barclays Global Inflation	4.2%	4.2%	0.1%
Real Estate ex-REITs	2.5%	Custom (Actual)	0.8%	0.6%	-0.2%
Total	100.0%				
Net Actual Return (reported by you)					6.9%
Calculated Policy Return = sum of (policy weights X benchmark returns)				6.8%	
Adjustment to reflect rebalancing and overlay impacts				<u>0.1%</u>	
Policy Return					<u>7.0%</u>
Net Value Added (Net Return - Policy Return)					-0.1%

The fund return consists of Equity, Fixed Income and Real Estate. The fund benchmark is the weighted benchmark of Equity and Fixed Income, the benchmark for Real Estate used in the report is the actual portfolio return.

Your policy return and value added calculations - 2012 to 2015

2015 Policy Return and Value Added

Asset class	Policy weight	Benchmark		Net return	Value added
		Description	Return		
Stock - Global	61.6%	Your Stock: Globa	3.0%	3.8%	0.8%
Fixed Income - Global	35.3%	Barclays Global A	0.6%	0.3%	-0.3%
Real Estate ex-REITs	3.1%	Custom (Actual)	10.0%	9.8%	-0.2%
Total	100.0%				
Net Return (reported by you)					2.7%
Calculated policy return (sum: Policy weights x benchmarks)				2.4%	
Adjustment to reflect rebalancing and overlay impacts				<u>-0.3%</u>	
Policy Return					<u>2.1%</u>
Net Value Added (Net Return - Policy Return)					0.6%

2013 Policy Return and Value Added

Asset class	Policy weight	Benchmark		Net return	Value added
		Description	Return		
Stock - Global	60.9%	Your Stock: Globa	25.0%	26.3%	1.3%
Fixed Income - Global	38.1%	Barclays Global A	-0.2%	0.1%	0.2%
Real Estate ex-REITs	1.0%	Custom (Actual)	11.8%	11.3%	-0.4%
Total	100.0%				
Net Return (reported by you)					15.9%
Calculated policy return (sum: Policy weights x benchmarks)				15.3%	
Adjustment to reflect rebalancing and overlay impacts				<u>-0.3%</u>	
Policy Return					<u>15.0%</u>
Net Value Added (Net Return - Policy Return)					0.9%

2014 Policy Return and Value Added

Asset class	Policy weight	Benchmark		Net return	Value added
		Description	Return		
Stock - Global	61.1%	Your Stock: Globa	8.7%	7.9%	-0.9%
Fixed Income - Global	36.7%	Barclays Global A	7.6%	6.9%	-0.7%
Real Estate ex-REITs	2.2%	Custom (Actual)	10.4%	10.1%	-0.3%
Total	100.0%				
Net Return (reported by you)					7.5%
Calculated policy return (sum: Policy weights x benchmarks)				8.35%	
Adjustment to reflect rebalancing and overlay impacts				<u>-0.1%</u>	
Policy Return					<u>8.3%</u>
Net Value Added (Net Return - Policy Return)					-0.8%

2012 Policy Return and Value Added

Asset class	Policy weight	Benchmark		Net return	Value added
		Description	Return		
Stock - Global	60.9%	Your Stock: Globa	17.5%	18.0%	0.5%
Fixed Income - Global	38.4%	Barclays Global A	7.0%	6.7%	-0.3%
Real Estate ex-REITs	0.7%	Custom (Actual)	5.8%	5.0%	-0.8%
Total	100.0%				
Net Return (reported by you)					13.4%
Calculated policy return (sum: Policy weights x benchmarks)				13.4%	
Adjustment to reflect rebalancing and overlay impacts				<u>-0.2%</u>	
Policy Return					<u>13.2%</u>
Net Value Added (Net Return - Policy Return)					0.1%

Profit/Loss on overlay programs

Overlay type	Your fund		Peer median				Global median			
	2016	2015	2016		2015		2016		2015	
	bps	bps	bps	#	bps	#	bps	#	bps	#
Int. Discretionary Currency			-111	2	-36	2	0	12	2	12
Ext. Discretionary Currency			-1	2	3	2	11	7	1	8
Internal Global TAA			-1	1	1	1	0	8	5	8
External Global TAA							-2	2	13	2
Internal PolicyTilt TAA			-38	1	-28	1	0	8	1	8
External PolicyTilt TAA							319	1	4	2
Internal Commodities			15	1			5	2	-6	1
External Commodities			11	1			107	2	-455	1
Internal Long/Short			-1	1	17	2	2	8	5	9
External Long/Short									-5	1
Internal Other			6	3	2	2	1	12	0	9
External Other							8	10	0	8
Total Profit/Loss			1	7	1	7	4	43	1	42

Profit/loss in basis points was calculated using total fund average holdings. This was done to measure the impact of the program at the total fund level.

5

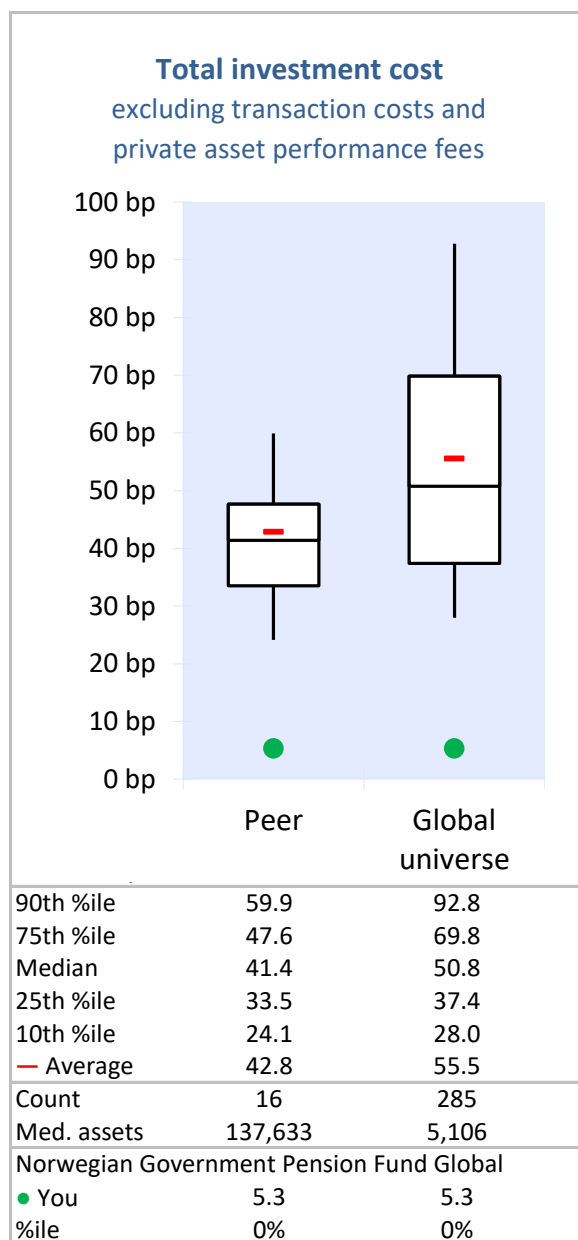
Total cost and benchmark cost

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Comparisons of total investment cost

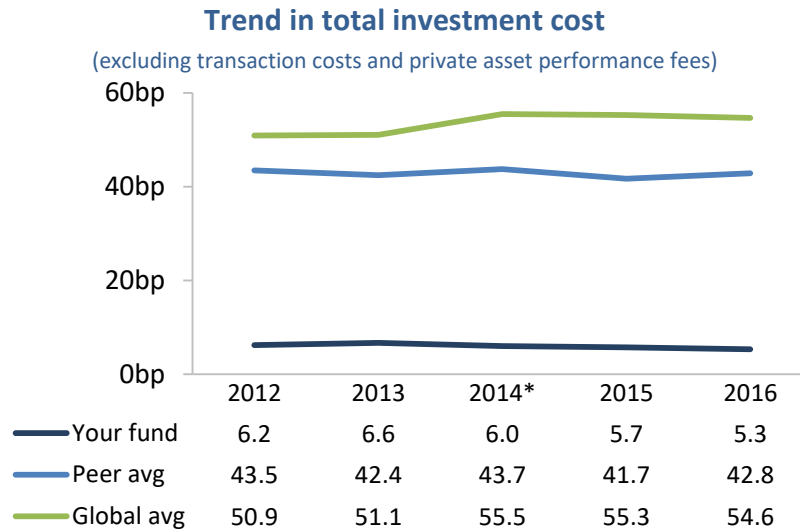
Your total investment cost, excluding transaction costs and private asset performance fees, of 5.3 bps was below the peer median of 41.4 bps.

Differences in total investment cost are often caused by two factors that are usually outside of management's control: asset mix and fund size. Therefore, to assess whether your fund's total investment cost is high or low given your unique asset mix and size, CEM calculates a benchmark cost for your fund. Benchmark cost analysis begins on page 7 of this section.



Trend in total investment cost

Your total investment cost, excluding transaction costs and private asset performance fees, decreased from 6.2 bps in 2012 to 5.3 bps in 2016.



Trend analysis is based on the 200 Global funds and the 16 peer funds with 5 or more consecutive years of data.

* Starting in 2014 hedge fund performance fees are being included for all participants. This is one reason for the uptick in costs relative to 2013.

Default underlying fund of fund fees are based on peer median data and default performance fees are based on universe median data.

Thus, to the extent that peers/universe adjust prior years' data and/or there is a change in peer group and the universe, your fund's prior years' costs may be different from what was shown in your previous CEM report. We are rethinking this methodology for next year.

Types of costs included in your total investment cost

The table below outlines the types of costs included in your total investment cost.

Asset class	Internal		External			
	In-house total cost	Transaction costs	Manager base fees	Monitoring & other costs	Perform. fees (active only)	Transaction costs
<u>Public</u> (Stock, Fixed income, commodities, REITs)	✓	✗	✓	✓	✓	✗
Derivatives/Overlays	✓	✗	✓	✓	✓	✗
<u>Hedge funds & Global TAA</u>						
Hedge Funds	n/a	n/a	✓	✓	✓	✗
Global TAA	✓	✗	✓	✓	✓	✗
<u>Private equity</u> (Diversified private equity, venture capital, LBO, other private equity)	✓	✗	✓*	✓	✗	✗
<u>Private real assets</u> (Infrastructure, natural resources, real estate ex-REITs, other real assets)	✓	✗	✓*	✓	✗	✗

*For limited partnerships, external manager base fees represent gross contractual management fees.

- ✓ indicates cost is included.
- ✗ indicates cost is excluded.
- Green shading indicates that the cost type has been newly added for the 2014 data year.
- CEM currently excludes external private asset performance fees and all transaction costs from your total cost because only a limited number of participants are currently able to provide complete data.

Detailed breakdown of your total investment cost

Your 2016 total investment cost, excluding transaction costs and private asset performance fees, was 5.3 bp or €412.1 million.

Your investment costs

	Internal		External Passive		External Active			Total		
	Passive	Active	Fees	Monitoring & Other	Base Fees	Perform. Fees ¹	Monitoring & Other	€000s	bps	% of Total
Asset management										
Stock - U.S.					1,333	338	156	1,827		0%
Stock - EAFE					16,996	3,584	4,543	25,123		6%
Stock - Emerging					45,509	19,998	1,649	67,156		16%
Stock - Global		102,953						102,953		25%
Fixed Income - Emerging					4,755		287	5,042		1%
Fixed Income - Global		40,473						40,473		10%
	<u>In Sub</u>	<u>Oversight</u>								
Real Estate - Operating Sub.	0	47,438						47,438		12%
Total asset management costs excluding private asset performance fees								290,012	3.7bp	70%
Oversight, custodial & other asset related costs										
Oversight of the Fund								66,954		16%
Trustee & Custodial								39,503		10%
Consulting and Performance Measurement								9,570		2%
Audit								6,110		1%
Other										
Total oversight, custodial & other costs								122,137	1.6bp	30%
Total investment costs excluding transaction costs and private asset performance fees								412,149	5.3bp	100%

¹ Starting in 2014, CEM changed its methodology to include performance fees on hedge funds in total cost used for comparison and benchmarking. Performance fees for real estate, infrastructure, natural resources and private equity are excluded.

Changes in your investment costs

The table below shows how your investment costs have changed from year to year by asset class.

Change in your investment costs (2016 - 2012)

	Investment costs (€000s)					Change (€000s)				Change (%)			
	2016	2015	2014	2013	2012	2016	2015	2014	2013	2016	2015	2014	2013
Asset management													
Stock - U.S.	1,827	0	0	0	0	1,827							
Stock - EAFE	25,123	0	0	0	0	25,123							
Stock - Emerging	67,156	0	0	0	0	67,156							
Stock - Global	102,953	249,652	214,185	210,993	146,290	-146,699	35,467	3,192	64,703	-59%	17%	2%	44%
Fixed Income - Emerging	5,042	0	0	0	0	5,042							
Fixed Income - Global	40,473	37,010	29,004	27,155	33,538	3,463	8,006	1,849	-6,383	9%	28%	7%	-19%
Real Estate - Operating Sub.	47,438	39,477	28,131	21,479	15,155	7,961	11,346	6,652	6,324	20%	40%	31%	42%
Total excl. private asset perf. fees	290,012	326,139	271,320	259,627	194,983	-36,127	54,819	11,693	64,644	-11%	20%	5%	33%
Oversight, custodial & other asset related costs													
Oversight of the Fund	66,954	67,859	59,310	67,148	64,168	-905	8,549	-7,838	2,980	-1%	14%	-12%	5%
Trustee & Custodial	39,503	42,400	51,964	43,763	33,318	-2,897	-9,564	8,201	10,445	-7%	-18%	19%	31%
Consulting and Performance Measurement	9,570	8,868	6,363	2,292	2,356	702	2,505	4,071	-64	8%	39%	178%	-3%
Audit	6,110	4,840	4,314	4,667	4,464	1,270	526	-353	203	26%	12%	-8%	5%
Other	0	0	0	0	0								
Total oversight, custodial & other costs	122,137	123,967	121,951	117,870	104,306	-1,830	2,016	4,081	13,564	-1%	2%	3%	13%
Total investment costs ¹	412,149	450,106	393,271	377,497	299,289	-37,957	56,835	15,774	78,208	-8%	14%	4%	26%
Total in basis points	5.3bp	5.7bp	6.0bp	6.6bp	6.2bp								

¹ Starting in 2014, CEM changed its methodology to include performance fees on hedge funds in total cost used for comparison and benchmarking. Performance fees for real estate, infrastructure, natural resources and private equity are excluded.

Total cost versus benchmark cost

Your fund's total investment cost, excluding transaction costs and private asset performance fees, was 13.3 bps below your benchmark cost of 18.6 bps. This implies that your fund was low cost by 13.3 bps compared to the peer median, after adjusting for your fund's asset mix.

Your cost versus benchmark

	€000s	bps
Your fund's total investment cost excluding transaction costs and illiquid asset performance fees	412,149	5.3 bp
- Your fund's benchmark	1,443,405	18.6 bp
= Your fund's cost savings	-1,031,256	-13.3 bp

Your benchmark cost is an estimate of your total costs assuming that you paid the peer median cost for each of your investment mandates and fund oversight. The calculation of your benchmark cost is shown on the following page.

The reasons why your fund's total cost was below your benchmark are summarized in the table below. Details of each of the impacts below are provided on pages 9 to 12.

Reasons why your fund was low cost

	Cost/-Savings impact	
	€000s	bps
<u>Differences in implementation style:</u>		
External active vs. low cost styles	-708,083	-9.1 bp
Fund of funds vs. external direct	0	0.0 bp
Mix of internal and passive styles	63,367	0.8 bp
Style impact of overlays	-143,570	-1.8 bp
Total style impact	-788,286	-10.2 bp
<u>Paying more/-less for similar services:</u>		
External investment management	-51,315	-0.7 bp
Internal investment management	-131,939	-1.7 bp
Oversight, custodial and other	-59,715	-0.8 bp
Total impact of paying more /-less	-242,969	-3.1 bp
Total savings	-1,031,256	-13.3 bp

Benchmark cost calculation

Your 2016 benchmark cost was 18.6 basis points or €1.4 billion. It equals your holdings for each asset class multiplied by the peer median cost for the asset class. The peer median cost is the style weighted average for all implementation styles (i.e., internal passive, internal active, external passive, external active).

Calculation of your 2016 benchmark cost

Asset class	Your avg. assets or fee basis (A) €mils	Weighted peer median cost ¹ (B)	Benchmark (A X B) €000s
Asset management costs			
Stock - U.S.	767	8.6 bp	662
Stock - EAFE	8,128	15.6 bp	12,643
Stock - Emerging	22,072	36.1 bp	79,748
Stock - Global	436,866	14.7 bp	640,348
Fixed Income - Emerging	2,075	27.9 bp	5,786
Fixed Income - Global	282,097	8.4 bp	235,598
Real Estate ex-REITs (excl. perf. fees)	24,136	59.3 bp	143,198
Overlay Programs ²	776,141	1.8 bp	143,570
Benchmark for asset management	776,141	16.3 bp	1,261,552
Oversight, custody and other costs			
Oversight of the Fund	776,141	1.0 bp	79,974
Trustee & Custodial	776,141	0.6 bp	44,864
Consulting	776,141	0.5 bp	34,927
Audit	776,141	0.0 bp	2,287
Other	776,141	0.3 bp	19,800
Benchmark for oversight, custody & other		2.3 bp	181,852
Total benchmark cost		18.6 bp	1,443,405

1. The weighted peer median cost for asset management is the style-weighted average of the peer median costs for all implementation styles (i.e., internal passive, internal active, external passive, external active, fund of fund). It excludes performance fees on private assets. The style weights by asset class for your fund and the peers are shown on page 17 of this section.

2. Total fund average holdings is used as the base when calculating the relative cost impact of the overlay programs.

Cost impact of differences in implementation style

Differences in implementation style (i.e., external active management versus lower cost indexed and internal management, fund of funds versus lower cost direct LPs, and overlay usage) relative to your peers saved you 10.2 bps.

Calculation of the cost impact of differences in implementation style

	Your avg holdings (mils)	% External active			Premium vs. internal and passive ^{1 2}	Cost/-Savings ³	
	(A)	You	Peer average	More/-Less	(C)	(A X B X C)	
Stock - U.S.	767	100%	18%	82%	44 bp	2,777	
Stock - EAFE	8,128	100%	47%	53%	27 bp	11,800	
Stock - Emerging	22,072	100%	64%	36%	46 bp	36,251	
Stock - Global	436,866	0%	33%	-33%	37 bp	-522,053	
Fixed Income - Emerging	2,075	100%	74%	26%	15 bp	798	
Fixed Income - Global	282,097	0%	24%	-24%	24 bp	-160,997	
Real Estate ex-REITs (incl. oper. sul partnerships as % of external:	24,136 0	0%	62%	-62%	51 bp	-76,658 0	
Total impact of differences in external active management usage						-708,083	-9.1 bp
<i>Overlay usage</i>							
Impact of lower use of portfolio level overlays (see page 10)						-143,570	-1.8 bp
<i>Mix of low cost styles</i>							
Impact of mix of internal indexed, internal active, external indexed (see page 11)						63,367	0.8 bp
Total						-788,286	-10.2 bp

1. The external active cost 'premium vs internal and passive' is the additional cost of external active management and fund of funds relative to the average of the other lower cost implementation styles: internal passive, internal active and external passive. These calculations are specific to your peer group.

2. 'Insufficient' indicates there is insufficient peer data to determine the cost premium.

Cost impact of overlays

As summarized on the previous page, the style impact of overlays saved you 1.8 bps. If you use more overlays than your peers, or more expensive types of overlays, then it increases your relative cost.

Calculation of the cost impact of differences in the use of portfolio level overlays

	Your avg total holdings (mils)	Overlay notional amounts as a % of avg total holdings			Median cost as a % of notional (C)	Your cost as a % of total holdings ¹	Average cost as a % of total holdings	Cost/-Savings Impact (000s) (A X B X C)
		You	Peer Average	More/-Less				
Internal Overlays	(A)			(B)				
Currency - Hedge	776,141	0.0%	n/a			0.0 bp ¹	0.1 bp	-5,764
Currency - Discretionary	776,141	0.0%	n/a			0.0 bp ¹	0.1 bp	-5,565
Passive Beta - Hedge	776,141	0.0%	n/a			0.0 bp ¹	0.1 bp	-4,475
Duration - Hedge	776,141	0.0%	n/a			0.0 bp ¹	0.1 bp	-4,900
Global TAA - Discretionary	776,141	0.0%	n/a			0.0 bp ¹	0.1 bp	-3,914
Policy Tilt TAA - Discretionary	776,141	0.0%	13.1%	-13.1%	4.7 bp			-47,429
Commodity Futures - Discretionary	776,141	0.0%	0.1%	-0.1%	7.6 bp			-348
Long/Short - Discretionary	776,141	0.0%	n/a			0.0 bp ¹	0.7 bp	-57,781
Other - Discretionary	776,141	0.0%	n/a			0.0 bp ¹	0.0 bp	-941
External Overlays								
Currency - Hedge	776,141	0.0%	3.1%	-3.1%	2.3 bp			-5,568
Currency - Discretionary	776,141	0.0%	0.3%	-0.3%	12.5 bp			-2,889
Passive Beta - Hedge	776,141	0.0%	0.1%	-0.1%	6.5 bp			-455
Duration - Hedge	776,141	0.0%	1.7%	-1.7%	2.1 bp			-2,653
Dur. Mgmt Swaption - Hedge	776,141	0.0%	0.0%	0.0%	3.3 bp			0
Global TAA - Discretionary	776,141	0.0%	0.0%	0.0%	18.8 bp			0
Policy Tilt TAA - Discretionary	776,141	0.0%	0.0%	0.0%	11.3 bp			0
Commodity Futures - Discretionary	776,141	0.0%	0.1%	-0.1%	12.1 bp			-890
Long/Short - Discretionary	776,141	0.0%	0.0%	0.0%	6.7 bp			0
Other - Discretionary	776,141	0.0%	0.0%	0.0%	7.4 bp			0
Total impact in 000s								-143,570
Total impact in basis points								-1.8 bp

1. For overlay programs (primarily certain internal, profit seeking programs) where no clear notional value is defined or provided, these types of overlays are compared in terms of cost relative to total holdings.

Cost impact of lower cost styles

As summarized on page 9, your mix of 'lower-cost' internal and passive styles cost you 0.8 bps. Details are shown below.

Cost impact of differences in your mix of 'lower-cost' implementation styles

	Your non-external active holdings (mils)	Percent holdings (of non-external-active)						Cost/-Savings ¹ (€000s)
		Internal passive		Internal active		External passive		
		You	Peers	You	Peers	You	Peers	
Stock - Global	436,866	0%	40%	100%	34%	0%	25%	60,511
Fixed Income - Global	282,097	0%	41%	100%	52%	0%	7%	2,856
Real Estate ex-REITs	24,136	0%	0%	100%	100%	0%	0%	0
Total impact (€000s)								63,367
Total impact in basis points								0.8 bp

1. Cost/-savings for each asset class equals non-external active holdings within each asset class X cumulative impact from the three lower cost styles. By formula: [(peer median cost for the style - peer weighted average cost of lower cost styles) X (your weight for the style - peer weight for the style)]. Peer median costs for each style are shown on page 18.

Cost impact of paying more/-less for similar services

Differences in what you paid relative to your peers for similar asset management and related oversight and support services saved you 3.1 bps.

Calculation of the cost impact of paying more/-less

Style	Your avg holdings (mils) (A)	Cost in bps			Cost/-Savings (€000s) (bps) (A X B)		
		You	Peer median	More/-less (B)	(€000s)	(bps)	
External asset management							
Stock - U.S.	active	767	23.8	44.8	-21.0	-1,611	
Stock - EAFE	active	8,128	30.9	30.1	0.8	680	
Stock - Emerging	active	22,072	30.4	52.6	-22.1	-48,842	
Fixed Income - Emerging	active	2,075	24.3	31.7	-7.4	-1,542	
Total for external management						-51,315	-0.7 bp
Internal asset management							
Stock - Global	active	436,866	2.4	4.1	-1.7	-75,853	
Fixed Income - Global	active	282,097	1.4	2.7	-1.3	-36,983	
Real Estate ex-REITs	active	24,136	19.7	27.6	-7.9	-19,102	
Total for internal asset management						-131,939	-1.7 bp
Oversight, custodial, other							
Oversight of the Fund		776,141	0.9	1.0	-0.2	-13,020	
Consulting and Performance Measurement		776,141	0.1	0.5	-0.3	-25,357	
Trustee & Custodial		776,141	0.5	0.6	-0.1	-5,361	
Audit		776,141	0.1	0.0	0.0	3,823	
Other		776,141	0.0	0.3	-0.3	-19,800	
Total for oversight, custodial, other						-59,715	-0.8 bp
Total						-242,969	-3.1 bp

*Universe median used as peer data was insufficient.

Summary of why you are high or low cost by asset class

The table below summarizes where you are high and low cost by asset class. It also quantifies how much is due to differences in implementation style (i.e., differences in the mix of external active, external passive, internal active, internal passive and fund of fund usage) and how much is due to paying more or less for similar services (i.e., same asset class and style).

Summary of why you are high or low cost by asset class

	Your cost ¹	Benchmark = peer weighted median cost ¹	More/-less	Your average assets (or fee basis ³)	More/-less in \$000s		
					Due to Impl. style	Due to paying more/less	Total More/-less
	(A)	(B)	(C = A - B)	(D)			(C X D)
Asset management costs							
Stock - U.S.	23.8 bp	8.6 bp	15.2 bp	767	2,777	-1,611	1,165
Stock - EAFE	30.9 bp	15.6 bp	15.4 bp	8,128	11,800	680	12,480
Stock - Emerging	30.4 bp	36.1 bp	-5.7 bp	22,072	36,251	-48,842	-12,592
Stock - Global	2.4 bp	14.7 bp	-12.3 bp	436,866	-461,542	-75,853	-537,395
Fixed Income - Emerging	24.3 bp	27.9 bp	-3.6 bp	2,075	798	-1,542	-744
Fixed Income - Global	1.4 bp	8.4 bp	-6.9 bp	282,097	-158,142	-36,983	-195,125
Real Estate ex-REITs (excl. perf. fees)	19.7 bp	59.3 bp	-39.7 bp	24,136	-76,658	-19,102	-95,760
Overlay Programs ²	0.0 bp	1.8 bp	-1.8 bp	776,141	-143,570	0	-143,570
Total asset management	3.7 bp	16.3 bp	-12.5 bp	776,141	-788,286	-183,254	-971,540
Oversight, custody and other costs							
Oversight of the Fund	0.9 bp	1.0 bp	-0.2 bp	776,141	n/a	-13,020	-13,020
Trustee & Custodial	0.5 bp	0.6 bp	-0.1 bp	776,141	n/a	-5,361	-5,361
Consulting	0.1 bp	0.5 bp	-0.3 bp	776,141	n/a	-25,357	-25,357
Audit	0.1 bp	0.0 bp	0.0 bp	776,141	n/a	3,823	3,823
Other	0.0 bp	0.3 bp	-0.3 bp	776,141	n/a	-19,800	-19,800
Total oversight, custody & other	1.6 bp	2.3 bp	-0.8 bp	776,141	n/a	-59,715	-59,715
Total	5.3 bp	18.6 bp	-13.3 bp	776,141	-788,286	-242,969	-1,031,256

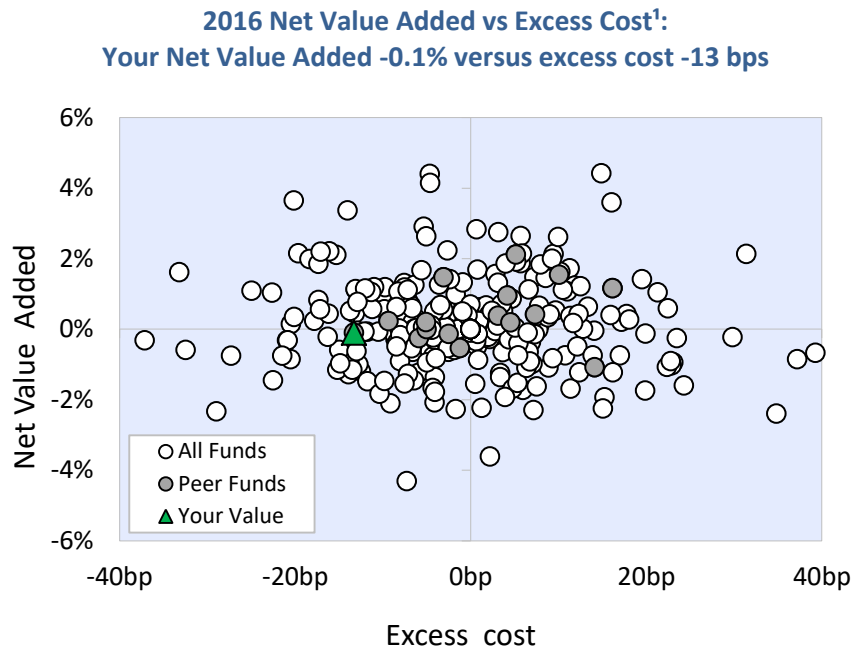
1. The weighted peer median cost for asset management is the style-weighted average of the peer median costs for all implementation styles (i.e., internal passive, internal active, external passive, external active, fund of fund). It excludes performance fees on private assets. The style weights by asset class for your fund and the peers are shown on page 17 of this section.

