

Investment
Cost Effectiveness Analysis
(for the 10-year period ending December 31, 2019)

Government Pension Fund Norway



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Key takeaways

Value added

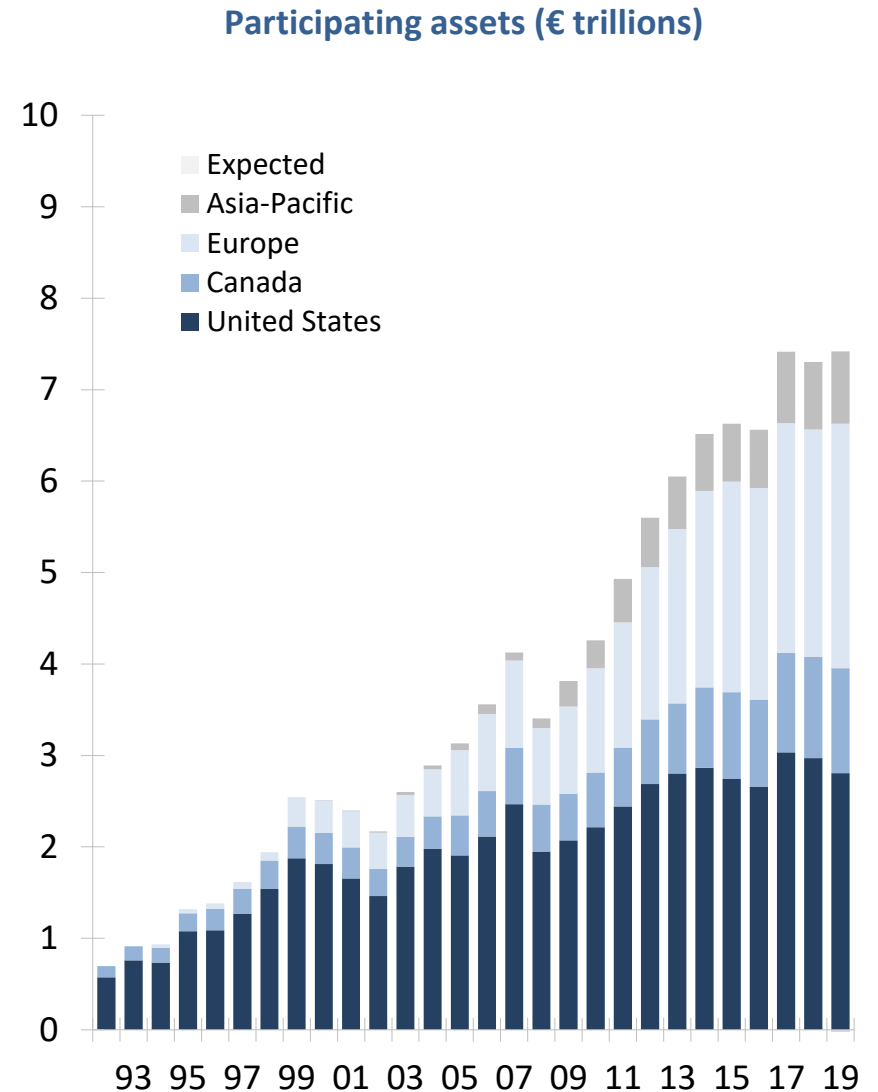
- Your 10-year net value added was 0.6%. This was above the Global median of 0.3% and above the peer median of 0.3%.

Cost

- Your 2019 investment cost of 6.7 bps was below your benchmark cost of 15.6 bps. This suggests that your fund was low cost compared to your peers.
- Your fund was low cost because you had a lower cost implementation style and you paid less than peers for similar services.
- Your 10-year performance placed in the positive value added, low cost quadrant of the cost effectiveness chart.

This benchmarking report compares your cost and return performance to the 305 funds in CEM's extensive pension database.

- 151 U.S. pension funds participate. The median U.S. fund had assets of €8.1 billion and the average U.S. fund had assets of €18.6 billion. Total participating U.S. assets were €2.8 trillion.
- 69 Canadian funds participate with assets totaling €1.1 trillion.
- 74 European funds participate with aggregate assets of €2.7 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Ireland, Denmark and the U.K.
- 6 Asia-Pacific funds participate with aggregate assets of €791.2 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 Government Pension Fund Norway

- 16 Global sponsors from €13 billion to €92 billion
- Median size of €56.2 billion versus your €27.3 billion
- Median size of internal equity program of €13 billion versus your €17 billion

- 3 Canadian funds, 7 European funds, 1 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.

Net value added is the component of total return from active management. Your 10-year net value added was 0.6%.

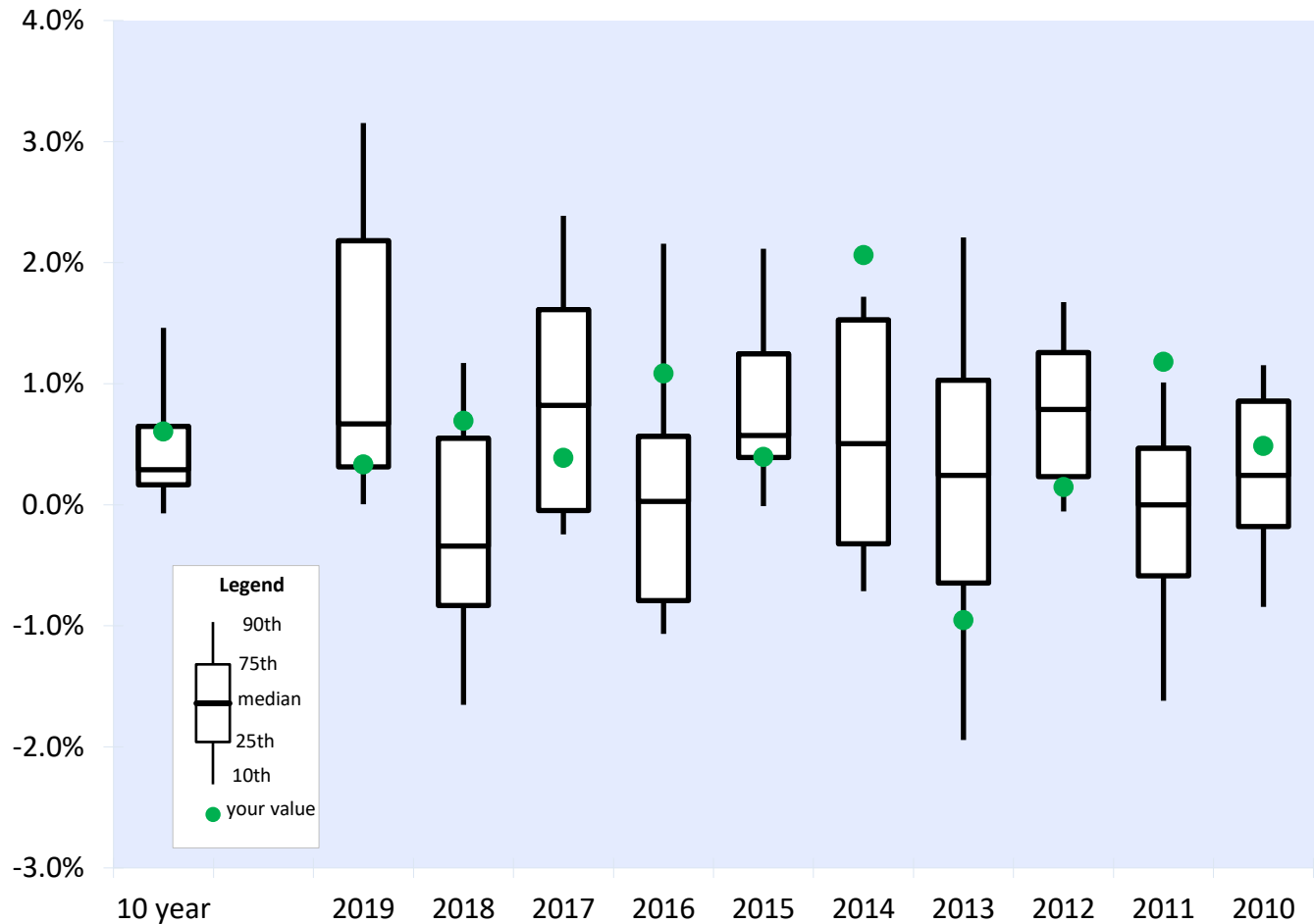
Net value added equals total net return minus policy return.

Value added for Government Pension Fund Norway

Year	Net Return	Policy Return	Net Value Added
2019	12.4%	12.0%	0.3%
2018	-0.4%	-1.1%	0.7%
2017	13.2%	12.8%	0.4%
2016	7.0%	5.9%	1.1%
2015	6.9%	6.5%	0.4%
2014	10.6%	8.5%	2.1%
2013	15.6%	16.6%	-1.0%
2012	12.1%	11.9%	0.1%
2011	-4.0%	-5.2%	1.2%
2010	15.2%	14.7%	0.5%
10-Year	8.7%	8.0%	0.6%

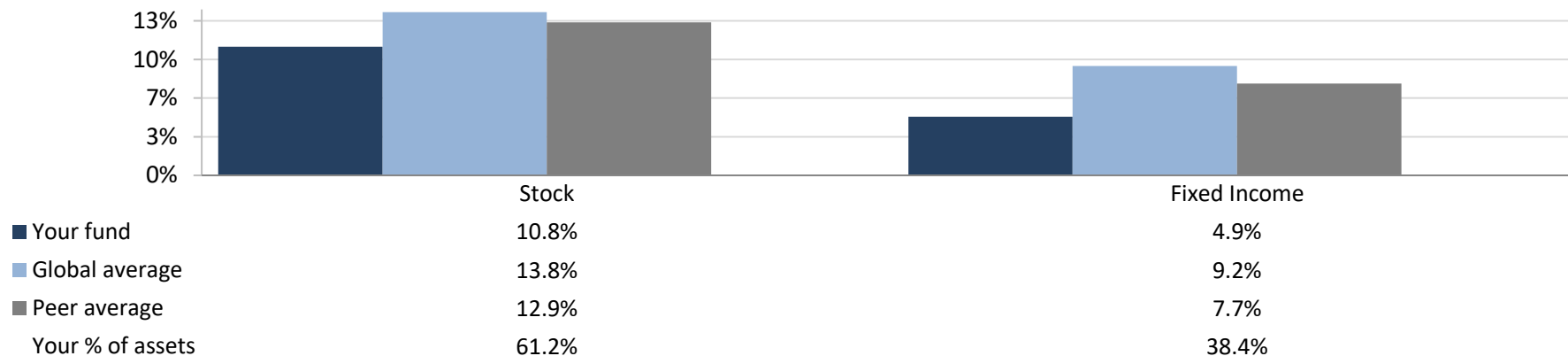
Your 10-year net value added of 0.6% compares to a median of 0.3% for your peers and 0.3% for the Global universe.

Peer net value added - quartile rankings

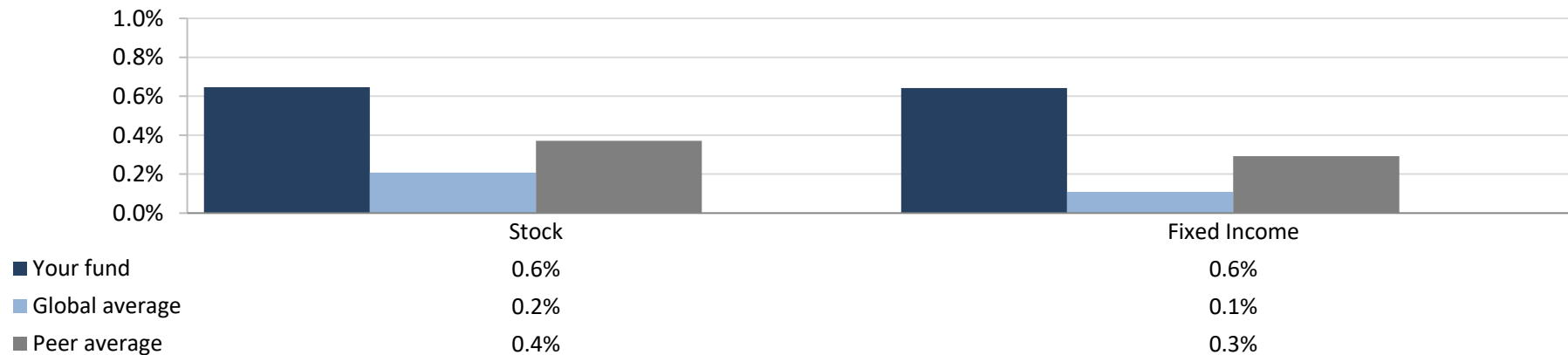


Comparisons of your 10-year net return and net value added by major asset class:

10-year average net return by major asset class



10-year average net value added by major asset class



Your investment costs were €17.2 million or 6.7 basis points in 2019.

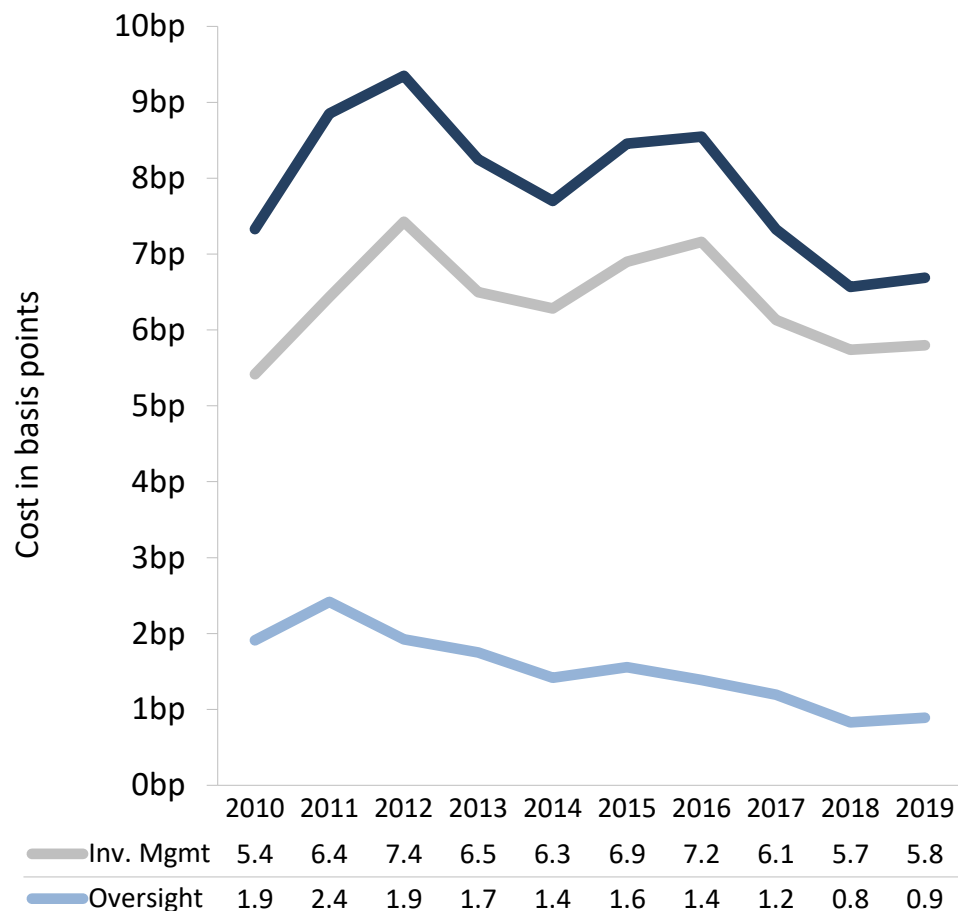
Asset management costs by asset class and style (€000s)	Internal Active	Total	
Stock - EAFE	7,017	7,017	
Fixed Income - EAFE	7,921	7,921	
Total excluding private asset performance fees		14,937	5.8bp
Oversight, custodial and other costs ¹			
Oversight of the fund		1,270	
Trustee & custodial		582	
Consulting and performance measurement		56	
Audit		252	
Other		131	
Total oversight, custodial & other costs		2,291	0.9bp
Total investment costs (excl. transaction costs)		17,228	6.7bp

Footnotes

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

Your costs changed very little between 2010 and 2019. You paid less in 2019 for similar investment styles but it was mostly offset by a higher cost asset mix.

Trend in cost



Reasons why you costs decreased by 0.6 bps

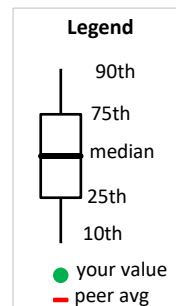
	Impact in bps
1. Asset mix movements	0.1
2. Paid less, net, for similar investment styles	
• Lower oversight, custodial & other costs	(1.0)
• Higher internal investment management costs	0.3
	<u>(0.7)</u>
Total decrease	<u>(0.6)</u>

Your total investment cost of 6.7 bps was the lowest of the peers and was substantially below the peer median of 40.3 bps.

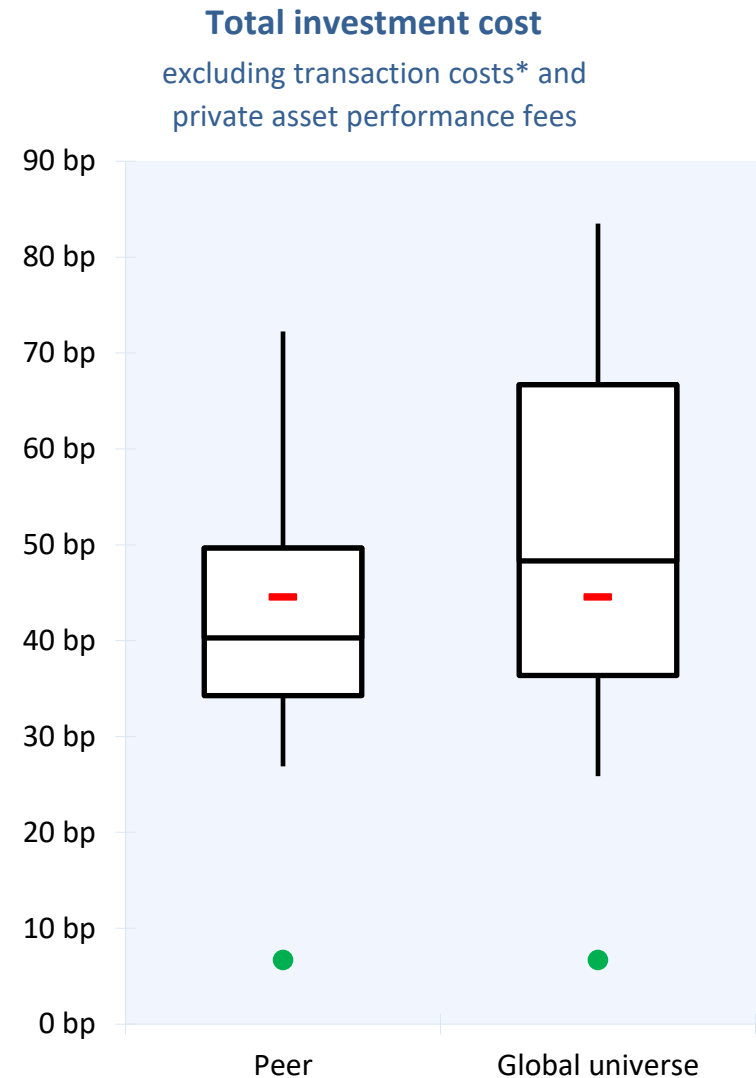
Differences in total investment cost are often caused by two factors that are often outside of management's control:

- Asset mix, particularly holdings of the highest cost asset classes: real estate (excl. REITs), infrastructure, hedge funds and private equity. These high cost assets equaled 0% of your funds assets at the end of 2019 versus a peer average of 27%.
- 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.



* Initial insights into transaction costs are discussed at the end of section 5.



Benchmark cost analysis suggests that, after adjusting for fund size and asset mix, your fund was low cost by 8.9 basis points in 2019.

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 6.7 bp was below your benchmark cost of 15.6 bp. Thus, your cost savings were 8.9 bp.

Your cost versus benchmark

	€000s	basis points
Your total investment cost	17,228	6.7 bp
Your benchmark cost	40,089	15.6 bp
Your excess cost	(22,861)	(8.9) bp

Your fund was low cost 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. Implementation style differences	(14,510)	(5.6)
2. Paying less than peers for similar services		
• Internal investment management costs	(4,712)	(1.8)
• Oversight, custodial & other costs	(3,638)	(1.4)
	<u>(8,351)</u>	<u>(3.2)</u>
Total savings	(22,861)	(8.9)

Alternative benchmark cost:

	Average holdings in €mils	GPFN cost in bps	Cost comparison with median peer across all management styles (bps)			Cost comparison with median peer with similar management style (bps)		
			Benchmark cost	Difference to benchmark cost	Contribution to total cost difference	Benchmark cost	Difference to benchmark cost	Contribution to total cost difference
<i>Internal asset management</i>								
Stock - Europe	15,572	4.5	14.9	10.4	6.3	9.3	4.8	2.9
Fixed Income- Europe	10,133	7.8	8.7	0.8	0.3	5.0	(2.8)	-1.1
Total, excl. Overlays and overhead		5.8	12.4		6.6	7.6		1.8
Overlay Programs	25,766	0.0	0.8	0.8	0.8	0.8	0.8	0.8
Overhead	25,766	0.9	2.3	1.4	1.4	2.3	1.4	1.4
Total	25,766	6.7	15.6		8.9	10.8		4.1

Notes:

Internal Europe stock uses All stock as the benchmark.

Internal Europe fixed income uses All fixed income as the benchmark.

High-level estimate of management costs incurred if GPFN were managed passively:

	Average holdings in €mils	Current cost in bps	Benchmark target cost in bps
<i>Internal asset management</i>			
Stock - Europe	15,572	4.5	3.4
Fixed Income- Europe	10,133	7.8	1.9
Overhead	25,766	0.9	0.9
Total	25,766	6.7	3.7

Notes:

Internal stock uses Global stock as the benchmark.

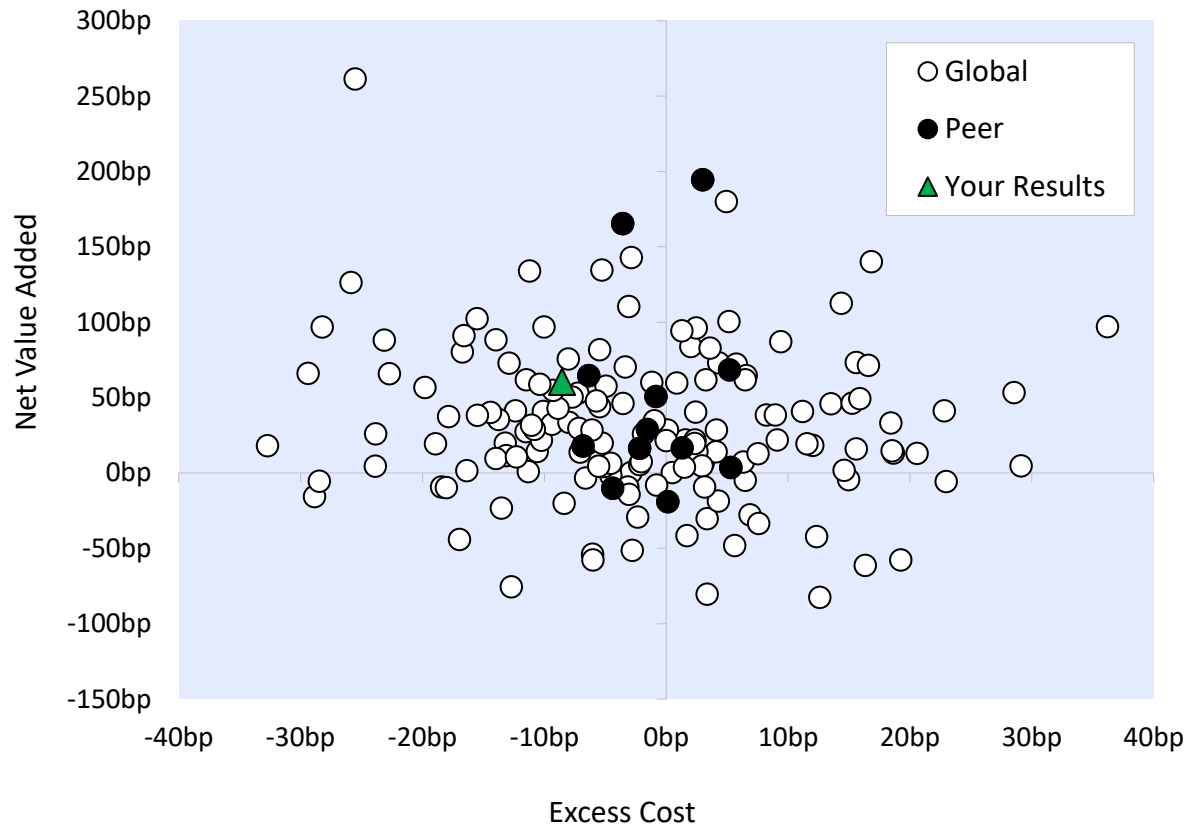
Internal fixed income uses All fixed income as the benchmark.

The benchmark result needs to be interpreted with caution since the value is very low and based on a limited number of observations.

This also does not take into consideration possible issues with owning a relatively large proportion of a given benchmark index or any constraints around ESG factors.

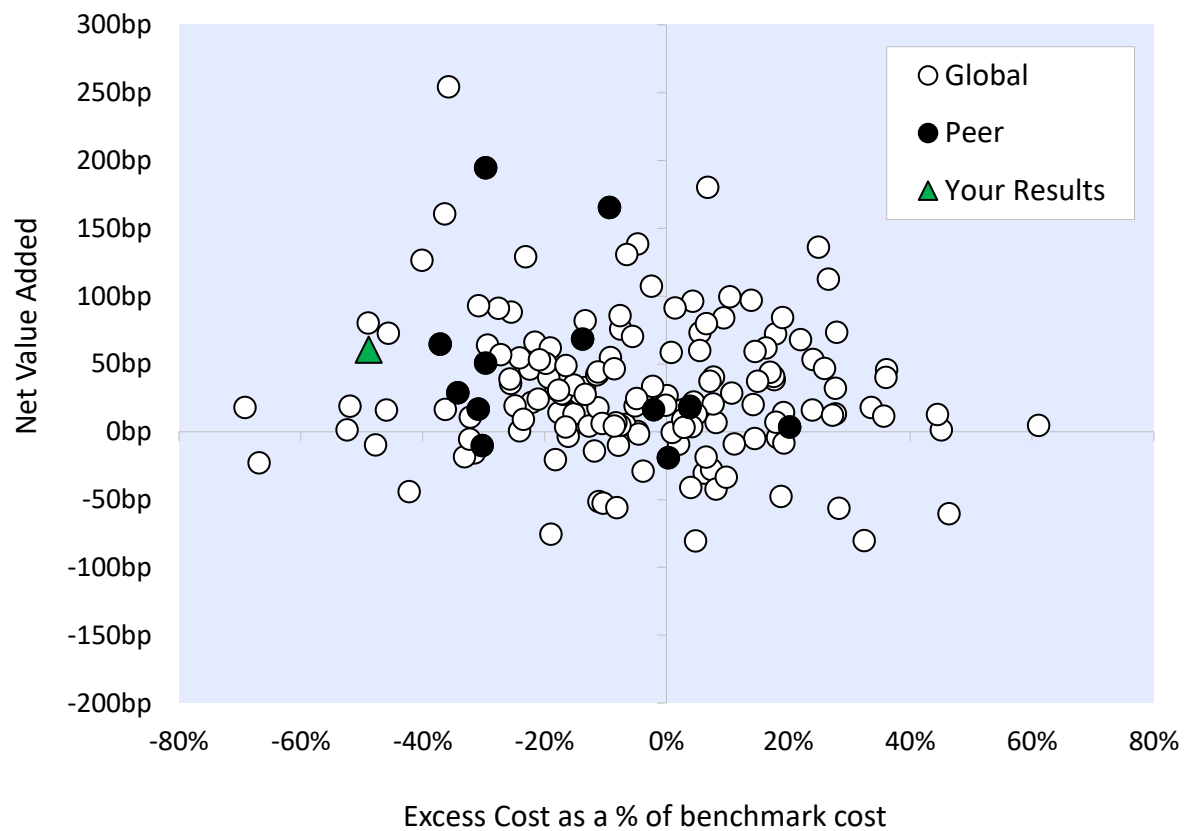
Your 10-year performance placed in the positive value added, low cost quadrant of the cost effectiveness chart.

10-Year net value added versus excess cost
(Your 10-year: net value added 61 bps, cost savings 9 bps)



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

10-year excess cost as a % of BM cost vs. net value added



2

Description of peer group and universe

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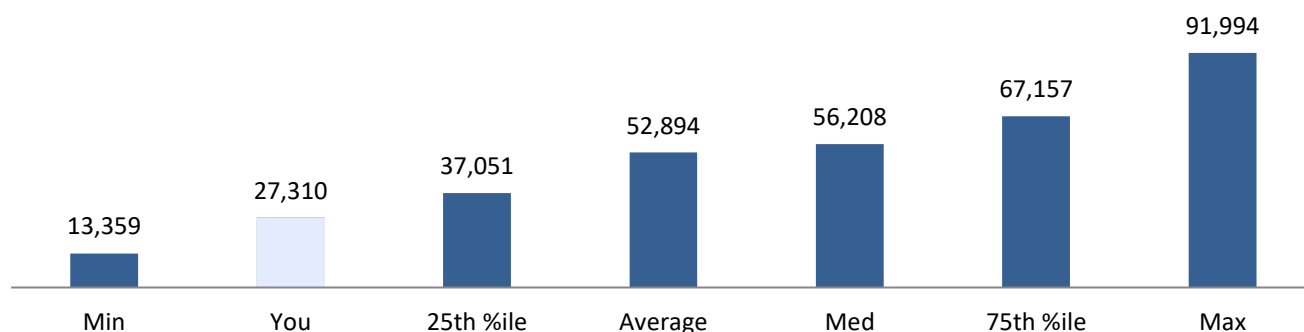
Peer group

Your peer group is comprised of 16 Global funds, with assets ranging from €13.4 billion to €92.0 billion versus your €27.3 billion. The median size is €56.2 billion.

Peer Group Characteristics - 2019

	Your Plan	Peers	Global average
<u>Plan Assets (\$ billions)</u>			
Range	27.3	13.4 - 92.0	0.0 - 937.6
Median		56.2	6.1
<u># of Plans</u>			
Corporate		0	134
Public	1	12	131
Other		4	40
Total		16	305
<u>Implementation style</u>			
% External active	0.0	29.4	65.5
% External passive	0.0	4.1	18.1
% Internal active	100.0	57.4	12.5
% Internal passive	0.0	9.1	3.9
<u>Asset mix</u>			
% Stock	61.8	40.8	38.8
% Fixed Income	38.2	28.9	38.3
% Real Assets	0.0	13.2	10.0
% Private Equity	0.0	7.8	5.1
% Hedge Funds & Other	0.0	6.7	5.7

Total fund assets (€ millions) - you versus peers

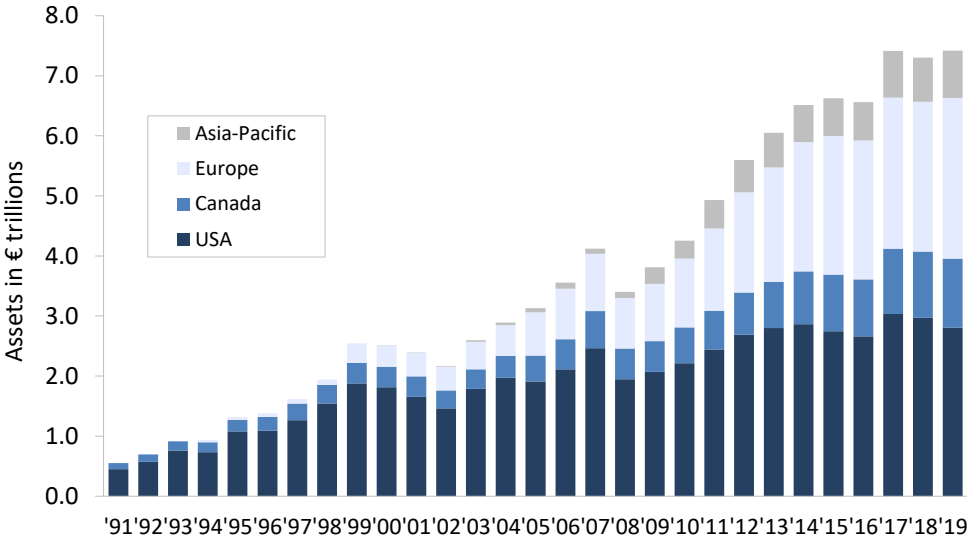


CEM global universe

CEM has been providing investment benchmarking solutions since 1991. The 2019 survey universe is comprised of 305 funds representing €7.5 trillion in assets. The breakdown by region is as follows:

- 151 U.S. pension funds with aggregate assets of €2.8 trillion.
- 69 Canadian pension funds with aggregate assets of €1.1 trillion.
- 74 European pension funds with aggregate assets of €2.7 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Denmark, UK, and Ireland.
- 6 Asia-Pacific pension funds with aggregate assets of €0.8 trillion.

CEM global universe



Universe subsets

CEM's global survey universe is comprised of 305 funds with total assets of €7.5 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 €13.4 - €92.0 billion. The peer median of €56.2 billion compares to your €27.3 billion.
- Global - The global universe is comprised of 305 funds ranging in size from €0.0 - €937.6 billion. The median fund is €6.1 billion.

Universe subsets by number of funds and assets

	Peer group ¹	Corp.	Public	Other	Total	U.S.	Canada	Europe	Asia-Pacific	Total
# of funds										
2019	16	134	131	40	305	151	69	74	11	305
2018	16	146	146	43	335	170	78	75	12	335
2017	16	150	155	46	351	167	79	91	14	351
2016	16	155	146	47	348	170	81	83	14	348
2015	16	162	149	53	364	176	81	92	15	364
2014	16	165	206	53	424	178	89	144	13	424
2013	16	186	200	61	447	193	90	152	12	447
2012	15	189	204	57	450	203	89	144	14	450
2011	15	196	115	66	377	204	89	70	14	377
2010	13	181	120	47	348	206	95	38	9	348
# of funds with uninterrupted data for:										
1 yr	16	134	131	40	305	151	69	74	11	305
2 yrs	16	124	129	38	291	145	66	71	9	291
3 yrs	16	115	124	36	275	136	60	70	9	275
4 yrs	16	109	122	36	267	132	57	69	9	267
5 yrs	16	103	115	34	252	126	51	66	9	252
6 yrs	16	97	112	33	242	123	50	63	6	242
7 yrs	16	93	108	31	232	116	48	62	6	232
8 yrs	15	86	104	27	217	111	47	53	6	217
9 yrs	14	83	71	26	180	109	44	21	6	180
10 yrs	13	77	67	21	165	101	44	16	4	165
Total assets (€ billions)										
2019	846	1,187	4,839	1,468	7,494	2,806	1,148	2,674	865	7,494
2018	777	1,098	4,925	1,345	7,369	2,969	1,107	2,490	804	7,369
2017	772	1,119	5,022	1,493	7,634	3,035	1,088	2,512	999	7,634
2016	690	1,080	4,292	1,377	6,749	2,661	950	2,314	825	6,749
2015	682	1,102	4,468	1,340	6,910	2,746	946	2,303	916	6,910
2014	662	1,164	4,373	1,229	6,767	2,866	879	2,149	873	6,767
2013	604	1,106	4,051	1,107	6,264	2,802	765	1,909	788	6,264
2012	536	1,096	3,795	852	5,744	2,687	707	1,665	685	5,744
2011	507	1,075	3,223	761	5,060	2,442	644	1,368	605	5,060
2010	427	941	2,723	625	4,290	2,215	598	1,142	335	4,290
2019 asset distribution (€ billions)										
Avg	52.9	8.9	36.9	36.7	24.6	18.6	16.6	36.1	78.7	24.6
Max	92.0	54.0	937.6	464.4	937.6	262.3	233.1	937.6	452.8	937.6
75th %ile	67.2	12.0	28.7	32.9	19.4	18.8	10.2	24.4	71.7	19.4
Median	56.2	4.5	6.5	11.4	6.1	8.1	3.5	7.0	20.7	6.1
25th %ile	37.1	1.9	2.3	2.4	2.2	2.4	1.4	2.5	2.0	2.2
Min	13.4	0.2	0.0	0.1	0.0	0.2	0.0	0.5	0.5	0.0

1. Peer group statistics are for your 2019 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 - 2019 (as a % of year-end assets)

	Your fund	Peer group	Global by type				Global by Country				
			Corp.	Public	Other	Total	U.S.	Canada	Europe	Asia-Pacific	Total
<u>Implementation style</u>											
External Active	0.0	28.7	69.1	57.4	60.4	62.9	71.0	60.6	49.1	59.6	62.9
Fund of funds	0.0	0.7	2.1	3.1	2.3	2.6	2.4	1.6	3.8	2.3	2.6
External passive	0.0	4.1	18.7	17.2	19.0	18.1	18.0	12.3	24.8	11.0	18.1
Internal Active	100.0	57.4	7.7	17.0	13.4	12.5	5.4	20.5	18.4	18.8	12.5
Internal Passive	<u>0.0</u>	<u>9.1</u>	<u>2.4</u>	<u>5.3</u>	<u>4.8</u>	<u>3.9</u>	<u>3.2</u>	<u>5.0</u>	<u>3.9</u>	<u>8.3</u>	<u>3.9</u>
Total	100	100	100	100	100	100	100	100	100	100	100
<u>Actual asset mix</u>											
Stock	61.8	40.8	31.1	45.9	41.0	38.8	37.1	38.7	41.4	44.9	38.8
Fixed Income	38.2	30.0	52.3	26.1	35.4	38.8	41.9	36.3	36.6	28.3	38.8
Global TAA	0.0	1.6	0.7	1.4	0.2	0.9	1.1	0.7	0.8	1.2	0.9
Real Assets	0.0	13.2	6.1	13.3	12.1	10.0	7.0	15.6	10.9	9.1	10.0
Hedge Funds	0.0	3.7	3.5	3.0	2.7	3.2	4.4	1.9	1.8	4.8	3.2
Balanced Funds	0.0	0.0	0.0	0.9	0.0	0.4	0.0	0.0	1.7	0.0	0.4
Risk Parity	0.0	0.3	0.6	0.6	1.0	0.6	0.9	0.2	0.1	3.6	0.6
Private Debt	0.0	2.6	1.6	2.2	3.6	2.1	1.5	2.5	3.1	1.4	2.1
Private Equity	<u>0.0</u>	<u>7.8</u>	<u>4.1</u>	<u>6.6</u>	<u>4.0</u>	<u>5.1</u>	<u>6.2</u>	<u>4.2</u>	<u>3.7</u>	<u>6.7</u>	<u>5.1</u>
Total	100	100	100	100	100	100	100	100	100	100	100
<u>Policy asset mix</u>											
Stock	62.0	43.8	31.6	46.1	42.0	39.2	37.3	39.0	42.0	47.2	39.2
Fixed Income	38.0	30.4	52.0	26.7	35.7	39.0	41.7	37.2	36.6	29.4	39.0
Global TAA	0.0	3.1	0.6	1.4	0.2	0.9	1.0	0.8	0.8	1.0	0.9
Real Assets	0.0	12.0	6.3	13.5	12.4	10.2	7.7	15.3	10.8	8.3	10.2
Hedge funds	0.0	1.9	3.3	2.6	2.0	2.8	3.8	1.6	1.8	3.8	2.8
Balanced Funds	0.0	0.0	0.0	0.5	0.0	0.2	0.0	0.0	0.8	0.0	0.2
Risk Parity	0.0	0.3	0.5	0.4	1.0	0.5	0.8	0.2	0.1	2.3	0.5
Private Debt	0.0	1.9	1.4	2.4	3.2	2.1	1.3	2.3	3.4	2.1	2.1
Private Equity	<u>0.0</u>	<u>6.5</u>	<u>4.2</u>	<u>6.5</u>	<u>3.6</u>	<u>5.1</u>	<u>6.4</u>	<u>3.6</u>	<u>3.7</u>	<u>5.9</u>	<u>5.1</u>
Total	100	100	100	100	100	100	100	100	100	100	100

Implementation style, actual mix and policy mix trends

Implementation style, actual mix and policy mix - 2015 to 2019 (as a % of year-end assets)

	Your fund					Peer average ¹					Global average ¹				
	2019	2018	2017	2016	2015	2019	2018	2017	2016	2015	2019	2018	2017	2016	2015
Implementation style															
External active	0.0	0.0	0.0	0.0	0.0	25.6	25.7	25.2	26.0	26.8	62.7	62.5	61.6	61.1	61.1
Fund of funds	0.0	0.0	0.0	0.0	0.0	0.5	0.6	0.7	0.6	0.6	2.2	2.4	2.4	2.6	2.7
External passive	0.0	0.0	0.0	0.0	0.0	4.0	3.5	4.4	4.8	5.2	16.1	16.3	17.1	17.6	17.9
Internal active	100.0	99.8	99.5	99.5	99.5	58.7	59.0	58.9	58.1	56.4	13.8	13.8	14.1	13.9	13.4
Internal passive	<u>0.0</u>	<u>0.2</u>	<u>0.5</u>	<u>0.5</u>	<u>0.5</u>	<u>11.1</u>	<u>11.1</u>	<u>10.8</u>	<u>10.6</u>	<u>11.0</u>	<u>5.2</u>	<u>4.9</u>	<u>4.7</u>	<u>4.9</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	61.8	58.9	62.3	60.8	59.2	40.4	40.7	42.7	41.5	41.9	37.6	37.6	41.3	41.4	42.5
Fixed income	38.2	41.1	37.7	39.2	40.8	31.8	32.0	32.0	31.8	31.6	39.3	39.0	37.1	36.9	36.6
Global TAA	0.0	0.0	0.0	0.0	0.0	1.9	2.3	2.5	3.1	4.0	0.9	0.9	0.8	1.1	1.4
Real assets	0.0	0.0	0.0	0.0	0.0	13.7	13.3	12.6	13.1	12.5	10.3	10.5	9.8	9.7	9.1
Hedge funds	0.0	0.0	0.0	0.0	0.0	2.2	2.3	2.4	2.6	2.5	3.5	3.8	3.7	4.0	4.0
Balanced Funds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Risk Parity	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.6	0.4	0.3
Private credit	0.0	0.0	0.0	0.0	0.0	2.3	2.1	1.5	1.3	1.0	1.9	1.8	1.4	1.2	0.9
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>6.9</u>	<u>5.9</u>	<u>6.3</u>	<u>6.0</u>	<u>6.0</u>	<u>5.9</u>	<u>5.3</u>	<u>5.4</u>	<u>5.3</u>
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Policy asset mix															
Stock	62.0	59.0	64.5	61.1	59.5	43.1	43.1	44.6	44.8	44.9	38.5	39.0	41.4	42.0	43.0
Fixed income	38.0	41.0	35.5	38.9	40.5	32.3	32.5	31.6	32.1	32.3	39.4	38.9	37.3	36.9	36.7
Global TAA	0.0	0.0	0.0	0.0	0.0	3.9	3.9	3.8	4.3	4.4	1.0	1.0	1.0	1.2	1.2
Real assets	0.0	0.0	0.0	0.0	0.0	12.3	12.2	12.2	11.6	11.3	10.3	10.2	9.9	9.6	9.0
Hedge funds	0.0	0.0	0.0	0.0	0.0	0.6	0.6	0.6	0.6	0.6	3.0	3.2	3.3	3.4	3.4
Balanced Funds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Risk Parity	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.3	0.4
Private credit	0.0	0.0	0.0	0.0	0.0	1.6	1.8	1.4	1.2	1.1	1.6	1.5	1.2	1.0	0.8
Private equity	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>5.8</u>	<u>5.5</u>	<u>5.3</u>	<u>5.0</u>	<u>4.9</u>	<u>5.8</u>	<u>5.6</u>	<u>5.5</u>	<u>5.6</u>	<u>5.5</u>
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

1. Trends are based on the 165 Global and 13 peer funds with 10 or more consecutive years of data ending 2019.

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 - 2019 (as a % of year-end 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.					10.3	8.7	46.8	34.2	38.3	44.0	9.6	8.1
Stock - EAFE	0.0		0.0	100.0	13.5	6.0	74.3	6.2	50.6	26.1	20.0	3.3
Stock - Global					35.6	0.7	63.7	0.0	61.1	25.6	10.5	2.8
Stock - Other					1.9	33.0	50.3	14.8	69.4	9.9	15.5	5.2
Stock - Emerging					40.9	11.3	39.8	8.1	76.3	12.9	6.8	4.0
Stock - ACWI x U.S.					71.1	0.0	28.8	0.1	69.2	29.4	0.6	0.8
Stock - Aggregate	0.0		0.0	100.0	20.2	7.3	59.4	13.1	55.4	28.8	11.2	4.5
Fixed Income - U.S.					5.2	9.0	83.6	2.1	63.3	17.2	16.2	3.2
Fixed Income - EAFE	0.0		0.0	100.0	3.5	0.4	74.6	21.6	40.3	34.9	16.9	7.9
Fixed Income - Global					11.0	0.0	79.9	9.2	59.6	7.5	29.0	3.9
Fixed Income - Other					9.3	6.1	84.6	0.0	55.4	15.3	24.6	4.7
Fixed Income - Long Bonds					1.0	0.0	99.0	0.0	78.8	11.0	5.9	4.2
Fixed Income - Emerging					61.4	0.0	35.3	3.3	83.0	4.7	10.9	1.4
Fixed Income - Inflation Indexed					0.0	7.4	77.7	14.9	10.2	47.4	17.3	25.2
Fixed Income - High Yield					92.7	0.0	7.3	0.0	88.8	2.2	7.8	1.2
Fixed Income - Bundled LDI					0.0	0.0	0.0	100.0	45.4	27.9	14.3	12.4
Fixed Income - Convertibles					100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0
Cash	0.0		100.0		35.5		64.5		54.8		45.2	
Fixed Income - Aggregate	0.0		0.0	100.0	14.3	3.1	72.1	10.4	63.0	16.3	15.3	5.5
Commodities					32.4	0.0	0.0	67.6	59.4	15.4	11.0	14.1
Infrastructure					27.4	0.6		72.0	77.7	5.5		16.8
Natural Resources					49.4	0.0		50.6	76.3	1.4		22.2
REITs					18.5		0.0	21.9	59.5	69.1	16.4	12.1
Real Estate					36.6	0.3		63.1	76.3	7.0		16.7
Other Real Assets					100.0			0.0	95.1			4.9
Real Assets - Aggregate					35.0	0.4	0.0	63.1	1.5	76.2	5.7	1.3
Hedge Funds					95.8	4.2			71.7	28.3		
Global TAA					10.8			89.2	78.3			21.7
Balanced Funds					0.0		0.0	0.0	85.8	14.2	0.0	0.0
Risk Parity					100.0			0.0	93.7			6.3
Private Credit					64.2	0.0		35.8	91.5	0.9		7.7
Mortgages					57.7			42.3	87.5			12.5
Diversified Private Equity					71.7	6.0		22.3	71.6	23.2		5.2
Venture Capital					75.8	22.2		2.0	58.7	40.9		0.4
LBO					92.7	6.2		1.1	95.1	4.7		0.2
Other Private Equity					89.2	0.0		10.8	86.8	0.0		13.2
Private Equity - Aggregate					77.3	6.9		15.8	74.1	21.2		4.7
Total Fund - Yr.-End Holdings	0.0	0.0	0.0	100.0	28.7	0.7	4.1	57.4	9.1	62.9	2.6	18.1
												12.5
												3.9

Actual mix

Actual asset mix - 2015 to 2019 (as a % of total year-end assets)

	Your fund					Peer average %					Global average %				
	2019	2018	2017	2016	2015	2019	2018	2017	2016	2015	2019	2018	2017	2016	2015
Stock - U.S.						11.1	11.4	11.4	11.1	11.1	10.7	11.2	12.2	13.4	13.6
Stock - EAFE	61.8	58.9	62.3	60.8	59.2	15.3	15.3	16.4	16.8	17.1	6.3	6.9	8.1	8.4	8.2
Stock - Global						7.7	7.5	7.5	6.1	6.1	13.3	12.5	13.0	11.8	11.8
Stock - Other						1.7	2.0	2.5	3.0	3.2	3.0	3.4	3.8	4.3	4.2
Stock - Emerging						4.2	4.3	4.5	4.4	4.4	3.0	3.1	3.4	3.0	2.9
Stock - ACWI x U.S.						0.8	0.8	0.9	0.8	0.8	2.5	2.3	2.5	2.6	2.7
Stock - Aggregate	61.8	58.9	62.3	60.8	59.2	40.8	41.3	43.2	42.3	42.6	38.8	39.4	43.1	43.5	43.4
Fixed Income - U.S.						6.6	6.5	6.2	6.0	6.4	6.9	7.0	5.7	6.2	6.8
Fixed Income - EAFE	37.9	40.9	37.2	38.7	40.2	5.7	6.7	6.3	6.9	7.1	3.5	3.2	3.8	3.7	4.3
Fixed Income - Global						4.3	4.1	4.0	4.2	3.5	2.5	2.4	2.8	2.7	2.9
Fixed Income - Other						2.3	2.5	3.2	3.8	4.0	4.8	5.0	5.3	5.9	6.0
Fixed Income - Long Bonds						2.1	1.5	1.2	1.3	1.3	12.6	12.8	10.7	10.0	9.7
Fixed Income - Emerging						2.1	1.9	1.9	1.8	1.7	1.3	1.1	1.1	1.0	1.1
Fixed Income - Inflation Indexed						2.0	3.0	3.3	3.0	3.0	1.8	1.8	2.1	2.4	2.0
Fixed Income - High Yield						0.7	0.7	1.0	1.2	1.3	1.3	1.2	1.2	1.3	1.3
Fixed Income - Bundled LDI						0.9					2.0	2.2	1.2	0.2	0.1
Fixed Income - Convertibles						0.2	0.2	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0
Cash	0.2					2.0	1.9	2.3	1.4	1.4	1.4	1.7	2.1	2.0	1.8
Fixed Income - Aggregate	38.2	40.9	37.2	38.7	40.2	28.9	29.0	29.5	29.5	29.7	38.3	38.6	36.1	35.6	36.1
Commodities						0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.3
Infrastructure						3.5	3.1	3.1	2.9	2.6	2.3	2.1	1.9	1.7	1.3
Natural Resources						0.7	0.6	0.6	0.6	0.5	0.3	0.4	0.5	0.4	0.3
REITs						0.2	0.2	0.2	0.2	0.2	0.5	0.6	0.6	0.5	0.6
Real Estate						8.6	8.6	8.0	8.5	8.4	6.3	6.3	5.7	5.7	5.5
Other Real Assets						0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3
Real Assets - Aggregate						13.2	12.8	12.1	12.6	12.1	10.0	9.9	9.1	9.0	8.4
Hedge Funds						3.7	3.7	3.7	3.9	3.9	3.2	3.4	3.4	3.8	3.8
Global TAA						1.6	1.9	2.0	2.5	3.2	0.9	0.9	0.9	1.2	1.6
Balanced Funds											0.4	0.4	0.5	0.5	0.5
Risk Parity						0.3	0.3	0.3	0.3	0.3	0.6	0.5	0.4	0.3	0.3
Mortgages						0.6	0.6	0.5	0.5	0.4	0.6	0.6	0.5	0.4	0.4
Private Credit						2.0	1.7	1.2	1.0	0.7	1.5	1.3	1.0	0.8	0.7
Diversified Private Equity						5.3	4.8	4.1	4.2	3.9	4.2	3.8	3.4	3.5	3.3
Venture Capital						0.5	0.5	0.4	0.4	0.4	0.2	0.3	0.2	0.2	0.3
LBO						1.8	1.7	1.3	1.3	1.4	0.6	0.5	0.5	0.5	0.5
Other Private Equity						0.2	0.3	0.4	0.5	0.5	0.2	0.2	0.2	0.2	0.2
Private Equity - Aggregate						7.8	7.2	6.2	6.4	6.1	5.1	4.8	4.3	4.5	4.3
Derivatives/Overlays Mkt Value		0.2	0.5	0.5	0.5	1.1	1.4	1.2	0.9	0.9	0.6	0.3	0.6	0.4	0.6
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	305	335	351	348	364
Median Assets (€ billions)	27.3	24.2	23.0	23.5	20.8	56.2	49.9	51.4	46.6	44.0	6.1	5.2	5.2	4.8	4.3