2. Total fund average holdings is used as the base when calculating the relative cost impact of the overlay programs.

Your cost effectiveness ranking

Being high or low cost is neither good nor bad. The more important question is, are you receiving sufficient value for your excess cost? At the total fund level, we provide insight into this question by combining your value added and your excess cost to create a snapshot your cost effectiveness performance relative to that of the survey universe.

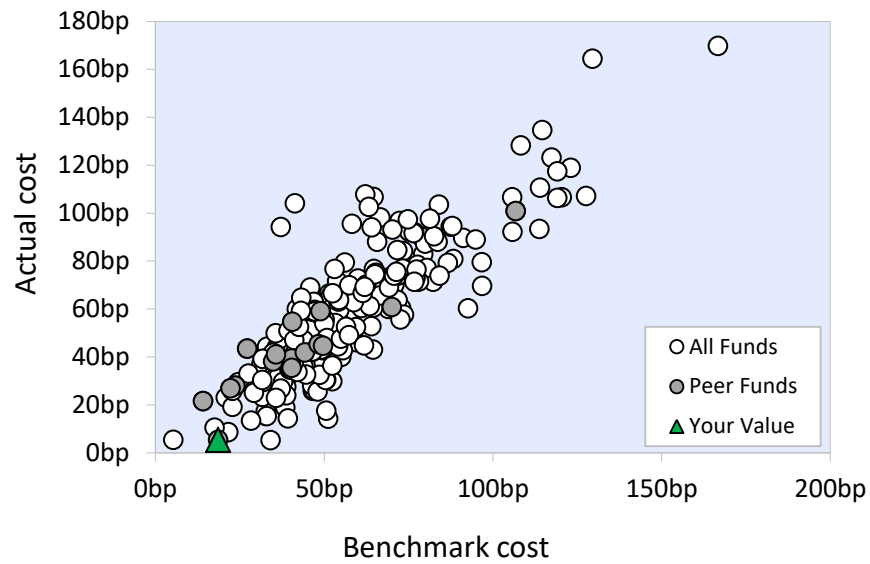
For the 2016 year, your fund ranked in the negative value added, low cost quadrant.



1. Benchmark cost and excess cost calculations are based on regression analysis (see Appendix B in this section) for all funds except your fund. Your fund's benchmark cost is based on peer-median costs (per page 7 of this section).

Actual cost versus benchmark cost

2016 Actual Cost vs Benchmark Cost¹: Your actual cost was 5.3 bps and your benchmark cost was 18.6 bps



1. Benchmark cost calculations are based on regression analysis (see Appendix B in this section) for all funds except your fund. Your fund's benchmark cost is based on peer-median costs (per page 7 of this section).

Appendix A: Benchmarking methodology formulas and data

a) Formulas

Example calculations are for Stock - U.S. unless otherwise indicated.

Asset class peer cost

$$\begin{aligned} &= \text{Weighted average by peer average style of peer median costs for asset class} \\ &= [(0.57 \times 0.7\text{bp}) + (0.02 \times 3.8\text{bp}) + (0.23 \times 0.8\text{bp}) + (0.18 \times 44.8\text{bp})] / (0.57 + 0.02 + 0.23 + 0.18) = 8.6\text{bp} \end{aligned}$$

Peer average low cost (by asset class)

$$\begin{aligned} &= \text{Weighted average by peer average style of peer median costs for internal passive, internal active and} \\ &\quad \text{external passive management for asset class} \\ &= [(0.57 \times 0.7\text{bp}) + (0.02 \times 3.8\text{bp}) + (0.23 \times 0.8\text{bp})] / (0.57 + 0.02 + 0.23) = 0.8\text{bp} \end{aligned}$$

External active cost premium (by asset class)

$$\begin{aligned} &= \text{Peer median external active cost - peer average low cost} \\ &= 44.8\text{bp} - 0.8\text{bp} = 44.0\text{bp} \end{aligned}$$

Fund of funds premium (by asset class)

$$\begin{aligned} &= \text{Peer median fund-of-funds cost - peer median external active cost} \\ &= (\text{For private equity}) 208.3\text{bp} - 166.7\text{bp} = 41.6\text{bp} \end{aligned}$$

Impact from other differences in implementation style (by Asset Class)=

$$\begin{aligned} &= [(\text{Your int. pass. \% - average peer int. pass. \%}) \times (\text{peer median int. pass. cost - peer average low cost}) \\ &\quad + (\text{your int. act. \% - peer average int. act. \%}) \times (\text{peer median int. act. cost - peer average low cost}) \\ &\quad + (\text{your ext. pass. \% - average peer ext. pass. \%}) \times (\text{median peer ext. pass. cost - peer average low cost})] \\ &\quad \times \text{your average holdings} \end{aligned}$$

b) Insufficient peer data

All peer data is adjusted to ensure comparisons are made only when sufficient data is available. When too few peers have the asset class or style in question, peer costs are replaced with your fund's cost, neutralizing the effect of your cost. Major implementation styles (external active, fund of funds and combined "low cost") that you do not hold are ignored if they have insufficient data to draw major style impact conclusions. Throughout this section, 'peer median' and 'average peer style' always refer to these adjusted values. The following page shows the adjusted data used in this section.

Appendix A: Benchmarking methodology formulas and data (page 2 of 2)

c) 2016 cost data used to calculate weighted peer median costs and impact of mix differences.

Asset Class	Your costs (basis points)						Peer median costs (basis points)						
	Internal Passive	Internal Active	External Passive	External Active	Limited Partner.	Fund of Funds	Internal Passive	Internal Active	External Passive	External Active	Limited Partner.	Fund of Funds	Weighted Median
Stock - U.S.				23.8			0.7	3.8	0.8	44.8			8.6
Stock - EAFE				30.9			2.1	2.6	3.3	30.1			15.6
Stock - Emerging				30.4			4.6	6.4	10.8	52.6			36.1
Stock - Global		2.4					1.3	4.1	3.1	39.2			14.7
Fixed Income - Emerging				24.3			17.2	17.2		31.7			27.9
Fixed Income - Global		1.4					2.6	2.7	2.0	26.6			8.4
Real Estate ex-REITs		19.7						27.6		60.4	89.5	125.7	59.3

d) 2016 Style weights used to calculate the weighted peer median costs and impact of mix differences.

Style Weights	You (%)						Peer average (%)					
	Internal Passive	Internal Active	External Passive	External Active	Limited Partner.	Fund of Funds	Internal Passive	Internal Active	External Passive	External Active	Limited Partner.	Fund of Funds
Stock - U.S.	0.0%	0.0%	0.0%	100.0%			57.1%	2.0%	23.2%	17.7%		
Stock - EAFE	0.0%	0.0%	0.0%	100.0%			28.2%	2.1%	22.6%	47.1%		
Stock - Emerging	0.0%	0.0%	0.0%	100.0%			20.4%	6.8%	8.5%	64.4%		
Stock - Global	0.0%	100.0%	0.0%	0.0%			27.0%	23.2%	17.1%	32.7%		
Fixed Income - Emerging	0.0%	0.0%	0.0%	100.0%			4.2%	22.2%	0.0%	73.6%		
Fixed Income - Global	0.0%	100.0%	0.0%	0.0%			31.1%	39.9%	5.2%	23.8%		
Real Estate ex-REITs		100.0%		0.0%	0.0%	0.0%		38.0%		29.4%	27.4%	5.2%

The above data was adjusted as noted when there were insufficient peers, or for other reasons where direct comparisons were inappropriate.

Appendix B: Regression based benchmarks

Regression Benchmark Cost Equations

	2016		2015		2014		2013		2012	
	Coeff.	"t"	Coeff.	"t"	Coeff.	"t"	Coeff.	"t"	Coeff.	"t"
Constant	80.2	17.9	76.5	17.4	84.4	19.2	76.8	18.2	73.2	18.9
Size in millions (Log 10)	-14.9	-13.4	-13.7	-12.8	-15.7	-14.6	-14.2	-13.3	-13.7	-13.8
<u>Percentage of assets in:</u>										
Stocks	14.2	3.3	11.1	2.8	14.3	3.3	19.6	4.5	19.0	4.6
Real estate	78.6	6.1	47.1	3.5	56.7	3.7	56.9	3.8	55.1	4.2
Private equity & hedge funds	193.6	27.3	208.1	28.2	205.2	27.4	203.3	26.9	208.1	30.5
Country variable (1 if Cdn)	-5.4	-3.1	-2.9	-1.7	-6.9	-4.0	-8.1	-4.7	-6.4	-4.1
	All		All		All		All		All	
Standard error	12.9		14.5		14.5		14.6		13.1	
R-squared	71%		65%		67%		65%		71%	
F statistic	178.5		184.1		185.9		175.1		219.0	
Sample size	374		486		449		466		454	

In order to compare your fund's cost effectiveness to the global survey universe, a benchmark cost for all participants is required.

The benchmark operating cost for all other funds is determined using regression analysis. The regression equation coefficients and "t statistics" are shown in the table above. An absolute "t" of greater than 2 indicates that the coefficient is statistically significant in predicting the dependent variable, in this case, the benchmark cost.

The benchmark equations have been remarkably robust. Although the coefficients change every year, primarily because of changes in the composition of the survey universe, they remain similar in relative magnitude and direction.

Most importantly, the R-squareds have been high. In 2016, the R-squared was 71% which means that fund size, asset mix and nationality explain more than 71% of the differences in costs between funds. This is good explanatory power.

Below is a description of the coefficients:

- Size = Log10 (fund size in millions)
- % Stocks = proportion in stocks (coefficient changed in 2011)
- % Real estate = proportion directly invested in real estate and infrastructure.
- % Private equity = proportion in direct and fund-of-funds venture capital, other private equity and hedge funds.
- Country variable = 1 if your country of origin is Canada, otherwise 0.

5

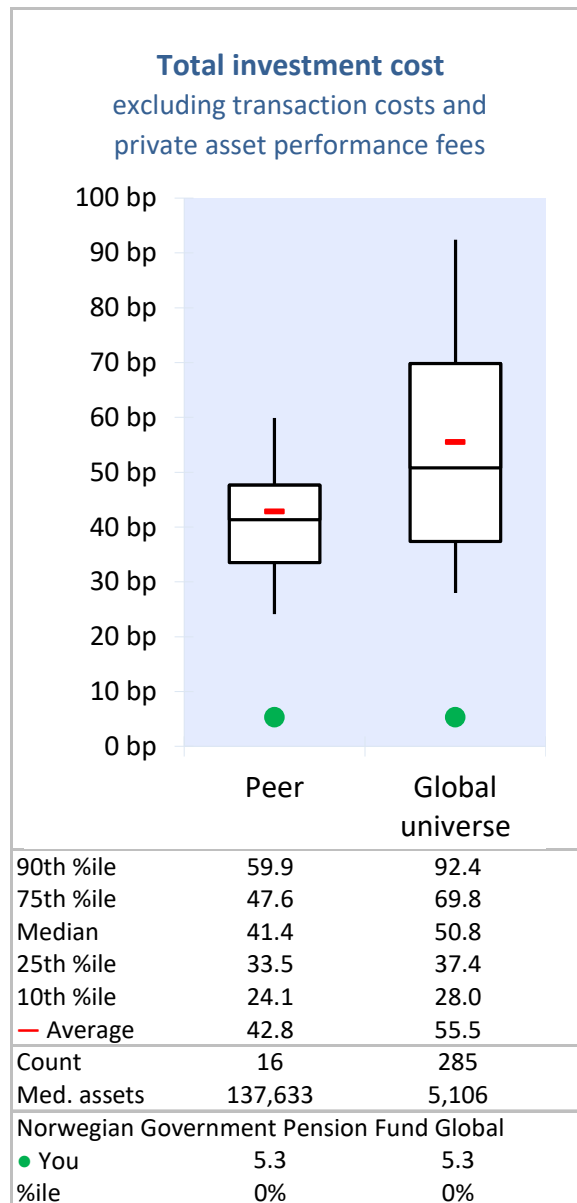
Total cost and benchmark cost

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Comparisons of total investment cost

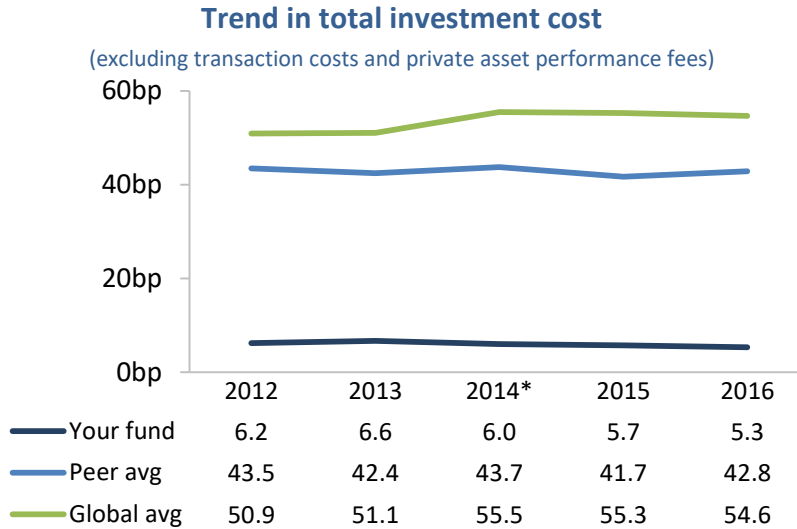
Your total investment cost, excluding transaction costs and private asset performance fees, of 5.3 bps was below the peer median of 41.4 bps.

Differences in total investment cost are often caused by two factors that are usually outside of management's control: asset mix and fund size. Therefore, to assess whether your fund's total investment cost is high or low given your unique asset mix and size, CEM calculates a benchmark cost for your fund. Benchmark cost analysis begins on page 7 of this section.



Trend in total investment cost

Your total investment cost, excluding transaction costs and private asset performance fees, decreased from 6.2 bps in 2012 to 5.3 bps in 2016.



Trend analysis is based on the 200 Global funds and the 16 peer funds with 5 or more consecutive years of data.

* Starting in 2014 hedge fund performance fees are being included for all participants. This is one reason for the uptick in costs relative to 2013.

Default underlying fund of fund fees are based on peer median data and default performance fees are based on universe median data.

Thus, to the extent that peers/universe adjust prior years' data and/or there is a change in peer group and the universe, your fund's prior years' costs may be different from what was shown in your previous CEM report. We are rethinking this methodology for next year.

Types of costs included in your total investment cost

The table below outlines the types of costs included in your total investment cost.

Asset class	Internal		External			
	In-house total cost	Transaction costs	Manager base fees	Monitoring & other costs	Perform. fees (active only)	Transaction costs
<u>Public</u> (Stock, Fixed income, commodities, REITs)	✓	✗	✓	✓	✓	✗
Derivatives/Overlays	✓	✗	✓	✓	✓	✗
<u>Hedge funds & Global TAA</u>						
Hedge Funds	n/a	n/a	✓	✓	✓	✗
Global TAA	✓	✗	✓	✓	✓	✗
<u>Private equity</u> (Diversified private equity, venture capital, LBO, other private equity)	✓	✗	✓*	✓	✗	✗
<u>Private real assets</u> (Infrastructure, natural resources, real estate ex-REITs, other real assets)	✓	✗	✓*	✓	✗	✗

*For limited partnerships, external manager base fees represent gross contractual management fees.

- ✓ indicates cost is included.
- ✗ indicates cost is excluded.
- Green shading indicates that the cost type has been newly added for the 2014 data year.
- CEM currently excludes external private asset performance fees and all transaction costs from your total cost because only a limited number of participants are currently able to provide complete data.

Detailed breakdown of your total investment cost

Your 2016 total investment cost, excluding transaction costs and private asset performance fees, was 5.3 bp or €412.1 million.

Your investment costs

	Internal		External Passive		External Active			Total		
	Passive	Active	Fees	Monitoring & Other	Base Fees	Perform. Fees ¹	Monitoring & Other	€000s	bps	% of Total
Asset management										
Stock - U.S.					1,333	338	156	1,827		0%
Stock - EAFE					16,996	3,584	4,543	25,123		6%
Stock - Emerging					45,509	19,998	1,649	67,156		16%
Stock - Global		102,953						102,953		25%
Fixed Income - Emerging					4,755		287	5,042		1%
Fixed Income - Global		40,473						40,473		10%
	<u>In Sub</u>	<u>Oversight</u>								
Real Estate - Operating Sub.	0	47,438						47,438		12%
Total asset management costs excluding private asset performance fees								290,012	3.7bp	70%
Oversight, custodial & other asset related costs										
Oversight of the Fund								66,954		16%
Trustee & Custodial								39,503		10%
Consulting and Performance Measurement								9,570		2%
Audit								6,110		1%
Other										
Total oversight, custodial & other costs								122,137	1.6bp	30%
Total investment costs excluding transaction costs and private asset performance fees								412,149	5.3bp	100%

¹ Starting in 2014, CEM changed its methodology to include performance fees on hedge funds in total cost used for comparison and benchmarking. Performance fees for real estate, infrastructure, natural resources and private equity are excluded.

Changes in your investment costs

The table below shows how your investment costs have changed from year to year by asset class.

Change in your investment costs (2016 - 2012)

	Investment costs (€000s)					Change (€000s)				Change (%)			
	2016	2015	2014	2013	2012	2016	2015	2014	2013	2016	2015	2014	2013
Asset management													
Stock - U.S.	1,827	0	0	0	0	1,827							
Stock - EAFE	25,123	0	0	0	0	25,123							
Stock - Emerging	67,156	0	0	0	0	67,156							
Stock - Global	102,953	249,652	214,185	210,993	146,290	-146,699	35,467	3,192	64,703	-59%	17%	2%	44%
Fixed Income - Emerging	5,042	0	0	0	0	5,042							
Fixed Income - Global	40,473	37,010	29,004	27,155	33,538	3,463	8,006	1,849	-6,383	9%	28%	7%	-19%
Real Estate - Operating Sub.	47,438	39,477	28,131	21,479	15,155	7,961	11,346	6,652	6,324	20%	40%	31%	42%
Total excl. private asset perf. fees	290,012	326,139	271,320	259,627	194,983	-36,127	54,819	11,693	64,644	-11%	20%	5%	33%
Oversight, custodial & other asset related costs													
Oversight of the Fund	66,954	67,859	59,310	67,148	64,168	-905	8,549	-7,838	2,980	-1%	14%	-12%	5%
Trustee & Custodial	39,503	42,400	51,964	43,763	33,318	-2,897	-9,564	8,201	10,445	-7%	-18%	19%	31%
Consulting and Performance Measurement	9,570	8,868	6,363	2,292	2,356	702	2,505	4,071	-64	8%	39%	178%	-3%
Audit	6,110	4,840	4,314	4,667	4,464	1,270	526	-353	203	26%	12%	-8%	5%
Other	0	0	0	0	0								
Total oversight, custodial & other costs	122,137	123,967	121,951	117,870	104,306	-1,830	2,016	4,081	13,564	-1%	2%	3%	13%
Total investment costs ¹	412,149	450,106	393,271	377,497	299,289	-37,957	56,835	15,774	78,208	-8%	14%	4%	26%
Total in basis points	5.3bp	5.7bp	6.0bp	6.6bp	6.2bp								

¹ Starting in 2014, CEM changed its methodology to include performance fees on hedge funds in total cost used for comparison and benchmarking. Performance fees for real estate, infrastructure, natural resources and private equity are excluded.

Total cost versus benchmark cost

Your fund's total investment cost, excluding transaction costs and private asset performance fees, was 13.3 bps below your benchmark cost of 18.6 bps. This implies that your fund was low cost by 13.3 bps compared to the peer median, after adjusting for your fund's asset mix.

Your cost versus benchmark

	€000s	bps
Your fund's total investment cost excluding transaction costs and illiquid asset performance fees	412,149	5.3 bp
- Your fund's benchmark	1,443,405	18.6 bp
= Your fund's cost savings	-1,031,256	-13.3 bp

Your benchmark cost is an estimate of your total costs assuming that you paid the peer median cost for each of your investment mandates and fund oversight. The calculation of your benchmark cost is shown on the following page.

The reasons why your fund's total cost was below your benchmark are summarized in the table below. Details of each of the impacts below are provided on pages 9 to 12.

Reasons why your fund was low cost

	Cost/-Savings impact	
	€000s	bps
<u>Differences in implementation style:</u>		
External active vs. low cost styles	-708,083	-9.1 bp
Fund of funds vs. external direct	0	0.0 bp
Mix of internal and passive styles	63,367	0.8 bp
Style impact of overlays	-143,570	-1.8 bp
Total style impact	-788,286	-10.2 bp
<u>Paying more/-less for similar services:</u>		
External investment management	-51,315	-0.7 bp
Internal investment management	-131,939	-1.7 bp
Oversight, custodial and other	-59,715	-0.8 bp
Total impact of paying more /-less	-242,969	-3.1 bp
Total savings	-1,031,256	-13.3 bp

Benchmark cost calculation

Your 2016 benchmark cost was 18.6 basis points or €1.4 billion. It equals your holdings for each asset class multiplied by the peer median cost for the asset class. The peer median cost is the style weighted average for all implementation styles (i.e., internal passive, internal active, external passive, external active).

Calculation of your 2016 benchmark cost

Asset class	Your avg. assets or fee basis (A) €mils	Weighted peer median cost ¹ (B)	Benchmark (A X B) €000s
Asset management costs			
Stock - U.S.	767	8.6 bp	662
Stock - EAFE	8,128	15.6 bp	12,643
Stock - Emerging	22,072	36.1 bp	79,748
Stock - Global	436,866	14.7 bp	640,348
Fixed Income - Emerging	2,075	27.9 bp	5,786
Fixed Income - Global	282,097	8.4 bp	235,598
Real Estate ex-REITs (excl. perf. fees)	24,136	59.3 bp	143,198
Overlay Programs ²	776,141	1.8 bp	143,570
Benchmark for asset management	776,141	16.3 bp	1,261,552
Oversight, custody and other costs			
Oversight of the Fund	776,141	1.0 bp	79,974
Trustee & Custodial	776,141	0.6 bp	44,864
Consulting	776,141	0.5 bp	34,927
Audit	776,141	0.0 bp	2,287
Other	776,141	0.3 bp	19,800
Benchmark for oversight, custody & other		2.3 bp	181,852
Total benchmark cost		18.6 bp	1,443,405

1. The weighted peer median cost for asset management is the style-weighted average of the peer median costs for all implementation styles (i.e., internal passive, internal active, external passive, external active, fund of fund). It excludes performance fees on private assets. The style weights by asset class for your fund and the peers are shown on page 17 of this section.

2. Total fund average holdings is used as the base when calculating the relative cost impact of the overlay programs.

Cost impact of differences in implementation style

Differences in implementation style (i.e., external active management versus lower cost indexed and internal management, fund of funds versus lower cost direct LPs, and overlay usage) relative to your peers saved you 10.2 bps.

Calculation of the cost impact of differences in implementation style

	Your avg holdings (mils)	% External active			Premium vs. internal and passive ^{1 2}	Cost/ -Savings ³ (€000s)	(bps)
	(A)	You	Peer average	More/ -Less	(C)	(A X B X C)	
Stock - U.S.	767	100%	18%	82%	44 bp	2,777	
Stock - EAFE	8,128	100%	47%	53%	27 bp	11,800	
Stock - Emerging	22,072	100%	64%	36%	46 bp	36,251	
Stock - Global	436,866	0%	33%	-33%	37 bp	-522,053	
Fixed Income - Emerging	2,075	100%	74%	26%	15 bp	798	
Fixed Income - Global	282,097	0%	24%	-24%	24 bp	-160,997	
Real Estate ex-REITs (incl. oper. sul partnerships as % of external:	24,136 0	0%	62%	-62%	51 bp	-76,658	
			53%		35 bp	0	
Total impact of differences in external active management usage						-708,083	-9.1 bp
<i>Overlay usage</i>							
Impact of lower use of portfolio level overlays (see page 10)						-143,570	-1.8 bp
<i>Mix of low cost styles</i>							
Impact of mix of internal indexed, internal active, external indexed (see page 11)						63,367	0.8 bp
Total						-788,286	-10.2 bp

1. The external active cost 'premium vs internal and passive' is the additional cost of external active management and fund of funds relative to the average of the other lower cost implementation styles: internal passive, internal active and external passive. These calculations are specific to your peer group.

2. 'Insufficient' indicates there is insufficient peer data to determine the cost premium.

Cost impact of overlays

As summarized on the previous page, the style impact of overlays saved you 1.8 bps. If you use more overlays than your peers, or more expensive types of overlays, then it increases your relative cost.