Policy mix

Policy asset mix - 2015 to 2019 (as a % of total assets)

	Your fund %					Peer average %					Global average %				
	2019	2018	2017	2016	2015	2019	2018	2017	2016	2015	2019	2018	2017	2016	2015
Stock - U.S.						9.9	10.0	9.8	11.3	11.3	9.7	10.6	11.3	12.2	12.6
Stock - EAFE	62.0	59.0	64.5	61.1	59.5	14.2	13.9	14.6	15.9	15.5	5.7	6.4	7.4	7.7	7.6
Stock - Global						13.0	13.0	13.3	9.6	9.7	15.4	14.6	15.0	13.8	13.3
Stock - Other						2.6	2.8	3.2	3.8	4.0	3.2	3.3	3.7	4.0	4.3
Stock - Emerging						3.6	3.9	3.7	4.0	4.2	2.7	2.8	2.9	2.7	2.8
Stock - ACWI x U.S.						0.5	0.5	0.5	0.5	0.5	2.6	2.6	2.6	2.8	2.9
Stock - Aggregate	62.0	59.0	64.5	61.1	59.5	43.8	44.1	45.0	45.0	45.2	39.2	40.3	42.8	43.3	43.5
Fixed Income - U.S.						6.4	6.2	6.0	6.0	5.9	7.0	7.3	6.0	6.2	6.9
Fixed Income - EAFE	38.0	41.0	35.5	38.9	40.5	6.3	7.0	6.3	6.5	6.9	3.7	3.3	3.8	3.7	4.5
Fixed Income - Global						5.8	5.8	6.2	6.5	6.4	2.7	2.7	3.1	3.2	3.1
Fixed Income - Other						2.8	2.7	2.9	3.5	3.7	5.0	5.0	5.9	6.3	6.3
Fixed Income - Long Bonds						1.5	1.5	1.6	1.7	1.6	13.1	13.1	11.3	10.8	10.4
Fixed Income - Emerging						1.8	1.8	1.7	1.5	1.6	1.3	1.1	1.0	1.0	1.1
Fixed Income - Inflation Indexed						4.5	4.4	3.8	3.9	3.6	2.1	2.0	2.3	2.6	2.2
Fixed Income - High Yield						0.6	0.5	0.7	0.8	1.0	1.3	1.1	1.2	1.4	1.4
Fixed Income - Bundled LDI											2.2	2.3	1.2	0.1	0.1
Fixed Income - Convertibles						0.2	0.2	0.2	0.0		0.0	0.0	0.1	0.0	0.0
Cash						0.5	0.5	1.2	0.9	0.9	0.4	0.5	0.6	0.9	0.7
Fixed Income - Aggregate	38.0	41.0	35.5	38.9	40.5	30.4	30.5	30.6	31.3	31.6	39.0	38.5	36.6	36.3	36.6
Commodities						0.1	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.5
Infrastructure						2.9	2.7	2.7	2.6	2.4	2.3	2.1	2.0	1.9	1.6
Natural Resources						0.4	0.3	0.4	0.4	0.3	0.3	0.3	0.4	0.3	0.3
REITs						0.2	0.2	0.2	0.3	0.2	0.5	0.6	0.6	0.5	0.5
Real Estate						8.4	8.3	8.2	7.8	7.6	6.5	6.4	6.1	5.9	5.6
Other Real Assets						0.1	0.2	0.2	0.1	0.2	0.2	0.3	0.3	0.3	0.4
Real Assets - Aggregate						12.0	11.8	11.9	11.3	11.0	10.2	10.0	9.6	9.3	8.9
Hedge Funds						1.9	1.9	1.5	1.6	1.7	2.8	3.1	3.2	3.3	3.3
Global TAA						3.1	3.2	3.1	3.5	3.6	0.9	0.9	1.0	1.2	1.5
Balanced Funds											0.2	0.2	0.2	0.3	0.2
Risk Parity						0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.4	0.3	0.3
Mortgages						0.7	0.8	0.5	0.5	0.4	0.7	0.6	0.5	0.4	0.4
Private Credit						1.2	1.3	1.1	0.7	0.8	1.4	1.2	1.0	0.8	0.7
Diversified Private Equity						4.7	4.5	4.4	4.1	3.8	4.4	4.1	4.0	4.1	4.0
Venture Capital						0.1	0.1	0.1	0.1	0.0	0.2	0.2	0.1	0.2	0.2
LBO						1.6	1.5	1.3	1.3	1.4	0.4	0.4	0.3	0.3	0.4
Other Private Equity						0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.2	0.1
Private Equity - Aggregate						6.5	6.1	6.0	5.7	5.5	5.1	4.8	4.6	4.8	4.7
Total Fund	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Count	1					16	16	16	16	16	305	335	351	348	364

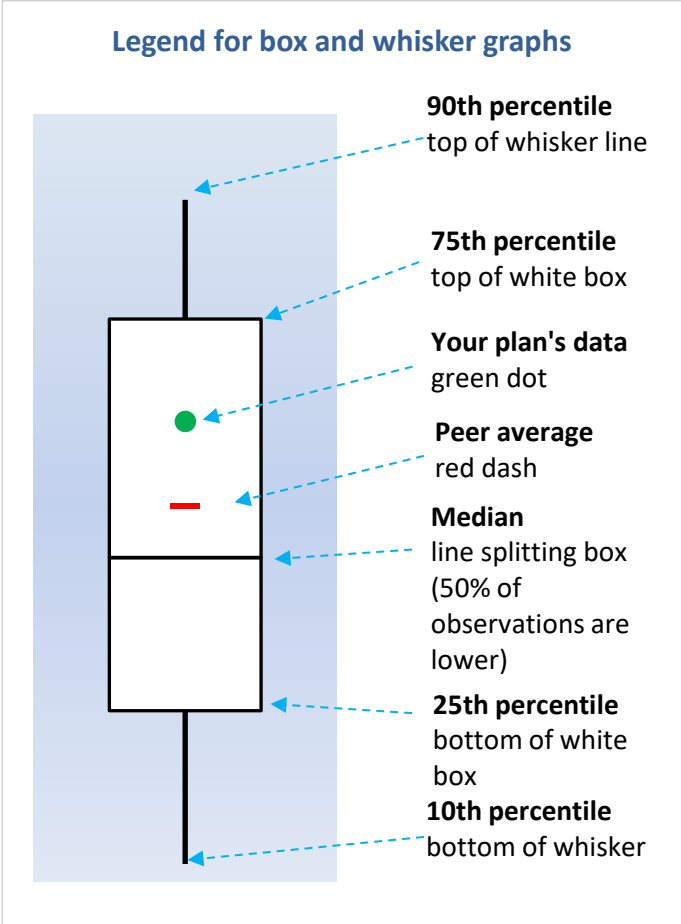
3

Returns, Benchmarks and Value Added

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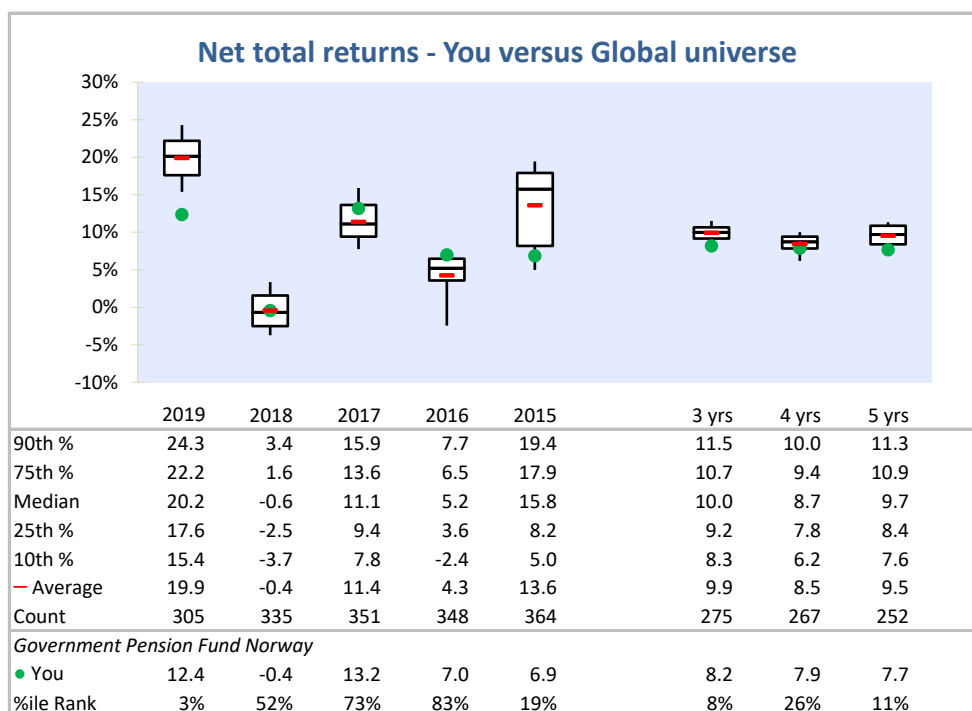
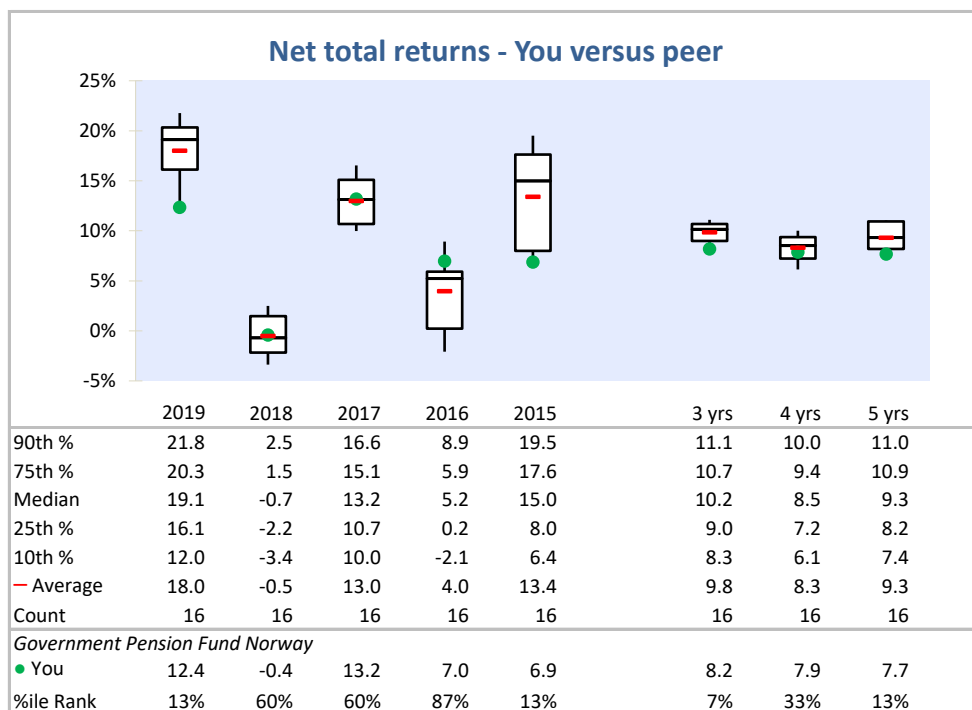
Interpreting box and whisker graphs

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.



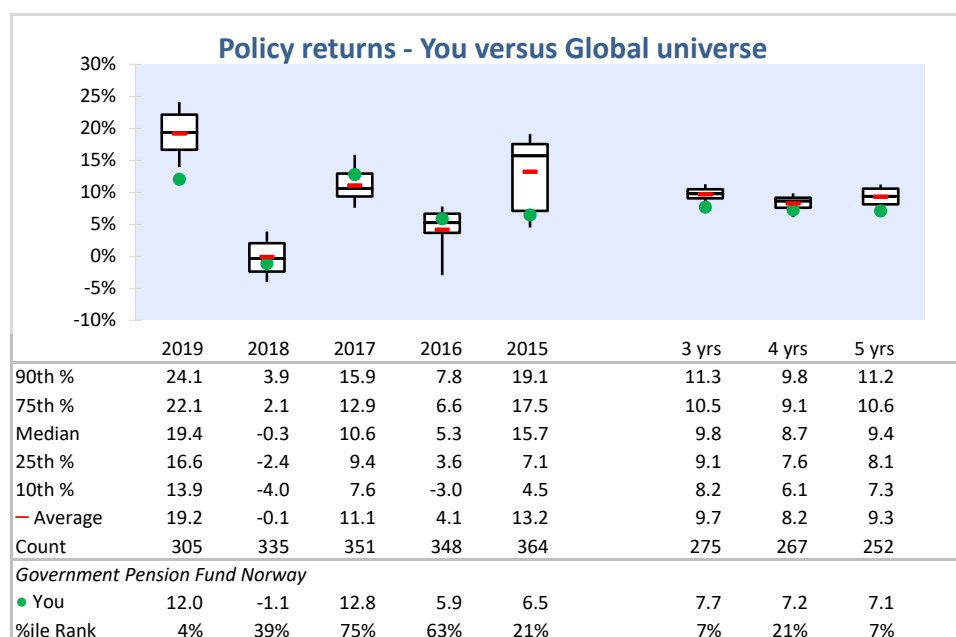
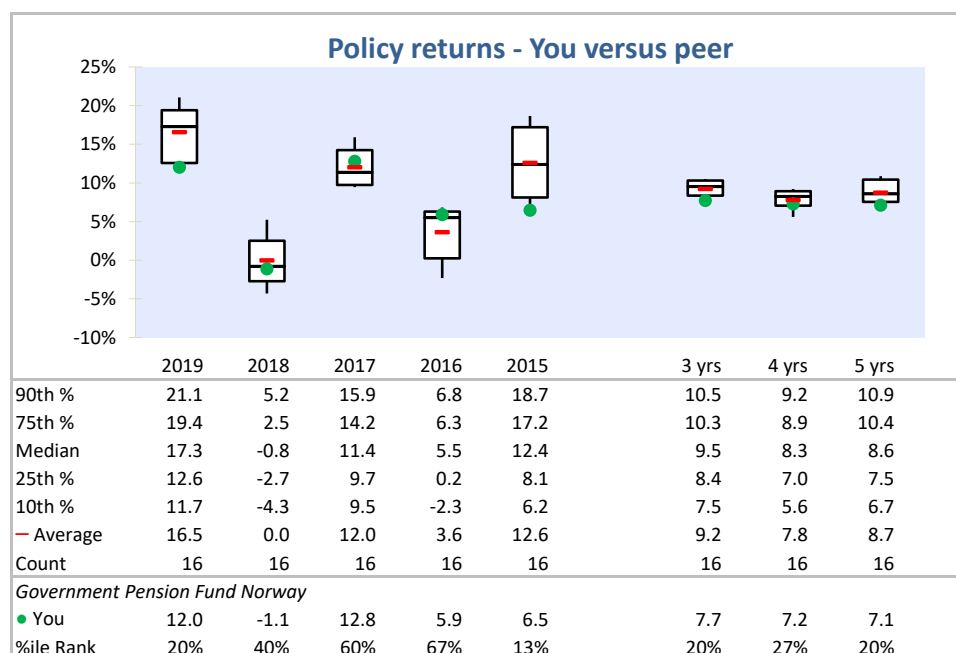
Net total returns

Your 5-year net total return of 7.7% was below 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

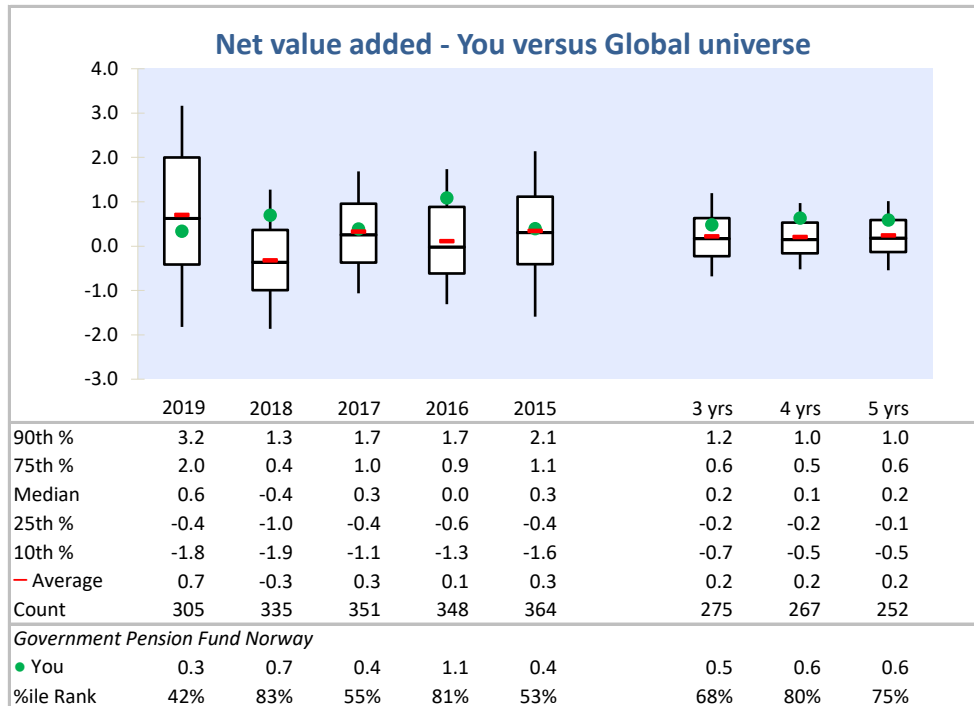
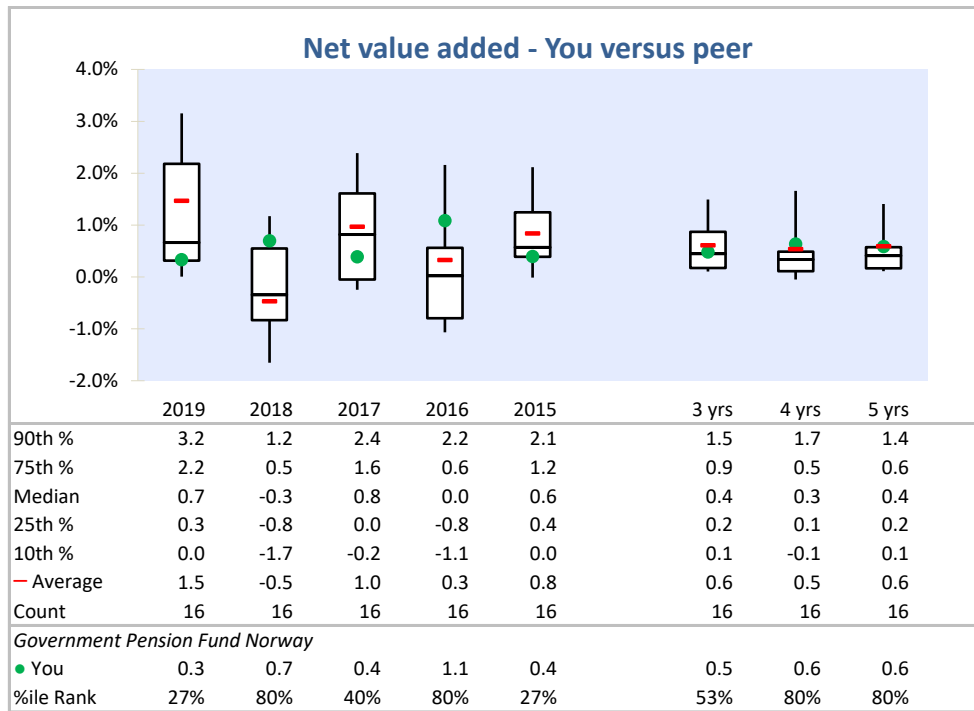
Your 5-year policy return of 7.1% was below the peer median and below the median of the Global universe. Policy return is the return you would have earned had you passively implemented your policy asset mix decision through your benchmark portfolios.



To enable fairer comparisons, the policy returns of all participants except your fund were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. Refer to the appendix of this section for details.

Net value added

Your 5-year net value added of 0.6% was among the highest in your peer group and above 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 %					
	2019	2018	2017	2016	2015	5-yr ¹	2019	2018	2017	2016	2015	5-yr ¹	2019	2018	2017	2016	2015	5-yr ¹
Stock - U.S.							33.2	-1.4	17.3	8.5	15.3	14.0	32.1	-1.4	15.2	9.8	17.6	14.1
Stock - EAFE	18.1	-1.9	19.3	10.4	9.8	10.9	24.4	-9.4	18.9	1.3	18.0	9.8	23.9	-9.9	19.8	-0.9	17.3	9.4
Stock - Global							28.7	-5.3	17.0	6.6	17.8	12.3	27.9	-4.0	19.3	3.8	16.9	12.1
Stock - Other							18.6	-3.0	9.4	14.7	-4.4	3.7	22.1	-9.0	10.3	16.0	0.4	6.9
Stock - Emerging							20.3	-11.3	28.0	8.0	2.2	8.6	22.7	-10.8	28.6	7.3	1.8	9.1
Stock - ACWI x U.S.							25.7	-8.4	20.9	3.4	15.5	10.7	25.0	-10.5	22.6	0.9	15.3	9.9
Stock - Aggregate	18.1	-1.9	19.3	10.4	9.8	10.9	27.4	-6.5	19.0	6.4	13.3	11.2	27.8	-5.7	18.4	6.2	14.0	11.5
Fixed Income - U.S.							11.0	2.8	2.3	0.7	15.6	6.2	12.2	4.2	0.3	1.4	17.6	6.8
Fixed Income - EAFE	4.1	1.6	3.6	2.1	2.9	2.8	5.8	0.0	7.8	-3.5	7.4	3.3	8.5	0.3	7.4	-3.9	8.4	4.3
Fixed Income - Global							8.3	-0.7	13.1	2.4	9.1	4.0	8.8	0.5	5.5	-0.1	11.6	4.3
Fixed Income - Other							7.8	2.8	4.3	0.9	9.5	5.0	11.4	1.3	6.2	2.5	8.8	5.6
Fixed Income - Long Bonds							22.9	-1.9	12.9	4.7	6.1	8.6	21.4	-0.9	6.4	4.7	11.1	8.6
Fixed Income - Emerging							14.2	-1.4	9.2	7.5	8.0	7.2	14.9	-1.8	8.3	7.2	9.4	7.5
Fixed Income - Inflation Indexed							10.9	-0.2	2.5	2.1	10.0	4.9	12.7	0.2	2.3	2.9	10.7	5.6
Fixed Income - High Yield							13.5	1.4	4.9	9.6	12.6	8.2	13.0	1.8	4.0	8.0	12.4	7.9
Fixed Income - Bundled LDI							10.4						21.8	-0.5	8.6	8.2	2.7	9.1
Fixed Income - Convertibles							12.2	0.2	7.2	-6.1	9.3	1.5	12.2	1.2	7.0	1.2	12.7	4.9
Cash							3.9	1.7	1.8	-3.8	13.4	3.0	4.1	3.6	-0.3	-3.3	12.3	2.8
Fixed Income - Aggregate	4.1	1.6	3.6	2.1	2.9	2.8	10.7	0.9	4.5	1.5	10.8	5.4	15.0	0.8	4.4	2.1	11.5	6.7
Commodities							12.5	-1.1	9.7	12.2	6.4	7.5	9.9	-7.5	0.1	10.1	-12.9	-0.7
Infrastructure							8.0	9.3	13.8	5.3	25.7	12.8	13.1	9.5	14.0	1.5	23.0	12.0
Natural Resources							6.6	9.3	-0.6	1.8	11.8	5.2	4.1	8.0	2.1	3.2	10.4	5.0
REITs							26.0	0.4	1.7	4.1	21.6	10.2	25.7	-0.2	6.2	1.9	17.5	9.5
Real Estate							9.9	10.7	11.9	3.5	23.9	11.7	9.1	12.3	7.6	2.1	25.8	11.0
Other Real Assets							-44.4	-18.8	6.4	7.4	-1.3	-18.7	5.1	-1.0	-0.5	3.4	8.7	0.7
Real Assets - Aggregate							10.5	9.8	11.4	4.4	23.1	11.6	10.6	8.8	7.2	2.3	22.0	9.9
Hedge Funds							10.9	2.6	6.4	-5.0	9.2	6.2	7.7	1.6	2.5	-2.3	15.1	5.2
Global TAA							19.8	-4.6	8.9	0.1	14.9	7.2	13.5	-0.9	5.0	2.2	12.8	6.6
Balanced Funds													32.1	-13.3	17.2	-11.2	14.9	7.4
Risk Parity							32.4	-5.2	12.6	12.9	6.0	11.1	22.0	-2.7	8.6	8.1	9.6	8.8
Mortgages							10.0	5.6	5.7	-0.4	12.7	6.4	8.7	2.6	6.4	1.5	13.0	6.2
Private Credit							8.0	6.9	4.9	4.2	15.3	7.7	11.6	8.1	6.7	2.4	16.4	8.1
Diversified Private Equity							12.8	18.3	15.6	5.6	24.3	15.0	11.6	18.8	13.1	4.6	27.1	15.1
Venture Capital							10.6	17.8	7.2	-7.0	23.6	9.5	8.4	23.0	10.0	-1.1	30.5	13.3
LBO							15.4	14.5	10.4	5.2	23.5	13.9	15.0	18.7	13.6	7.8	25.7	15.0
Other Private Equity							18.3	2.6	11.8	7.9	26.2	18.8	11.9	14.4	8.9	3.8	23.3	15.2
Private Equity - Aggregate							13.2	16.7	13.5	6.2	24.8	14.7	11.3	18.8	12.9	4.7	27.1	15.1
Total Fund Return	12.4	-0.4	13.2	7.0	6.9	7.7	18.0	-0.5	13.0	4.0	13.4	9.3	19.9	-0.4	11.4	4.3	13.6	9.5

You were not able to provide full year returns for all of the components of returns of asset classes with values shown in italics. The composite calculation only uses those components with a full year return.

1. The 5-year return number only includes funds with continuous data over the last 5 years.

Benchmark returns by asset class

Asset class	Your fund %						Peer average %						Global average %					
	2019	2018	2017	2016	2015	5-yr ¹	2019	2018	2017	2016	2015	5-yr ¹	2019	2018	2017	2016	2015	5-yr ¹
Stock - U.S.							32.3	-2.6	16.4	8.4	14.9	13.3	32.0	-1.1	15.1	10.2	17.7	14.2
Stock - EAFE	17.7	-2.6	19.1	8.7	9.2	10.1	24.8	-8.6	18.2	0.8	15.8	9.5	24.2	-9.1	19.2	-1.1	16.2	9.1
Stock - Global							27.8	-5.1	17.6	5.5	17.0	12.0	28.2	-4.5	17.4	4.9	16.1	11.8
Stock - Other							28.7	-8.9	4.6	11.7	-2.6	3.9	26.0	-8.3	11.2	15.1	-0.6	7.5
Stock - Emerging							21.0	-11.1	28.7	7.9	0.2	8.6	20.3	-9.7	29.5	8.0	1.3	9.0
Stock - ACWI x U.S.							23.8	-8.9	20.0	3.5	13.1	9.6	23.8	-9.8	21.4	2.0	13.2	9.3
Stock - Aggregate	17.7	-2.6	19.1	8.7	9.2	10.1	26.8	-6.1	18.2	5.8	12.7	10.8	27.9	-5.5	17.8	6.7	13.3	11.4
Fixed Income - U.S.							11.3	3.1	2.4	0.6	15.3	6.0	11.4	4.2	0.0	0.5	17.2	6.3
Fixed Income - EAFE	3.8	1.0	2.9	1.8	2.7	2.4	5.9	-0.5	6.9	-3.5	8.2	3.2	8.4	0.4	7.0	-3.6	9.0	4.0
Fixed Income - Global							8.4	1.3	4.3	-0.5	11.9	4.9	10.3	1.3	4.4	-1.0	11.9	4.9
Fixed Income - Other							9.9	2.5	3.0	1.6	9.8	5.1	11.1	1.1	3.6	1.9	9.4	5.4
Fixed Income - Long Bonds							22.1	-2.3	12.0	3.9	6.1	8.0	21.4	-0.8	6.2	4.1	11.2	8.4
Fixed Income - Emerging							14.3	-0.3	7.9	4.7	11.3	7.4	14.8	-0.7	7.2	6.3	10.5	7.5
Fixed Income - Inflation Indexed							9.3	0.5	2.7	1.6	10.0	4.7	11.9	0.2	2.5	3.2	10.9	5.3
Fixed Income - High Yield							13.8	1.5	4.9	10.9	11.1	8.3	14.6	1.6	4.3	10.3	11.3	8.4
Fixed Income - Bundled LDI													21.9	-0.4	8.3	4.9	2.9	9.4
Fixed Income - Convertibles							24.1	-1.9	16.9	-0.2	12.0	9.5	16.5	0.7	12.4	4.4	12.2	10.3
Cash							4.6	2.3	1.1	-5.1	10.8	2.2	4.4	3.4	-0.1	-3.7	12.0	3.0
Fixed Income - Aggregate	3.8	1.0	2.9	1.8	2.7	2.4	10.1	1.1	3.7	0.6	11.0	5.2	14.9	0.8	4.3	1.8	11.5	6.5
Commodities							19.5	-7.3	8.0	4.5	-8.7	-1.2	12.8	-7.2	-0.1	7.8	-12.7	-0.7
Infrastructure							9.9	7.7	12.0	2.0	18.7	9.6	13.2	4.7	10.1	-1.0	16.4	7.8
Natural Resources							8.1	6.5	7.0	2.0	17.2	8.0	9.0	5.0	2.1	2.7	14.7	6.5
REITs							26.1	0.5	1.5	4.3	21.4	10.2	25.5	-0.2	6.6	2.5	18.0	9.7
Real Estate							8.6	9.4	9.9	3.1	24.0	10.6	9.9	9.1	6.1	2.0	25.1	10.0
Other Real Assets							12.1	-3.0	15.7	-1.8	11.0	6.3	12.2	2.5	1.5	3.0	11.0	6.6
Real Assets - Aggregate							9.4	8.6	9.9	2.8	22.1	10.2	11.6	6.9	6.2	1.7	20.6	8.9
Hedge Funds							13.5	3.4	9.2	-6.2	8.9	7.2	10.7	2.6	3.5	-1.2	15.9	6.0
Global TAA							18.3	5.3	10.1	0.5	16.4	10.2	16.1	1.1	7.5	0.9	16.3	8.7
Balanced Funds													40.8	-12.1	20.4	-13.0	19.2	8.7
Risk Parity							32.0	-5.4	5.9	4.5	22.2	11.1	18.4	1.7	7.1	7.2	16.5	10.0
Mortgages							11.0	3.7	4.8	1.2	10.4	5.9	8.7	1.4	4.7	0.7	10.3	4.6
Private Credit							11.2	2.8	3.6	4.5	11.8	6.4	14.8	3.9	5.7	0.7	13.5	7.1
Diversified Private Equity							-6.1	21.9	17.6	2.2	20.8	10.5	-6.5	23.1	17.4	3.8	21.0	10.8
Venture Capital							-8.3	23.9	14.8	5.4	19.0	10.2	-7.3	24.9	15.2	4.0	21.0	10.7
LBO							-8.2	24.0	15.5	3.7	20.5	10.2	-8.1	25.8	14.7	5.4	20.4	10.7
Other Private Equity							-4.0	17.1	18.8	-2.8	24.4	9.5	-6.8	21.6	17.7	2.6	20.8	10.4
Private Equity - Aggregate							-6.4	22.6	17.1	2.7	20.6	10.5	-6.7	23.2	17.4	3.8	21.0	10.8
Total Policy Return	12.0	-1.1	12.8	5.9	6.5	7.1	16.5	0.0	12.0	3.6	12.6	8.7	19.2	-0.1	11.1	4.1	13.2	9.3

1. The 5-year return number only includes funds with continuous data over the last 5 years.

2. To enable fairer comparisons, the policy returns of all participants except your fund were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. Refer to the appendix of this section for details.

Net value added by asset class

Asset class	Your fund %						Peer average %						Global average %					
	2019	2018	2017	2016	2015	5-yr ¹	2019	2018	2017	2016	2015	5-yr ¹	2019	2018	2017	2016	2015	5-yr ¹
Stock - U.S.							0.9	1.2	0.9	0.0	0.4	0.7	0.1	-0.3	0.0	-0.4	-0.1	-0.2
Stock - EAFE	0.4	0.7	0.2	1.7	0.6	0.7	-0.4	-0.8	0.7	0.4	2.2	0.4	-0.3	-0.8	0.6	0.2	1.0	0.1
Stock - Global							-0.2	-0.1	-0.4	1.2	0.6	0.2	-0.5	0.5	1.8	-1.1	0.7	0.2
Stock - Other							-10.0	7.1	6.6	0.3	1.1	1.1	-3.7	-0.6	-0.7	0.3	1.5	-0.3
Stock - Emerging							-0.7	-0.2	-0.7	0.1	2.0	-0.1	2.3	-1.1	-0.9	-0.8	0.5	0.1
Stock - ACWI x U.S.							1.9	0.5	0.9	-0.1	2.4	1.1	1.2	-0.7	1.2	-1.1	2.1	0.6
Stock - Aggregate	0.4	0.7	0.2	1.7	0.6	0.7	0.6	-0.4	0.8	0.6	0.6	0.4	0.0	-0.2	0.6	-0.5	0.7	0.1
Fixed Income - U.S.							-0.3	-0.2	-0.2	0.1	0.2	0.2	0.7	0.0	0.3	0.9	0.3	0.5
Fixed Income - EAFE	0.3	0.6	0.7	0.3	0.1	0.4	0.0	0.4	1.0	0.0	-0.8	0.1	1.0	-0.1	0.4	-0.2	-0.2	0.3
Fixed Income - Global							0.6	-2.0	8.8	2.8	-2.5	-0.2	-1.6	-0.7	1.3	0.9	-0.5	-0.7
Fixed Income - Other							-2.1	0.3	1.3	-0.6	-0.3	-0.1	0.1	0.2	2.6	0.7	-0.2	0.2
Fixed Income - Long Bonds							0.8	0.3	0.8	0.9	0.0	0.6	0.2	-0.1	0.3	0.3	-0.2	0.1
Fixed Income - Emerging							-0.1	-1.2	1.3	2.8	-3.3	-0.2	-0.2	-1.2	1.1	1.0	-1.0	0.0
Fixed Income - Inflation Indexed							1.7	-0.7	-0.2	0.5	0.0	0.2	0.8	-0.1	-0.1	-0.3	0.0	0.3
Fixed Income - High Yield							-0.3	-0.1	0.0	-1.3	1.6	0.0	-1.4	0.2	-0.3	-2.0	1.3	-0.4
Fixed Income - Bundled LDI													0.4	-0.1	0.0	1.6	-0.2	-0.4
Fixed Income - Convertibles							-12.0	2.0	-9.6	-6.0	-2.6	-8.0	-6.2	0.1	-4.7	-4.8	-1.4	-8.0
Cash							-0.6	-0.3	0.2	0.1	3.6	0.6	-0.3	0.0	-0.1	0.4	0.0	-0.4
Fixed Income - Aggregate	0.3	0.6	0.7	0.3	0.1	0.4	0.5	-0.1	0.7	0.9	0.0	0.2	-0.1	0.0	0.0	0.3	-0.1	0.0
Commodities							-0.1	1.7	-3.2	0.5	0.5	0.4	-3.5	-0.9	-0.1	1.4	-0.5	-1.0
Infrastructure							-1.9	1.7	1.8	3.3	7.0	3.2	0.0	4.8	3.9	2.2	7.2	4.1
Natural Resources							-0.7	1.1	-6.5	-0.4	-5.9	-2.8	-4.9	2.8	0.1	0.2	-4.3	-1.3
REITs							-0.1	-0.1	0.2	-0.2	0.2	0.0	1.3	-0.3	0.1	-1.1	-0.6	-0.2
Real Estate							1.3	1.3	2.0	0.7	0.8	1.3	-0.8	3.2	1.4	0.2	0.4	0.9
Other Real Assets							-56.5	-15.8	-9.3	9.2	-12.3	-25.1	-7.9	-3.0	-2.0	0.1	-3.2	-6.2
Real Assets - Aggregate							1.1	1.2	1.5	2.0	1.3	1.6	-0.9	1.9	0.9	0.6	1.4	0.9
Hedge Funds							-3.1	-0.8	-2.8	1.0	0.3	-0.9	-3.0	-1.0	-1.0	-1.1	-0.9	-0.8
Global TAA							-1.2	-9.9	-1.2	-0.3	-1.5	-3.1	-3.2	-2.3	-2.2	1.2	-3.7	-1.7
Balanced Funds													-8.8	-0.7	-3.8	2.2	-4.1	-1.1
Risk Parity							0.4	0.2	6.7	8.3	-16.2	0.0	3.4	-4.4	1.5	1.3	-8.2	-1.4
Mortgages							-1.0	1.9	0.9	-1.6	2.3	0.5	0.1	1.3	1.4	0.8	2.3	1.5
Private Credit							-1.6	4.1	0.2	0.5	4.6	2.0	-2.8	4.1	1.1	0.8	3.3	1.2
Diversified Private Equity							18.6	-3.9	-2.1	3.2	3.7	4.4	17.9	-4.3	-4.3	0.8	5.9	4.1
Venture Capital							18.7	-6.8	-7.3	-13.2	5.2	-0.9	15.6	-2.1	-4.6	-5.8	9.4	2.6
LBO							23.4	-10.2	-4.8	0.9	3.5	3.5	23.7	-7.2	-1.2	2.8	4.8	4.5
Other Private Equity							24.2	-14.0	-7.4	11.8	1.4	9.6	18.2	-7.7	-8.0	0.5	2.0	4.4
Private Equity - Aggregate							19.4	-6.1	-3.6	3.3	4.4	4.0	17.7	-4.3	-4.5	1.0	5.7	4.2
Total Fund Return	0.3	0.7	0.4	1.1	0.4	0.6	1.5	-0.5	1.0	0.3	0.8	0.6	0.7	-0.3	0.3	0.1	0.3	0.2

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.

You were not able to provide full year returns for all of the components of returns of asset classes with values shown in italics. The composite calculation only uses those components with a full year return.

1. The 5-year return number only includes funds with continuous data over the last 5 years.

2. To enable fairer comparisons, the policy returns of all participants except your fund were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. Refer to the appendix of this section for details.

Your policy return and value added calculation - 2019

2019 Policy Return and Value Added

Asset class	Policy weight	Benchmark Description	Return	Net return	Value added
Stock - EAFE	62.0%	CMVINXBINN - Custom Index 15 % - OSEBX 85 %	17.7%	18.1%	0.4%
Fixed Income - EAFE	38.0%	Barclays Capital Global Aggregate Nordic ex Norv	3.8%	4.1%	0.3%
Cash					
Total	100.0%				
Net Actual Return (reported by you)					12.4%
Calculated Policy Return = sum of (policy weights X benchmark returns)				12.4%	
Adjustment to reflect rebalancing and overlay impacts				-0.4%	
Policy Return (reported by you)					<u>12.0%</u>
Net Value Added (Net Return - Policy Return)					0.3%

Your policy return and value added calculations - 2015 to 2018

2018 Policy Return and Value Added

Asset class	Policy	Benchmark		Net return	Value added
	weight	Description	Return		
Stock - EAFE	59.0%	CMVINXBXINN -	-2.6%	-1.9%	0.7%
Fixed Income - EAFE	41.0%	Barclays Capital	1.0%	1.6%	0.6%
Total	100.0%				
Net Return (reported by you)					-0.4%
Calculated policy return (sum: Policy weights x benchmarks)				-1.1%	
Adjustment to reflect rebalancing and overlay impacts				<u>0.0%</u>	
Policy return (reported by you)					<u>-1.1%</u>
Net Value Added (Net Return - Policy Return)					0.7%

2016 Policy Return and Value Added

Asset class	Policy	Benchmark		Net return	Value added
	weight	Description	Return		
Stock - EAFE	61.1%	CMVINXBXINN -	8.7%	10.4%	1.7%
Fixed Income - EAFE	38.9%	Barclays Capital	1.8%	2.1%	0.3%
Total	100.0%				
Net Return (reported by you)					7.0%
Calculated policy return (sum: Policy weights x benchmarks)				6.0%	
Adjustment to reflect rebalancing and overlay impacts				<u>-0.1%</u>	
Policy return (reported by you)					<u>5.9%</u>
Net Value Added (Net Return - Policy Return)					1.1%

2017 Policy Return and Value Added

Asset class	Policy	Benchmark		Net return	Value added
	weight	Description	Return		
Stock - EAFE	64.5%	CMVINXBXINN -	19.1%	19.3%	0.2%
Fixed Income - EAFE	35.5%	Barclays Capital	2.9%	3.6%	0.7%
Total	100.0%				
Net Return (reported by you)					13.2%
Calculated policy return (sum: Policy weights x benchmarks)				13.4%	
Adjustment to reflect rebalancing and overlay impacts				<u>-0.6%</u>	
Policy return (reported by you)					<u>12.8%</u>
Net Value Added (Net Return - Policy Return)					0.4%

2015 Policy Return and Value Added

Asset class	Policy	Benchmark		Net return	Value added
	weight	Description	Return		
Stock - EAFE	59.5%	CMVINXBXINN -	9.2%	9.8%	0.6%
Fixed Income - EAFE	40.5%	Barclays Capital	2.7%	2.9%	0.1%
Total	100.0%				
Net Return (reported by you)					6.9%
Calculated policy return (sum: Policy weights x benchmarks)				6.6%	
Adjustment to reflect rebalancing and overlay impacts				<u>-0.1%</u>	
Policy return (reported by you)					<u>6.5%</u>
Net Value Added (Net Return - Policy Return)					0.4%

Profit/Loss on overlay programs

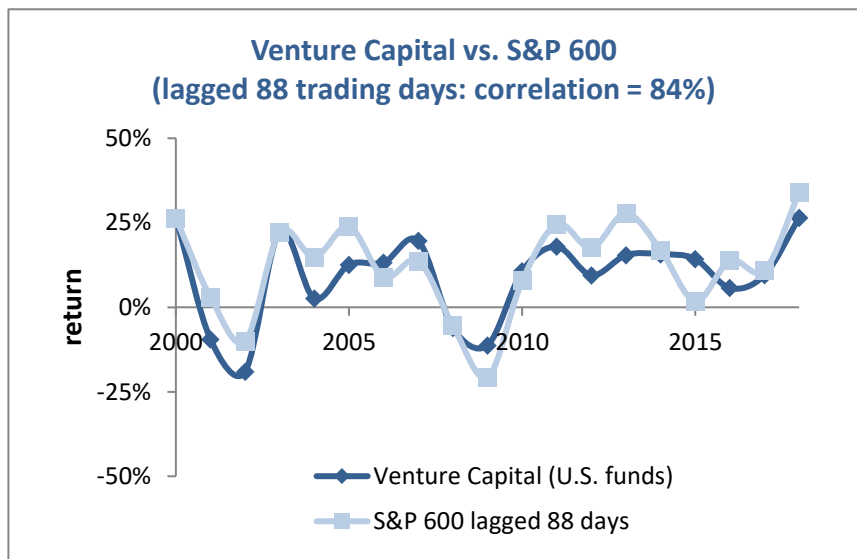
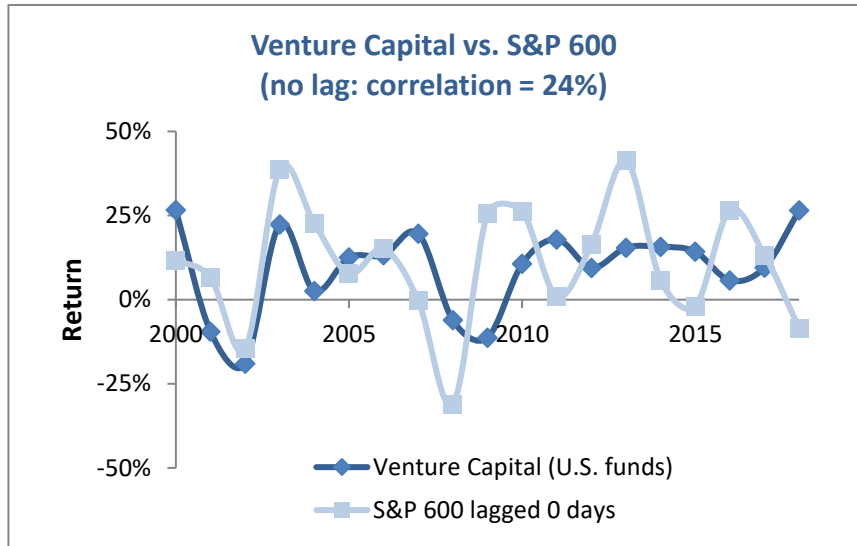
Overlay type	Your fund		Peer median				Global median			
	2019	2018	2019		2018		2019		2018	
	bps	bps	bps	#	bps	#	bps	#	bps	#
Int. Discretionary Currency			3.2	3	-1.8	5	0.1	11	-0.1	14
Ext. Discretionary Currency							0.0	9	-0.8	9
Internal Global TAA			27.8	3	-21.9	4	24.1	6	-15.7	8
External Global TAA									-9.7	2
Internal PolicyTilt TAA			17.9	2	4.6	3	0.1	9	0.0	12
External PolicyTilt TAA							-26.3	1	0.0	2
Internal Commodities			-1.4	1	-4.7	1	0.0	3	-4.7	3
External Commodities							10.5	3	-2.7	4
Internal Long/Short			9.3	3	3.2	4	1.7	5	-0.7	7
External Long/Short									0.0	1
Internal Other			0.7	3	-1.5	4	-2.2	11	0.0	11
External Other			-0.8	1	-21.5	1	0.2	15	0.0	14

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.

Appendix - 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 2008 the S&P 600 index return was -31.1% versus -5.4% if lagged 88 trading days. Thus if a fund earned the average reported venture capital return for 2008 of -6.1%, they would have mistakenly believed that their value added from venture capital was 25.0% using the un-lagged benchmarks versus -7% using the same benchmark lagged to match the average 88 day reporting lag of venture capital funds.



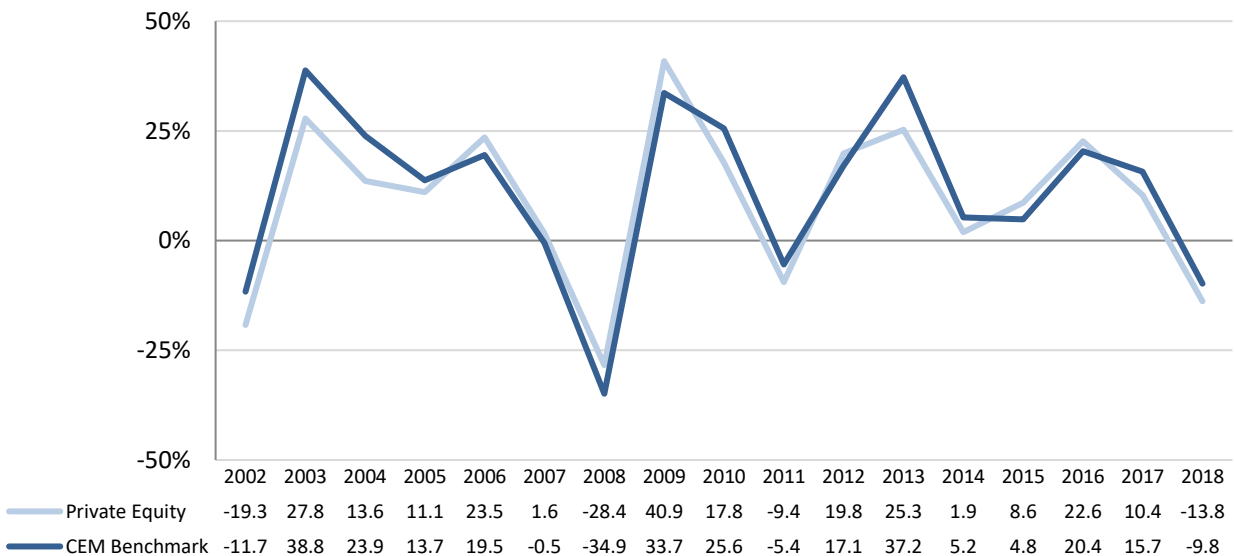
- Un-investable peer-based benchmarks. Peer based benchmarks reflect the reporting lags in peer portfolios so they have much better correlations than un-lagged investable benchmarks. But their relationship statistics are not as good as for lagged investable benchmarks.
- Aspirational premiums (i.e., 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 85 trading days (i.e., approximately 119 calendar days or 3.9 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 82% for the default benchmarks versus 44% for self-reported benchmarks. Other statistics such as volatility were also much better.

Private equity returns versus reported and default benchmark returns - Global median



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.

4

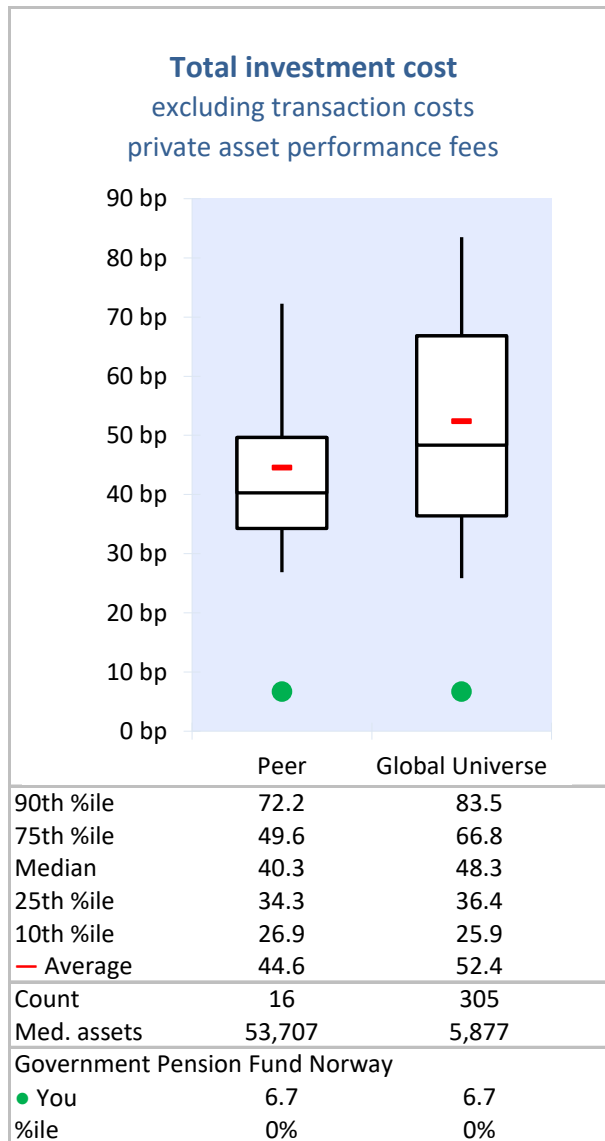
Cost: total, benchmark, trend

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Comparisons of total investment cost

Your total investment cost, excluding transaction costs and private asset performance fees, of 6.7 bps was below the peer median of 40.3 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.