Calculation of the cost impact of differences in the use of portfolio level overlays

	Your avg total holdings (mils)	Overlay notional amounts as a % of avg total holdings			Median cost as a % of notional	Your cost as a % of total holdings ¹	Average cost as a % of total holdings	Cost/-Savings Impact (000s)
		You	Peer Average	More/-Less				
	(A)	(B)			(C)			(A X B X C)
Internal Overlays								
Currency - Hedge	776,141	0.0%	n/a			0.0 bp ¹	0.1 bp	-5,764
Currency - Discretionary	776,141	0.0%	n/a			0.0 bp ¹	0.1 bp	-5,565
Passive Beta - Hedge	776,141	0.0%	n/a			0.0 bp ¹	0.1 bp	-4,475
Duration - Hedge	776,141	0.0%	n/a			0.0 bp ¹	0.1 bp	-4,900
Global TAA - Discretionary	776,141	0.0%	n/a			0.0 bp ¹	0.1 bp	-3,914
Policy Tilt TAA - Discretionary	776,141	0.0%	13.1%	-13.1%	4.7 bp			-47,429
Commodity Futures - Discretionary	776,141	0.0%	0.1%	-0.1%	7.6 bp			-348
Long/Short - Discretionary	776,141	0.0%	n/a			0.0 bp ¹	0.7 bp	-57,781
Other - Discretionary	776,141	0.0%	n/a			0.0 bp ¹	0.0 bp	-941
External Overlays								
Currency - Hedge	776,141	0.0%	3.1%	-3.1%	2.3 bp			-5,568
Currency - Discretionary	776,141	0.0%	0.3%	-0.3%	12.5 bp			-2,889
Passive Beta - Hedge	776,141	0.0%	0.1%	-0.1%	6.5 bp			-455
Duration - Hedge	776,141	0.0%	1.7%	-1.7%	2.1 bp			-2,653
Dur. Mgmt Swaption - Hedge	776,141	0.0%	0.0%	0.0%	3.3 bp			0
Global TAA - Discretionary	776,141	0.0%	0.0%	0.0%	18.8 bp			0
Policy Tilt TAA - Discretionary	776,141	0.0%	0.0%	0.0%	11.3 bp			0
Commodity Futures - Discretionary	776,141	0.0%	0.1%	-0.1%	12.1 bp			-890
Long/Short - Discretionary	776,141	0.0%	0.0%	0.0%	6.7 bp			0
Other - Discretionary	776,141	0.0%	0.0%	0.0%	7.4 bp			0
Total impact in 000s								-143,570
Total impact in basis points								-1.8 bp

1. For overlay programs (primarily certain internal, profit seeking programs) where no clear notional value is defined or provided, these types of overlays are compared in terms of cost relative to total holdings.

Cost impact of lower cost styles

As summarized on page 9, your mix of 'lower-cost' internal and passive styles cost you 0.8 bps. Details are shown below.

Cost impact of differences in your mix of 'lower-cost' implementation styles

	Your non-external active holdings (mils)	Percent holdings (of non-external-active)						Cost/-Savings ¹ (€000s)
		Internal passive		Internal active		External passive		
		You	Peers	You	Peers	You	Peers	
Stock - Global	436,866	0%	40%	100%	34%	0%	25%	60,511
Fixed Income - Global	282,097	0%	41%	100%	52%	0%	7%	2,856
Real Estate ex-REITs	24,136	0%	0%	100%	100%	0%	0%	0
Total impact (€000s)								63,367
Total impact in basis points								0.8 bp

1. Cost/-savings for each asset class equals non-external active holdings within each asset class X cumulative impact from the three lower cost styles. By formula: [(peer median cost for the style - peer weighted average cost of lower cost styles) X (your weight for the style - peer weight for the style)]. Peer median costs for each style are shown on page 18.

Cost impact of paying more/-less for similar services

Differences in what you paid relative to your peers for similar asset management and related oversight and support services saved you 3.1 bps.

Calculation of the cost impact of paying more/-less

Style	Your avg holdings (mils) (A)	Cost in bps			Cost/-Savings (€000s) (A X B)	Cost/-Savings (bps)	
		You	Peer median	More/-less (B)			
External asset management							
Stock - U.S.	active	767	23.8	44.8	-21.0	-1,611	
Stock - EAFE	active	8,128	30.9	30.1	0.8	680	
Stock - Emerging	active	22,072	30.4	52.6	-22.1	-48,842	
Fixed Income - Emerging	active	2,075	24.3	31.7	-7.4	-1,542	
Total for external management						-51,315	-0.7 bp
Internal asset management							
Stock - Global	active	436,866	2.4	4.1	-1.7	-75,853	
Fixed Income - Global	active	282,097	1.4	2.7	-1.3	-36,983	
Real Estate ex-REITs	active	24,136	19.7	27.6	-7.9	-19,102	
Total for internal asset management						-131,939	-1.7 bp
Oversight, custodial, other							
Oversight of the Fund		776,141	0.9	1.0	-0.2	-13,020	
Consulting and Performance Measurement		776,141	0.1	0.5	-0.3	-25,357	
Trustee & Custodial		776,141	0.5	0.6	-0.1	-5,361	
Audit		776,141	0.1	0.0	0.0	3,823	
Other		776,141	0.0	0.3	-0.3	-19,800	
Total for oversight, custodial, other						-59,715	-0.8 bp
Total						-242,969	-3.1 bp

*Universe median used as peer data was insufficient.

Summary of why you are high or low cost by asset class

The table below summarizes where you are high and low cost by asset class. It also quantifies how much is due to differences in implementation style (i.e., differences in the mix of external active, external passive, internal active, internal passive and fund of fund usage) and how much is due to paying more or less for similar services (i.e., same asset class and style).

Summary of why you are high or low cost by asset class

	Your cost ¹	Benchmark = peer weighted median cost ¹	More/-less	Your average assets (or fee basis ³)	More/-less in \$000s		
					Due to Impl. style	Due to paying more/less	Total More/-less
	(A)	(B)	(C = A - B)	(D)			(C X D)
Asset management costs							
Stock - U.S.	23.8 bp	8.6 bp	15.2 bp	767	2,777	-1,611	1,165
Stock - EAFE	30.9 bp	15.6 bp	15.4 bp	8,128	11,800	680	12,480
Stock - Emerging	30.4 bp	36.1 bp	-5.7 bp	22,072	36,251	-48,842	-12,592
Stock - Global	2.4 bp	14.7 bp	-12.3 bp	436,866	-461,542	-75,853	-537,395
Fixed Income - Emerging	24.3 bp	27.9 bp	-3.6 bp	2,075	798	-1,542	-744
Fixed Income - Global	1.4 bp	8.4 bp	-6.9 bp	282,097	-158,142	-36,983	-195,125
Real Estate ex-REITs (excl. perf. fees)	19.7 bp	59.3 bp	-39.7 bp	24,136	-76,658	-19,102	-95,760
Overlay Programs ²	0.0 bp	1.8 bp	-1.8 bp	776,141	-143,570	0	-143,570
Total asset management	3.7 bp	16.3 bp	-12.5 bp	776,141	-788,286	-183,254	-971,540
Oversight, custody and other costs							
Oversight of the Fund	0.9 bp	1.0 bp	-0.2 bp	776,141	n/a	-13,020	-13,020
Trustee & Custodial	0.5 bp	0.6 bp	-0.1 bp	776,141	n/a	-5,361	-5,361
Consulting	0.1 bp	0.5 bp	-0.3 bp	776,141	n/a	-25,357	-25,357
Audit	0.1 bp	0.0 bp	0.0 bp	776,141	n/a	3,823	3,823
Other	0.0 bp	0.3 bp	-0.3 bp	776,141	n/a	-19,800	-19,800
Total oversight, custody & other	1.6 bp	2.3 bp	-0.8 bp	776,141	n/a	-59,715	-59,715
Total	5.3 bp	18.6 bp	-13.3 bp	776,141	-788,286	-242,969	-1,031,256

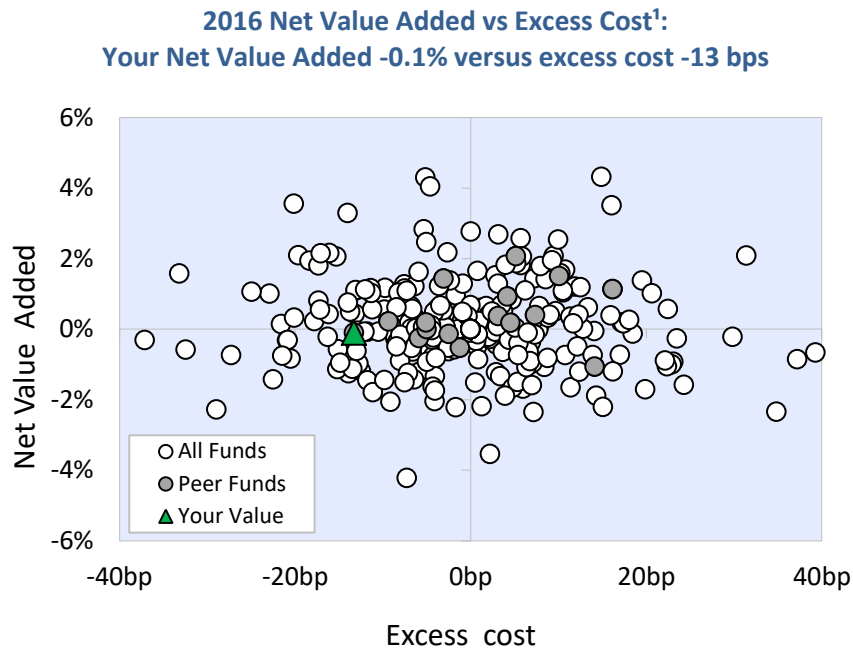
1. The weighted peer median cost for asset management is the style-weighted average of the peer median costs for all implementation styles (i.e., internal passive, internal active, external passive, external active, fund of fund). It excludes performance fees on private assets. The style weights by asset class for your fund and the peers are shown on page 17 of this section.

2. Total fund average holdings is used as the base when calculating the relative cost impact of the overlay programs.

Your cost effectiveness ranking

Being high or low cost is neither good nor bad. The more important question is, are you receiving sufficient value for your excess cost? At the total fund level, we provide insight into this question by combining your value added and your excess cost to create a snapshot your cost effectiveness performance relative to that of the survey universe.

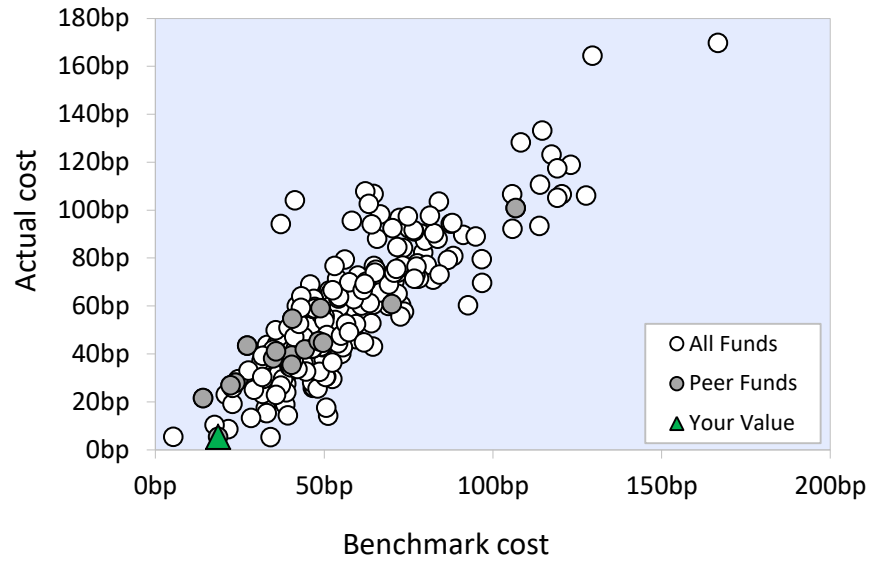
For the 2016 year, your fund ranked in the negative value added, low cost quadrant.



1. Benchmark cost and excess cost calculations are based on regression analysis (see Appendix B in this section) for all funds except your fund. Your fund's benchmark cost is based on peer-median costs (per page 7 of this section).

Actual cost versus benchmark cost

2016 Actual Cost vs Benchmark Cost¹: Your actual cost was 5.3 bps and your benchmark cost was 18.6 bps



1. Benchmark cost calculations are based on regression analysis (see Appendix B in this section) for all funds except your fund. Your fund's benchmark cost is based on peer-median costs (per page 7 of this section).

Appendix A: Benchmarking methodology formulas and data

a) Formulas

Example calculations are for Stock - U.S. unless otherwise indicated.

Asset class peer cost

$$\begin{aligned} &= \text{Weighted average by peer average style of peer median costs for asset class} \\ &= [(0.57 \times 0.7\text{bp}) + (0.02 \times 3.8\text{bp}) + (0.23 \times 0.8\text{bp}) + (0.18 \times 44.8\text{bp})] / (0.57 + 0.02 + 0.23 + 0.18) = 8.6\text{bp} \end{aligned}$$

Peer average low cost (by asset class)

$$\begin{aligned} &= \text{Weighted average by peer average style of peer median costs for internal passive, internal active and external passive management for asset class} \\ &= [(0.57 \times 0.7\text{bp}) + (0.02 \times 3.8\text{bp}) + (0.23 \times 0.8\text{bp})] / (0.57 + 0.02 + 0.23) = 0.8\text{bp} \end{aligned}$$

External active cost premium (by asset class)

$$\begin{aligned} &= \text{Peer median external active cost - peer average low cost} \\ &= 44.8\text{bp} - 0.8\text{bp} = 44.0\text{bp} \end{aligned}$$

Fund of funds premium (by asset class)

$$\begin{aligned} &= \text{Peer median fund-of-funds cost - peer median external active cost} \\ &= (\text{For private equity}) 208.3\text{bp} - 166.7\text{bp} = 41.6\text{bp} \end{aligned}$$

Impact from other differences in implementation style (by Asset Class)=

$$\begin{aligned} &= [(\text{Your int. pass. \%} - \text{average peer int. pass. \%}) \times (\text{peer median int. pass. cost} - \text{peer average low cost}) \\ &\quad + (\text{your int. act. \%} - \text{peer average int. act. \%}) \times (\text{peer median int. act. cost} - \text{peer average low cost}) \\ &\quad + (\text{your ext. pass. \%} - \text{average peer ext. pass. \%}) \times (\text{median peer ext. pass. cost} - \text{peer average low cost})] \\ &\quad \times \text{your average holdings} \end{aligned}$$

b) Insufficient peer data

All peer data is adjusted to ensure comparisons are made only when sufficient data is available. When too few peers have the asset class or style in question, peer costs are replaced with your fund's cost, neutralizing the effect of your cost. Major implementation styles (external active, fund of funds and combined "low cost") that you do not hold are ignored if they have insufficient data to draw major style impact conclusions. Throughout this section, 'peer median' and 'average peer style' always refer to these adjusted values. The following page shows the adjusted data used in this section.

Appendix A: Benchmarking methodology formulas and data (page 2 of 2)

c) 2016 cost data used to calculate weighted peer median costs and impact of mix differences.

Asset Class	Your costs (basis points)						Peer median costs (basis points)						
	Internal Passive	Internal Active	External Passive	External Active	Limited Partner.	Fund of Funds	Internal Passive	Internal Active	External Passive	External Active	Limited Partner.	Fund of Funds	Weighted Median
Stock - U.S.				23.8			0.7	3.8	0.8	44.8			8.6
Stock - EAFE				30.9			2.1	2.6	3.3	30.1			15.6
Stock - Emerging				30.4			4.6	6.4	10.8	52.6			36.1
Stock - Global		2.4					1.3	4.1	3.1	39.2			14.7
Fixed Income - Emerging				24.3			17.2	17.2		31.7			27.9
Fixed Income - Global		1.4					2.6	2.7	2.0	26.6			8.4
Real Estate ex-REITs		19.7						27.6		60.4	89.5	125.7	59.3

*Performance fees are included.

d) 2016 Style weights used to calculate the weighted peer median costs and impact of mix differences.

Style Weights	You (%)						Peer average (%)					
	Internal Passive	Internal Active	External Passive	External Active	Limited Partner.	Fund of Funds	Internal Passive	Internal Active	External Passive	External Active	Limited Partner.	Fund of Funds
Stock - U.S.	0.0%	0.0%	0.0%	100.0%			57.1%	2.0%	23.2%	17.7%		
Stock - EAFE	0.0%	0.0%	0.0%	100.0%			28.2%	2.1%	22.6%	47.1%		
Stock - Emerging	0.0%	0.0%	0.0%	100.0%			20.4%	6.8%	8.5%	64.4%		
Stock - Global	0.0%	100.0%	0.0%	0.0%			27.0%	23.2%	17.1%	32.7%		
Fixed Income - Emerging	0.0%	0.0%	0.0%	100.0%			4.2%	22.2%	0.0%	73.6%		
Fixed Income - Global	0.0%	100.0%	0.0%	0.0%			31.1%	39.9%	5.2%	23.8%		
Real Estate ex-REITs		100.0%		0.0%	0.0%	0.0%		38.0%		29.4%	27.4%	5.2%

The above data was adjusted as noted when there were insufficient peers, or for other reasons where direct comparisons were inappropriate.

Appendix B: Regression based benchmarks

Regression Benchmark Cost Equations

	2016		2015		2014		2013		2012	
	Coeff.	"t"	Coeff.	"t"	Coeff.	"t"	Coeff.	"t"	Coeff.	"t"
Constant	80.2	17.9	76.5	17.4	84.4	19.2	76.8	18.2	73.2	18.9
Size in millions (Log 10)	-14.9	-13.4	-13.7	-12.8	-15.7	-14.6	-14.2	-13.3	-13.7	-13.8
<u>Percentage of assets in:</u>										
Stocks	14.2	3.3	11.1	2.8	14.3	3.3	19.6	4.5	19.0	4.6
Real estate	78.6	6.1	47.1	3.5	56.7	3.7	56.9	3.8	55.1	4.2
Private equity & hedge funds	193.6	27.3	208.1	28.2	205.2	27.4	203.3	26.9	208.1	30.5
Country variable (1 if Cdn)	-5.4	-3.1	-2.9	-1.7	-6.9	-4.0	-8.1	-4.7	-6.4	-4.1
	All		All		All		All		All	
Standard error	12.9		14.5		14.5		14.6		13.1	
R-squared	71%		65%		67%		65%		71%	
F statistic	178.5		184.1		185.9		175.1		219.0	
Sample size	374		486		449		466		454	

In order to compare your fund's cost effectiveness to the global survey universe, a benchmark cost for all participants is required.

The benchmark operating cost for all other funds is determined using regression analysis. The regression equation coefficients and "t statistics" are shown in the table above. An absolute "t" of greater than 2 indicates that the coefficient is statistically significant in predicting the dependent variable, in this case, the benchmark cost.

The benchmark equations have been remarkably robust. Although the coefficients change every year, primarily because of changes in the composition of the survey universe, they remain similar in relative magnitude and direction.

Most importantly, the R-squareds have been high. In 2016, the R-squared was 71% which means that fund size, asset mix and nationality explain more than 71% of the differences in costs between funds. This is good explanatory power.

Below is a description of the coefficients:

- Size = Log10 (fund size in millions)
- % Stocks = proportion in stocks (coefficient changed in 2011)
- % Real estate = proportion directly invested in real estate and infrastructure.
- % Private equity = proportion in direct and fund-of-funds venture capital, other private equity and hedge funds.
- Country variable = 1 if your country of origin is Canada, otherwise 0.

Appendix 2:

Cost comparisons

Total fund cost	2
Governance, operations & support	3
Public asset classes	
- Stock	4
- Fixed Income	11
- Commodities	21
- REITs	22
Real asset classes	
- Real estate ex-REITs	23
- Infrastructure	24
- Natural resources	25
- Other real assets	26
Private equity	
- Diversified private equity	27
- LBO	28
- Venture capital	29
- Other private equity	30
Global TAA	31
Hedge Funds	32
Overlays	33

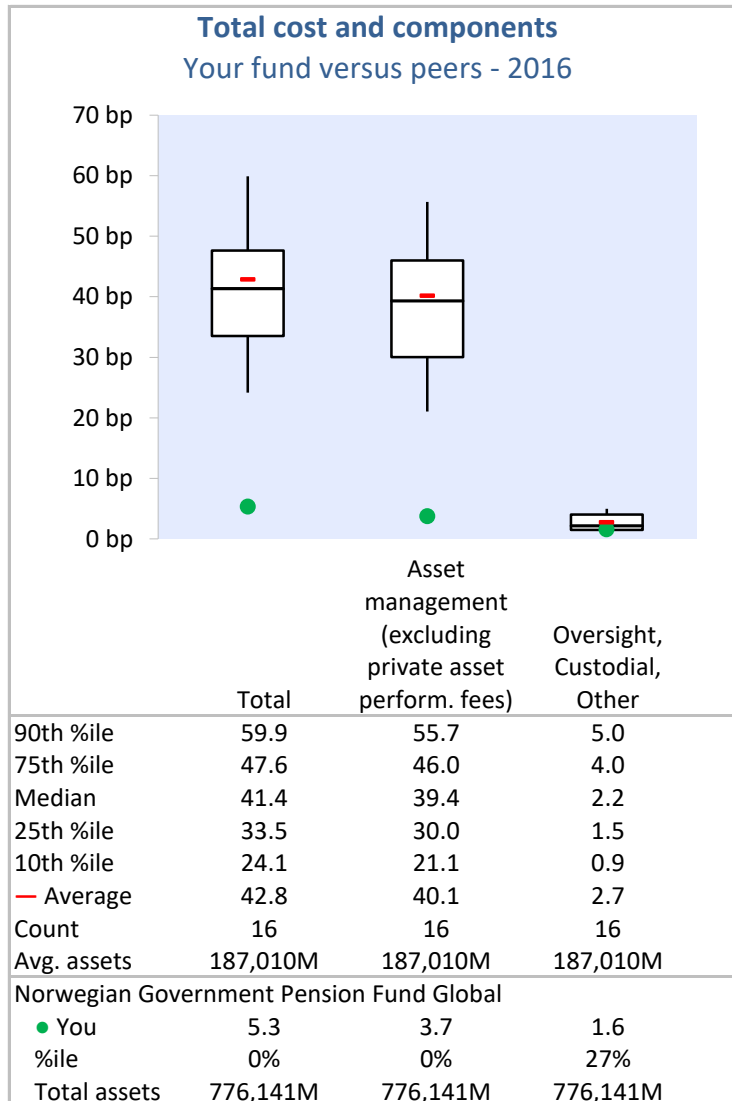
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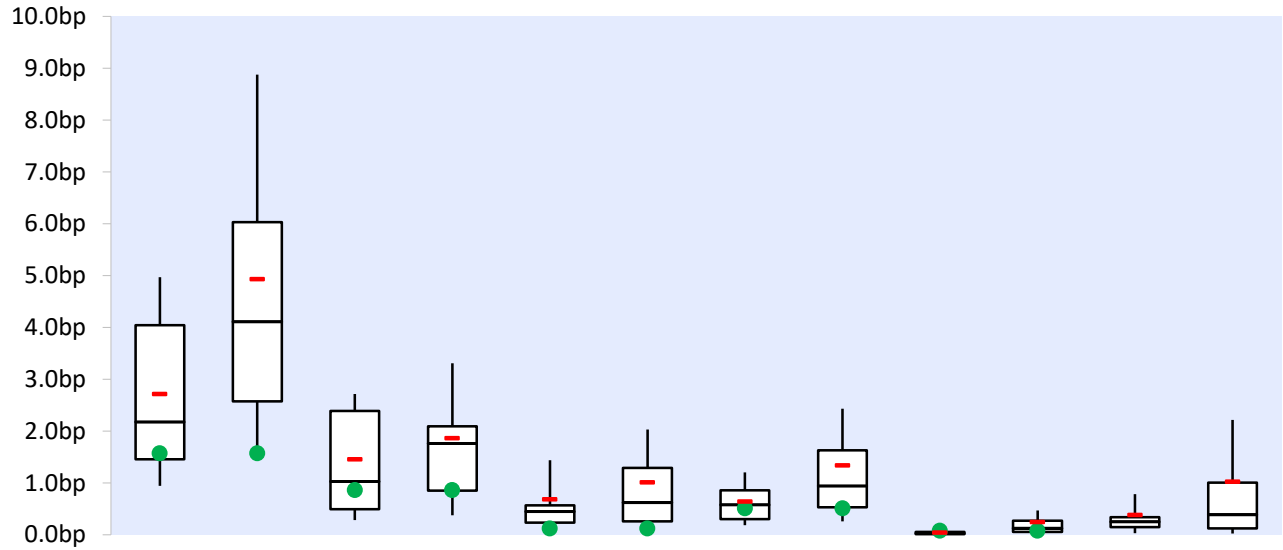
Total fund cost

Total costs are benchmarked in the previous section. In this section, your fund's costs are compared on a line-item basis to your peers. This enables you to understand better why you may be a high or low cost fund and it also identifies and quantifies major cost differences that may warrant further investigation.

The 25th to 75th percentile range is the most relevant since higher and lower values may include outliers caused by unusual circumstances, such as performance-based fees. Count refers to the number of funds in your peer group that have costs in this category. It enables you to gauge the statistical significance.