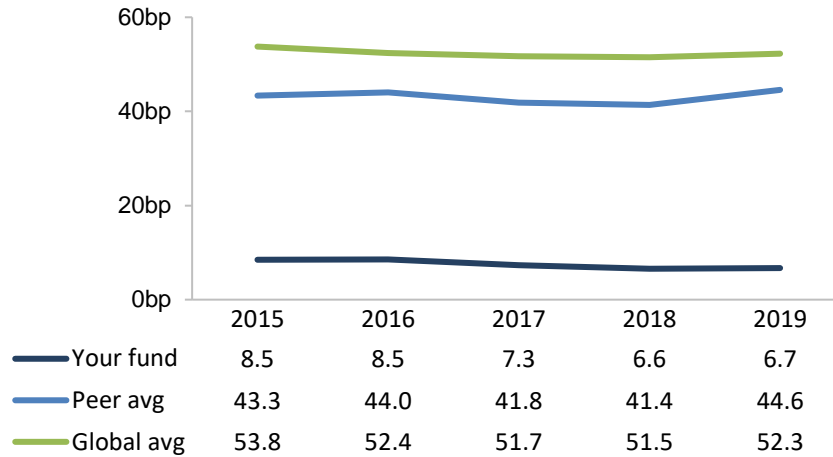


Trend in total investment cost, you versus peers and universe

Your total investment cost, excluding transaction costs and private asset performance fees, decreased from 8.5 bps in 2015 to 6.7 bps in 2019.

Trend in total investment cost

(excluding transaction costs and private asset performance fees)



Trend analysis is based on 252 Global funds and 16 peer funds with 5 or more consecutive years of data.

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 real assets</u> (Infrastructure, natural resources, real estate ex-REITs, other real assets)	✓	✗	✓	✓	✗	✗
<u>Private equity</u> (Diversified private equity, venture capital, LBO, other private equity)	✓	✗	✓*	✓	✗	✗

*External manager base fees represent gross contractual management fees.

- ✓ indicates cost is included.
- ✗ indicates cost is excluded.
- CEM currently excludes performance fees for certain external assets 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 2019 total investment cost, excluding transaction costs and private asset performance fees, was 6.7 bp or €17.2 million.

	Internal		External Passive		External Active			Total ¹		
	Passive	Active	Fees	Monitoring & Other	Base Fees	Perform. Fees	Monitor. & Other	€000s	bps	% of Total
Asset management										
Stock - EAFE		7,017						7,017		41%
Fixed Income - EAFE		7,921						7,921		46%
Total asset management costs excluding private asset performance fees								14,937	5.8bp	87%
Oversight, custodial & other asset related costs										
Oversight of the Fund								1,270		7%
Trustee & Custodial								582		3%
Consulting and Performance Measurement								56		0%
Audit								252		1%
Other								131		1%
Total oversight, custodial & other costs								2,291	0.9bp	13%
Total investment costs excluding transaction costs and private asset performance fees								17,228	6.7bp	100%

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.

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 (2019 - 2015)

	Investment costs (€000s)					Change (€000s)				Change (%)			
	2019	2018	2017	2016	2015	2019	2018	2017	2016	2019	2018	2017	2016
Asset management													
Stock - EAFE	7,017	7,472	7,445	8,622	7,910	-456	27	-1,177	712	-6%	0%	-14%	9%
Fixed Income - EAFE	7,921	6,426	6,647	7,217	6,353	1,495	-221	-570	864	23%	-3%	-8%	14%
Total excl. private asset perf. fees	14,937	13,899	14,092	15,839	14,263	1,039	-194	-1,747	1,576	7%	-1%	-11%	11%
Oversight, custodial & other asset related costs													
Oversight of the Fund	1,270	937	1,604	1,519	1,721	333	-667	85	-202	36%	-42%	6%	-12%
Trustee & Custodial	582	624	721	895	763	-42	-97	-174	132	-7%	-13%	-19%	17%
Consulting and Performance Measurement	56	66	45	52	71	-10	21	-7	-19	-15%	47%	-13%	-27%
Audit	252	227	270	306	267	25	-43	-36	39	11%	-16%	-12%	15%
Other	131	155	105	293	400	-24	50	-188	-107	-15%	48%	-64%	-27%
Total oversight, custodial & other	2,291	2,009	2,745	3,065	3,222	282	-736	-320	-157	14%	-27%	-10%	-5%
Total investment costs ¹	17,228	15,908	16,837	18,904	17,485	1,321	-930	-2,067	1,419	8%	-6%	-11%	8%
Total in basis points	6.7bp	6.6bp	7.3bp	8.5bp	8.5bp								

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.

Total cost versus benchmark cost

Your fund's total investment cost, excluding transaction costs and private asset performance fees, was 8.9 bps below your benchmark cost of 15.6 bps. This implies that your fund was low cost by 8.9 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 costs excluding transaction costs and private asset performance fees	17,228	6.7 bp
- Your fund's benchmark	40,089	15.6 bp
= Your fund's cost savings	-22,861	-8.9 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 11.

Reasons why your fund was low cost

	Cost/-Savings impact	
	€000s	bps
<u>Differences in implementation style:</u>		
Less passive	5,929	2.3 bp
More int. active % of total active	-18,306	-7.1 bp
Less overlays and unfunded strategies	-2,133	-0.8 bp
Total style impact	-14,510	-5.6 bp
<u>Paying more/-less for similar services:</u>		
External investment management	0	0.0 bp
Internal investment management	-4,712	-1.8 bp
Oversight, custodial and other	-3,638	-1.4 bp
Total impact of paying more /-less	-8,351	-3.2 bp
Total savings	-22,861	-8.9 bp

Benchmark cost calculation

Your 2019 benchmark cost was 15.6 basis points or 40.1 million. 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).

Asset class	Your average assets (A)	Weighted peer median cost ¹ (B)	Benchmark €000s (A X B)
Asset management costs			
Stock - EAFE ⁴	15,572	14.9 bp	23,261
Fixed Income - EAFE ⁴	10,133	8.7 bp	8,766
Cash	32	0.0 bp	0
Overlay Programs ²	25,766	0.8 bp	2,133
Benchmark for asset management	25,766	13.3 bp	34,160
Oversight, custody and other costs³			
Oversight	25,766	1.6 bp	
Trustee & Custodial	25,766	0.4 bp	
Consulting	25,766	0.0 bp	
Audit	25,766	0.0 bp	
Other	25,766	0.1 bp	
Benchmark for oversight, custody & other	25,766	2.3 bp	5,929
Total benchmark cost		15.6 bp	40,089

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). The style weights by asset class for your fund and the peers are shown on page 15 of this section.
2. Total fund average holdings is used as the base when calculating the relative cost impact of the overlay programs.
3. Benchmarks for oversight total and individual lines are based on peer medians. Sum of the lines may be different from the total.
4. A different asset was used as a proxy to determine the benchmarks and style percentages: 'Stock - Aggregate' for 'Stock - EAFE', 'Fixed Income - Aggregate' for 'Fixed Income - EAFE'.

Cost impact of differences in implementation style

Differences in implementation style (passive vs. active, internal vs. external, etc.) relative to your peers saved you 5.6 bps.

Implementation choices	Assets by style	Peer benchmark cost			Style 1 %			Cost/ -Savings €000s	bps
		Style 1	Style 2	Style 1 -Savings	Your	Peer average	More/ -Less		
	a	b	c	d = b - c			e	a x d x e	
<u>Passive vs active</u>	Total assets	Passive	Active		Passive % of total assets				
Stock - EAFE	15,572	2 bp	18 bp	-16 bp	0%	20%	-20%	5,023	
Fixed Income - EAFE	10,133	3 bp	10 bp	-7 bp	0%	14%	-14%	905	
Less passive								5,929	2.3 bp
<u>Internal active vs external active</u>	Active assets	Internal active	External active		Internal active % of active				
Stock - EAFE	15,572	9 bp	43 bp	-34 bp	100%	74%	26%	-13,738	
Fixed Income - EAFE	10,133	5 bp	32 bp	-27 bp	100%	84%	16%	-4,567	
More int. active % of total active								-18,306	-7.1 bp
Less overlays and unfunded strategies								-2,133	-0.8 bp
Total impact of differences in implementation style								-14,510	-5.6 bp

Cost impact of overlays

As summarized on the previous page, the style impact of overlays saved you 0.8 bps. If you use more overlays than your peers, or more expensive types of overlays, then it increases your relative cost.

	Your average total holdings (mils)	Cost as % of total holdings		Cost/-Savings Impact (000s)
		You	Peer avg.	
	(A)	(B)	(C)	A X (B - C)
Internal Overlays				
Currency - Hedge	25,766	NA	0.11 bp	-271
Currency - Discretionary	25,766	NA	0.09 bp	-239
Rebalancing / Passive Beta - Hedge	25,766	NA	0.05 bp	-128
Duration Management - Hedge	25,766	NA	0.04 bp	-93
Global TAA - Discretionary	25,766	NA	0.10 bp	-248
Policy tilt TAA - Discretionary	25,766	NA	0.03 bp	-67
Commodity Futures - Discretionary	25,766	NA	0.00 bp	-10
Long/Short - Discretionary	25,766	NA	0.29 bp	-754
Other Overlay - Discretionary	25,766	NA	0.06 bp	-160
External Overlays				
Currency - Hedge	25,766	NA	0.00 bp	-4
Currency - Discretionary	25,766	NA	0.02 bp	-53
Rebalancing / Passive Beta - Hedge	25,766	NA	0.03 bp	-89
Other Overlay - Discretionary	25,766	NA	0.01 bp	-18
Total impact in 000s				-2,133
Total impact in basis points				-0.8 bp

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 3.2 bps.

	Style	Your avg holdings (mils)	Cost in bps			Cost/-Savings	
			Your	Peer median	More/-less	€000s	bps
Internal asset management		(A)			(B)	(A X B)	
Stock - EAFE	active	15,572	4.5	9.3	-4.8	-7,529	
Fixed Income - EAFE	active	10,133	7.8	5.0	2.8	2,817	
Cash ¹	active	32	0.0	0.0	0.0	0	
Total for internal management						-4,712	-1.8 bp
Oversight, custodial, other²							
Oversight			0.5	1.6	-1.1		
Trustee & Custodial			0.2	0.4	-0.1		
Consulting			0.0	0.0	0.0		
Audit			0.1	0.0	0.1		
Other			0.1	0.1	-0.1		
Total for oversight, custodial, other		25,766	0.9	2.3	-1.4	-3,638	-1.4 bp
Total						-8,351	-3.2 bp

1. The impact of this line is neutralized by setting the benchmark cost to You.

2. The benchmark for 'oversight, custodial and other costs' is based on the total costs for these activities.

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).

	Your cost ¹	Benchmark = peer weighted median cost ¹	More/-less	Your average assets (or fee basis)	More/-less in €000s		
					Total More/-less	Due to Impl. style	Due to paying more/less
Asset management costs	(A)	(B)	(C = A - B)	(D)	(C X D)		
Stock - EAFE ⁴	4.5 bp	14.9 bp	-10.4 bp	15,572	-16,244	-8,715	-7,529
Fixed Income - EAFE ⁴	7.8 bp	8.7 bp	-0.8 bp	10,133	-845	-3,662	2,817
Cash	0.0 bp	0.0 bp	0.0 bp	32	0	0	0
Overlay Programs ²	0.0 bp	0.8 bp	-0.8 bp	25,766	-2,133	-2,133	0
Total asset management	5.8 bp	13.3 bp	-7.5 bp	25,766	-19,222	-14,510	-4,712
Oversight, custody and other costs³							
Oversight of the Fund	0.5 bp	1.6 bp	-1.1 bp				
Trustee & Custodial	0.2 bp	0.4 bp	-0.1 bp				
Consulting	0.0 bp	0.0 bp	0.0 bp				
Audit	0.1 bp	0.0 bp	0.1 bp				
Other	0.1 bp	0.1 bp	-0.1 bp				
Total oversight, custody & other	0.9 bp	2.3 bp	-1.4 bp	25,766	-3,638	n/a	-3,638
Total	6.7 bp	15.6 bp	-8.9 bp	25,766	-22,861	-14,510	-8,351

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 15 of this section.

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

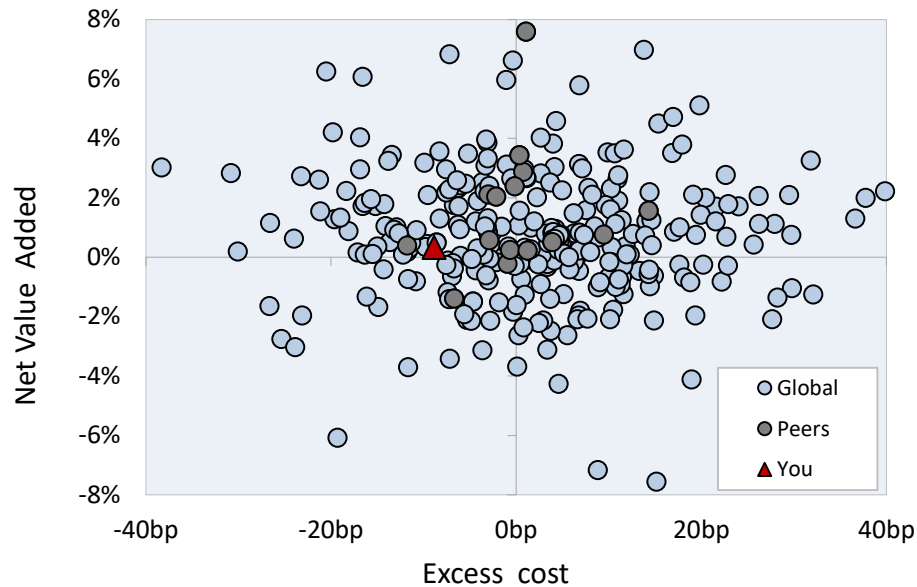
3. Benchmarks for oversight total and individual lines are based on peer medians. Sum of the lines may be different from the total.

4. A different asset was used as a proxy to determine the benchmarks and style percentages: 'Stock - Aggregate' for 'Stock - EAFE', 'Fixed Income - Aggregate' for 'Fixed Income - EAFE'.

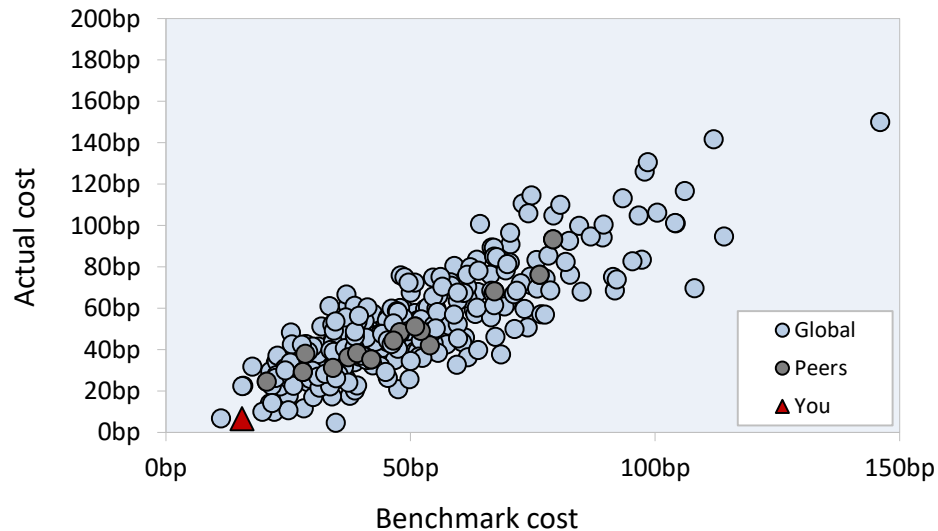
Your cost effectiveness ranking

Being high or low cost is neither good nor bad. More important is whether you are receiving sufficient value for your excess cost. At the total fund level, we provide insight into this question by combining your value added and excess cost to create a snapshot of your cost effectiveness performance relative to that of the global universe. In 2019, your fund ranked in the positive value added, low cost quadrant.

Your 2019 Net value added 0.3%, Excess cost -9 bps



Your 2019 Actual cost 6.7 bps, Benchmark cost 15.6 bps



For all funds except your fund, benchmark cost equals the sum of group median costs x fund's average holdings by asset class plus group median cost of derivatives/overlays plus group median cost of oversight/support. Group peer if the fund is in the peer group, universe - if the fund is part of the universe, and global/database otherwise. Your fund's benchmark cost is calculated using peer-based methodology per page 7 of this section.

Benchmarking methodology formulas and data

a) Formulas

Example calculations for 'Stock - EAFE'

Asset class peer cost = weighted average by peer average style of peer median costs

$$= (13\% \times 1.7 \text{ bp}) + (59\% \times 9.3 \text{ bp}) + (7\% \times 3.5 \text{ bp}) + (21\% \times 43.2 \text{ bp}) = 14.9 \text{ bp}$$

Your cost versus benchmark (-savings/+excess) = asset class your cost - asset class peer cost

$$= 4.5 \text{ bp} - 14.9 \text{ bp} = -10.4 \text{ bp}$$

Attribution of 'your cost versus benchmark' to impact of style mix and impact of cost/paying more

Cost impact of differences in implementation style (-savings/+excess)

= cost impacts of passive vs active (A), internal passive vs external passive (B), internal active vs external active (C)

$$= 3.2 \text{ bp} + 0.0 \text{ bp} + -8.8 \text{ bp} = -5.6 \text{ bp}$$

A) Impact of Passive vs Active management (-savings/+excess)

$$= (\text{peer average passive cost} - \text{peer average active cost}) \times (\text{passive \% of asset, you} - \text{passive \% of asset, peer average}) \\ = (2.3 \text{ bp} - 18.2 \text{ bp}) \times (0\% - 20\%) = 3.2 \text{ bp}$$

Peer average passive cost = weighted average by peer average style of peer median costs for internal passive and external passive management

$$= [(13\% \times 1.7 \text{ bp}) + (7\% \times 3.5 \text{ bp})] / (13\% + 7\%) = 2.3 \text{ bp}$$

Peer average active cost = weighted average by peer average style of peer median costs for internal active and external active management

$$= [(59\% \times 9.3 \text{ bp}) + (21\% \times 43.2 \text{ bp})] / (59\% + 21\%) = 18.2 \text{ bp}$$

B) Impact of Internal Passive vs External Passive management (-savings/+excess)

$$= (\text{peer average internal passive cost} - \text{peer average external passive cost}) \times (\text{internal passive \% of passive, you} - \text{internal passive \% of passive, peer average}) \times \text{passive \% of asset, you} \\ = (1.7 \text{ bp} - 3.5 \text{ bp}) \times (0\% - 0\%) \times 0\% = 0.0 \text{ bp}$$

C) Impact of Internal Active vs External Active management (-savings/+excess)

$$= (\text{peer average internal active cost} - \text{peer average external active cost}) \times (\text{internal active \% of active, you} - \text{internal active \% of active, peer avg}) \times \text{active \% of asset, you} \\ = (9.3 \text{ bp} - 43.2 \text{ bp}) \times (100\% - 74\%) \times 100\% = -8.8 \text{ bp}$$

Cost impact of paying more/-less

$$= (\text{cost internal passive, you} - \text{cost internal passive, peer}) \times \text{internal passive \% of asset, you} + (\text{cost internal active, you} - \text{cost internal active, peer}) \times \text{internal active \% of asset, you} + (\text{cost external passive, you} - \text{cost external passive, peer}) \times \text{external passive \% of asset, you} + (\text{cost external active, you} - \text{cost external active, peer}) \times \text{external active \% of asset, you} \\ = (0.0 \text{ bp} - 1.7 \text{ bp}) \times 0\% + (4.5 \text{ bp} - 9.3 \text{ bp}) \times 100\% + (0.0 \text{ bp} - 3.5 \text{ bp}) \times 0\% + (0.0 \text{ bp} - 43.2 \text{ bp}) \times 0\% = -4.8 \text{ bp}$$

Your cost versus benchmark (-savings/+excess)

$$= \text{cost impact of differences in implementation style} + \text{cost impact of paying more/-less} \\ = -5.6 \text{ bp} + -4.8 \text{ bp} = -10.4 \text{ bp}$$

Benchmarking methodology formulas and data

b) 2019 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	Co-invest	Limited Partner.	Fund of Funds	Internal Passive	Internal Active	External Passive	External Active	Co-invest	Limited Partner.	Fund of Funds	Weighted Median
Stock - EAFE		4.5						1.7	9.3	3.5	43.2				14.9
Fixed Income - EAFE		7.8						2.1	5.0	6.1	32.4				8.7
Cash		0.0							0.0						0.0

c) 2019 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	Co-invest	Limited Partner.	Fund of Funds	Internal Passive	Internal Active	External Passive	External Active	Co-invest	Limited Partner.	Fund of Funds
Stock - EAFE	0.0%	100.0%	0.0%	0.0%				13.3%	58.9%	7.0%	20.7%			
Fixed Income - EAFE	0.0%	100.0%	0.0%	0.0%				10.5%	72.2%	3.1%	14.2%			
Cash		100.0%		0.0%					100.0%		0.0%			

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

Methodology of the cost trend model

CEM cost trend model relies on four factors or reasons to explain the cost differences over time: asset value, asset mix, implementation style, and paying more/less for similar services.

Factors affecting the cost differences

Asset value. If we keep the last three factors constant, costs will normally follow changes in the asset holdings. For external implementations, among the reasons is the common practice of charging management fees based on the value of assets under management. For internal, more assets requires additional internal staff (front and back office) and other operating expenditures. In the current model, for simplicity, we assume that costs change proportionately to the plan average assets.

Change in asset value only affects the cost amounts and does not affect costs in basis points. These are determined by the changes in the last three factors.

Asset mix. These are the cost differences associated with increasing / decreasing allocations to one or more of the asset classes, while keeping other factors constant. Higher allocations to more expensive assets will increase the cost both in amounts and in basis points.

Implementation style. These are changes in costs associated with increasing / decreasing allocations to one or more of the management styles within the same asset class.

Paying more/less for similar services. These cost differences reflect changes in the fees / internal costs in basis points for the same implementation style within the same asset class or same oversight service.

Attribution of the cost differences and other assumptions

Change in the cost amount for one asset =

Sum of impacts of asset value, asset mix, implementation style, and paying more/less for similar services.

Change in the basis point costs for one asset =

Sum of basis point impacts of asset mix, implementation style, and paying more/less for similar services.

For overlays, we do not differentiate between implementation styles and use entire asset category.

Oversight costs are only affected by changes in asset value and paying more/less for similar services.

The base model attributes cost differences between any two years. Trends and cumulative results are built upon combinations of multiple two-year attributions. When an entire asset class is missing in one of the two years, the cost difference for that asset is attributed to the asset value and mix impacts only. Impacts of other factors is 0. When an implementation style within the same asset class is missing in one of the two years, the cost difference for that style is attributed to the effects of the implementation style, while impact of paying more/less for similar services is 0. Impacts of changes in the asset value and asset mix are still accounted for.

General simplified formula for attributing basis point cost differences for one asset class

Cost difference in bps = impact of asset mix + impacts of style & paying =

$$[CostBpsL \times (HavgHpct - HavgLpct)] + [HavgHpct \times (CostBpsH - CostBpsL)]$$

where L/H are lower and higher years; HavgPct is % of asset's average holdings in total nav holdings;

CostBps is the asset total cost in basis points for a particular year.

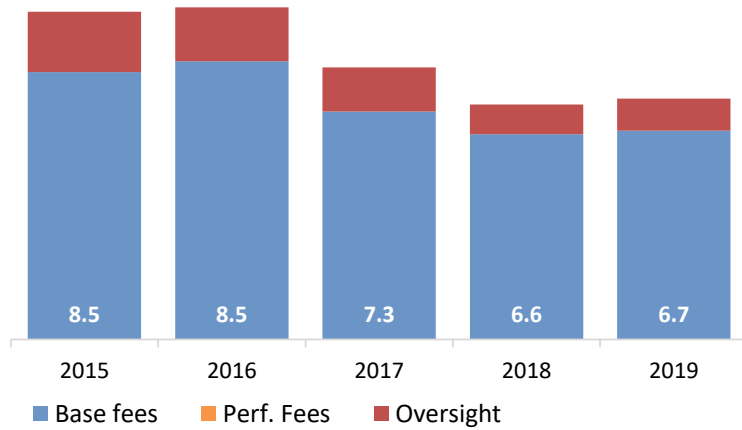
Further, cost difference for style & paying impacts (CostBpsH - CostBpsL) for one style =

$$style\ impact [CostStyleBpsL \times (WgH - WgL)] + paying\ impact [WgH \times (CostStyleBpsH - CostStyleBpsL)]$$

where CostStyleBps is the style cost in basis points; Wg is the weight for that style within the asset class.

Total plan cost and cost changes

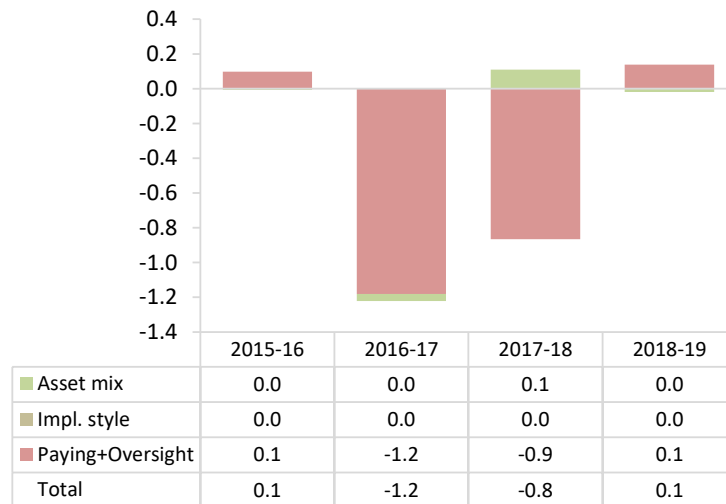
Total plan cost over time, bps



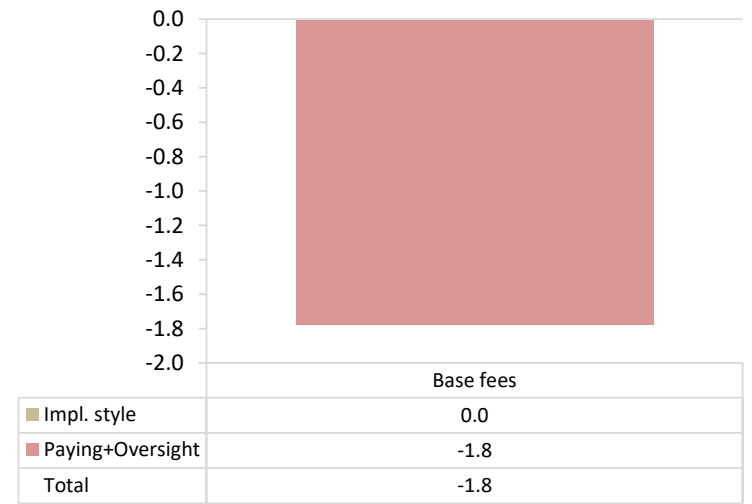
Cost differences, 2019 versus 2015, bps



Reasons for cost differences over time, bps



Impact of base and performance fees, 2019 vs. 2015, bps



Summary of cost differences, 2019 versus 2015

Your total cost decreased by 1.8 bps between 2015 and 2019 because of changes in: asset mix (0.0 bps), implementation style (0.0 bps), and paying more/less for similar services (-1.8 bps).

	bps	€000s
Starting total cost, 2015	8.5	17,485
Growth in asset value		4,302
Asset mix	<u>0.0</u>	<u>23</u>
Stock and REITs	0.1	334
Fixed Income	-0.1	-310
Implementation style (less expensive vs. more)	<u>0.0</u>	<u>0</u>
Paying more/-less for	<u>-1.1</u>	<u>-2,859</u>
Stock and REITs	-1.2	-3,174
Fixed Income	0.1	315
Oversight, custodial, other (pay more/-less)	<u>-0.7</u>	<u>-1,724</u>
Total difference	-1.8	-257
Ending total cost, 2019	6.7	17,228

Summary of cost differences, year over year

	bps	€000s	bps	€000s	bps	€000s	bps	€000s	bps	€000s
	2015		2016		2017		2018		2015	
Starting total cost	8.5	17,485	8.5	18,904	7.3	16,837	6.6	15,908	8.5	17,485
Growth in asset value		1,221		739		904		1,014		4,302
Asset mix	0.0	-17	0.0	-92	0.1	265	0.0	-51	0.0	23
Stock and REITs	0.1	234	0.1	326	-0.2	-429	0.1	214	0.1	334
Fixed Income	-0.1	-251	-0.2	-418	0.3	694	-0.1	-265	-0.1	-310
Implementation style (less expensive vs. more)	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0
Paying more/-less for	0.3	598	-1.0	-2,275	-0.5	-1,215	0.1	204	-1.1	-2,859
Stock and REITs	0.0	-74	-0.8	-1,840	0.0	56	-0.4	-1,146	-1.2	-3,174
Fixed Income	0.3	672	-0.2	-435	-0.5	-1,272	0.5	1,349	0.1	315
Oversight, custodial, other (pay more/-less)	-0.2	-382	-0.2	-440	-0.4	-883	0.1	154	-0.7	-1,724
Total difference	0.1	1,419	-1.2	-2,067	-0.8	-930	0.1	1,321	-1.8	-257
Ending total cost	8.5	18,904	7.3	16,837	6.6	15,908	6.7	17,228	6.7	17,228
	2016		2017		2018		2019		2019	

Sum of all changes (except for the total) between adjacent years will differ from the changes between starting and ending years in the last two columns.

Reasons by asset class and cost type, €000

Your total cost has decreased by €257 thousand in 2019 compared to 2015. An increase of €4.3 million was due to the €5.1 billion rise in plan total average nav holdings. The remaining decrease of €4.6 million is explained by the changes in the asset mix (€23 thousand), implementation style (€0.0 thousand), and paying more/less for similar services (-€4.6 million).

Asset class ¹	2015 cost €000s	Asset mix €000s	Implement. style €000s	Paying more/-less €000s	Total ex asset gr. €000s	Total difference €000s	Growth in asset value €000s	2019 cost €000s
	A	B	C	D	E=B+C+D	F=G-A	F-E	G
Stock - EAFE	7,910	334	0	-3,174	-2,840	-894	1,946	7,017
Fixed Income - EAFE	6,353	-310	0	315	5	1,568	1,563	7,921
Cash	n/a	0	0	0	0	0	0	0
Total for asset management	14,263	23	0	-2,859	-2,835	674	3,510	14,937
Overlays and unfunded strategies ²	0	0		0	0	0	0	0
Oversight	1,721			-874	-874	-451	423	1,270
Trustee & Custodial	71			-32	-32	-15	17	56
Consulting	763			-369	-369	-181	188	582
Audit	267			-81	-81	-15	66	252
Other	400			-367	-367	-269	98	131
Total for fund oversight ³	3,222			-1,724	-1,724	-931	793	2,291
Total	17,485	23	0	-4,582	-4,559	-257	4,302	17,228

1. Cost differences for asset classes are attributed to the effects of:

- Asset growth, asset mix, implementation style, and paying for similar services, when the asset class exists in both years.
- Asset growth and asset mix, when the asset class exists only in one of the years.

2. Cost differences for overlays are attributed to the effects of:

- Asset growth and paying more/less for similar services, when the fund has overlays in both years.
- Asset growth and asset mix, when the fund has overlays only in one of the years.

3. Cost differences for oversight are attributed to the effects of asset growth and paying more/less for similar services.

Reasons by asset class and cost type, basis points

Your total cost has decreased by 1.8 bps in 2019 vs. 2015. It was driven by the changes in the asset mix (0.0 bps), implementation style (0.0 bps), and paying more/less for similar services (-1.8 bps).

Asset class	Asset mix bps	Implement. style bps	Paying more/-less bps	Total difference bps	Total ¹ ex asset gr. €000s
	B	C	D	B+C+D	
Stock - EAFE	0.1	0.0	-1.2	-1.1	-2,840
Fixed Income - EAFE	-0.1	0.0	0.1	0.0	5
Cash	0.0	0.0	0.0	0.0	0
Total for asset management	0.0	0.0	-1.1	-1.1	-2,835
Overlays and unfunded strategies	0.00		0.00	0.00	0
Oversight			-0.3	-0.3	-874
Trustee & Custodial			0.0	0.0	-32
Consulting			-0.1	-0.1	-369
Audit			0.0	0.0	-81
Other			-0.1	-0.1	-367
Total for fund oversight			-0.7	-0.7	-1,724
Total	0.0	0.0	-1.8	-1.8	-4,559
Total basis point costs in years 2019 and 2015		6.7	8.5	-1.8	

1. Calculated by multiplying total difference in bps by plan total nav average holdings for year 2019, €26 billion. Similarly, basis point costs on this page are converted from the amounts on the previous page using the same total nav holdings as the fee basis.

Impact of changes in asset mix

Changes in the asset mix increased your total cost by €23 thousand or 0.0 bps.

Asset class	2015 Cost bps	2019 Cost bps	2015 asset ¹ weight %	2019 asset ¹ weight %	Change in asset weight	Asset mix changes ² bps	Asset mix changes ³ €000s
	A	B	C	D	E=D-C	A (or B) x E	
Stock - EAFE	6.5	4.5	58%	60%	2%	0.1	334
Fixed Income - EAFE	7.5	7.8	41%	39%	-2%	-0.1	-310
Total for asset management						0.0	23

1. Weight % = asset's average (NAV for performance lines) holdings / plan total nav average holdings.
2. If asset is not available in one of the years, the entire weighted cost difference in bps is attributed to the asset mix.
3. Calculated by multiplying asset mix changes in bps by plan total nav average holdings for year 2019, €26 billion.

Impact of changes in implementation style

Changes in implementation style (passive vs. active, internal vs. external, etc.) in 2019 vs. 2015 saved you €0.0 thousand.

Implementation choices	2019 avg. assets €mils	Cost, 2015			Style 1 %			Cost/ €000s
	A	Style 1 B	Style 2 C	Style 1 -Savings D = B - C	2019	2015	More/ -Less E	
Total								0

Cost differences are attributed exclusively to the effects of implementation style when the style existed in one of the years only.

Impact of paying more/-less for similar services

In 2019, you paid €4.6 million less for similar asset management and oversight / support services vs. 2015.

Asset class styles where you had assets in both 2019 and 2015 ¹	Style	2019 avg. assets €mils	Cost in bps		More/ -less	Cost/ -Savings €000s
			2019	2015		
<u>Internal asset management</u>		A			B	A x B
Stock - EAFE	active	15,572	4.5	6.5	-2.0	-3,174
Fixed Income - EAFE	active	10,133	7.8	7.5	0.3	315
Total for internal management						-2,859
Oversight		25,766	0.5	0.8	-0.3	-874.5
Trustee & Custodial		25,766	0.0	0.0	0.0	-32
Consulting		25,766	0.2	0.4	-0.1	-369
Audit		25,766	0.1	0.1	0.0	-81
Other		25,766	0.1	0.2	-0.1	-367
Total for fund oversight						-1,724
Total						-4,582

1. Cost differences are attributed to paying more/less for similar services only if the asset-class style existed in both years.

5

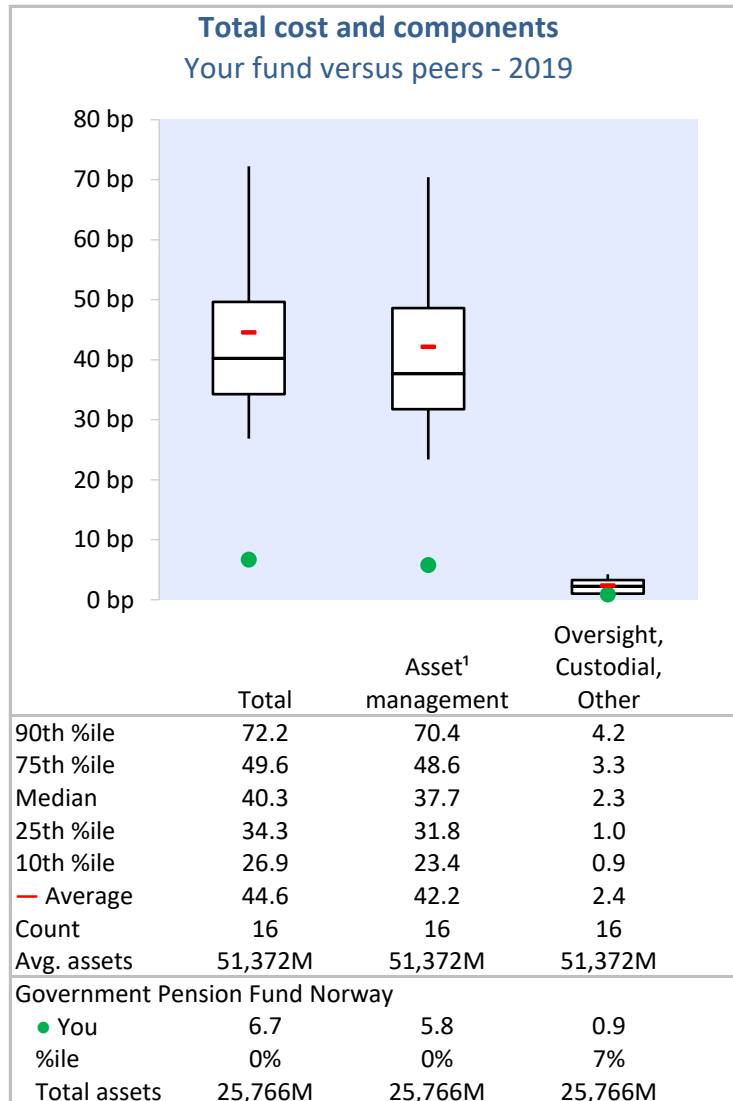
Cost comparisons

Total fund cost	2
Governance, operations & support	3
Public asset classes	
- Stock	4
- Fixed Income	10
- 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
- Private credit	30
- Other private equity	32
Global TAA	33
RiskParity	34
Balanced Funds	35
Hedge Funds	36
Overlays	37
Transaction costs	40

Total fund cost

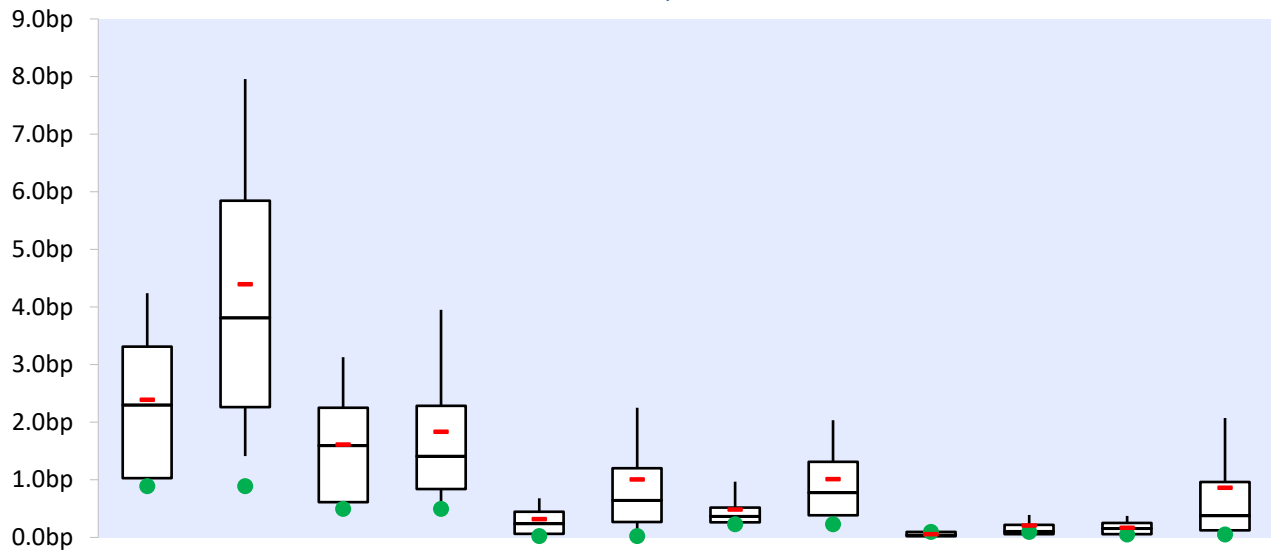
Total costs are benchmarked in the previous section. In this section, your fund's costs are compared on a line-item basis to your peers. This enables you to understand better why you may be a high or low cost fund and it also identifies and quantifies major cost differences that may warrant further investigation.

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.



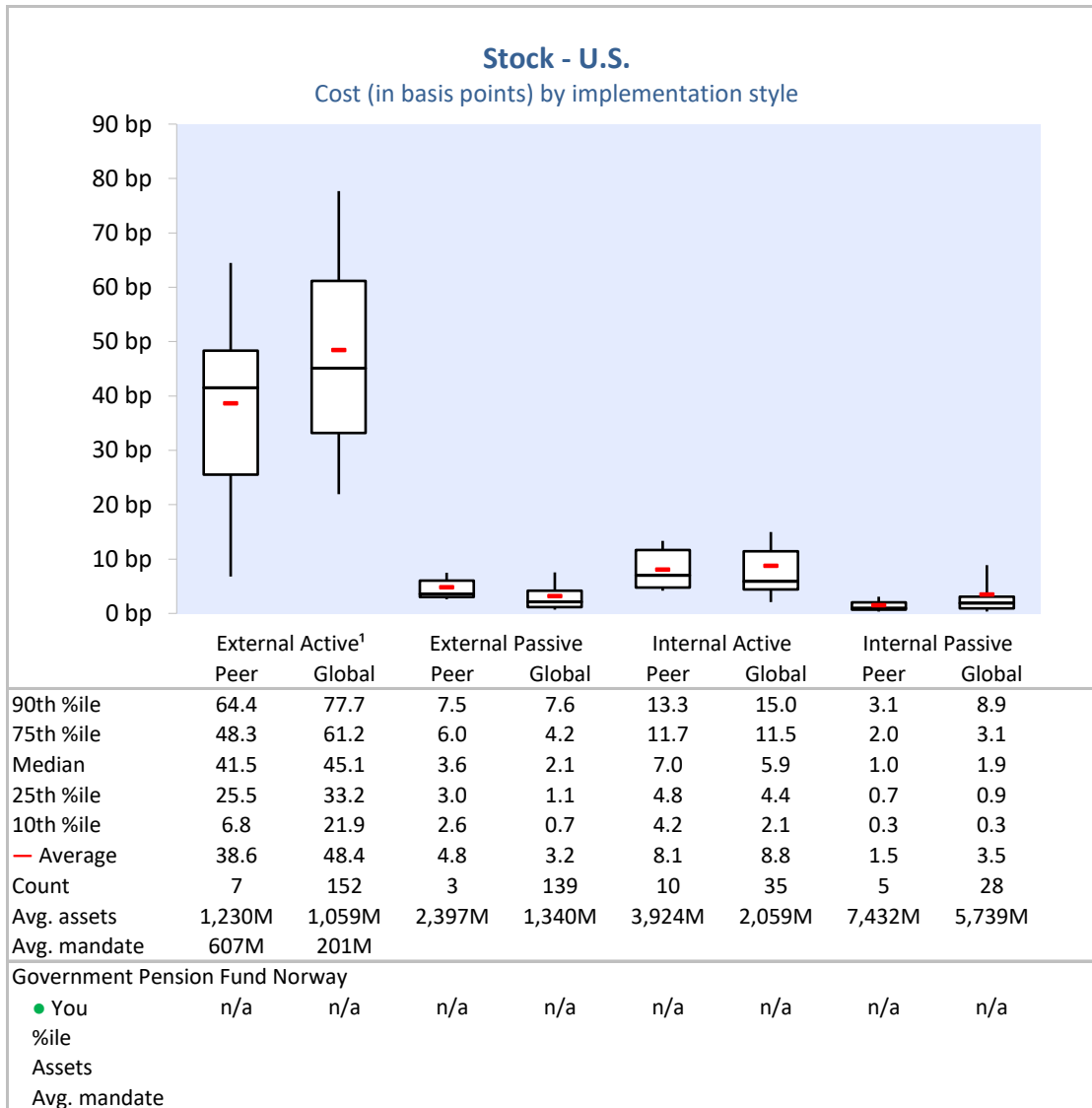
Governance, operations & support

Cost 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	4.2	8.0	3.1	4.0	0.7	2.3	1.0	2.0	0.1	0.4	0.4	2.1
75th %ile	3.3	5.8	2.2	2.3	0.4	1.2	0.5	1.3	0.1	0.2	0.2	1.0
Median	2.3	3.8	1.6	1.4	0.2	0.6	0.4	0.8	0.0	0.1	0.2	0.4
25th %ile	1.0	2.3	0.6	0.8	0.1	0.3	0.3	0.4	0.0	0.1	0.1	0.1
10th %ile	0.9	1.4	0.4	0.5	0.0	0.1	0.2	0.2	0.0	0.0	0.0	0.0
— Average	2.4	4.4	1.6	1.8	0.3	1.0	0.5	1.0	0.1	0.2	0.2	0.9
Count	16	305	16	305	6	247	15	289	14	265	15	215
Avg. assets	51,372M	24,166M	51,372M	24,166M	51,372M	24,166M	51,372M	24,166M	51,372M	24,166M	51,372M	24,166M
Government Pension Fund Norway												
● You	0.9	0.9	0.5	0.5	0.0	0.0	0.2	0.2	0.1	0.1	0.1	0.1
%ile	7%	5%	13%	11%	0%	1%	7%	11%	77%	45%	21%	13%
Plan assets	25,766M	25,766M	25,766M	25,766M	25,766M	25,766M	25,766M	25,766M	25,766M	25,766M	25,766M	25,766M

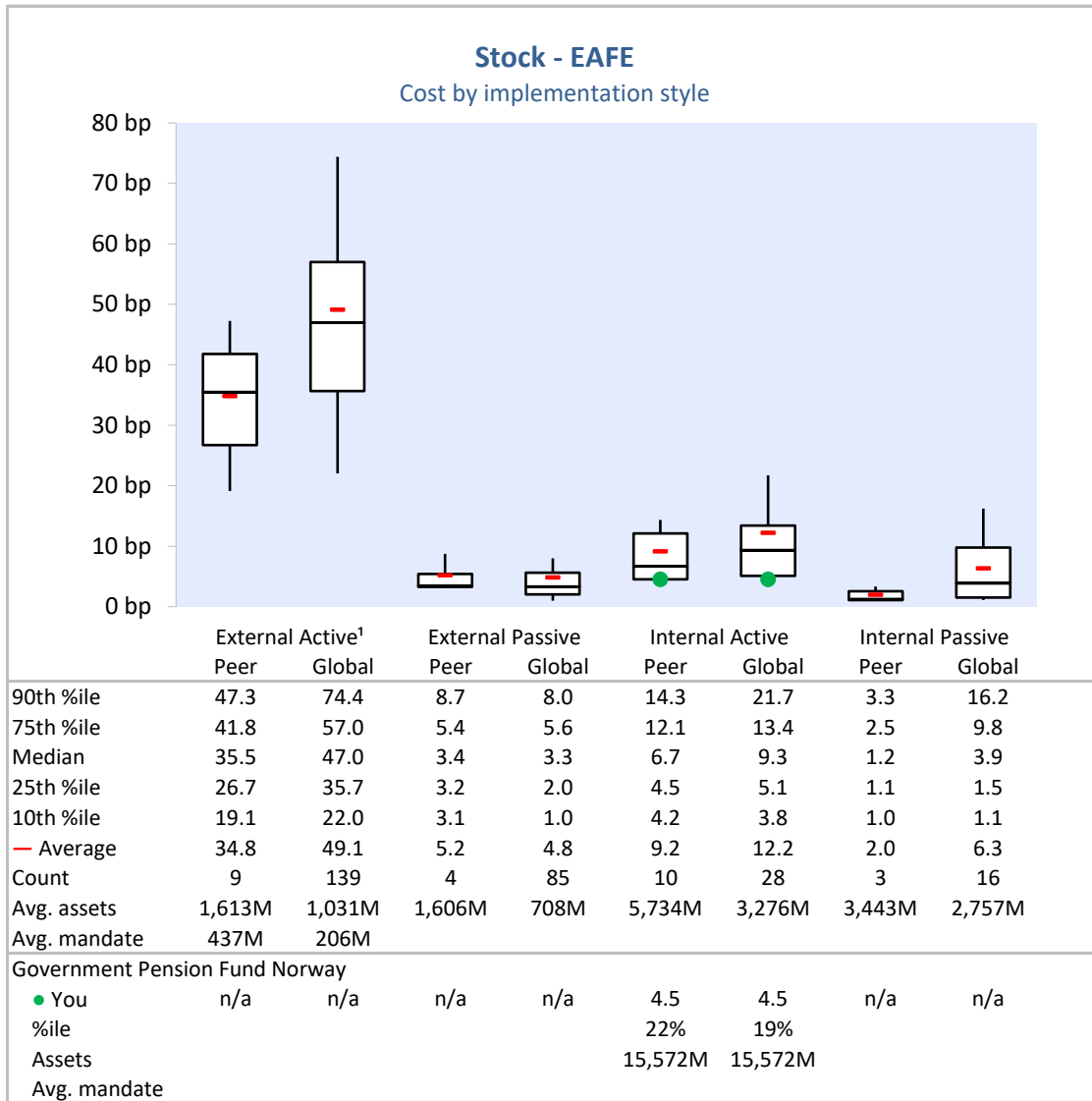
1. Oversight costs include the salaries and benefits of executives and their staff responsible for overseeing the entire fund or multiple asset classes and the fees/salaries of the Board or Investment Committee. All costs associated with the above including fees/salaries, travel, director's insurance 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	n/a	27.9	42.1
Performance fees*	n/a	9.2	5.7
Internal and other	<u>n/a</u>	<u>1.6</u>	<u>0.7</u>
Total	n/a	38.6	48.4