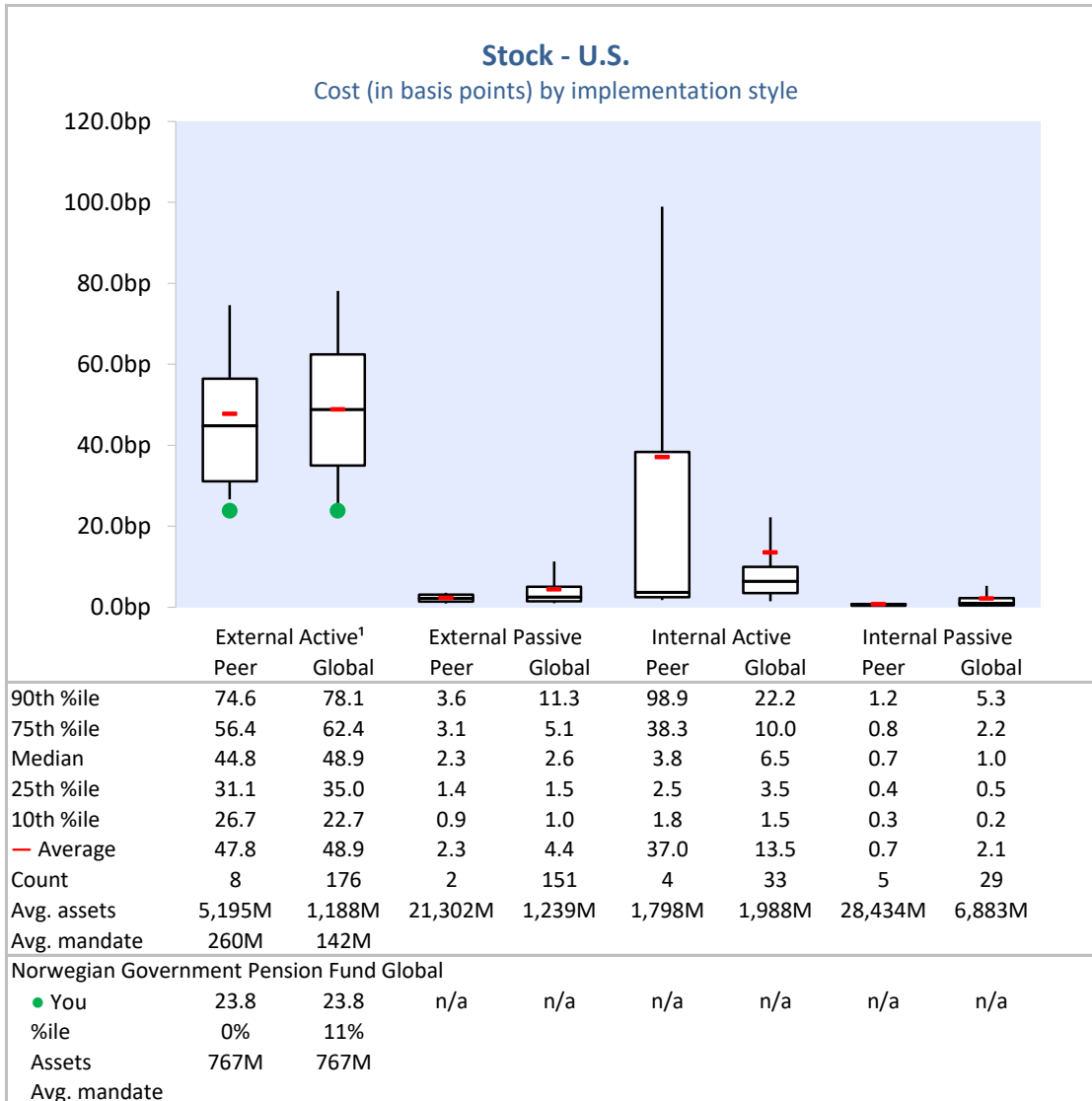


Governance, operations & support
Cost (in basis points) as a % of total plan assets



	Total		Oversight ¹		Consulting & Perf. Meas.		Custody		Audit		Other	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	5.0	8.9	2.7	3.3	1.4	2.0	1.2	2.4	0.1	0.5	0.8	2.2
75th %ile	4.0	6.0	2.4	2.1	0.6	1.3	0.9	1.6	0.1	0.3	0.3	1.0
Median	2.2	4.1	1.0	1.8	0.5	0.6	0.6	0.9	0.0	0.1	0.3	0.4
25th %ile	1.5	2.6	0.5	0.9	0.2	0.3	0.3	0.5	0.0	0.1	0.2	0.1
10th %ile	0.9	1.6	0.3	0.4	0.2	0.1	0.2	0.3	0.0	0.0	0.0	0.0
— Average	2.7	4.9	1.5	1.9	0.7	1.0	0.6	1.3	0.0	0.2	0.4	1.0
Count	16	285	16	285	6	234	16	277	14	255	14	201
Avg. assets	187,010M	20,843M	187,010M	20,843M	187,010M	20,843M	187,010M	20,843M	187,010M	20,843M	187,010M	20,843M
Norwegian Government Pension Fund Global												
● You	1.6	1.6	0.9	0.9	0.1	0.1	0.5	0.5	0.1	0.1	n/a	n/a
%ile	27%	10%	47%	25%	0%	10%	40%	24%	85%	32%		
Plan assets	776,141M	776,141M	776,141M	776,141M	776,141M	776,141M	776,141M	776,141M	776,141M	776,141M		

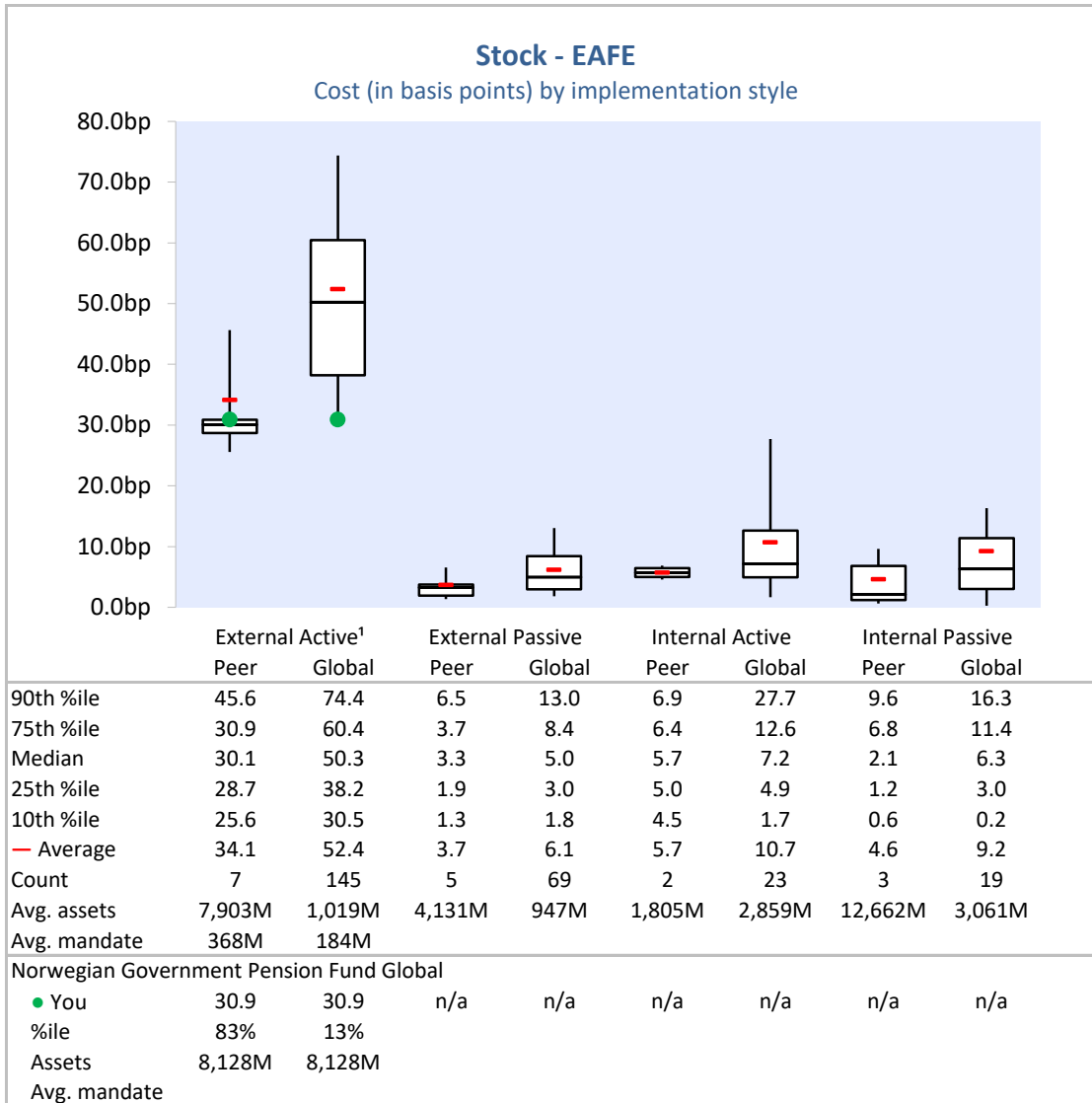
1. Oversight costs include the salaries and benefits of executives and their staff responsible for overseeing the entire fund or multiple asset classes and the fees/salaries of the Board or Investment Committee. All costs associated with the above including fees/salaries, travel, director's insurance and attributed overhead are included. Given fiduciary obligations, having the lowest oversight costs is not necessarily optimal. Some sponsors with lower-than-average executive and administration costs compensate by having-higher-than average consulting costs.



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	17.4	41.7	45.7
Performance fees*	4.4	5.1	2.8
Internal and other	<u>2.0</u>	<u>1.0</u>	<u>0.4</u>
Total	23.8	47.8	48.9

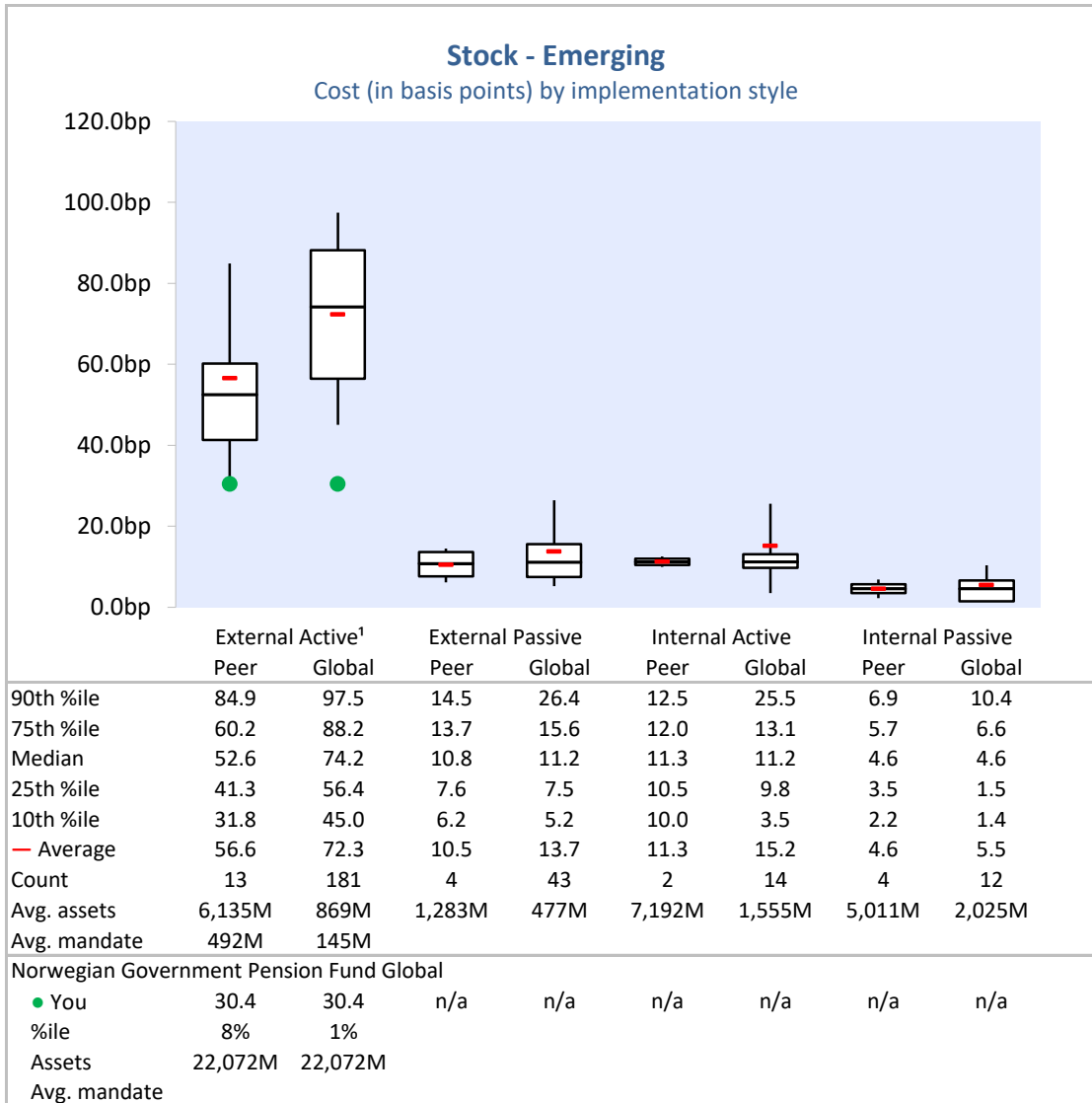
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 10.3 bps for peers (4 funds) and 9.1 bps for Global participants (54 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	20.9	23.9	48.5
Performance fees*	4.4	8.9	3.4
Internal and other	<u>5.6</u>	<u>1.3</u>	<u>0.5</u>
Total	30.9	34.1	52.4

* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 15.6 bps for peers (4 funds) and 12.5 bps for Global participants (39 funds).



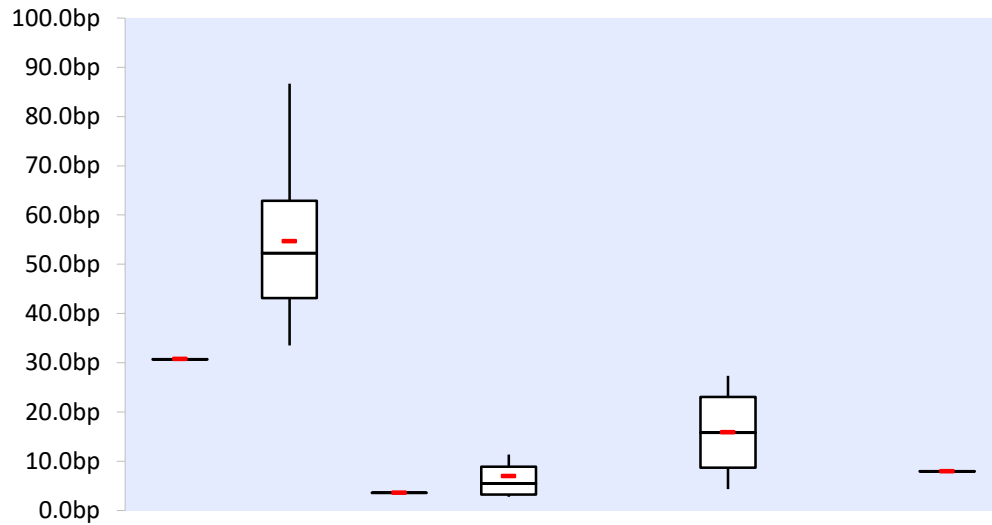
1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	20.6	42.5	68.1
Performance fees*	9.1	6.3	2.6
Internal and other	<u>0.7</u>	<u>7.9</u>	<u>1.7</u>
Total	30.4	56.6	72.3

* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 13.6 bps for peers (6 funds) and 10.5 bps for Global participants (44 funds).

Stock - ACWixU.S.

Cost (in basis points) by implementation style

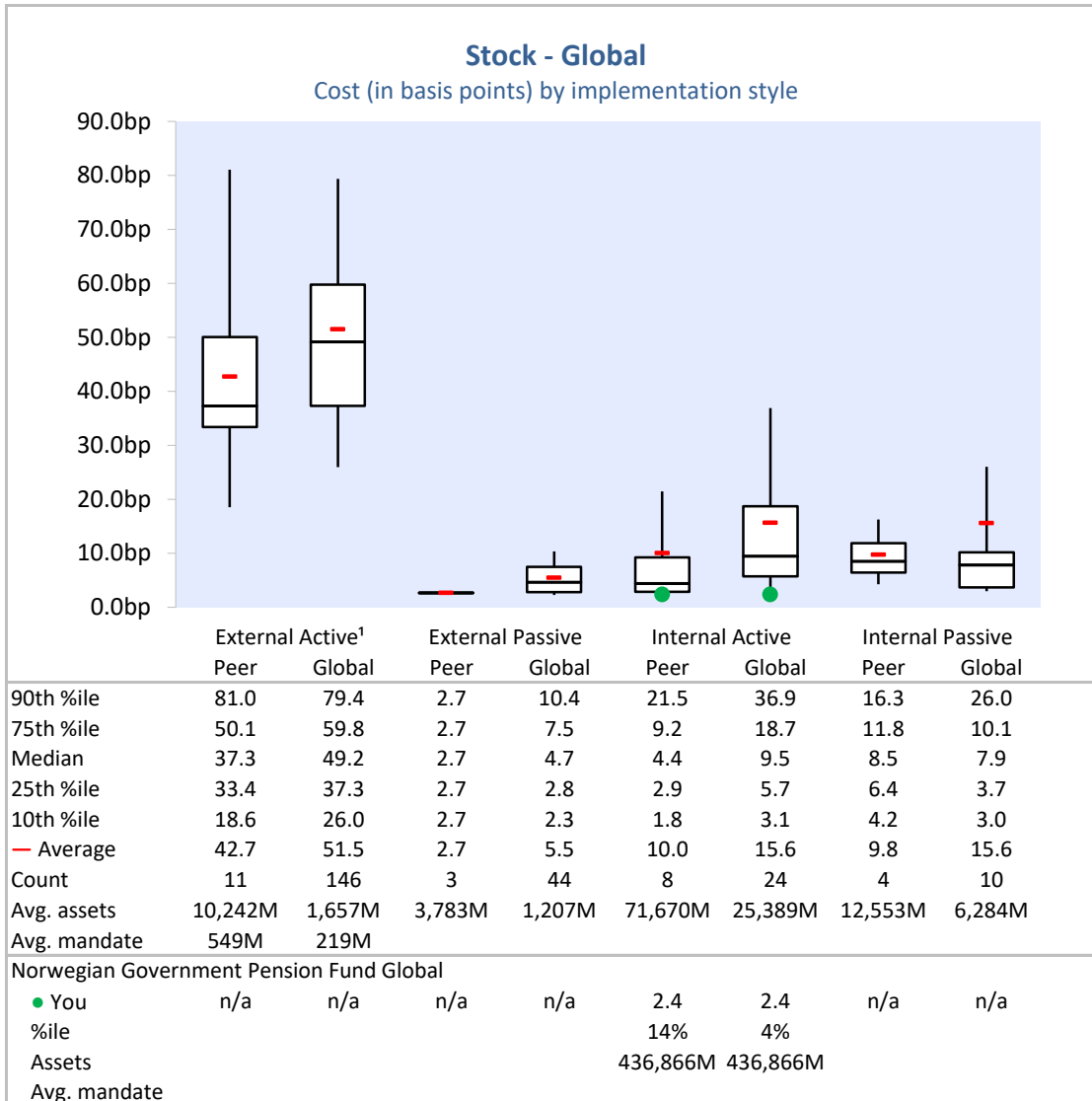


	External Active ¹		External Passive		Internal Active		Internal Passive	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	30.7	86.6	3.6	11.4		27.4		8.0
75th %ile	30.7	62.9	3.6	8.9		23.0		8.0
Median	30.7	52.3	3.6	5.5		15.9		8.0
25th %ile	30.7	43.1	3.6	3.3		8.7		8.0
10th %ile	30.7	33.5	3.6	2.8		4.4		8.0
— Average	30.7	54.7	3.6	6.9		15.9		8.0
Count	1	66	1	37	0	2	0	1
Avg. assets	1,456M	997M	6,280M	941M		1,080M		49M
Avg. mandate	485M	178M						
Norwegian Government Pension Fund Global								
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
%ile								
Assets								
Avg. mandate								

1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	29.5	53.5
Performance fees*	n/a	0.0	1.0
Internal and other	<u>n/a</u>	<u>1.3</u>	<u>0.3</u>
Total	n/a	30.7	54.7

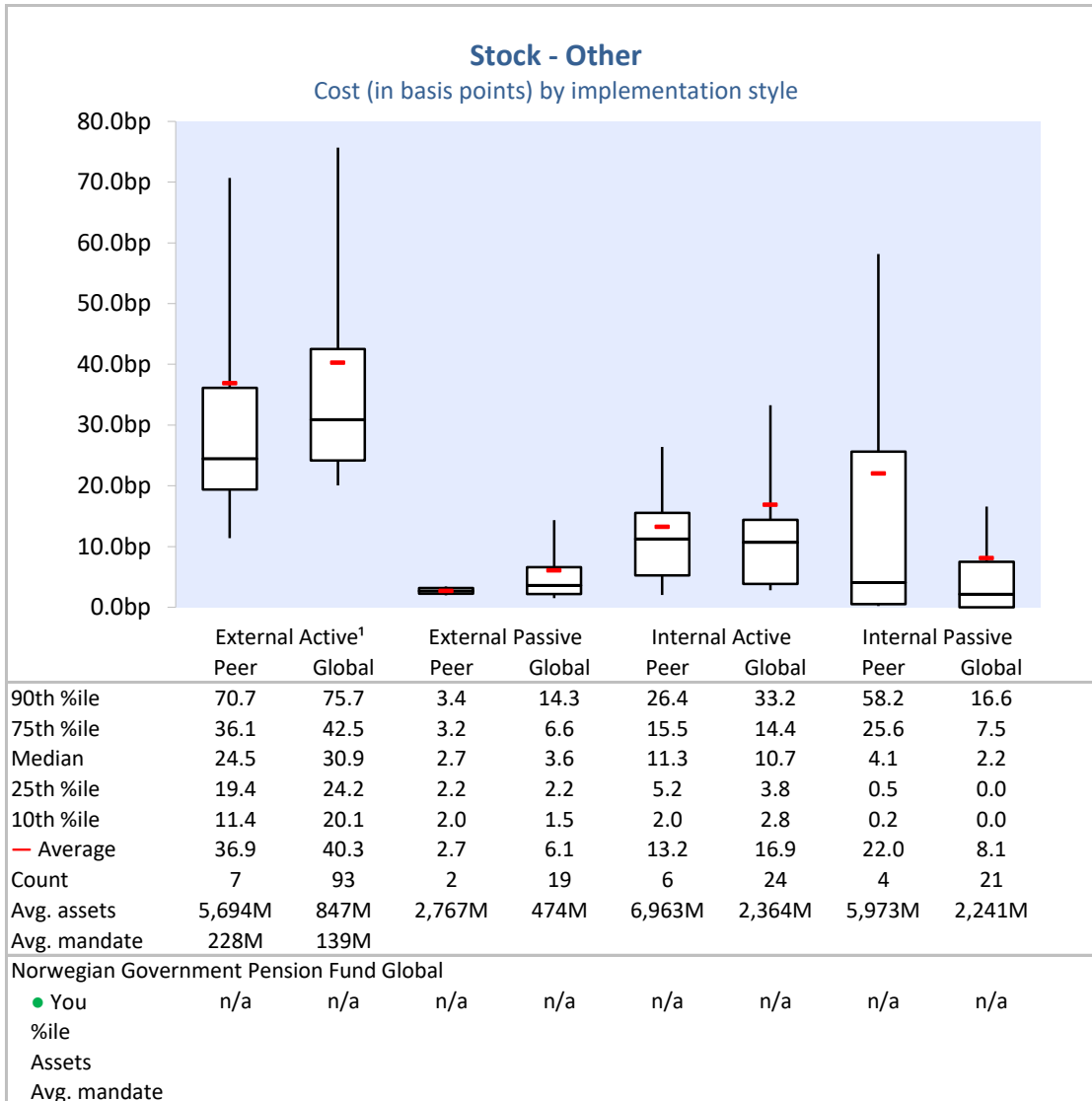
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 3.7 bps for Global participants (17 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	32.4	47.1
Performance fees*	n/a	5.7	3.0
Internal and other	<u>n/a</u>	<u>4.6</u>	<u>1.4</u>
Total	n/a	42.7	51.5

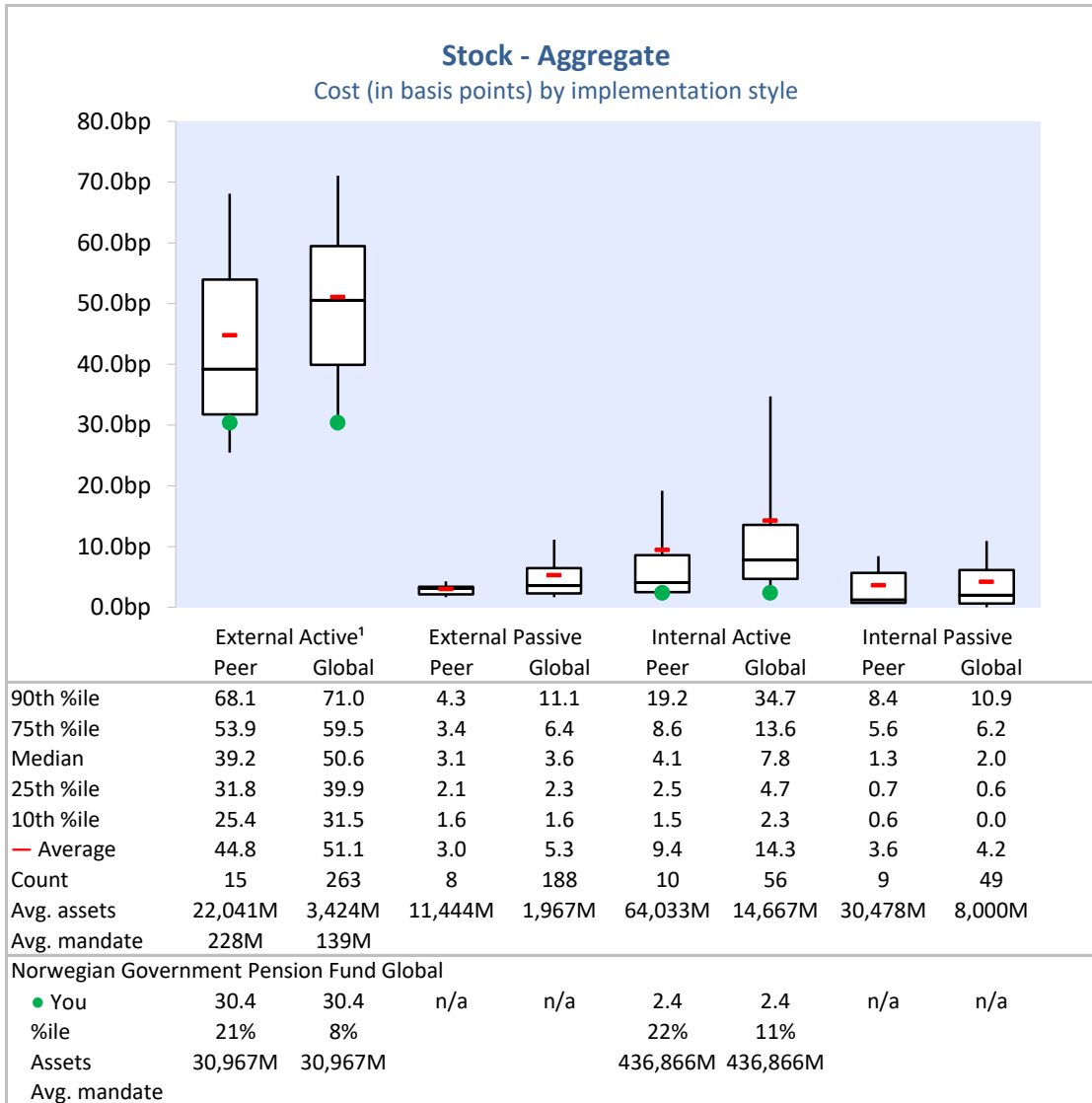
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 10.5 bps for peers (6 funds) and 12.3 bps for Global participants (36 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	35.2	38.8
Performance fees*	n/a	1.0	1.2
Internal and other	<u>n/a</u>	<u>0.6</u>	<u>0.3</u>
Total	n/a	36.9	40.3

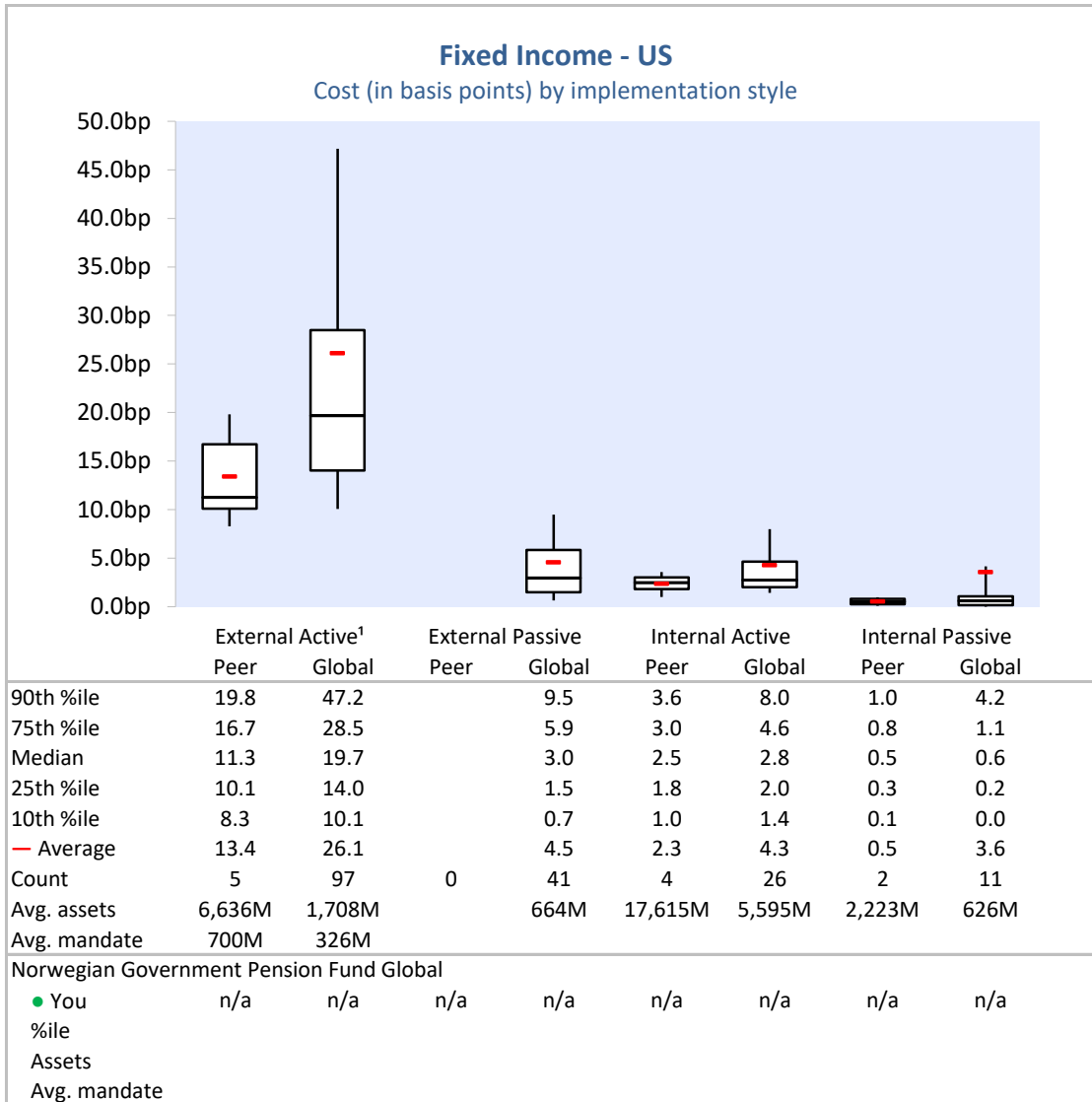
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 1.8 bps for peers (4 funds) and 6.2 bps for Global participants (18 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	20.6	33.4	47.3
Performance fees*	7.7	5.8	2.6
Internal and other	<u>2.0</u>	<u>5.5</u>	<u>1.1</u>
Total	30.4	44.8	51.1