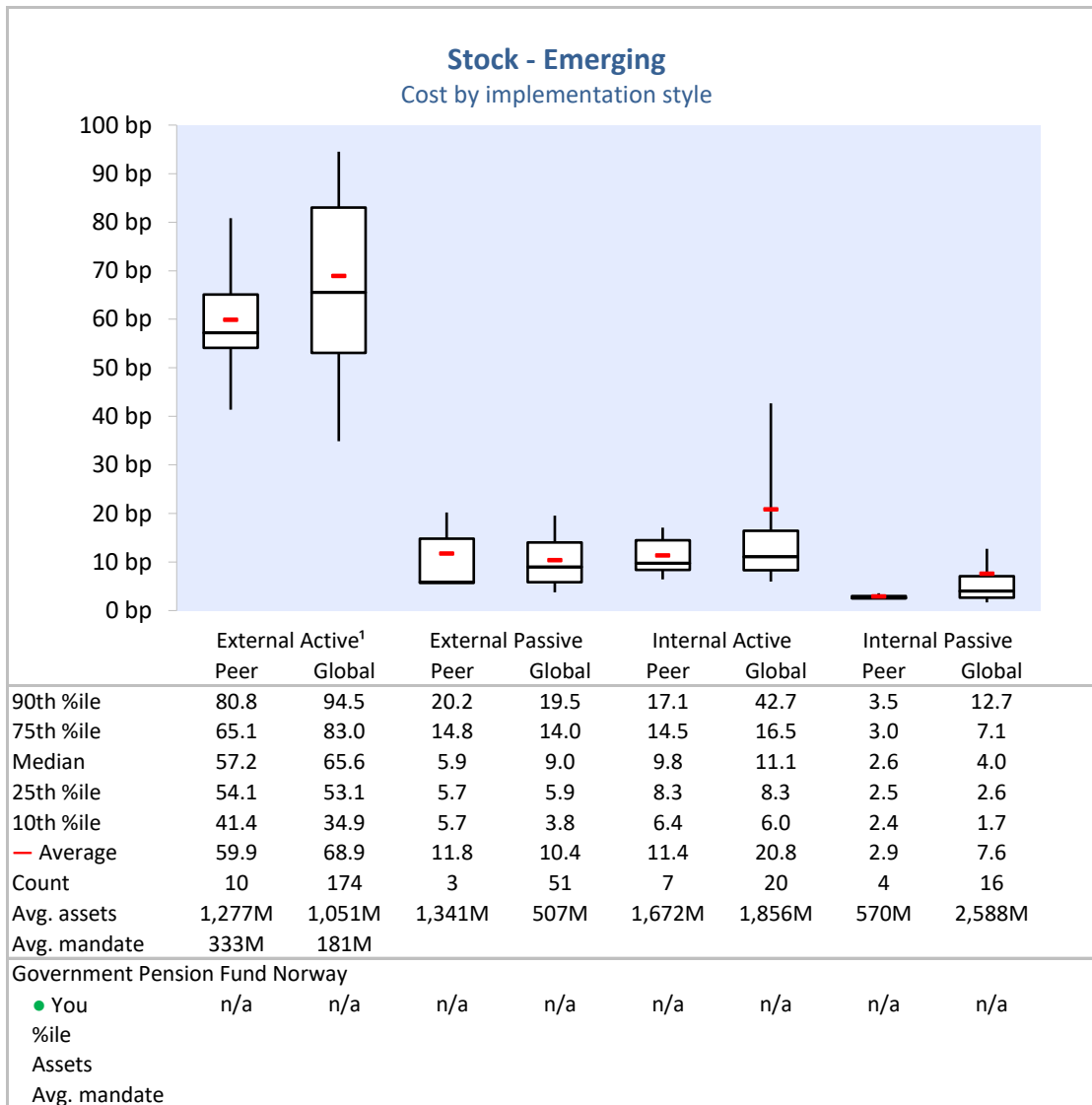
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 21.4 bps for peers (3 funds) and 20.0 bps for Global participants (43 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	33.2	45.9
Performance fees*	n/a	0.1	2.4
Internal and other	<u>n/a</u>	<u>1.5</u>	<u>0.8</u>
Total	n/a	34.8	49.1

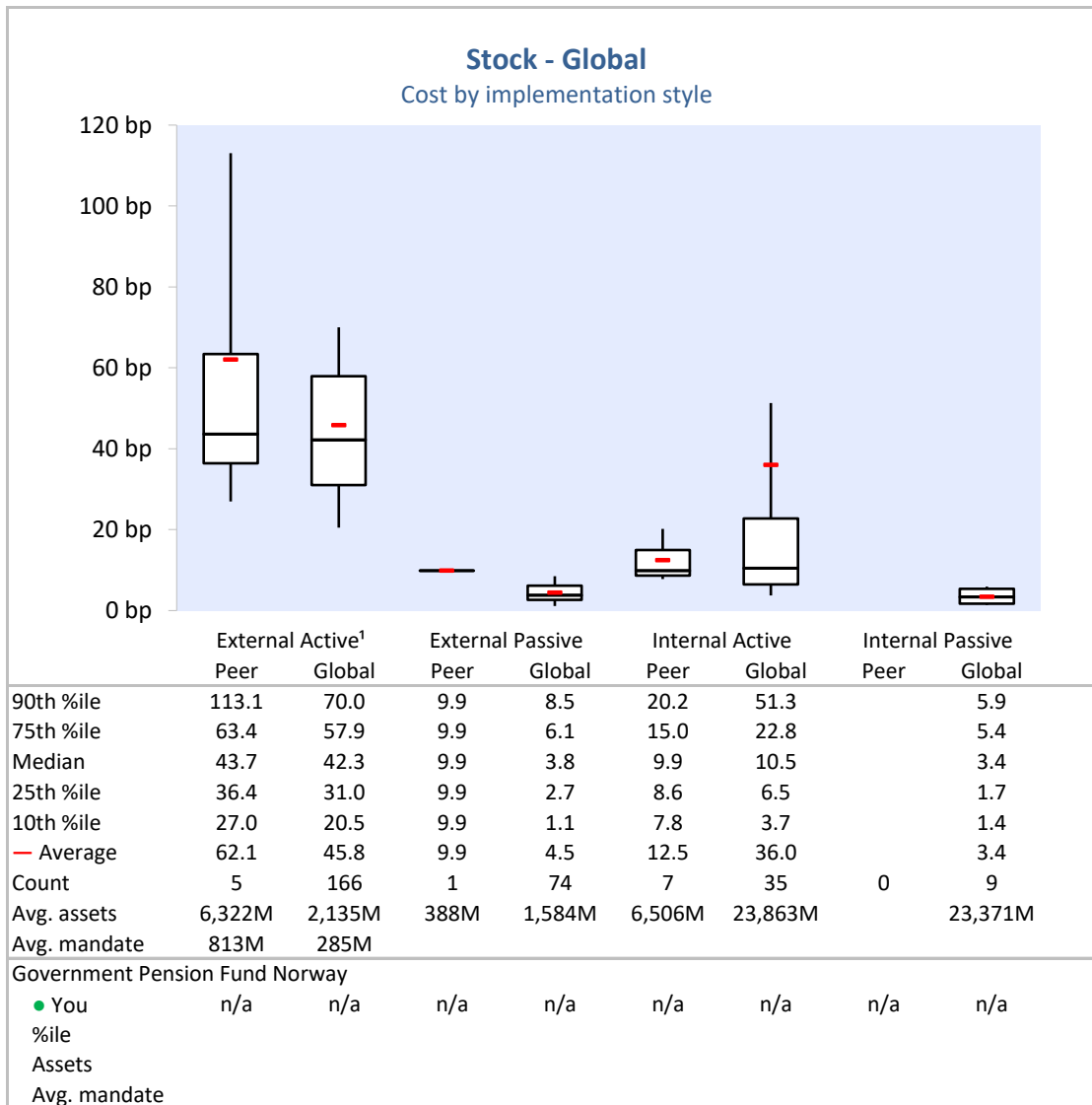
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 1.3 bps for peers (1 fund) and 10.4 bps for Global participants (32 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	48.2	60.7
Performance fees*	n/a	9.3	6.8
Internal and other	<u>n/a</u>	<u>2.5</u>	<u>1.4</u>
Total	n/a	59.9	68.9

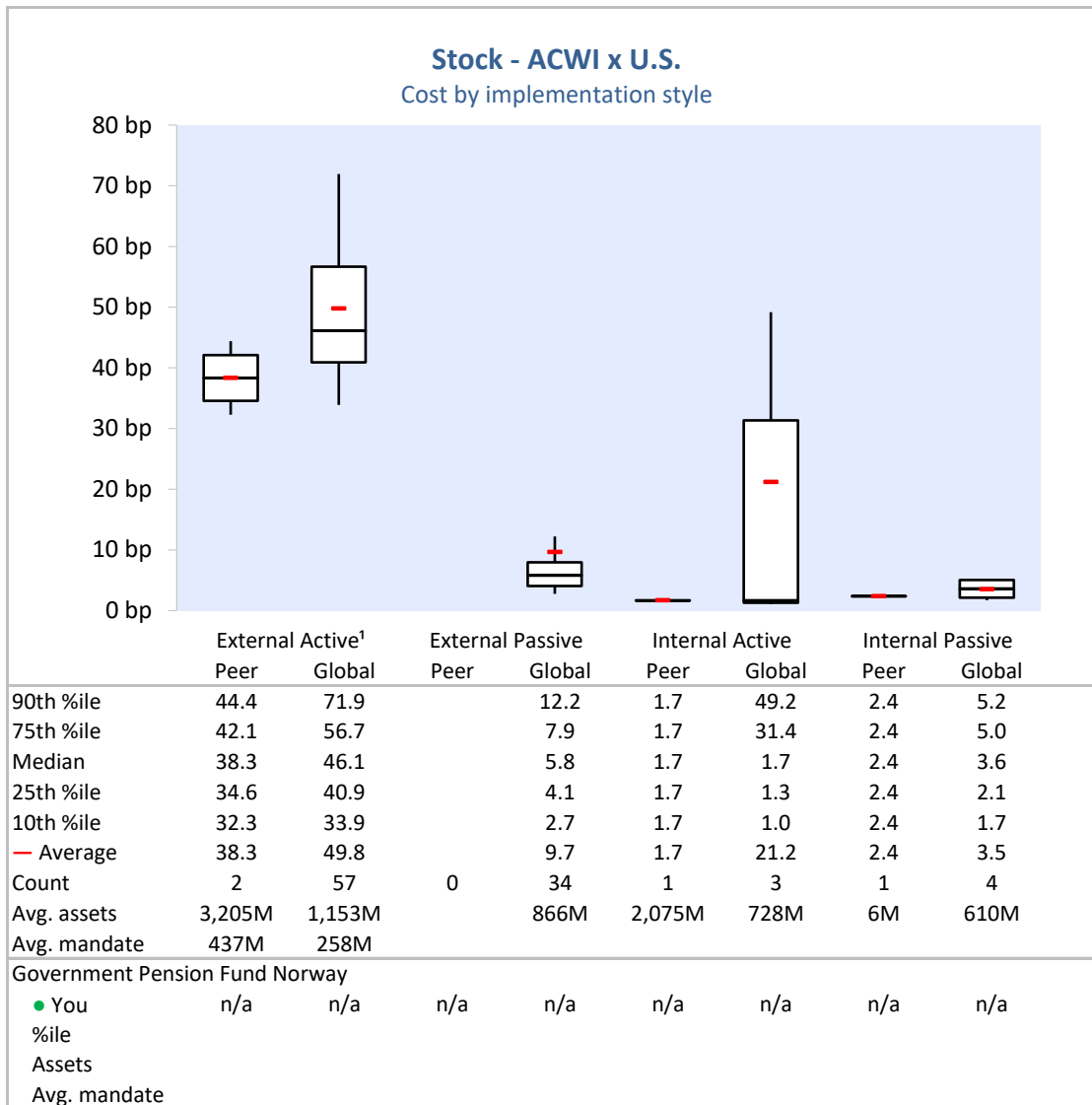
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 23.1 bps for peers (4 funds) and 28.3 bps for Global participants (42 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	41.9	42.3
Performance fees*	n/a	18.4	2.3
Internal and other	<u>n/a</u>	<u>1.8</u>	<u>1.3</u>
Total	n/a	62.1	45.8

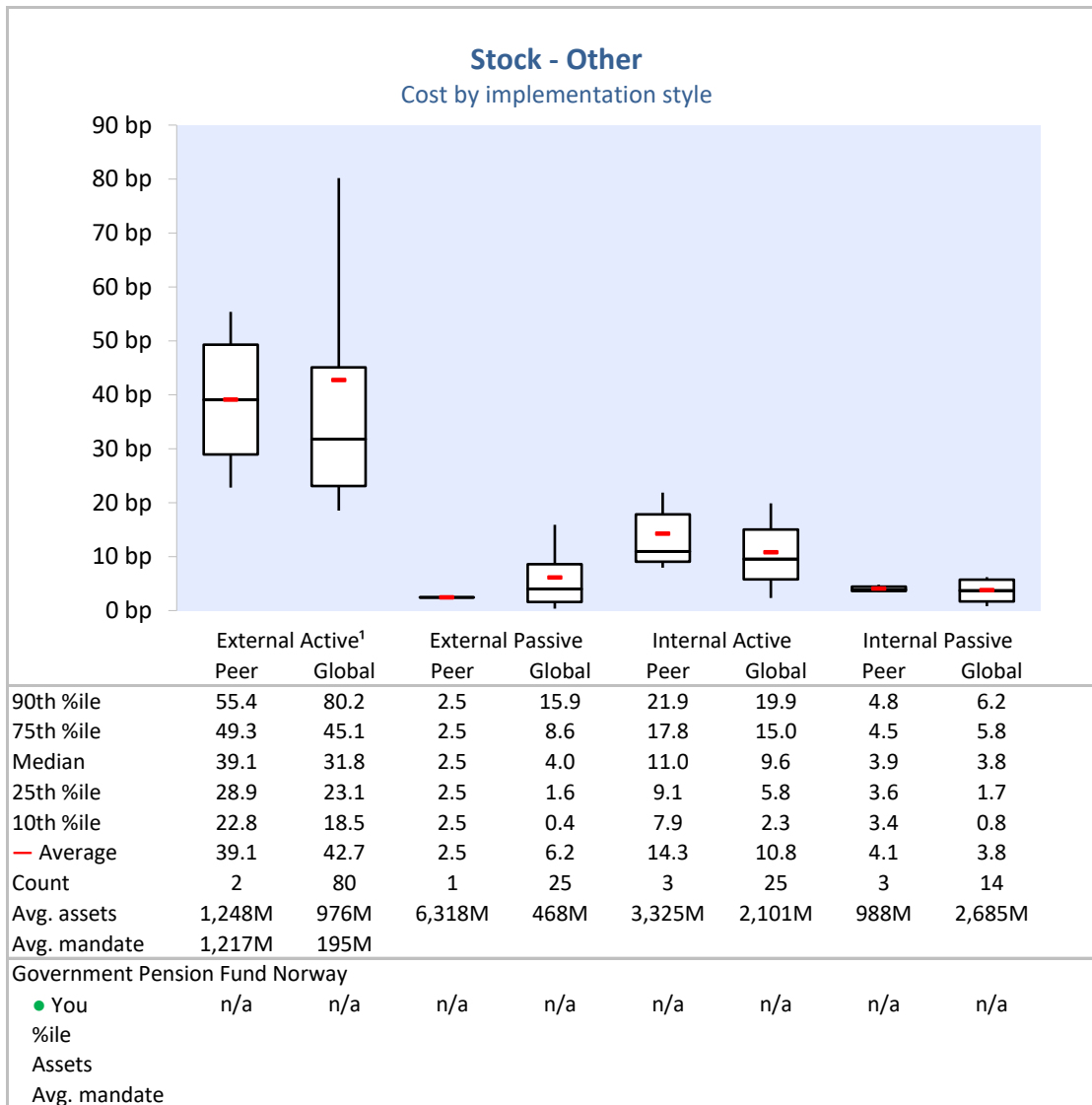
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 23.0 bps for peers (4 funds) and 7.6 bps for Global participants (49 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	37.9	48.5
Performance fees*	n/a	n/a	1.0
Internal and other	<u>n/a</u>	<u>0.5</u>	<u>0.3</u>
Total	n/a	38.3	49.8

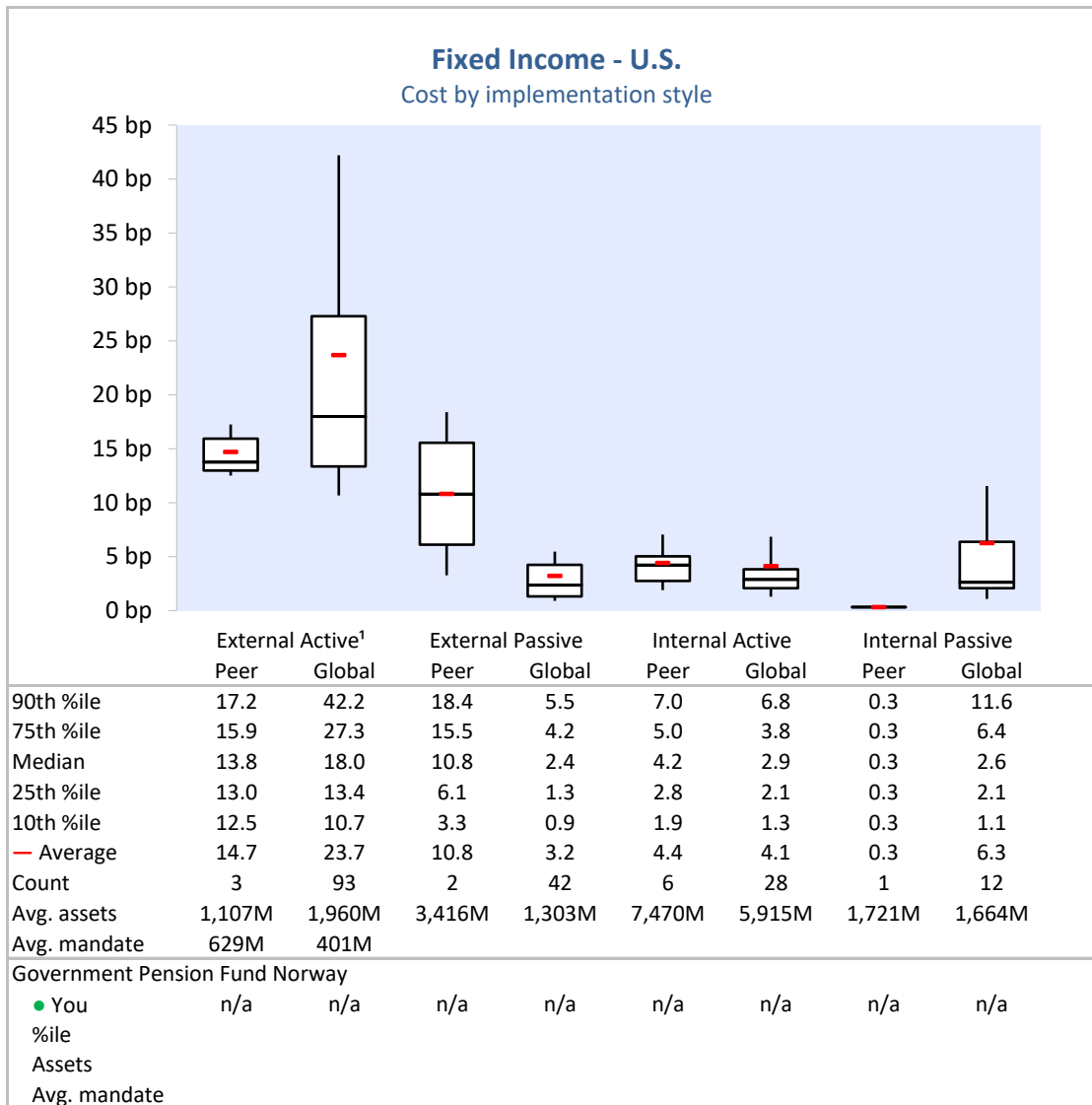
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 5.9 bps for Global participants (10 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	38.0	37.1
Performance fees*	n/a	n/a	4.6
Internal and other	<u>n/a</u>	<u>1.1</u>	<u>1.0</u>
Total	n/a	39.1	42.7

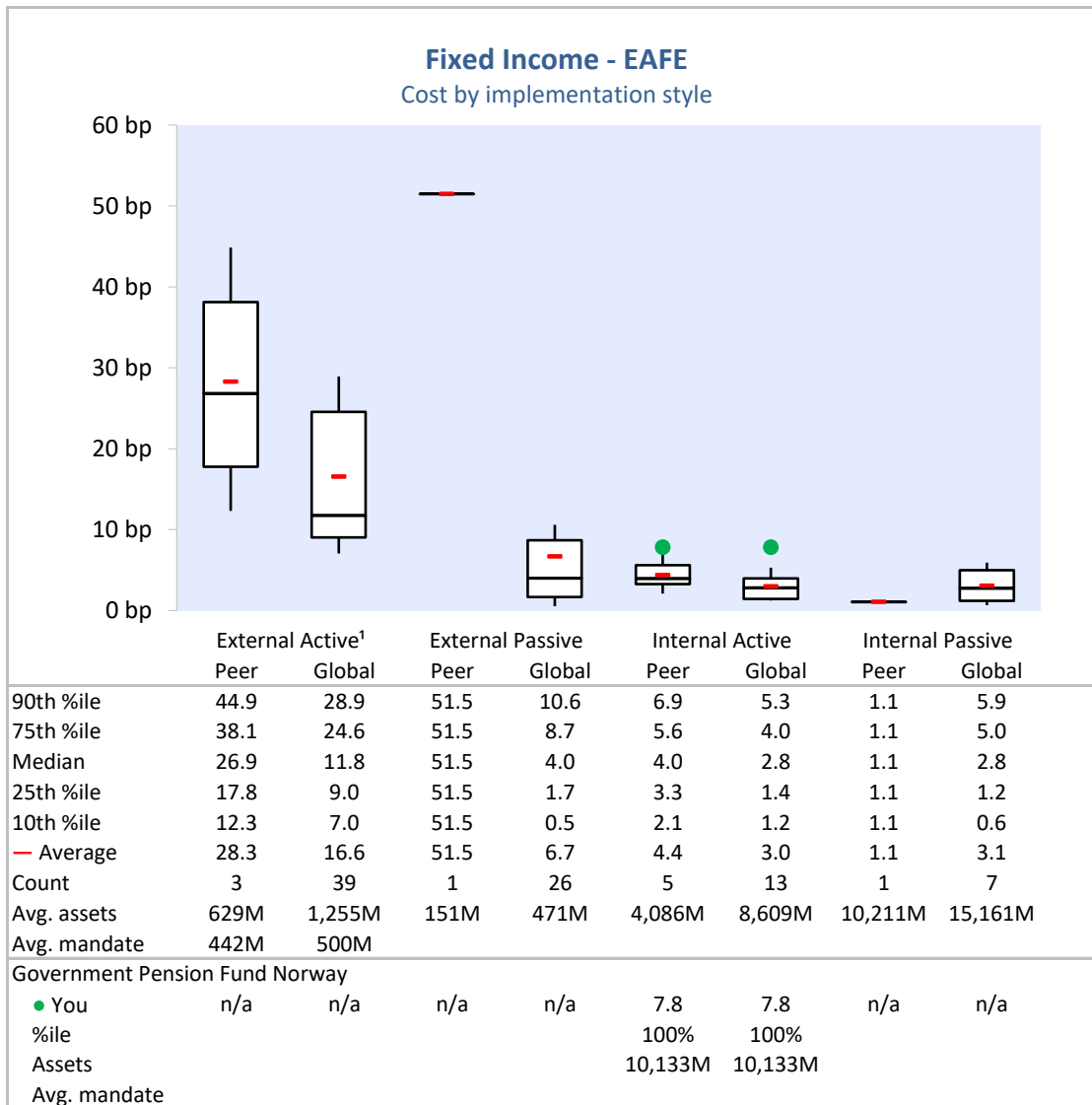
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 33.6 bps for Global participants (11 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	13.4	22.2
Performance fees*	n/a	n/a	0.8
Internal and other	<u>n/a</u>	<u>1.3</u>	<u>0.7</u>
Total	n/a	14.7	23.7

* 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 4.8 bps for Global participants (15 funds).

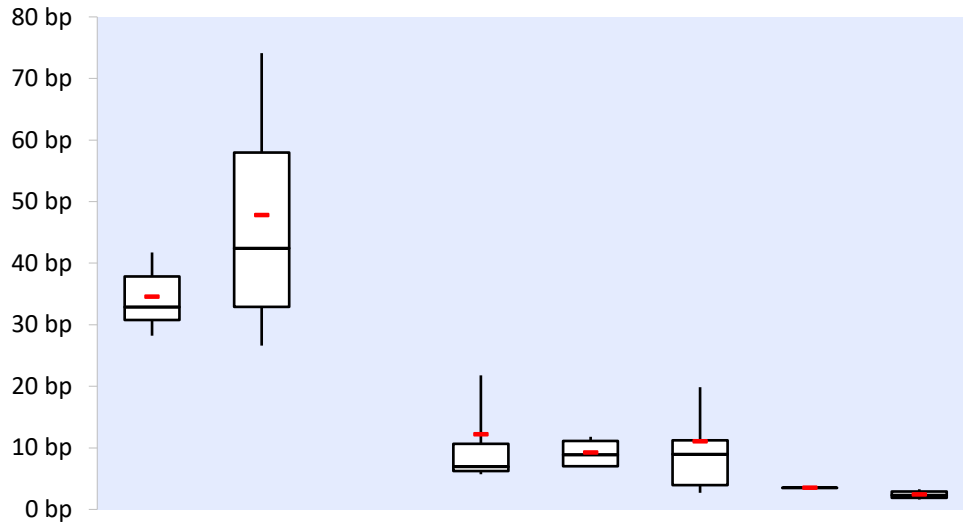


1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	22.3	15.2
Performance fees*	n/a	5.1	1.0
Internal and other	<u>n/a</u>	<u>0.9</u>	<u>0.4</u>
Total	n/a	28.3	16.6

* 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 15.4 bps for peers (1 fund) and 3.9 bps for Global participants (10 funds).