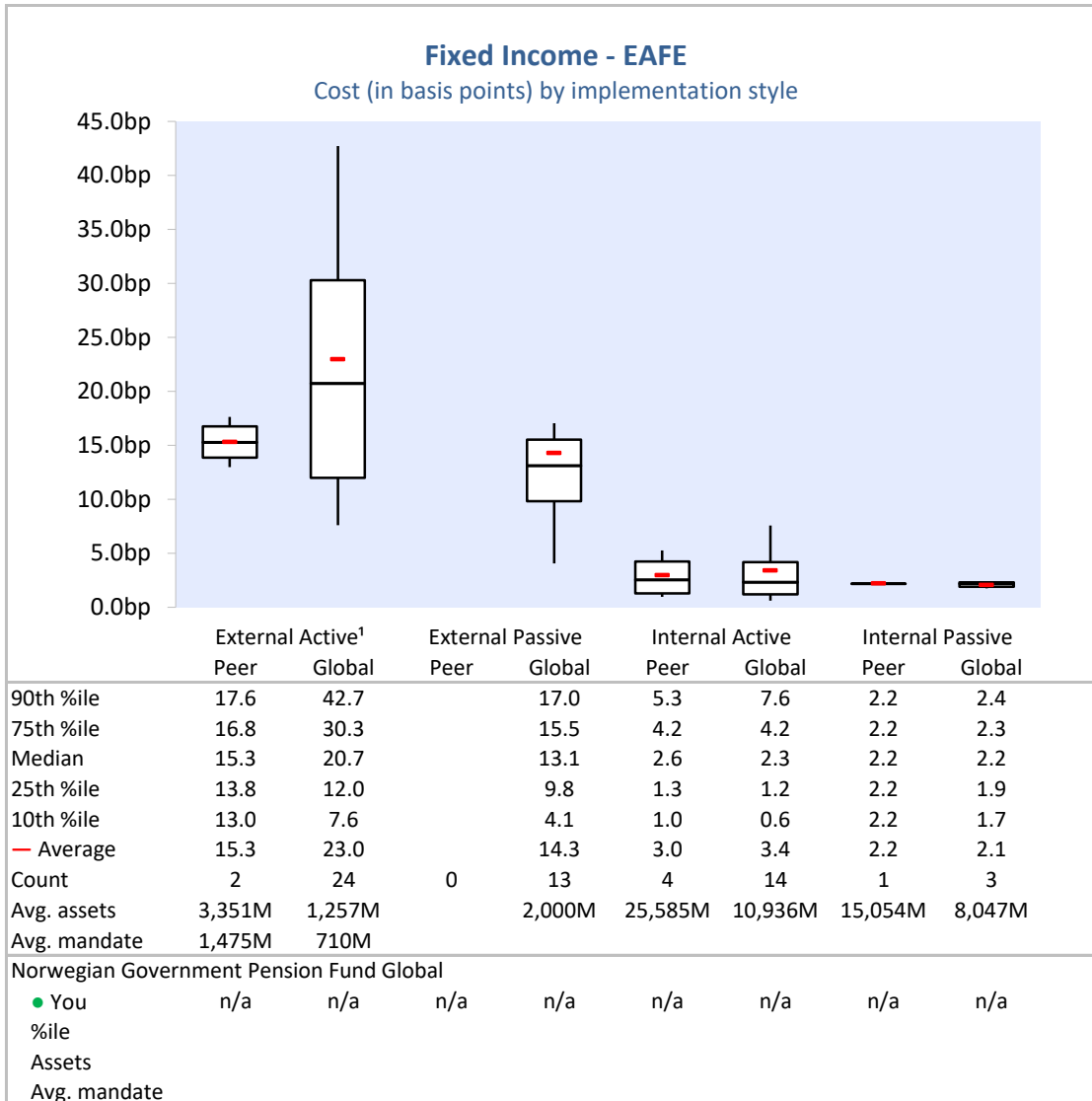
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 8.8 bps for peers (10 funds) and 7.7 bps for Global participants (89 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a		
Performance fees*	n/a		
Internal and other	<u>n/a</u>	<u>1.4</u>	<u>0.5</u>
Total	n/a	13.4	26.1

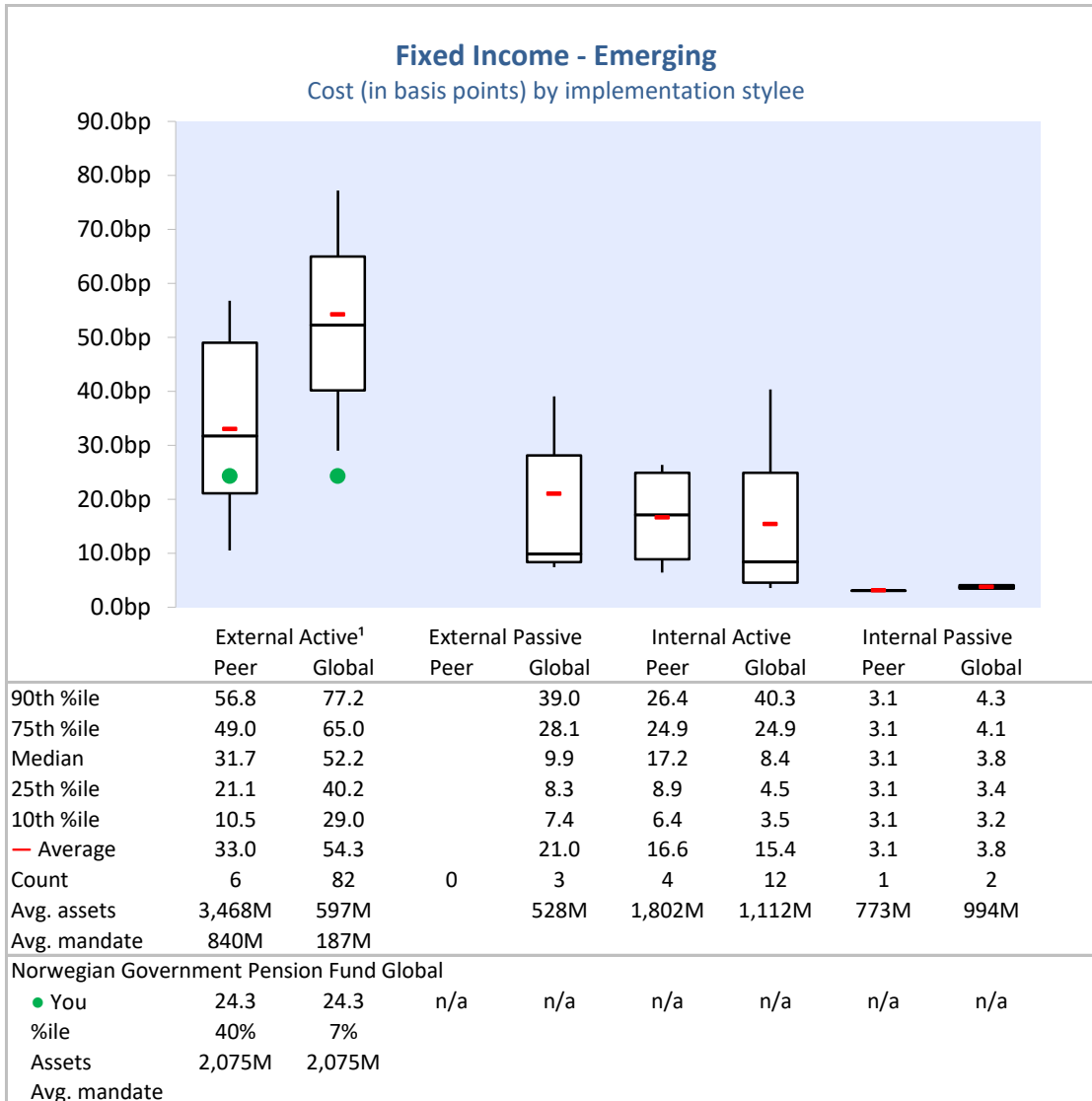
* For funds that did not report a performance fee, a value of 'zero' was used.



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	9.2	18.8
Performance fees*	n/a	5.6	0.7
Internal and other	n/a	0.6	3.4
Total	n/a	15.3	23.0

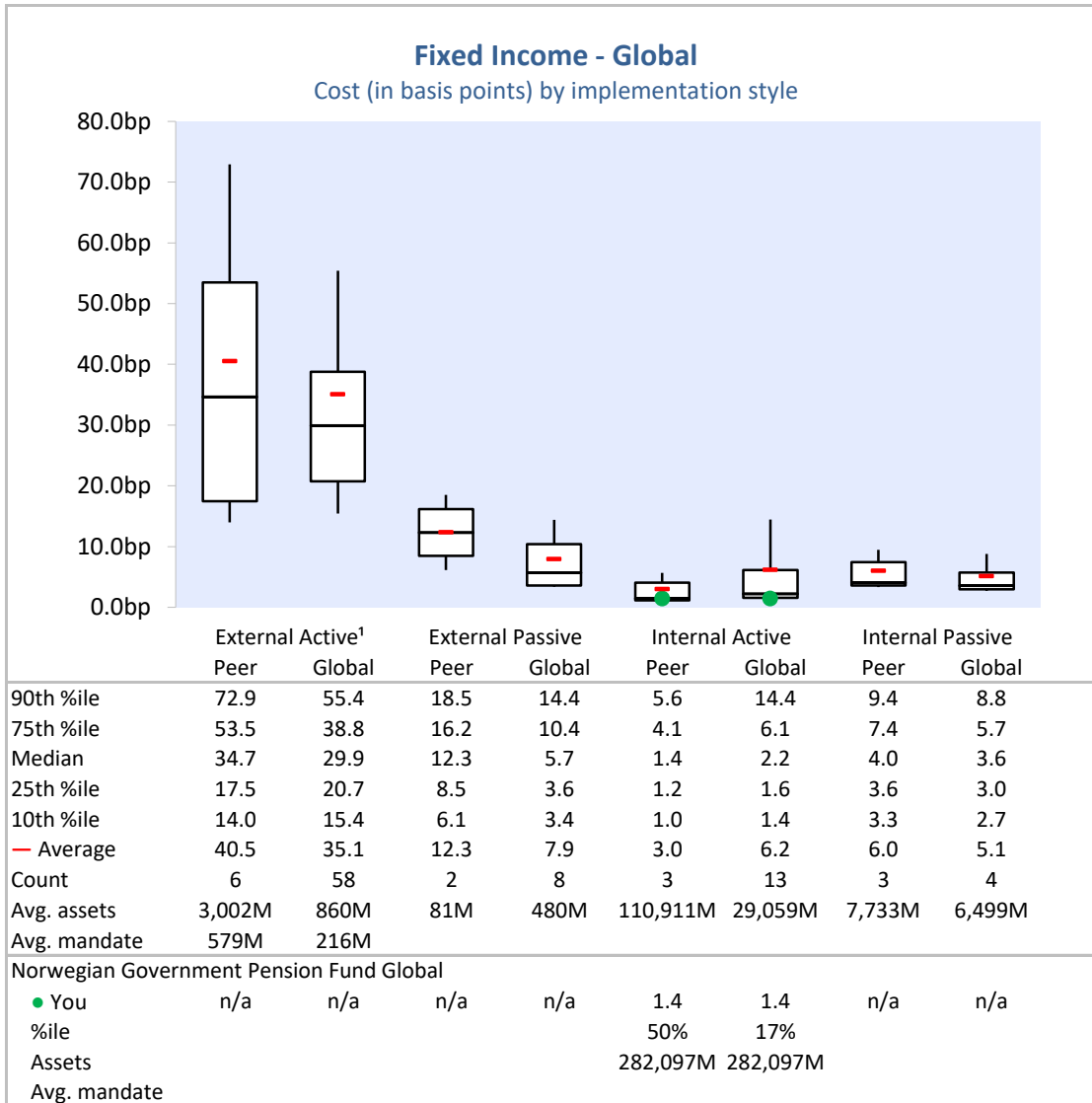
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 5.6 bps for peers (2 funds) and 2.6 bps for Global participants (7 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	22.9	25.5	49.7
Performance fees*	0.0	5.0	2.7
Internal and other	<u>1.4</u>	<u>2.5</u>	<u>1.8</u>
Total	24.3	33.0	54.3

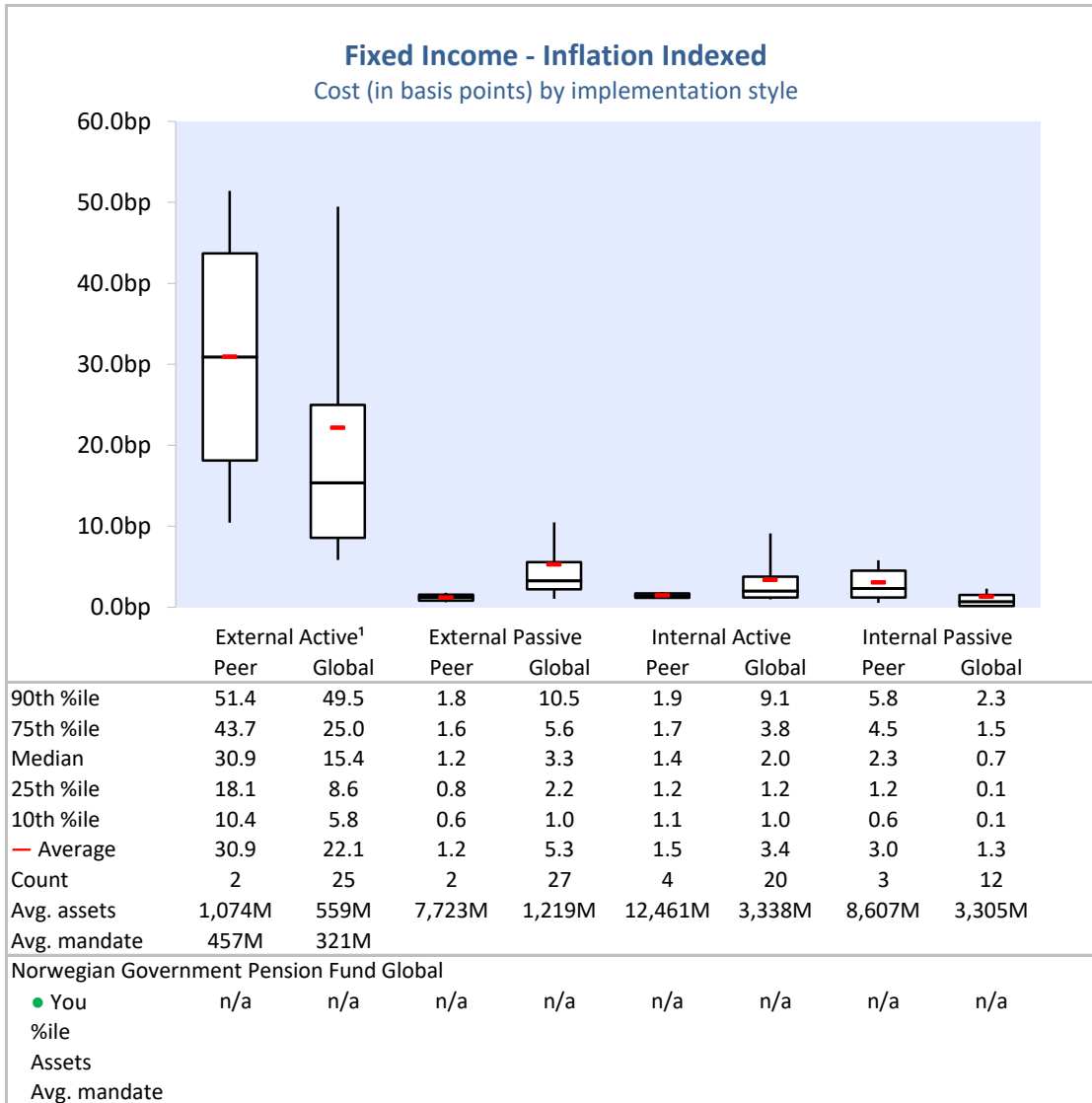
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 10.0 bps for peers (3 funds) and 9.7 bps for Global participants (23 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	33.7	33.7
Performance fees*	n/a	4.4	1.0
Internal and other	<u>n/a</u>	<u>2.4</u>	<u>0.4</u>
Total	n/a	40.5	35.1

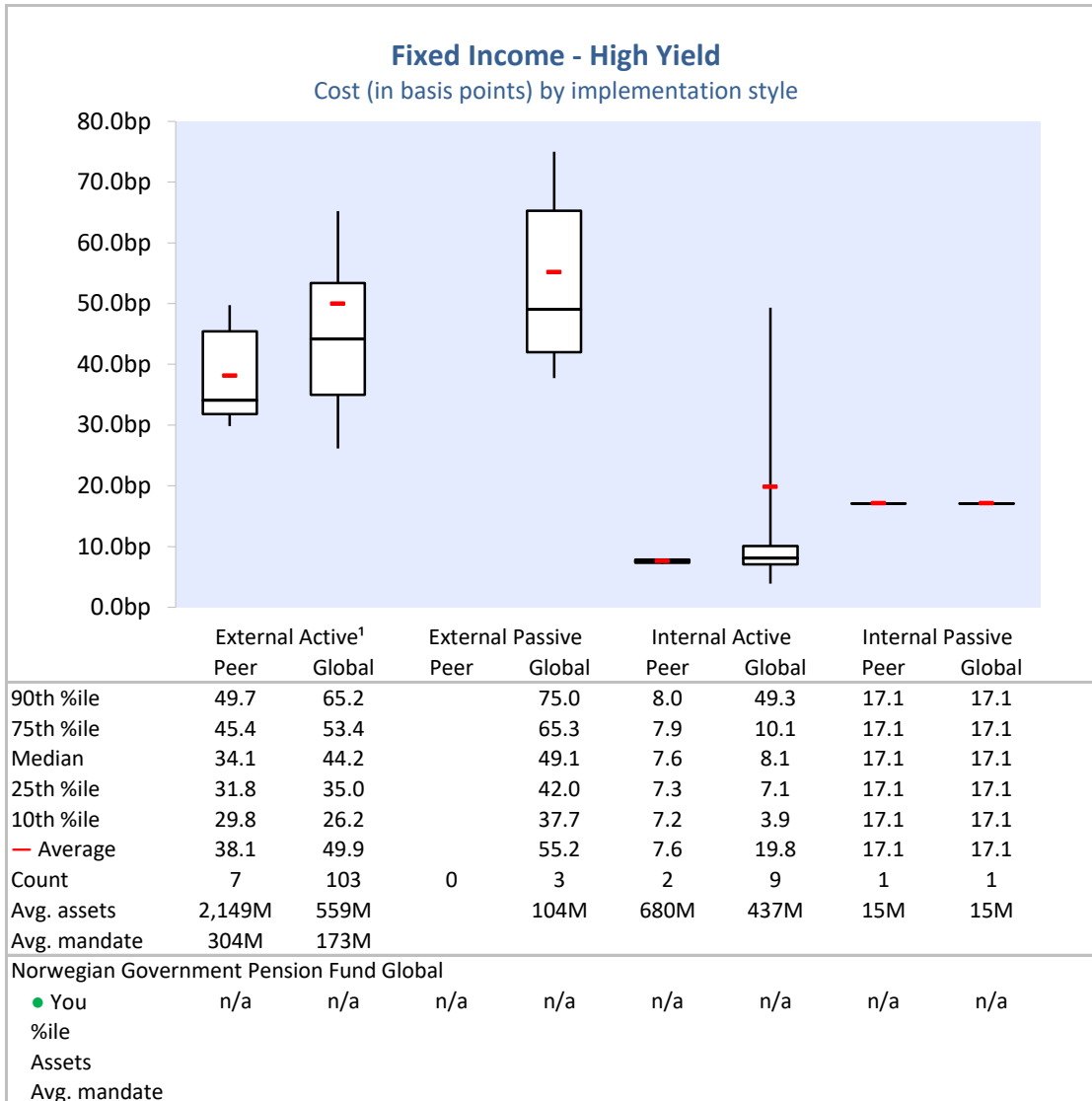
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 8.8 bps for peers (3 funds) and 3.9 bps for Global participants (15 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	30.9	21.3
Performance fees*	n/a	0.0	0.6
Internal and other	<u>n/a</u>	<u>0.0</u>	<u>0.2</u>
Total	n/a	30.9	22.1

* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 0.0 bps for peers (1 fund) and 1.8 bps for Global participants (8 funds).



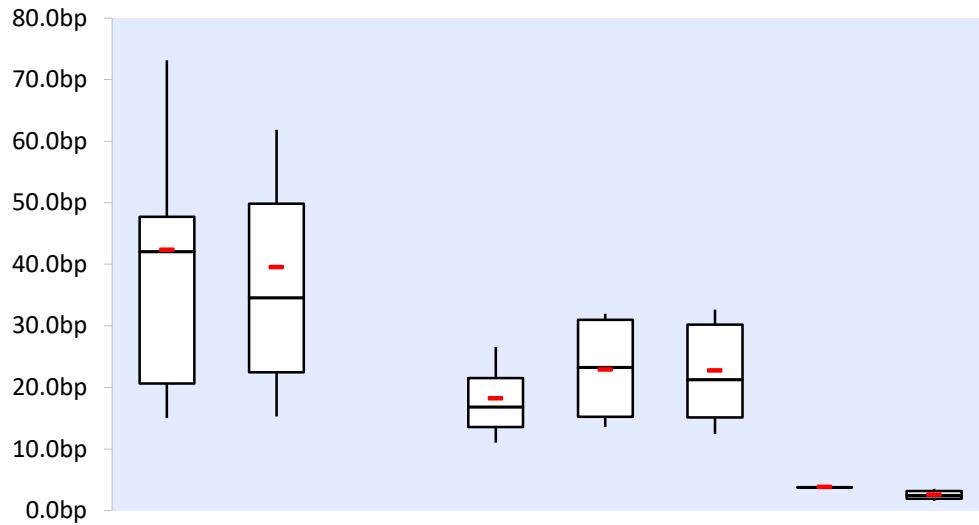
1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	38.3	45.1
Performance fees*	n/a	-1.5	3.4
Internal and other	<u>n/a</u>	<u>1.3</u>	<u>1.5</u>
Total	n/a	38.1	49.9

* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is -3.6 bps for peers (3 funds) and 15.8 bps for Global participants (22 funds).

Fixed Income - Mortgages

Cost (in basis points) by implementation style

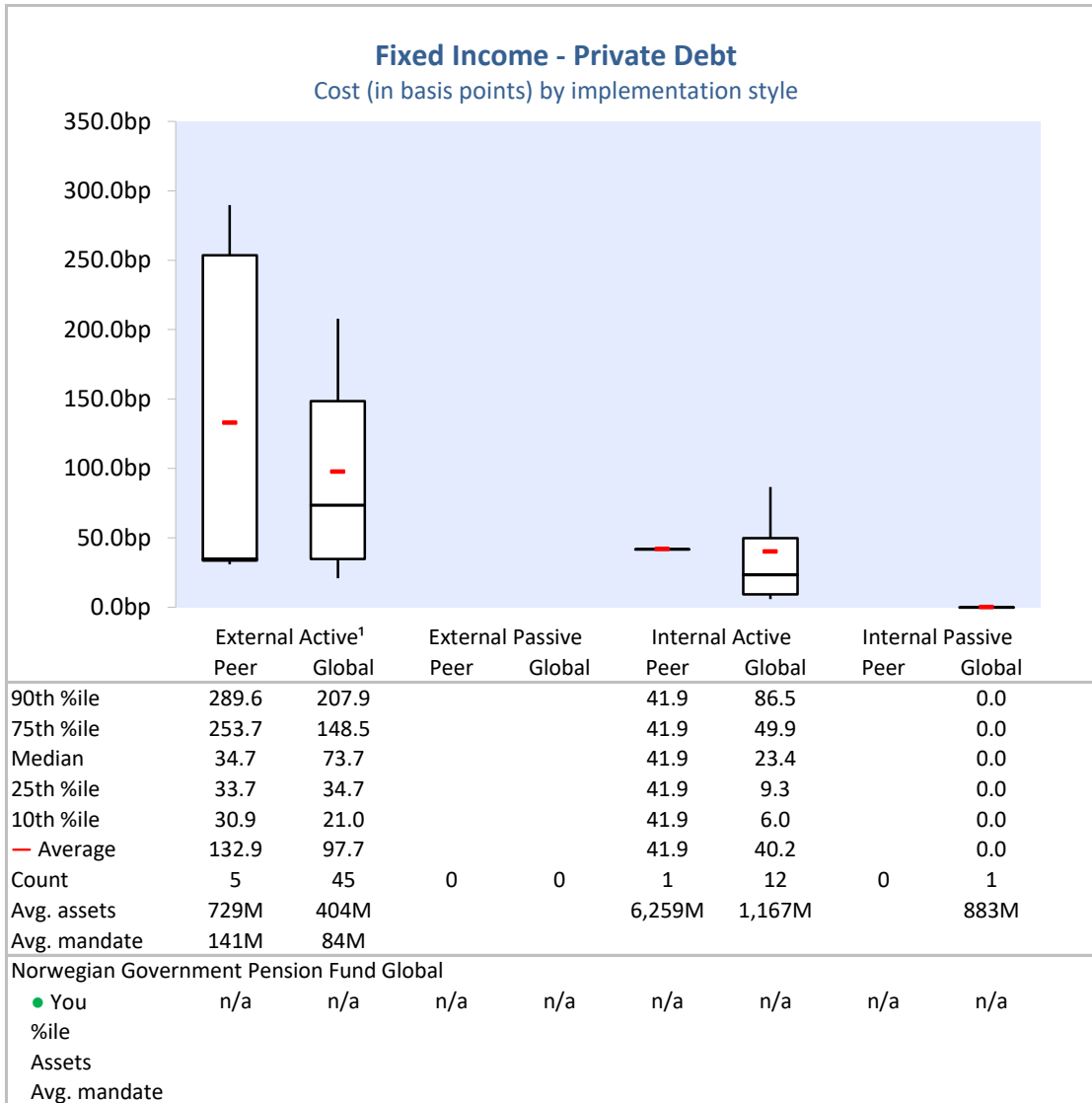


	External Active ¹		External Passive		Internal Active		Internal Passive	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	73.1	61.9		26.6	32.0	32.6	3.8	3.5
75th %ile	47.7	49.9		21.5	31.0	30.2	3.8	3.1
Median	42.1	34.6		16.8	23.3	21.3	3.8	2.5
25th %ile	20.6	22.4		13.6	15.2	15.1	3.8	1.9
10th %ile	15.0	15.3		11.0	13.6	12.4	3.8	1.6
— Average	42.4	39.5		18.2	22.9	22.7	3.8	2.5
Count	5	34	0	4	4	11	1	3
Avg. assets	1,490M	410M		53M	4,648M	2,118M	615M	374M
Avg. mandate	1,617M	271M						
Norwegian Government Pension Fund Global								
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
%ile								
Assets								
Avg. mandate								

1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	35.3	36.6
Performance fees*	n/a	0.0	0.3
Internal and other	<u>n/a</u>	<u>7.1</u>	<u>2.6</u>
Total	n/a	42.4	39.5

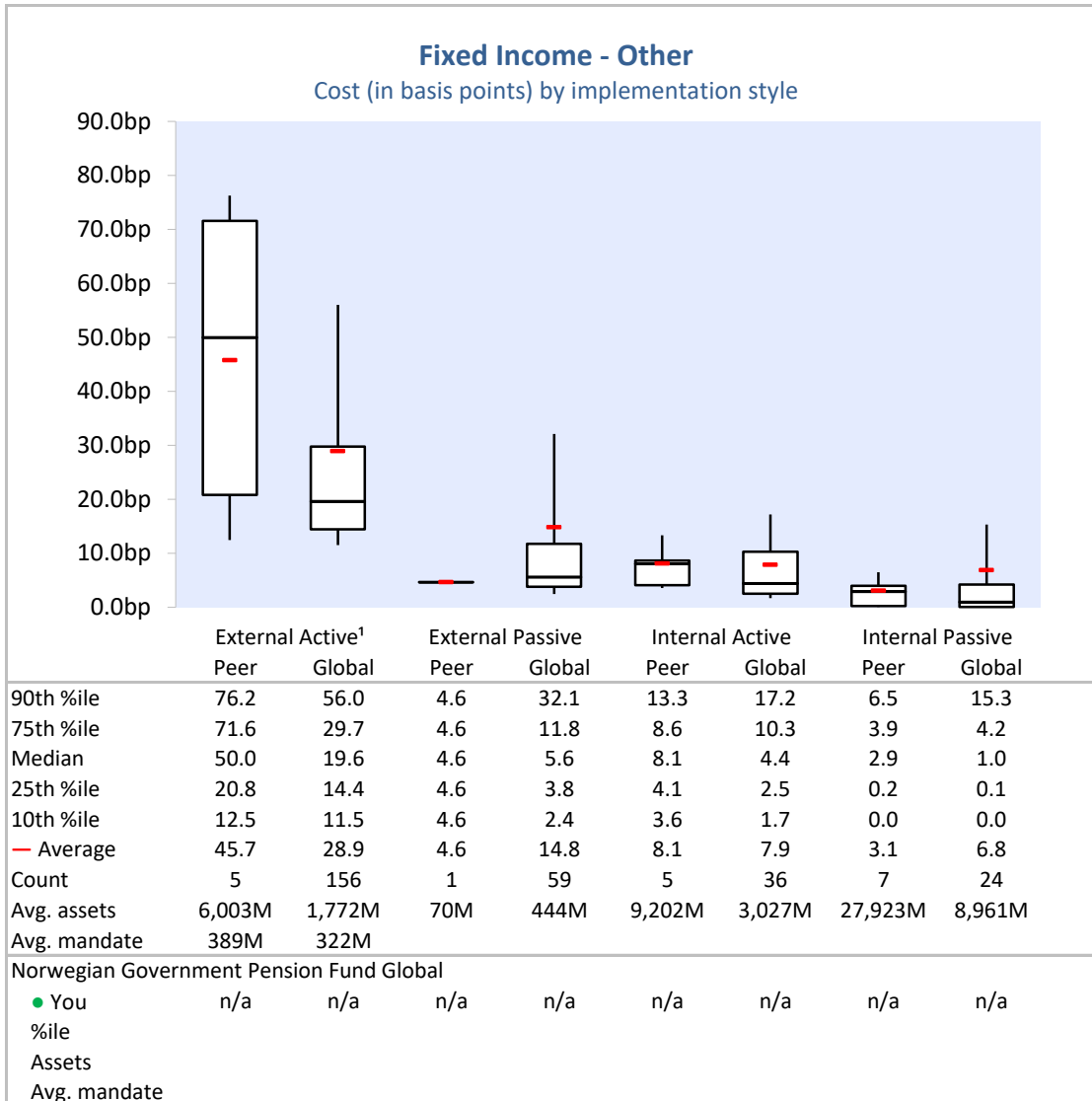
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 3.7 bps for Global participants (3 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	91.6	83.6
Performance fees*	n/a	31.8	8.8
Internal and other	<u>n/a</u>	<u>9.6</u>	<u>5.3</u>
Total	n/a	132.9	97.7

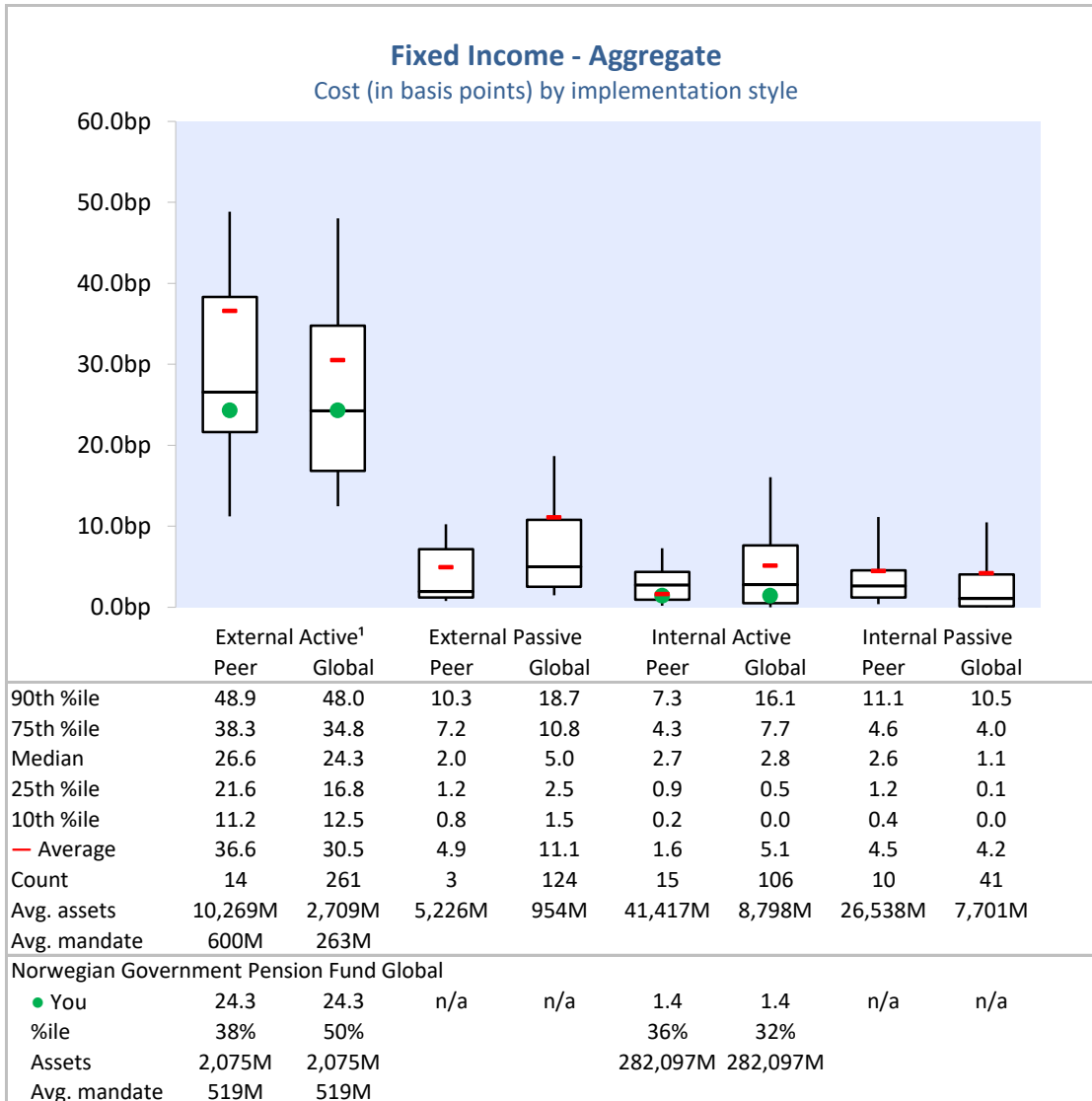
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 158.8 bps for peers (1 fund) and 44.2 bps for Global participants (9 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	45.2	26.2
Performance fees*	n/a	0.0	2.3
Internal and other	<u>n/a</u>	<u>0.5</u>	<u>0.4</u>
Total	n/a	45.7	28.9

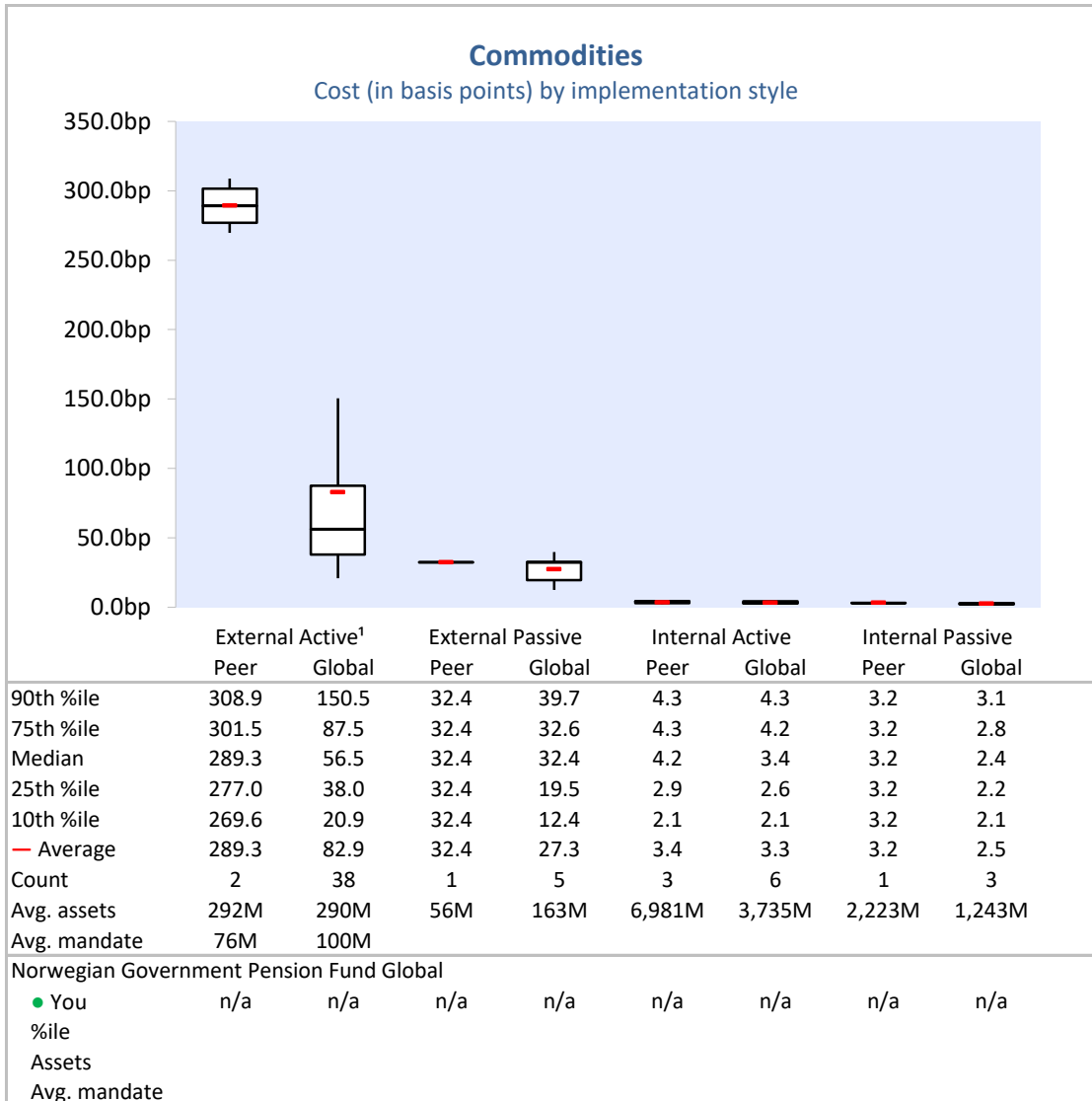
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 0.0 bps for peers (1 fund) and 15.2 bps for Global participants (24 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	22.9	31.3	27.4
Performance fees*	0.0	1.9	2.0
Internal and other	<u>1.4</u>	<u>3.4</u>	<u>1.0</u>
Total	24.3	36.6	30.5

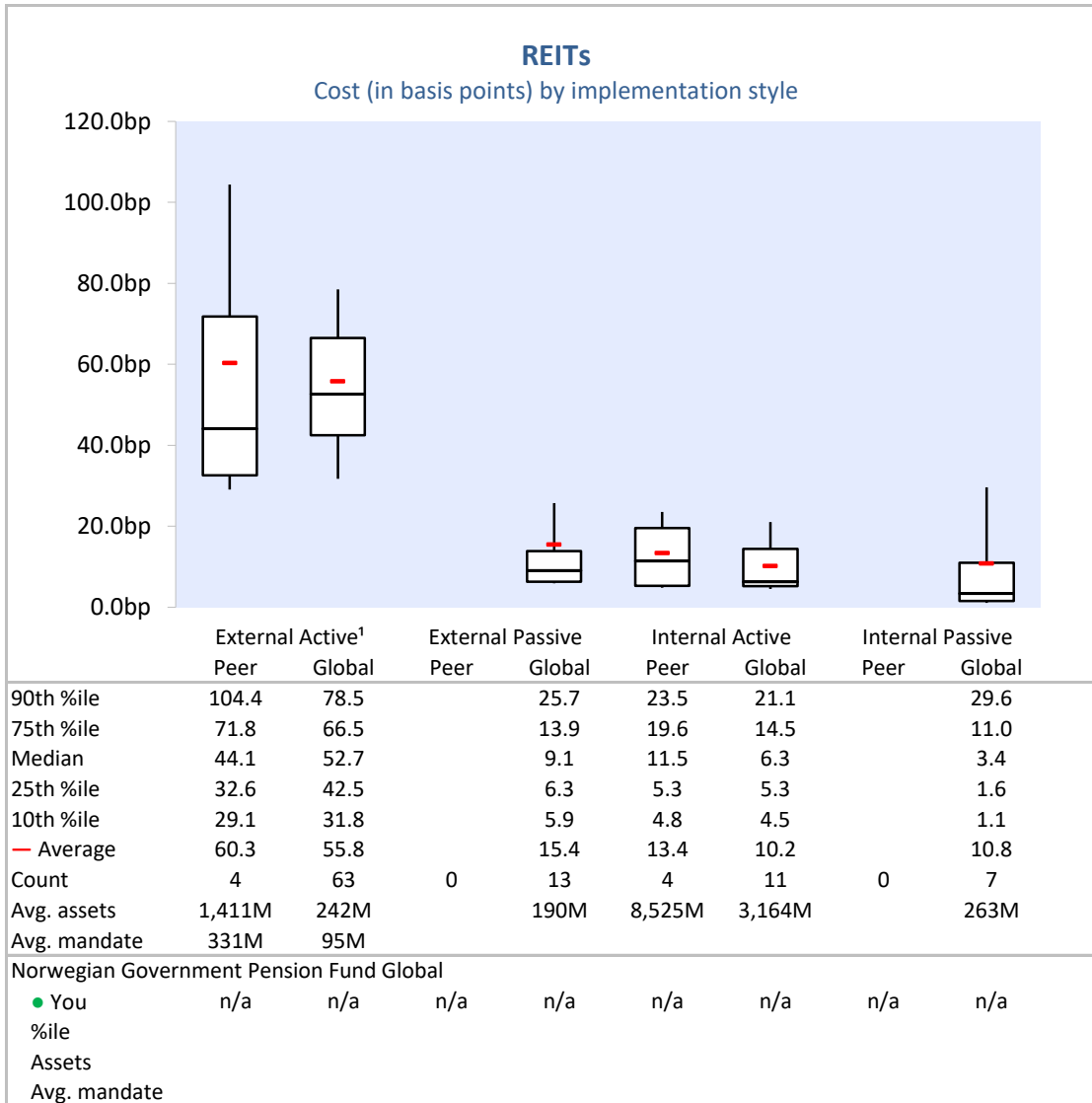
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 5.3 bps for peers (5 funds) and 8.5 bps for Global participants (62 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	195.1	65.8
Performance fees*	n/a	69.2	15.5
Internal and other	<u>n/a</u>	<u>24.9</u>	<u>1.6</u>
Total	n/a	289.3	82.9

* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 138.5 bps for peers (1 fund) and 39.3 bps for Global participants (15 funds).



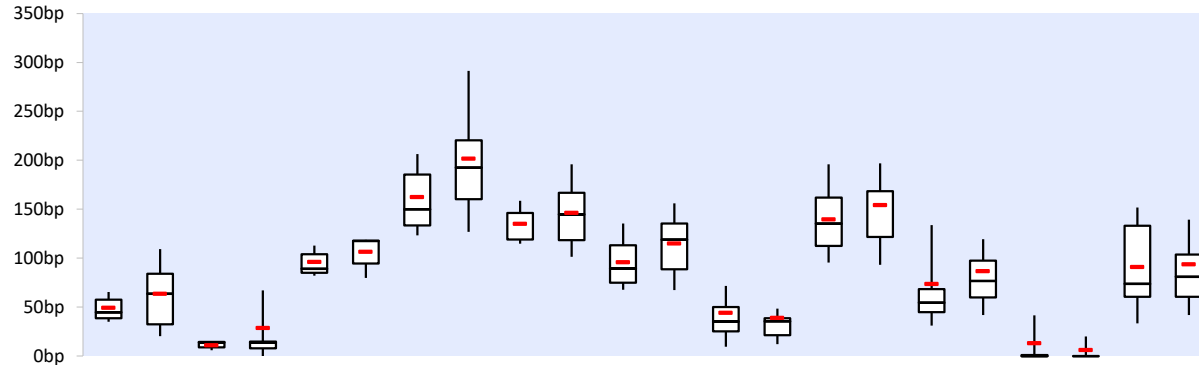
1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	52.4	53.4
Performance fees*	n/a	0.0	1.3
Internal and other	<u>n/a</u>	<u>7.9</u>	<u>1.0</u>
Total	n/a	60.3	55.8

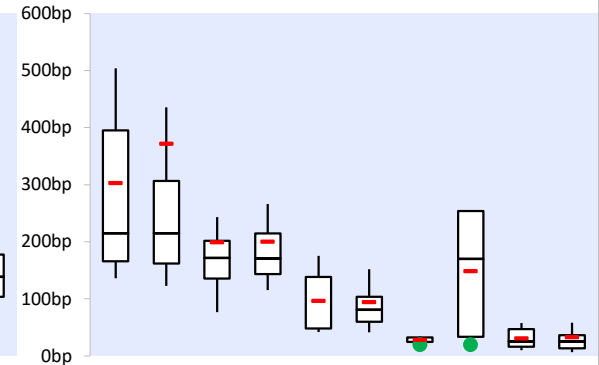
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 8.2 bps for Global participants (10 funds).

Real Estate ex-REITs

Cost as a % of the amount fees are based on¹



Cost as a % of NAV

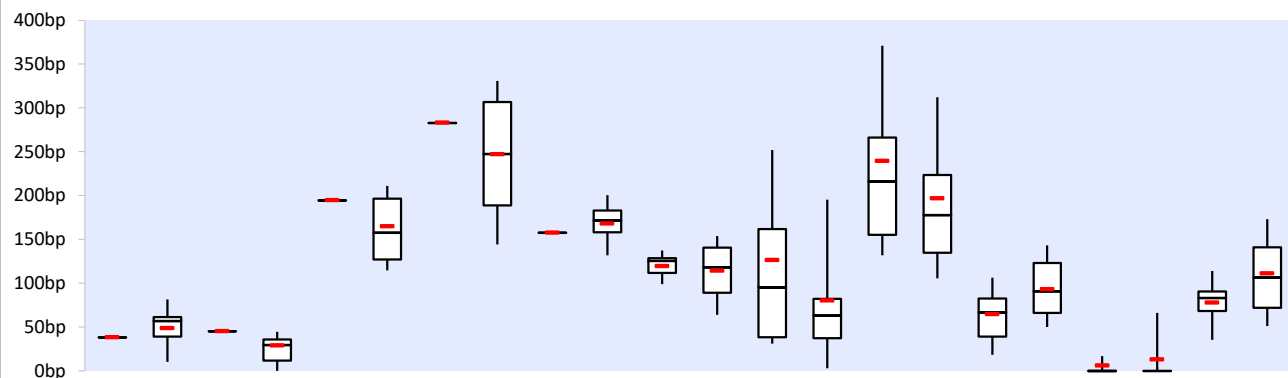


	Fund of Funds										Direct LP & Co-Inv. ⁴								External (not LP)								Fund of Funds		Direct LP & Co-Inv. ⁴		External (not LP)		Oper. Sub.		Internal	
	Mgmt fees (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees		Perf. fees		Total ³ incl. perf.		Mgmt fees		Perf. fees		Total ³ incl. perf.		Total ³ incl. perf.		Total ³ incl. perf.		Total		Total							
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global						
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global						
90th %ile	65.4	109.2	14.4	66.8	112.8	118.6	206.3	291.4	158.6	195.9	135.4	155.8	71.5	48.4	196.0	196.8	133.8	119.2	41.4	19.8	151.5	139.2	503.7	435.9	243.0	266.3	175.1	151.7	33.8	253.8	57.7	58.3				
75th %ile	57.6	84.0	14.2	14.5	104.0	117.8	185.2	220.3	146.2	166.8	113.2	135.3	50.0	38.5	161.9	168.5	68.1	97.5	0.9	0.0	133.0	103.7	395.4	306.4	201.8	214.4	138.1	103.7	32.3	253.8	47.1	36.1				
Median	44.6	63.6	14.0	13.7	89.3	117.8	150.2	192.6	125.7	144.8	89.5	119.1	35.3	35.7	135.3	149.5	54.6	76.8	0.0	0.0	73.7	81.0	215.0	215.0	171.8	170.9	79.1	80.9	29.8	170.3	25.4	25.4				
25th %ile	38.5	32.3	8.8	7.7	84.8	94.6	133.4	160.1	118.8	118.2	74.8	88.5	25.0	21.2	112.5	121.7	44.6	59.8	0.0	0.0	60.4	60.4	165.8	162.1	135.2	143.3	48.1	60.0	24.7	33.5	15.8	13.4				
10th %ile	34.8	20.0	5.7	0.0	82.1	79.7	123.3	126.9	114.7	101.4	67.6	67.1	9.5	11.9	95.5	93.0	30.8	41.6	0.0	0.0	33.4	41.6	136.3	122.7	76.8	115.0	41.7	41.3	21.7	26.7	10.0	6.3				
— Average	49.2	63.4	10.7	28.3	96.1	106.3	162.4	201.5	134.8	146.2	95.8	114.9	43.8	38.8	139.6	154.1	73.3	86.4	13.0	5.7	90.9	93.4	302.5	371.5	198.8	200.0	96.1	94.0	28.1	148.3	30.4	32.7				
Count	3	25	3	25	3	25	3	25	3	25	11	115	11	114	11	114	9	149	9	149	9	149	3	25	11	114	9	149	3	8	7	35				
Avg. assets	1,195M	399M	1,195M	399M	1,195M	399M	1,195M	399M	1,195M	399M	6,263M	1,483M	6,263M	1,483M	6,263M	1,483M	5,274M	937M	5,274M	937M	5,274M	937M	1,177M	367M	5,598M	1,274M	4,555M	879M	18,542M	8,707M	4,445M	1,940M				
Norwegian Government Pension Fund Global	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a				
● You																																				
%ile																																				
Assets																																				

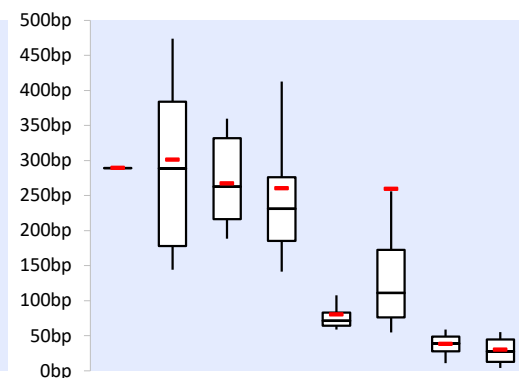
- The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.
- The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 79 bps (on amount fees are based on) for underlying management fees and 39 bps (on NAV) for underlying performance fees were used.
- The total cost also includes the internal cost of monitoring and selecting real estate investments. The peer average cost of monitoring and selecting was 6.4 bps for fund of funds, 8.8 bps for LPs and 4.7 bps for external (not LPs).
- Co-investment is included with direct LPs because it can only be done alongside direct LPs. CEM uses this combined style in its benchmark cost analysis to ensure funds that reduce their costs by using co-investment receive benchmark credit. Co-investment is done by none of your peers and 6 of the Global funds.

Infrastructure

Cost as a % of the amount fees are based on¹



Cost as a % of NAV

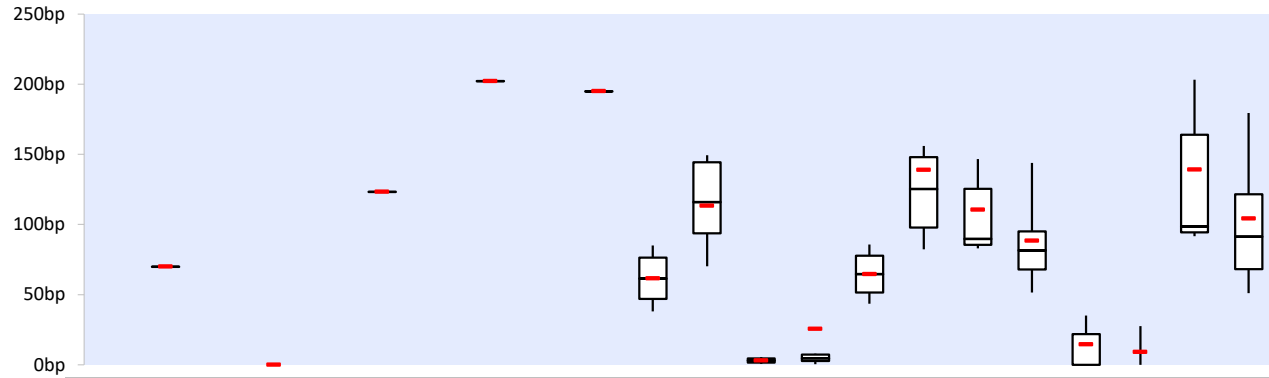


	Fund of Funds										Direct LP & Co-Inv. ⁴						External (not LP)						Fund of Funds		Direct LP & Co-Inv. ⁴		External (not LP)		Internal		
	Mgmt fees (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees		Perf. fees		Total ³ incl. perf.		Mgmt fees		Perf. fees		Total ³ incl. perf.		Total ³ incl. perf.		Total ³ incl. perf.		Total ³ incl. perf.		Total ³ incl. perf.		
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	
90th %ile	38.1	81.5	45.2	44.4	194.6	211.1	283.1	330.8	157.7	200.3	137.2	153.5	251.8	195.2	370.9	312.1	106.0	142.9	16.7	66.2	113.8	172.9	289.5	474.0	359.5	412.4	107.7	256.0	58.9	55.1	
75th %ile	38.1	61.3	45.2	35.7	194.6	196.4	283.1	306.6	157.7	182.9	128.3	140.5	161.8	82.0	266.1	223.3	82.5	123.0	0.0	0.0	90.6	141.0	289.5	384.0	331.9	276.3	83.0	172.6	49.0	44.8	
Median	38.1	57.0	45.2	29.4	194.6	157.8	283.1	247.4	157.7	171.5	125.5	118.1	95.2	63.0	216.1	177.9	66.6	90.9	0.0	0.0	83.3	106.5	289.5	288.8	263.0	231.2	71.7	111.5	39.0	27.9	
25th %ile	38.1	39.1	45.2	11.7	194.6	127.2	283.1	188.6	157.7	158.2	111.8	88.9	38.1	37.2	155.2	134.8	39.1	65.9	0.0	0.0	68.1	71.8	289.5	177.8	216.1	185.3	64.1	76.2	27.9	12.6	
10th %ile	38.1	10.0	45.2	0.0	194.6	114.5	283.1	144.1	157.7	131.7	98.9	63.9	31.0	3.0	131.8	105.6	18.0	49.9	0.0	0.0	35.5	51.1	289.5	144.1	188.5	141.4	58.9	54.8	10.8	3.9	
— Average	38.1	48.6	45.2	28.8	194.6	165.0	283.1	247.2	157.7	167.9	119.6	114.1	126.4	80.2	239.6	197.0	64.5	92.9	6.0	13.0	77.9	111.2	289.5	301.1	267.1	260.2	80.3	259.4	38.2	30.2	
Count	1	15	1	15	1	15	1	15	1	15	9	66	9	63	9	63	7	56	7	56	7	56	1	15	9	64	7	56	9	23	
Avg. assets	468M	95M	468M	95M	468M	95M	468M	95M	468M	95M	1,677M	461M	1,677M	461M	1,677M	461M	1,784M	407M	1,784M	407M	1,784M	407M	458M	86M	1,433M	401M	1,999M	410M	4,475M	3,157M	
Norwegian Government Pension Fund Global																															
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
%ile																															
Assets																															

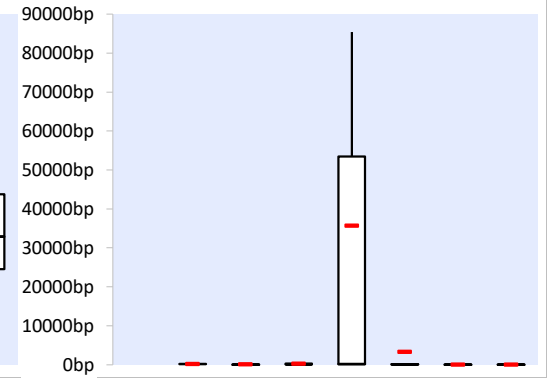
- The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.
- The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 114 bps (on amount fees are based on) for underlying management fees and 82 bps (on NAV) for underlying performance fees were used.
- The total cost also includes the internal cost of monitoring and selecting infrastructure investments. The peer average cost of monitoring and selecting was 5.2 bps for fund of funds, 8.2 bps for LPs and 7.4 bps for external (not LPs).
- Co-investment is included with direct LPs because it can only be done alongside direct LPs. CEM uses this combined style in its benchmark cost analysis to ensure funds that reduce their costs by using co-investment receive benchmark credit. Co-investment is done by 2 of your peers and 11 of the Global funds.

Natural Resources

Cost as a % of the amount fees are based on¹

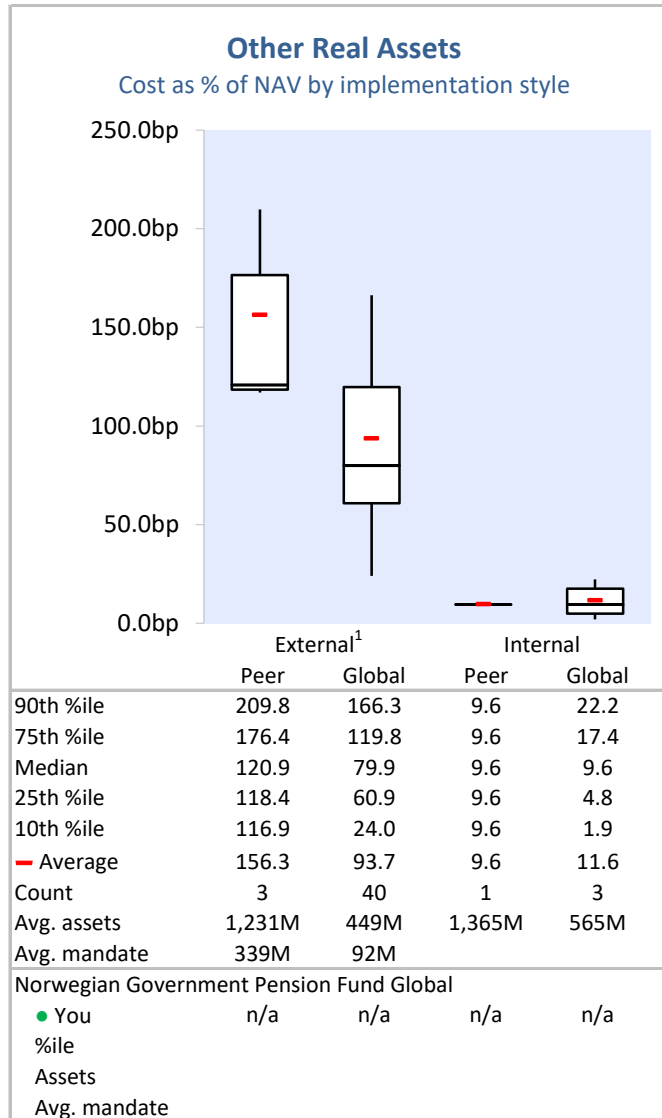


Cost as a % of NAV



	Fund of Funds										Direct LP & Co-Inv. ⁴						External (not LP)						Fund of Funds		Direct LP & Co-Inv. ⁴		External (not LP)		Internal	
	Mgmt fees (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees		Perf. fees		Total ³ incl. perf.		Mgmt fees		Perf. fees		Total ³ incl. perf.		Total ³ incl. perf.		Total ³ incl. perf.		Total ³ incl. perf.		Total ³ incl. perf.	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile		70.0		0.0		123.4		202.3		195.1		85.1	149.4		5.5	8.0		85.7	156.0		146.7	143.9		35.0	27.4		203.2	179.5		
75th %ile		70.0		0.0		123.4		202.3		195.1		76.3	144.4		4.6	7.2		77.8	148.0		125.4	95.0		21.9	0.0		164.1	121.5		
Median		70.0		0.0		123.4		202.3		195.1		61.6	116.2		3.0	4.8		64.6	125.4		89.9	81.5		0.0	0.0		98.8	91.4		
25th %ile		70.0		0.0		123.4		202.3		195.1		46.9	93.6		1.5	2.6		51.5	97.8		85.5	67.9		0.0	0.0		94.3	68.2		
10th %ile		70.0		0.0		123.4		202.3		195.1		38.1	70.2		0.6	0.4		43.6	82.3		82.9	51.5		0.0	0.0		91.6	51.0		
— Average		70.0		0.0		123.4		202.3		195.1		61.6	113.4		3.0	25.6		64.6	139.0		110.7	88.5		14.6	9.2		139.3	104.5		
Count	0	1	0	1	0	1	0	1	0	1	2	24	2	24	2	24	3	34	3	34	3	34	3	34	0	1	2	24	3	34
Avg. assets		257M		257M		257M		257M		257M	1,070M	648M	1,070M	648M	1,070M	648M	722M	267M	722M	267M	722M	267M	722M	267M	0	1	2	24	3	34
Norwegian Government Pension Fund Global																														
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
%ile																														
Assets																														

- The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.
- The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 116 bps (on amount fees are based on) for underlying management fees and 7 bps (on NAV) for underlying performance fees were used.
- The total cost also includes the internal cost of monitoring and selecting natural resources investments. The peer average cost of monitoring and selecting was 2.4 bps for LPs and 14.1 bps for external (not LPs).
- Co-investment is included with direct LPs because it can only be done alongside direct LPs. CEM uses this combined style in its benchmark cost analysis to ensure funds that reduce their costs by using co-investment receive benchmark credit. Co-investment is done by none of your peers and 2 of the Global funds.



1. Breakdown of external fees

	Your Plan	Peer Average	Global Average
Base fees	n/a	148.7	91.6
Internal and other	<u>n/a</u>	<u>7.5</u>	<u>2.2</u>
Total†	n/a	156.3	93.7
Performance fees*	n/a	42.2	7.8

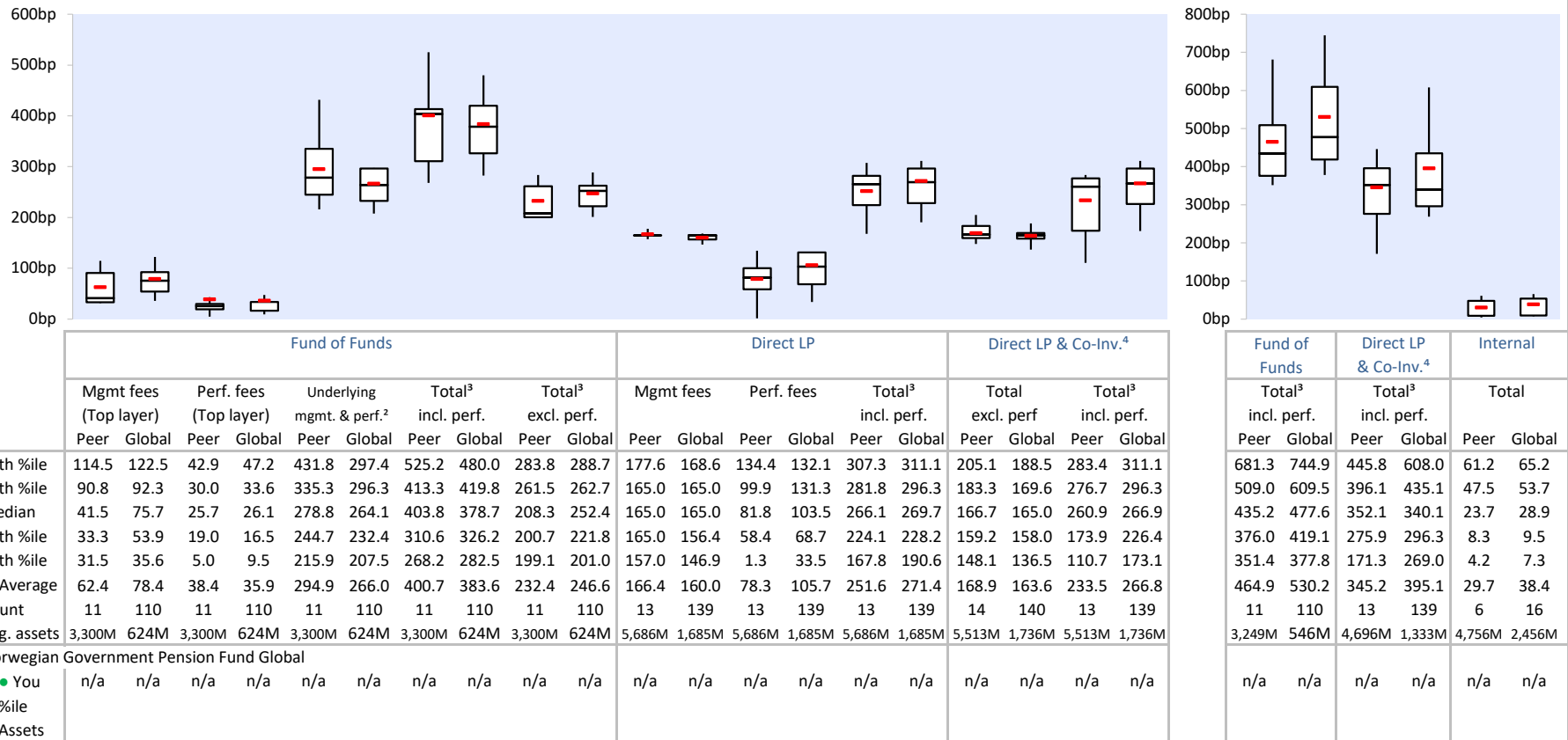
† Total cost excludes performance fees because most participants did not provide performance fees for other real assets.

* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 42.2 bps for peers (3 funds) and 7.8 bps for Global participants (40 funds).

Diversified Private Equity

Cost as a % of the amount fees are based on¹

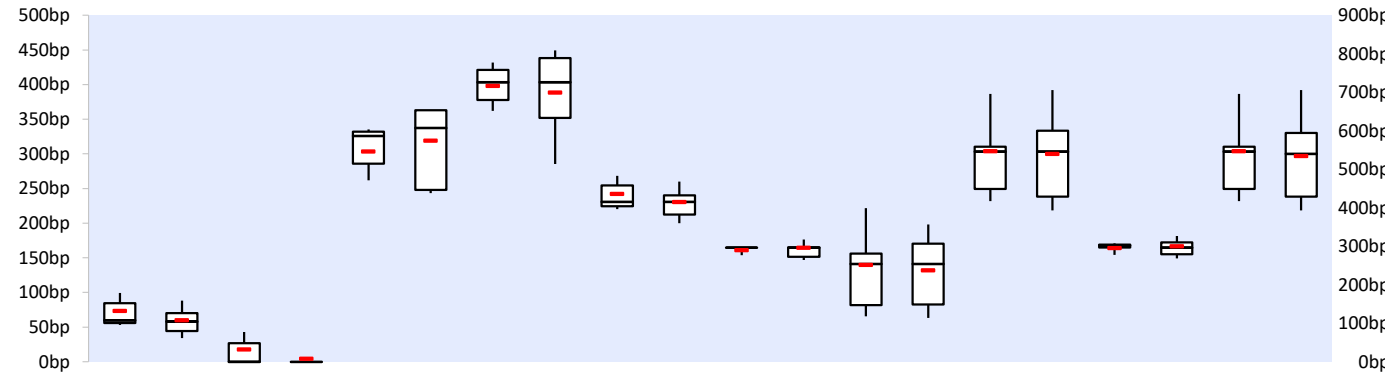
Cost as a % of NAV



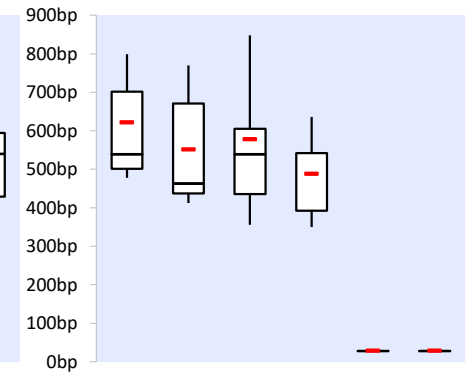
- The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.
- The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 165 bps (on amount fees are based on) for underlying management fees and 131 bps (on NAV) for underlying performance fees were used.
- The total cost also includes the internal cost of monitoring and selecting private equity investments. The peer average cost of monitoring and selecting was 5.0 bps for fund of funds and 6.8 bps for LPs.
- Co-investment is included with direct LPs because it can only be done alongside direct LPs. CEM uses this combined style in its benchmark cost analysis to ensure funds that reduce their costs by using co-investment receive benchmark credit. Co-investment is done by 4 of your peers and 13 of the Global funds.

LBO

Cost as a % of the amount fees are based on¹



Cost as a % of NAV



	Fund of Funds										Direct LP						Direct LP & Co-Inv. ⁴				Fund of Funds		Direct LP & Co-Inv. ⁴		Internal	
	Mgmt fees (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees		Perf. fees		Total ³ incl. perf.		Total excl. perf.		Total ³ incl. perf.		Total incl. perf.		Total			
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global		
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global		
90th %ile	99.1	88.0	43.0	0.0	335.4	363.1	431.7	449.3	268.2	259.9	165.0	176.5	221.6	198.1	386.6	392.2	171.0	181.3	386.5	392.2	799.0	769.6	847.9	635.5	28.5	28.5
75th %ile	84.4	70.0	26.9	0.0	331.9	363.1	421.2	438.1	254.2	240.0	165.0	165.0	156.1	170.2	310.1	333.4	169.0	172.2	310.1	330.1	701.5	670.9	605.5	541.5	28.5	28.5
Median	59.9	58.0	0.0	0.0	326.2	337.7	403.6	403.6	230.9	230.9	165.0	165.0	141.1	141.0	303.2	303.2	167.8	165.0	303.2	300.0	539.1	463.0	539.6	441.7	28.5	28.5
25th %ile	55.6	44.1	0.0	0.0	286.0	247.9	377.8	351.9	224.2	212.4	165.0	151.3	81.6	82.5	249.4	238.5	165.0	155.2	249.4	238.5	501.1	437.1	435.4	392.3	28.5	28.5
10th %ile	53.0	34.3	0.0	0.0	261.8	243.6	362.3	285.3	220.2	200.0	153.5	146.7	65.5	63.2	231.6	218.6	154.3	149.0	231.6	218.6	478.3	412.2	355.5	350.0	28.5	28.5
— Average	73.4	59.8	17.9	4.1	303.2	318.9	398.1	388.6	242.0	230.5	161.2	164.3	139.8	131.8	304.0	300.0	164.2	166.7	304.0	296.9	622.0	551.8	578.5	488.1	28.5	28.5
Count	3	13	3	13	3	13	3	13	3	13	5	38	5	38	5	38	5	38	5	38	3	13	5	38	1	1
Avg. assets	469M	242M	469M	242M	469M	242M	469M	242M	469M	242M	10,178M	2,311M	10,178M	2,311M	10,178M	2,311M	10,179M	2,333M	10,179M	2,333M	286M	151M	5,641M	1,425M	7,207M	7,207M
Norwegian Government Pension Fund Global																										
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
%ile																										
Assets																										

1. The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.

2. The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 165 bps (on amount fees are based on) for underlying management fees and 198 bps (on NAV) for underlying performance fees were used.

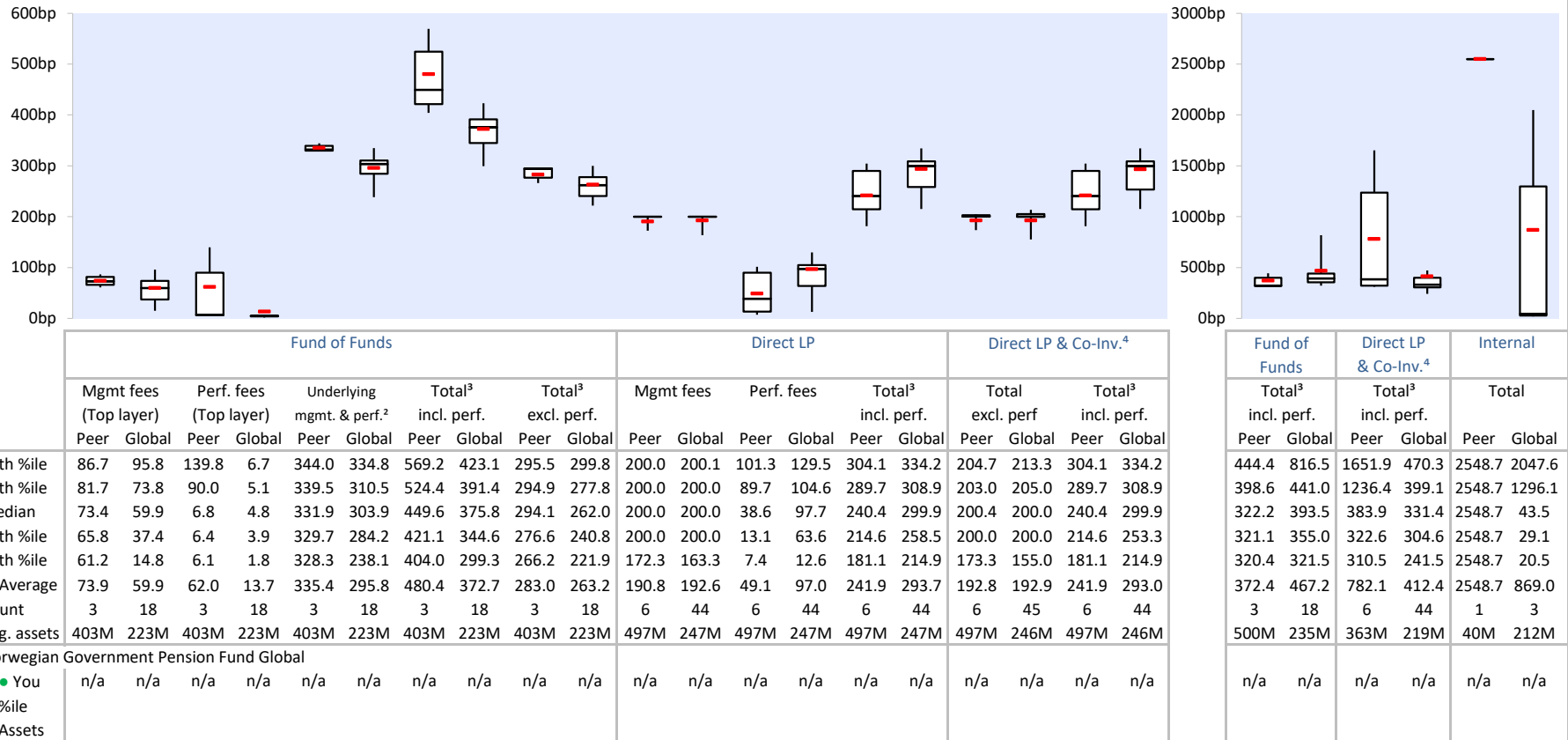
3. The total cost also includes the internal cost of monitoring and selecting private equity investments. The peer average cost of monitoring and selecting was 3.6 bps for fund of funds and 3.1 bps for LPs.

4. Co-investment is included with direct LPs because it can only be done alongside direct LPs. CEM uses this combined style in its benchmark cost analysis to ensure funds that reduce their costs by using co-investment receive benchmark credit. Co-investment is done by none of your peers and 4 of the Global funds.

Venture Capital

Cost as a % of the amount fees are based on¹

Cost as a % of NAV



1. The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.

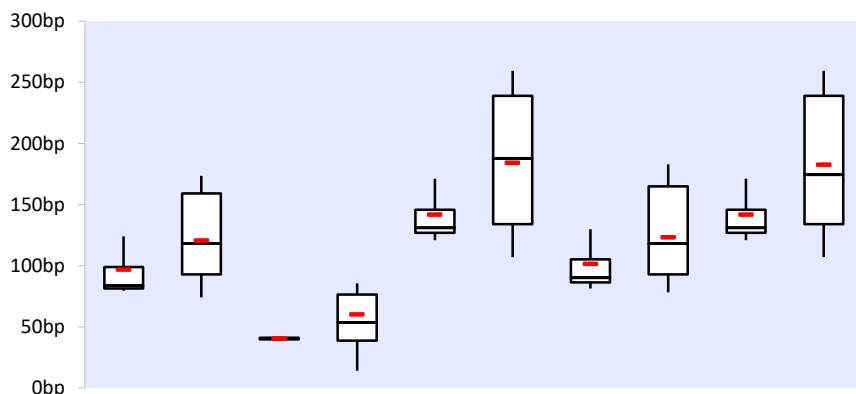
2. The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 200 bps (on amount fees are based on) for underlying management fees and 105 bps (on NAV) for underlying performance fees were used.

3. The total cost also includes the internal cost of monitoring and selecting private equity investments. The peer average cost of monitoring and selecting was 9.1 bps for fund of funds and 2.0 bps for LPs.

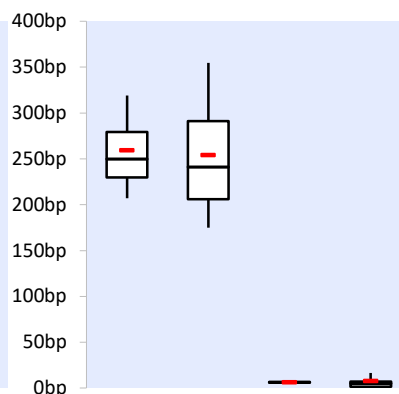
4. Co-investment is included with direct LPs because it can only be done alongside direct LPs. CEM uses this combined style in its benchmark cost analysis to ensure funds that reduce their costs by using co-investment receive benchmark credit. Co-investment is done by none of your peers and 3 of the Global funds.

Other Private Equity

Cost as a % of the amount fees are based on¹



Cost as a % of NAV

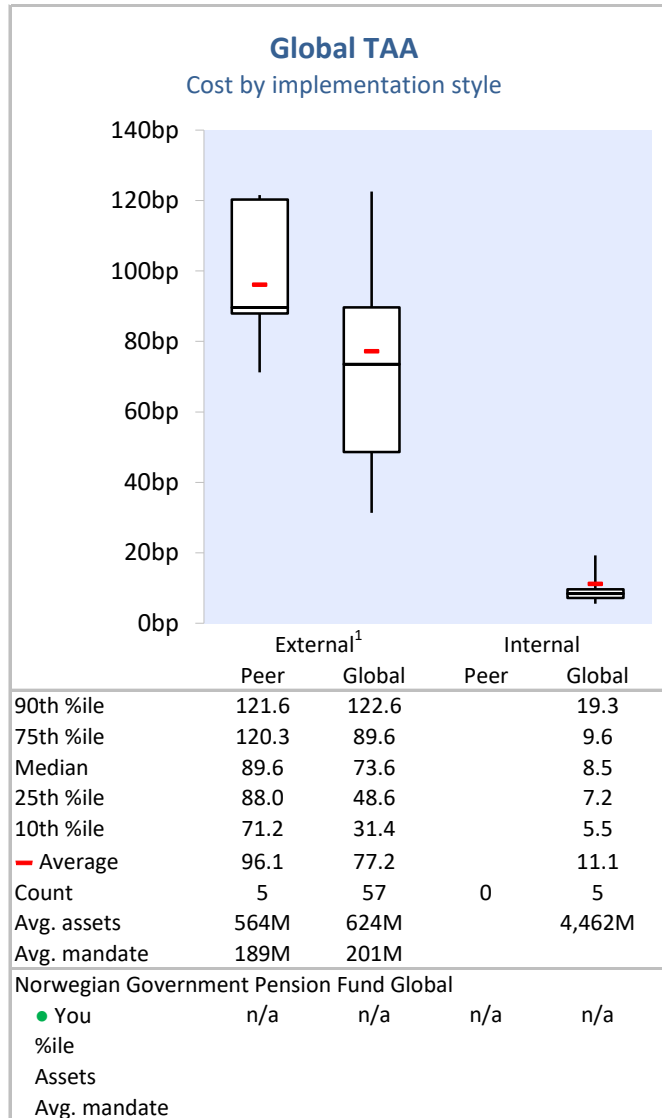


	Direct LP						Direct LP & Co-Inv. ³				Direct LP & Co-Inv. ³		Internal		
	Mgmt fees		Perf. fees		Total ² incl. perf.		Total excl. perf.		Total ² incl. perf.		Total ² incl. perf.		Total		
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	
90th %ile	124.1	173.5	41.4	85.7	171.2	259.4	130.0	183.0	171.2	259.4	319.0	354.7	6.9	16.5	
75th %ile	99.0	159.1	41.2	76.4	146.0	239.1	105.4	165.0	146.0	239.1	279.4	291.1	6.7	7.1	
Median	83.8	118.4	40.7	53.7	131.1	188.0	90.5	118.4	131.1	174.6	250.0	241.4	6.3	5.5	
25th %ile	81.5	93.0	39.9	38.7	127.0	134.0	86.5	93.0	127.0	134.0	229.9	205.9	5.9	1.5	
10th %ile	79.6	74.1	39.2	14.1	121.0	107.2	81.6	78.5	121.0	107.2	206.9	175.0	5.6	1.2	
— Average	96.7	120.6	40.4	60.1	141.8	184.3	101.4	123.1	141.8	182.7	259.2	254.0	6.3	7.7	
Count	4	37	4	37	4	37	4	37	4	37	4	37	2	9	
Avg. assets	3,121M	844M	3,121M	844M	3,121M	844M							43M	252M	
Norwegian Government Pension Fund Global															
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
%ile															
Assets															

1. The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.

2. The total cost also includes the internal cost of monitoring and selecting private equity investments. The peer average cost of monitoring and selecting was 4.7

3. Co-investment is included with direct LPs in CEM's benchmark cost analysis because it reduces the cost of investing in direct LPs. Co-investment is done by none of your peers and 1 of the Global funds.



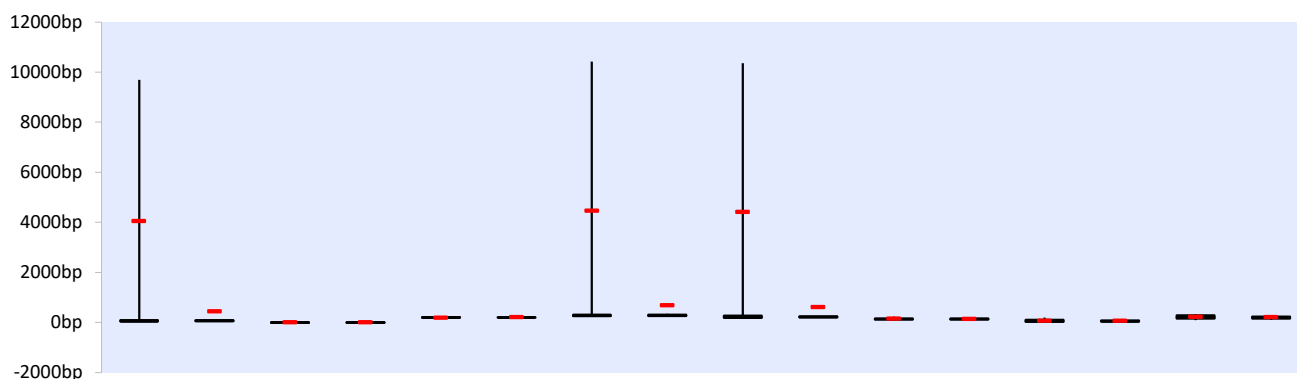
1. Breakdown of External fees

	Your Plan	Peer Average	Global Average
Base fees	n/a	57.6	67.6
Performance fees*	n/a	16.6	4.7
Internal and other	<u>n/a</u>	<u>21.8</u>	<u>4.9</u>
Total	n/a	96.1	77.2

* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 20.8 bps for peers (4 funds) and 7.5 bps for Global participants (36 funds).

Hedge Funds

Cost by implementation style

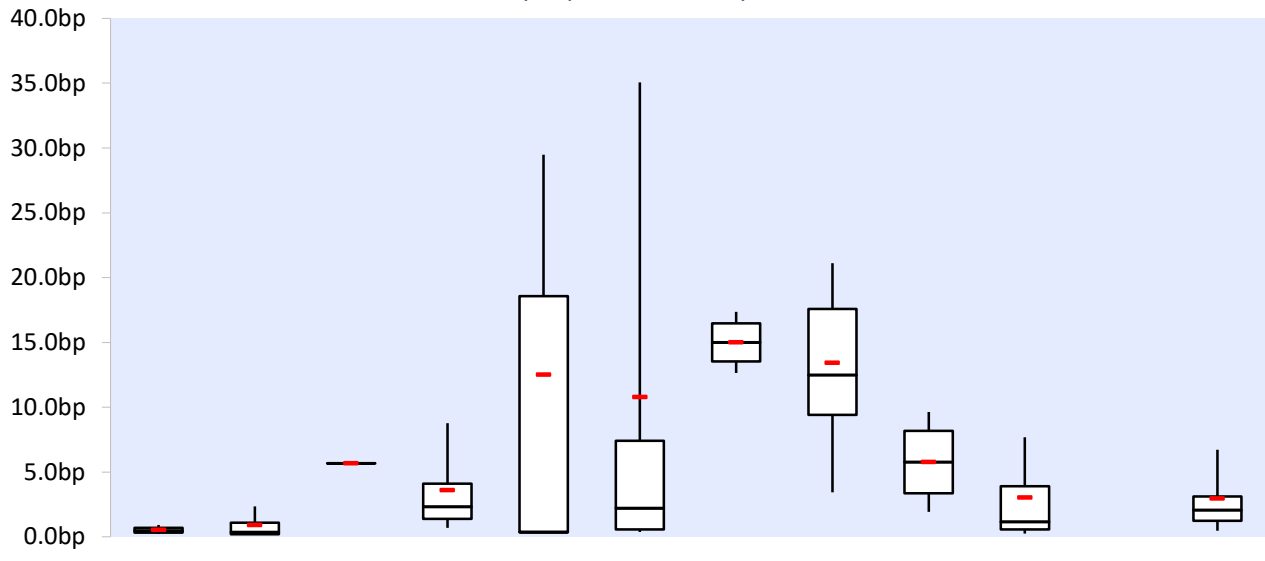


	Fund of Funds								External direct							
	Mgmt fees (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ¹		Total ² incl. perf.		Total ² excl. perf.		Mgmt fees		Perf. fees		Total ² incl. perf.	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	9696.7	104.8	19.2	21.3	214.9	242.3	10419.1	344.8	10362.6	252.0	239.8	180.2	193.9	115.7	317.7	287.2
75th %ile	96.7	90.7	5.2	1.2	203.2	203.2	310.5	304.9	266.1	240.5	160.6	159.0	110.6	75.1	280.9	239.0
Median	58.0	70.0	0.0	0.0	203.2	203.2	269.0	285.4	208.5	218.2	147.2	146.3	57.5	56.0	209.5	210.1
25th %ile	48.9	55.0	0.0	0.0	189.2	203.2	253.9	264.3	199.8	204.0	117.3	112.5	33.4	39.5	154.5	162.5
10th %ile	35.8	33.9	-0.1	0.0	147.2	203.2	230.2	240.4	185.2	181.6	91.0	64.4	4.2	11.5	96.3	103.7
— Average	4049.1	445.6	5.0	7.3	194.1	207.6	4467.1	682.3	4415.2	614.5	148.0	144.6	70.6	64.9	227.2	213.2
Count	8	85	8	86	8	86	8	85	8	85	13	115	13	115	13	115
Avg. assets	2,200M	567M	2,200M	567M	2,200M	567M	2,200M	567M	2,200M	567M	3,532M	1,357M	3,532M	1,357M	3,532M	1,357M
Norwegian Government Pension Fund Global																
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
%ile																
Assets																

1. The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 147 bps (on NAV) for underlying management fees and 56 bps (on NAV) for underlying performance fees were used.

2. The total cost also includes the internal cost of monitoring and selecting hedge fund investments. The peer average cost of monitoring and selecting was 218.9 bps for fund of funds and 8.6 bps for external direct.

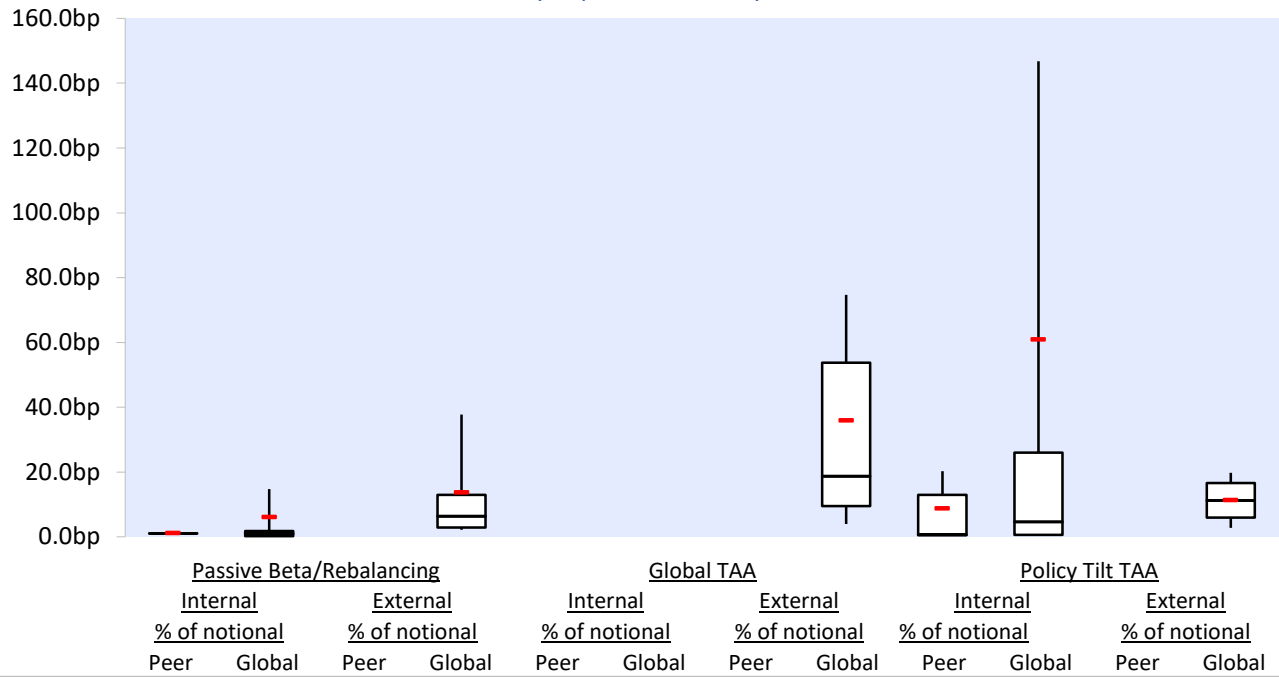
Overlays: currency, duration
Cost by implementation style



	<u>Currency Hedge</u>				<u>Discretionary Currency</u>				<u>Duration Management</u>			
	<u>Internal</u>		<u>External</u>		<u>Internal</u>		<u>External</u>		<u>Internal</u>		<u>External</u>	
	<u>% of notional</u>	<u>% of notional</u>	<u>% of notional</u>	<u>% of notional</u>	<u>% of notional</u>	<u>% of notional</u>	<u>% of notional</u>	<u>% of notional</u>	<u>% of notional</u>	<u>% of notional</u>	<u>% of notional</u>	<u>% of notional</u>
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	0.9	2.4	5.7	8.8	29.5	35.1	17.4	21.1	9.6	7.7		6.7
75th %ile	0.7	1.1	5.7	4.1	18.6	7.4	16.5	17.6	8.2	3.9		3.1
Median	0.5	0.4	5.7	2.3	0.4	2.2	15.0	12.5	5.8	1.2		2.1
25th %ile	0.3	0.2	5.7	1.4	0.4	0.6	13.5	9.4	3.4	0.6		1.2
10th %ile	0.2	0.2	5.7	0.7	0.4	0.4	12.7	3.4	1.9	0.2		0.5
— Average	0.5	0.9	5.7	3.6	12.5	10.8	15.0	13.4	5.8	3.0		2.9
Count	4	17	1	43	3	12	2	13	2	6	0	14
Avg. notional	28,320M	12,932M	133,771M	4,908M	25,537M	7,508M	3,023M	1,468M	33,304M	16,108M		16,249M
Norwegian Government Pension Fund Global												
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
%ile												
Notional												

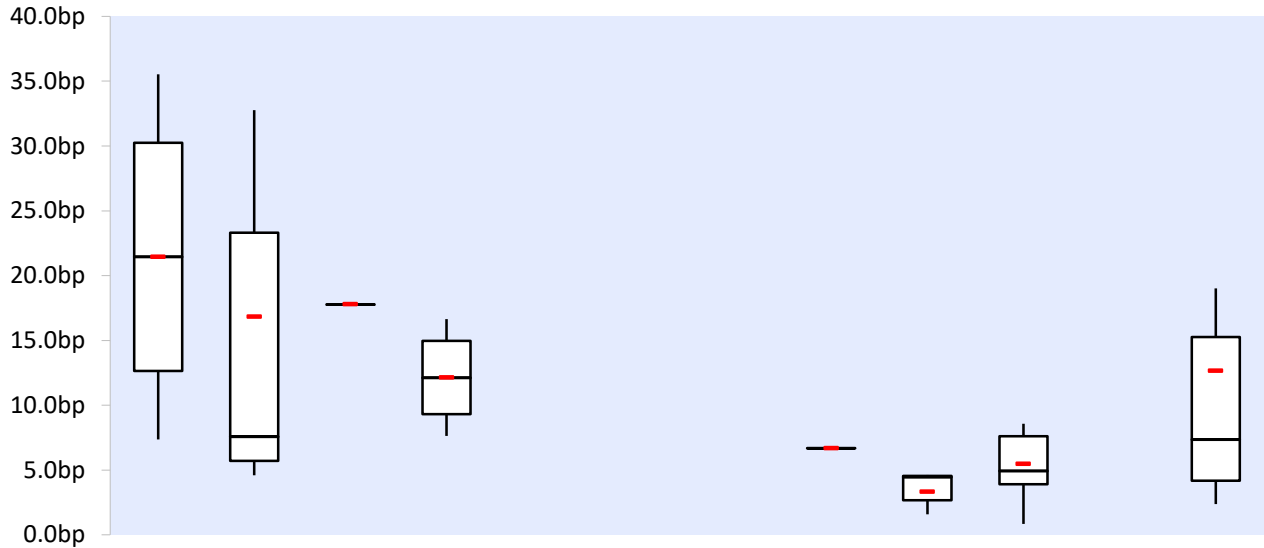
Overlays: passive beta/rebalancing, global TAA, policy tilt TAA

Cost by implementation style



	Internal		External		Internal		External		Internal		External	
	% of notional		% of notional		% of notional		% of notional		% of notional		% of notional	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	1.1	14.8		37.7				74.6	20.2	146.8		19.8
75th %ile	1.1	1.8		13.0				53.7	12.9	26.0		16.6
Median	1.1	1.1		6.5				18.8	0.7	4.7		11.3
25th %ile	1.1	0.2		2.9				9.5	0.5	0.6		6.0
10th %ile	1.1	0.2		2.2				3.9	0.4	0.5		2.8
— Average	1.1	6.1		13.7				35.9	8.7	60.9		11.3
Count	1	8	0	29	0	0	0	3	3	8	0	2
Avg. notional	3,368M	7,141M		1,040M				2,064M	67,235M	32,079M		2,823M
Norwegian Government Pension Fund Global												
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
%ile												
Notional												

Overlays: commodity, long/short, other
Cost by implementation style



	Commodity				Long/ Short				Other			
	Internal		External		Internal		External		Internal		External	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	35.5	32.8	17.8	16.7				6.7	4.6	8.6		19.0
75th %ile	30.3	23.3	17.8	15.0				6.7	4.6	7.6		15.3
Median	21.5	7.6	17.8	12.1				6.7	4.5	4.9		7.4
25th %ile	12.7	5.7	17.8	9.3				6.7	2.7	3.9		4.2
10th %ile	7.4	4.6	17.8	7.6				6.7	1.6	0.8		2.4
— Average	21.5	16.8	17.8	12.1				6.7	3.3	5.5		12.7
Count	2	3	1	2	0	0	0	1	3	10	0	15
Avg. notional	260M	359M	443M	673M				381M	2,291M	1,555M		602M
Norwegian Government Pension Fund Global												
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
%ile												
Notional												

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Appendices

Appendix A - Data Summary

Appendix B - Currency conversion

Appendix C - Data quality

Appendix D - Glossary of terms

Appendix A - Data Summary

Norwegian Government Pension Fund Global

Plan Info	2016	2015	2014
Contact	Julie Belck-Olsen	Julie Belck-Olsen	Kyrre Nilsen
Type of fund (corporate, public, other)	Public	Public	Public
Total fund size (mils) as at December 31	827,241.0	777,429.0	708,824.0
Asset-class level holdings provided on survey are: year end or average?	Average	Average	Average
Total return for year ended	6.92%	2.74%	7.58%
Is the return net or gross?	Gross	Gross	Gross
Total fund policy or benchmark return	6.97%	2.07%	8.30%

Ancillary Data	2016	2015	2014
What is your hedging policy for: Foreign non-U.S. Holdings?			
What were your actuarial fees in 000s?			
How many plan members/beneficiaries do you have: Active? Active (no-accrual)? Retired? Other?			
What type of plan(s) do you have?			
To what extent are your retired members' benefits indexed to inflation? Contractual % Ad hoc % If the indexation is subject to a cap, describe the cap			
What % of the plan's liabilities pertain to retired members?			
Actuarial valuation assumptions for funding purposes: Liability discount rate Salary progression rate			
What was your actuarial assumption for expected rate of return?			

Appendix A - Data Summary: Policy Weights and Benchmarks

Norwegian Government Pension Fund Global

Asset Class		Policy Weight	Benchmark	
			Description	Return
Stock - Europe	2016		Your Stock: Europe benchmark	3.8
	2015			
	2014			
U.S. Stock	2016		Your Stock: U.S. Broad/All benchmark	16.1
	2015			
	2014			
Stock - Emerging	2016		Your Stock: Emerging benchmark	10.7
	2015			
	2014			
Stock - Global	2016	62.2	Your Stock: Global benchmark	8.6
	2015	61.6	Your Stock: Global benchmark	3.0
	2014	61.1	Your Stock: Global benchmark	8.7
Fixed Income - Emerging	2016		Custom	13.0
	2015			
	2014			
Fixed Income - Global	2016	35.3	Barclays Global Aggregate + Barclays Global Inflation Linked	4.2
	2015	35.3	Barclays Global Aggregate + Barclays Global Inflation Linked	0.6
	2014	36.7	Barclays Global Aggregate + Barclays Global Inflation Linked	7.6
Real Estate ex-REITs	2016	2.5	Custom (Actual)	0.8
	2015	3.1	Custom (Actual)	10.0
	2014	2.2	Custom (Actual)	10.4

Appendix A - Data Summary: Assets, Returns and Costs

Norwegian Government Pension Fund Global

Asset Class		Assets (millions)					Fees/Costs in 000s						
		Internally		Externally Managed			Internally		Externally Managed				
		Active		Active			Active		Active				
		Assets	Return	Assets	Return	# of mgrs	000s	bps ¹	Base Fees ³	Perform Fees	Internal & Other ³	Total 000s	bps ¹
Stock - Europe	2016			8,128.0	2.4				16,996.0	3,584.0	4,543.0	25,123.0	30.9
	2015												
	2014												
U.S. Stock	2016			767.0	22.9				1,333.0	338.0	156.0	1,827.0	23.8
	2015												
	2014												
Stock - Emerging	2016			22,072.0	11.3				45,509.0	19,998.0	1,649.0	67,156.0	30.4
	2015												
	2014												
Stock - Global	2016	436,866.0	8.7			87	102,953.0	2.4					
	2015	454,193.0	4.3	30,644.5	-2.7	81	114,509.0	2.5	63,858.0	64,589.0	6,696.0	135,143.0	44.1
	2014	375,631.0	7.7	25,859.0	10.6	77	81,998.0	2.2	50,165.0	77,696.0	4,326.0	132,187.0	51.1
Fixed Income - Global	2016	282,097.0	4.3			4	40,473.0	1.4					
	2015	275,995.9	0.4	1,530.1	-8.5	3	32,020.0	1.2	4,815.0		175.0	4,990.0	32.6
	2014	243,704.0	6.9	1,278.0	6.3	4	25,671.0	1.1	3,153.0		180.0	3,333.0	26.1
Fixed Income - Emerging	2016			2,075.0	13.3				4,755.0		287.0	5,042.0	24.3
	2015												
	2014												

1. Cost in basis points = total cost / average holdings.

Appendix A: Assets, Returns and Costs (cont.)

Norwegian Government Pension Fund Global

Asset Class		Assets (millions) and Annual Returns				# Ext Mgrs	Investment Fees / Costs in 000s ¹					
		Internal & Co-Inv		External			Internal & Co-Inv			External		
		Assets	Return	Amt fees based on	Assets		Return	Total 000s	bps	Base Fees	Perform Fees	Internal & Other
Real Estate ex-REITs		<u>Direct</u>				<u>Direct</u>						
	2016											
	2015											
	2014											
			<u>Operating Sub.</u>				<u>Operating Sub.</u>					
	2016	24,136.0	0.8			0.0	47,438.0	19.7				
	2015	20,809.6	10.0			0.0	39,477.0	19.0				
2014	9,227.0	10.4			0.0	28,131.0	30.5					
						<u>Under Oversight</u>						

1. Cost in basis points = total cost / average holdings. Total cost excludes private asset performance fees because of comparability issues.

Appendix A - Data Summary: Oversight, Custodial and Other Costs

Norwegian Government Pension Fund Global

Oversight, Custodial and Other Costs			
		000s	bps
Oversight of the fund assets ¹	2016	66,954.0	0.9bp
	2015	67,859.0	0.9bp
	2014	59,310.0	0.9bp
Custodial total	2016	39,503.0	0.5bp
	2015	42,400.0	0.5bp
	2014	51,964.0	0.8bp
Custodial foreign (if available)	2016		
	2015	42,400.0	0.6bp
	2014		
Custodial domestic (if available)	2016		
	2015		
	2014		
Consulting / performance measurement	2016	9,570.0	0.1bp
	2015	8,868.0	0.1bp
	2014	6,363.0	0.1bp
Audit	2016	6,110.0	0.1bp
	2015	4,840.0	0.1bp
	2014	4,314.0	0.1bp
Other (legal etc)	2016		
	2015		
	2014		
Total	2016	122,137.0	1.6bp
	2015	123,967.0	1.6bp
	2014	121,951.0	1.9bp

Summary of All Asset Management Costs			
		000s	bps
Investment Management Costs	2016	290,012.0	3.7bp
	2015	326,139.0	4.2bp
	2014	271,320.0	4.1bp
Overlay Costs	2016		
	2015		
	2014		
Oversight, Custodial & Other Costs	2016	122,137.0	1.6bp
	2015	123,967.0	1.6bp
	2014	121,951.0	1.9bp
Total	2016	412,149.0	5.3bp
	2015	450,106.0	5.7bp
	2014	393,271.0	6.0bp

1. Oversight includes the salaries and benefits of executives and their staff responsible for overseeing the entire fund or multiple asset classes and the fees / salaries of the board or investment committee. All costs associated with the above including fees / salaries, travel, director's insurance and attributed overhead should be included.

Appendix B - Currency conversion

Norwegian Government Pension Fund Global

All currency amounts have been converted to Euros using Purchasing Power Parity figures per the OECD. The table below shows the foreign exchange rates for the past 5 years.

Currency conversion table					
	2016	2015	2014	2013	2012
United States Dollars - USD*	0.731	0.761	0.777	0.773	0.806
Canada Dollars - CAD	0.576	0.624	0.619	0.626	0.660
Euro - EUR*	1.000	1.000	1.000	1.000	1.000
Sweden Kronor - SEK	0.081	0.084	0.088	0.090	0.091
Swiss Franc - CHF	0.592	0.589		0.556	
United Kingdom Pounds - GBP	1.055	1.086	1.109	1.114	1.185
Australia Dollars - AUD	0.499	0.527	0.518	0.525	0.552
New Zealand Dollars - NZD	0.504	0.536	0.528	0.528	0.545
South African Rand - ZAR					

1. Source OECD website.

* USD - Some participating Asia-Pacific funds report holdings and performance in USD.

EUR - Participating funds from Denmark and Norway report holdings and performance in Euros.

Appendix C - Data quality

The value of the information contained in these reports is only as good as the quality of the data received. CEM's procedures for checking and improving the data include the following.

Improved survey clarity

Twenty years of feedback from survey participants has led to improved definitions and survey clarity. In addition to immediate feedback from participants, CEM has hosted user workshops to solicit additional feedback and to resolve issues, such as trade-offs between more information and effort on the part of participants.

Computer and desktop verification

Survey responses are compared to norms for the survey universe and to each sponsor's prior year data when available. This typically results in questions generated by our online survey engine as well as additional follow-up to clarify responses or with additional questions.

In addition to these procedures, data quality continues to improve for the following reasons:

Learning curve -

This is CEM's 26th year of gathering this data and experience is teaching the firm and the participants how to do a better job.

Growing universe -

As our universe of respondents continues to increase in size, so does our confidence in the results as unbiased errors tend to average themselves out.

Any suggestions on how to further improve data quality are welcome.

Currency Conversions

For reports where either the peer group or report universe includes funds from multiple countries, we have converted the returns back to the base currency of the fund we prepared the report for. For example, for a Euro zone fund with peers from the U.S. we converted U.S. returns to Euro based on the currency return for the year using December 31 spot rates.

Appendix D - Glossary of terms

Average cost

- Calculated by dividing actual annual costs by the average of beginning and end-of-year holdings. If beginning-of-year holdings are not available, they are estimated using end-of-year holdings before the effect of this year's return on investment.

Benchmark return

- Rate of return on a portfolio of investable assets (such as the S&P500) designated as the benchmark portfolio against which the fund measures its own performance for that asset class.

F statistics

- Measure of the statistical significance of the regression coefficients taken as a group. Generally, regression equations with 5 coefficients and sample sizes greater than 20 are statistically significant if its F statistic is greater than 3.

Global TAA

- Fully funded segregated asset pool dedicated to active asset allocation.

Impact coefficient

- Estimate of the impact on the dependent variable in a regression of a change in the value of a given explanatory variable

Level of significance

- Degree to which sample data explains the universe from which they are extracted.

N-year peers

- Subset of peer group that have participated in our study for at least the consecutive n years.

Oversight of the fund

- Resources devoted to the oversight of the fund.

Overlay

- Derivative based program (unfunded other than margin requirements), designed to enhance total portfolio return (such as a tactical asset allocation program) or to achieve some specific mandate such as currency hedging.

Passive proportion

- Proportion of assets managed passively, i.e., indexed to broad capital market benchmarks or dedicated to replicate market benchmarks.

Policy mix

- Reflects long-term policy or target asset weights. Policy asset mix is often established by a fund's investment committee or board and is determined by such long term considerations as liability structure, risk tolerance and long term capital markets prospects.

Policy return

- The return you would have earned if you had passively implemented your policy mix decision through your benchmark portfolios. Your policy return equals the sum of your policy weights multiplied by your asset class benchmarks for each asset class.

R squared (coefficient of determination)

- The percentage of the differences in the dependent variable explained by the regression equation. For example, an R squared of 1 means 100% of the differences are explained and an R squared of 0 means that none of the differences are explained.

Value added

- the difference between your total actual return and your policy return. It is a measure of actual value produced over what could have been earned passively.