Fixed Income - Emerging Cost by implementation style

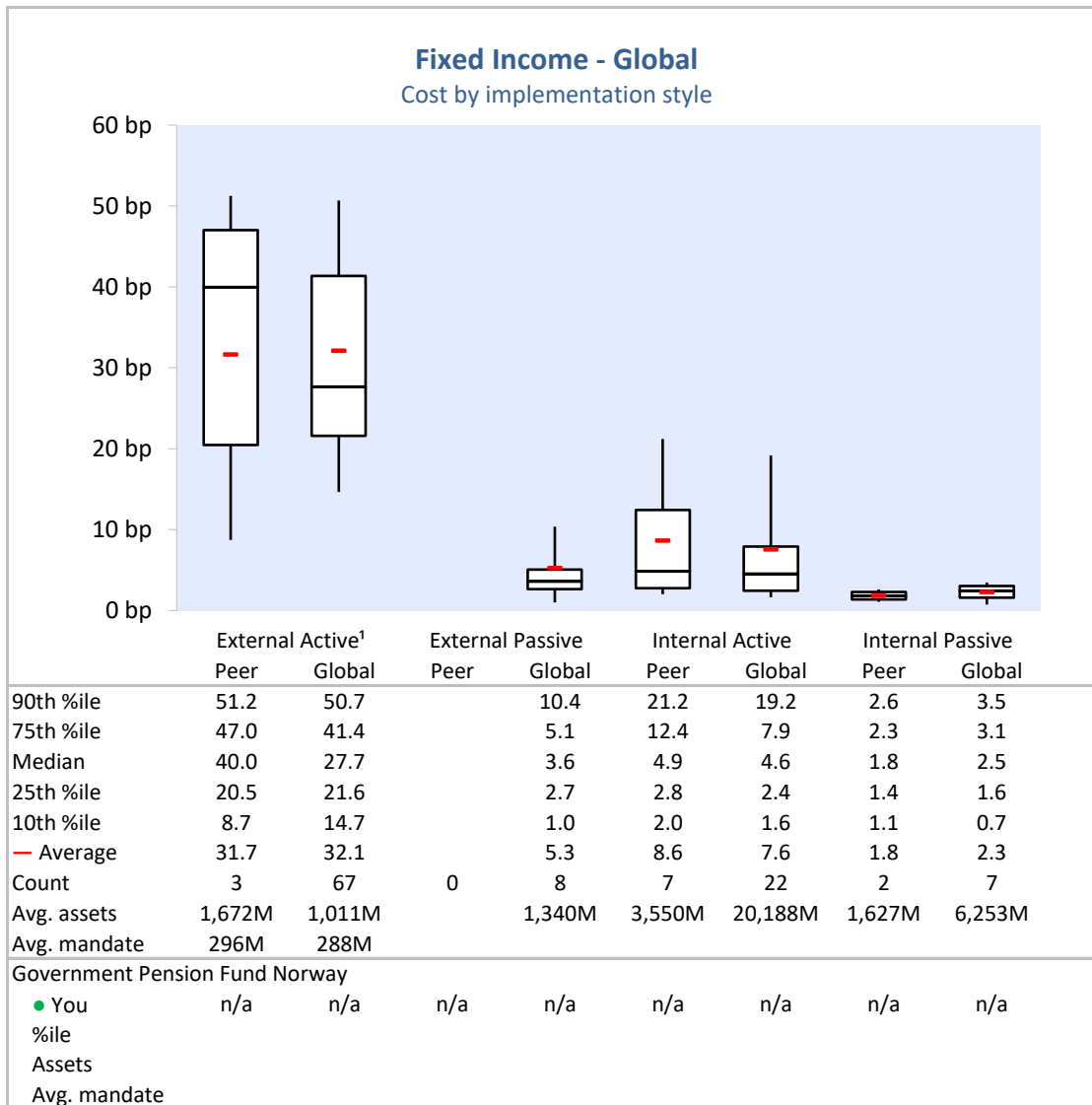


	External Active ¹		External Passive		Internal Active		Internal Passive	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	41.7	74.1		21.8	11.8	19.9	3.5	3.3
75th %ile	37.8	58.0		10.7	11.1	11.2	3.5	2.9
Median	32.9	42.5		7.0	8.9	9.0	3.5	2.3
25th %ile	30.8	32.9		6.2	7.0	4.0	3.5	1.9
10th %ile	28.2	26.6		5.7	7.0	2.7	3.5	1.6
— Average	34.6	47.8		12.2	9.2	11.1	3.5	2.4
Count	8	90	0	8	4	16	1	3
Avg. assets	1,594M	789M		783M	1,136M	1,403M	314M	2,478M
Avg. mandate	352M	203M						
Government Pension Fund Norway								
● 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	31.5	45.4
Performance fees*	n/a	1.2	0.7
Internal and other	<u>n/a</u>	<u>1.9</u>	<u>1.7</u>
Total	n/a	34.6	47.8

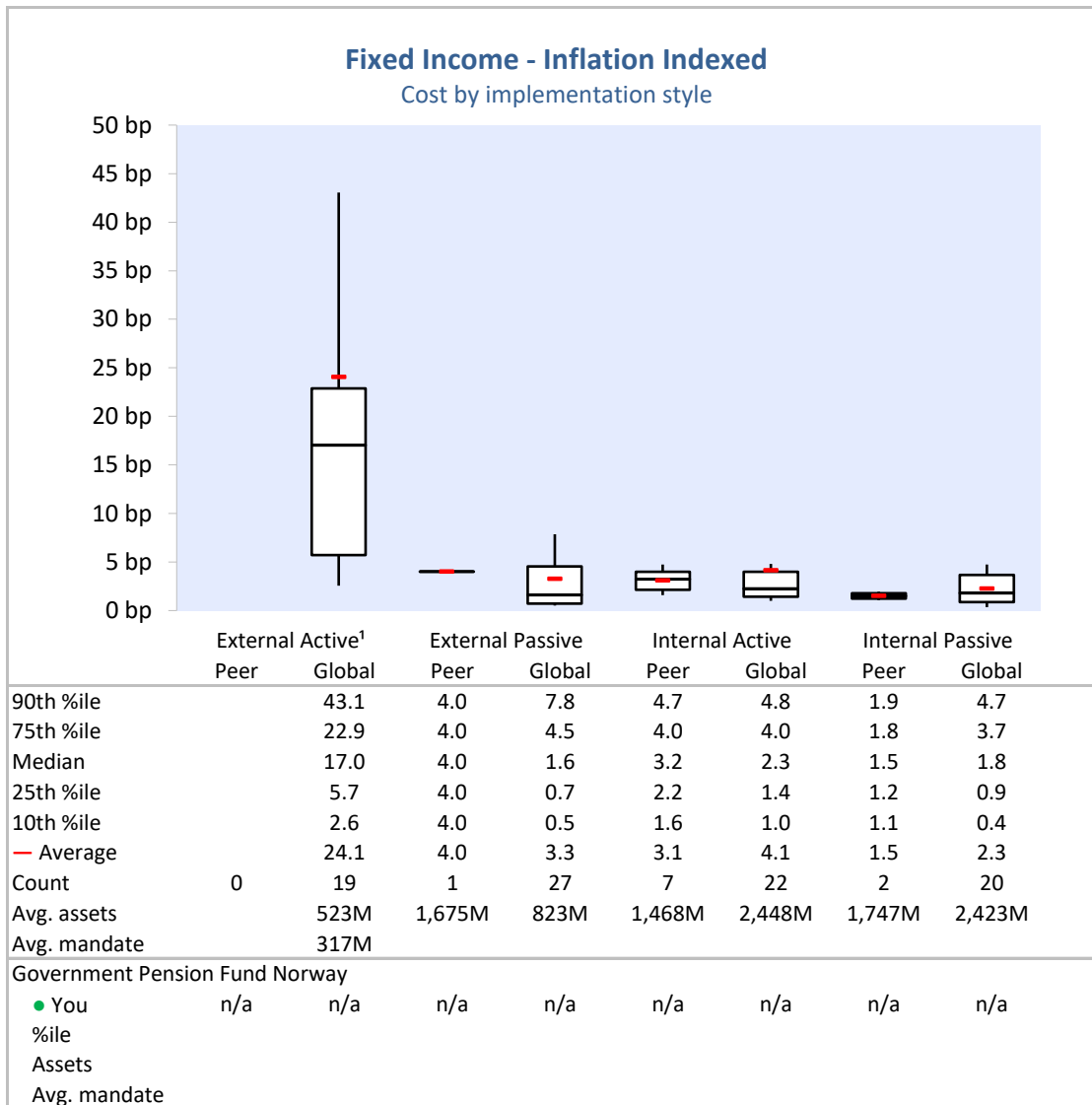
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 3.1 bps for peers (3 funds) and 3.4 bps for Global participants (19 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	29.5	29.8
Performance fees*	n/a	0.0	1.5
Internal and other	<u>n/a</u>	<u>2.1</u>	<u>0.8</u>
Total	n/a	31.7	32.1

* 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 0.0 bps for peers (1 fund) and 6.5 bps for Global participants (16 funds).



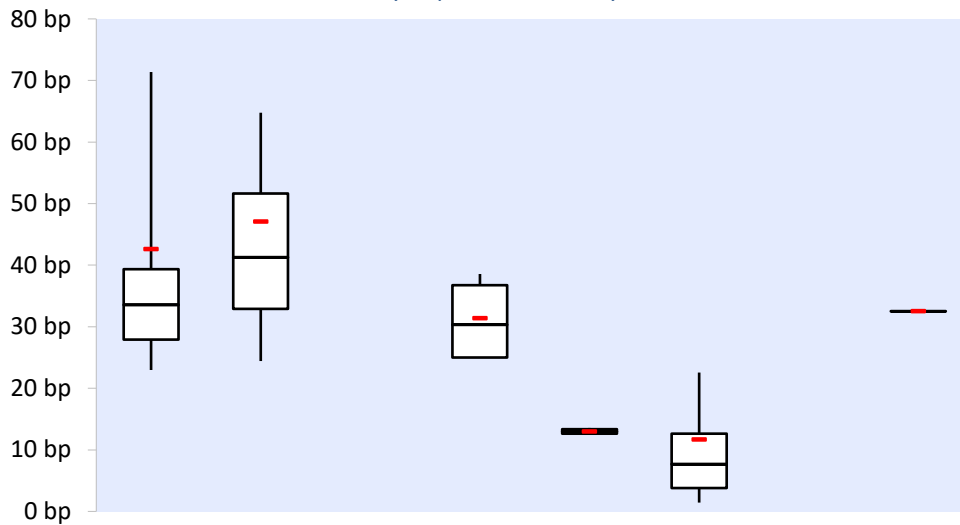
1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	n/a	21.7
Performance fees*	n/a	n/a	1.8
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>0.6</u>
Total	n/a	n/a	24.1

* 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 11.3 bps for Global participants (3 funds).

Fixed Income - High Yield

Cost by implementation style



	External Active ¹		External Passive		Internal Active		Internal Passive	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	71.4	64.8		38.6	13.5	22.5		32.6
75th %ile	39.3	51.6		36.7	13.3	12.6		32.6
Median	33.6	41.3		30.4	13.0	7.7		32.6
25th %ile	27.9	32.9		25.0	12.6	3.8		32.6
10th %ile	23.0	24.4		25.0	12.4	1.4		32.6
— Average	42.6	47.1		31.4	13.0	11.7		32.6
Count	6	111	0	4	2	16	0	1
Avg. assets	1,054M	536M		590M	295M	990M		548M
Avg. mandate	259M	171M						
Government Pension Fund Norway								
● You	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
%ile								
Assets								
Avg. mandate								

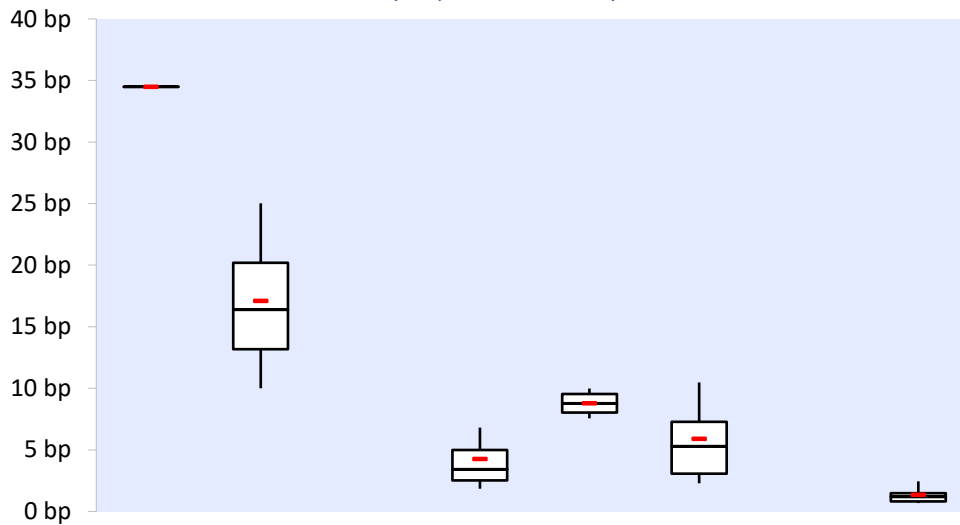
1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	40.1	43.4
Performance fees*	n/a	0.5	2.0
Internal and other	<u>n/a</u>	<u>2.0</u>	<u>1.7</u>
Total	n/a	42.6	47.1

* 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 3.2 bps for peers (1 fund) and 11.9 bps for Global participants (19 funds).

Fixed Income - Long Bonds

Cost by implementation style



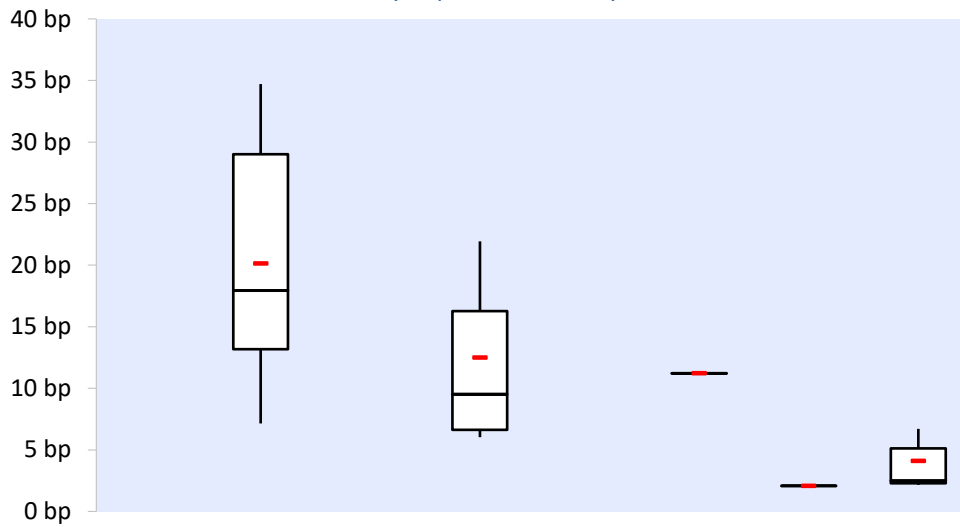
	External Active ¹		External Passive		Internal Active		Internal Passive	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	34.5	25.0		6.8	10.0	10.5		2.4
75th %ile	34.5	20.2		5.0	9.5	7.3		1.5
Median	34.5	16.4		3.4	8.8	5.3		1.2
25th %ile	34.5	13.2		2.5	8.0	3.1		0.8
10th %ile	34.5	10.0		1.8	7.6	2.3		0.7
— Average	34.5	17.1		4.3	8.8	5.9		1.4
Count	1	89	0	33	2	13	0	12
Avg. assets	209M	2,922M		375M	7,676M	2,931M		3,950M
Avg. mandate		454M						
Government Pension Fund Norway								
● 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	32.3	16.4
Performance fees*	n/a	0.0	0.7
Internal and other	<u>n/a</u>	<u>2.2</u>	<u>0.1</u>
Total	n/a	34.5	17.1

* 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 0.0 bps for peers (1 fund) and 3.9 bps for Global participants (15 funds).

Fixed Income - Bundled LDI Cost by implementation style



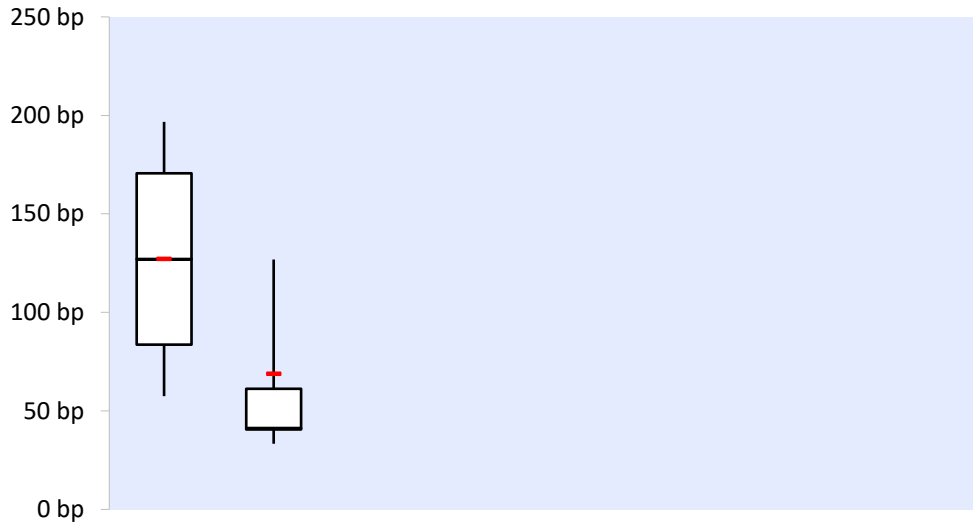
	External Active ¹		External Passive		Internal Active		Internal Passive	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile		34.7		21.9		11.2	2.1	6.7
75th %ile		29.0		16.3		11.2	2.1	5.1
Median		18.0		9.5		11.2	2.1	2.5
25th %ile		13.2		6.6		11.2	2.1	2.3
10th %ile		7.2		6.0		11.2	2.1	2.2
— Average		20.1		12.5		11.2	2.1	4.1
Count	0	14	0	6	0	1	1	3
Avg. assets		1,796M		5,830M		909M	10,101M	7,780M
Avg. mandate		276M						
Government Pension Fund Norway								
● 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	n/a	19.6
Performance fees*	n/a	n/a	0.0
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>0.5</u>
Total	n/a	n/a	20.1

* 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 0.3 bps for Global participants (2 funds).

Fixed Income - Convertibles Cost by implementation style

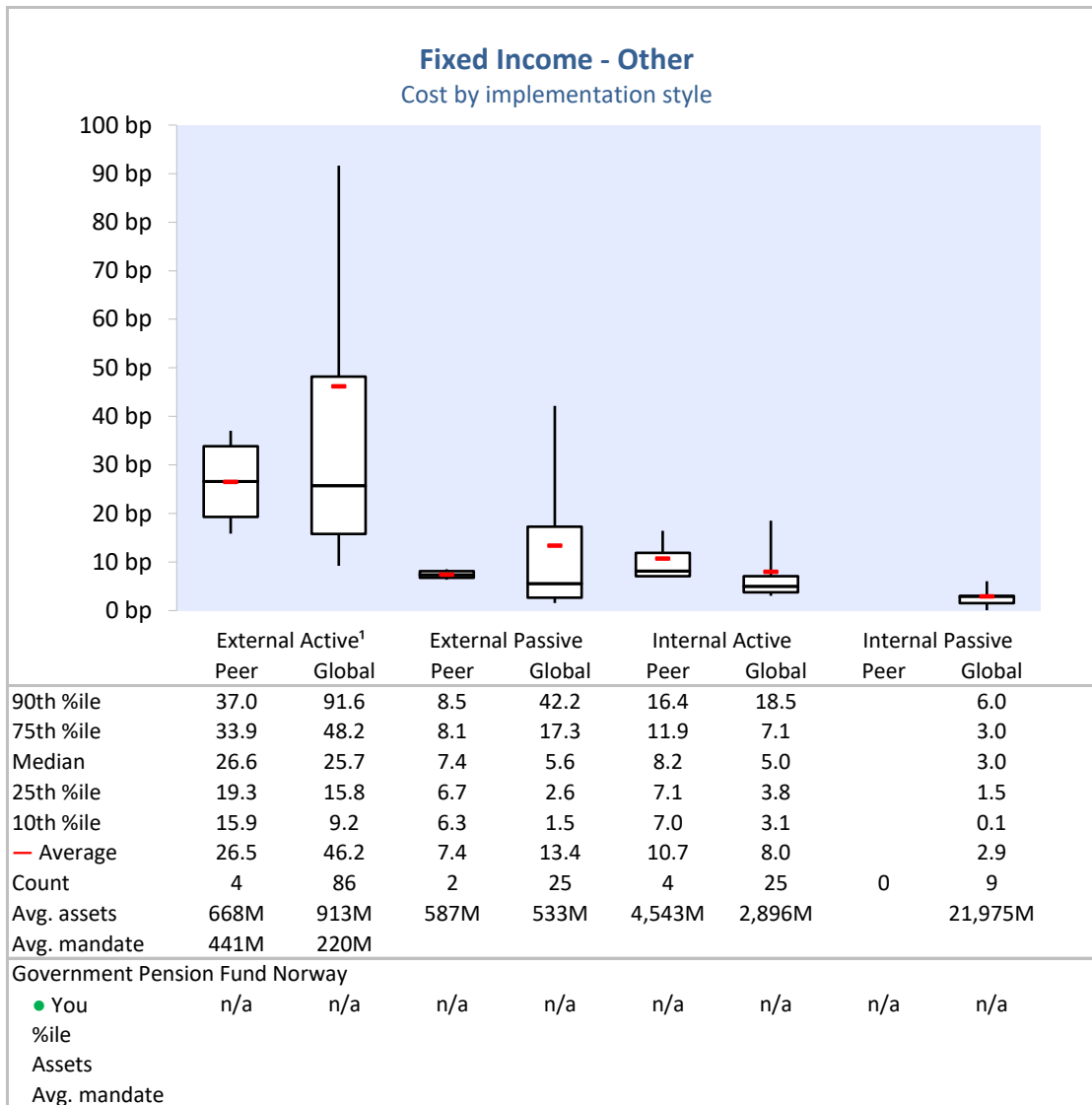


	External Active ¹		External Passive		Internal Active		Internal Passive	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	196.7	126.9						
75th %ile	170.6	61.3						
Median	127.1	41.3						
25th %ile	83.6	40.6						
10th %ile	57.5	33.3						
— Average	127.1	68.9						
Count	2	7	0	0	0	0	0	0
Avg. assets	935M	610M						
Avg. mandate	251M	270M						
Government Pension Fund Norway								
● 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	44.9	44.9
Performance fees*	n/a	81.0	23.3
Internal and other	<u>n/a</u>	<u>1.2</u>	<u>0.7</u>
Total	n/a	127.1	68.9

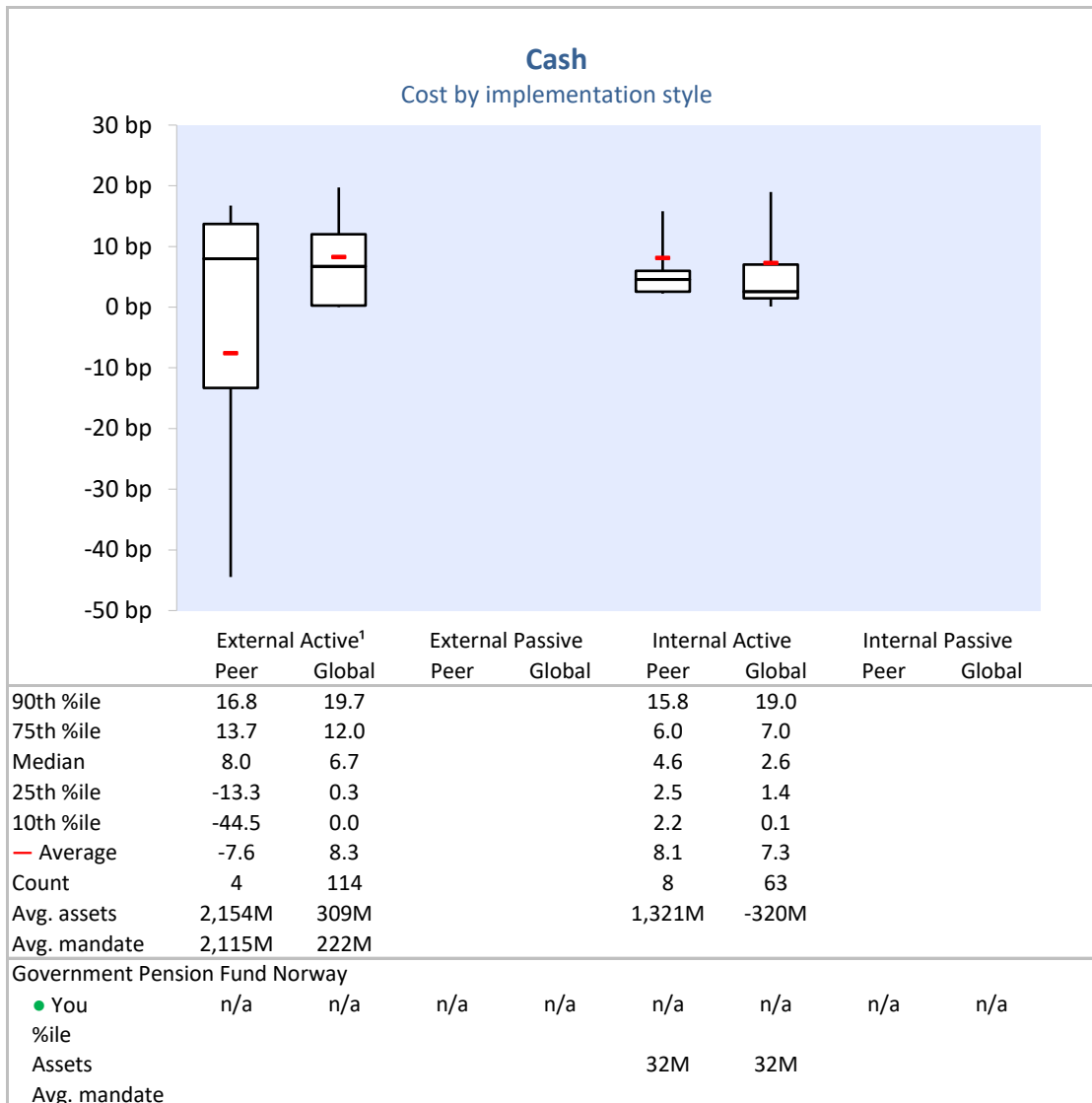
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 162.0 bps for peers (1 fund) and 81.5 bps for Global participants (2 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	22.9	38.7
Performance fees*	n/a	0.0	5.9
Internal and other	<u>n/a</u>	<u>3.6</u>	<u>1.6</u>
Total	n/a	26.5	46.2

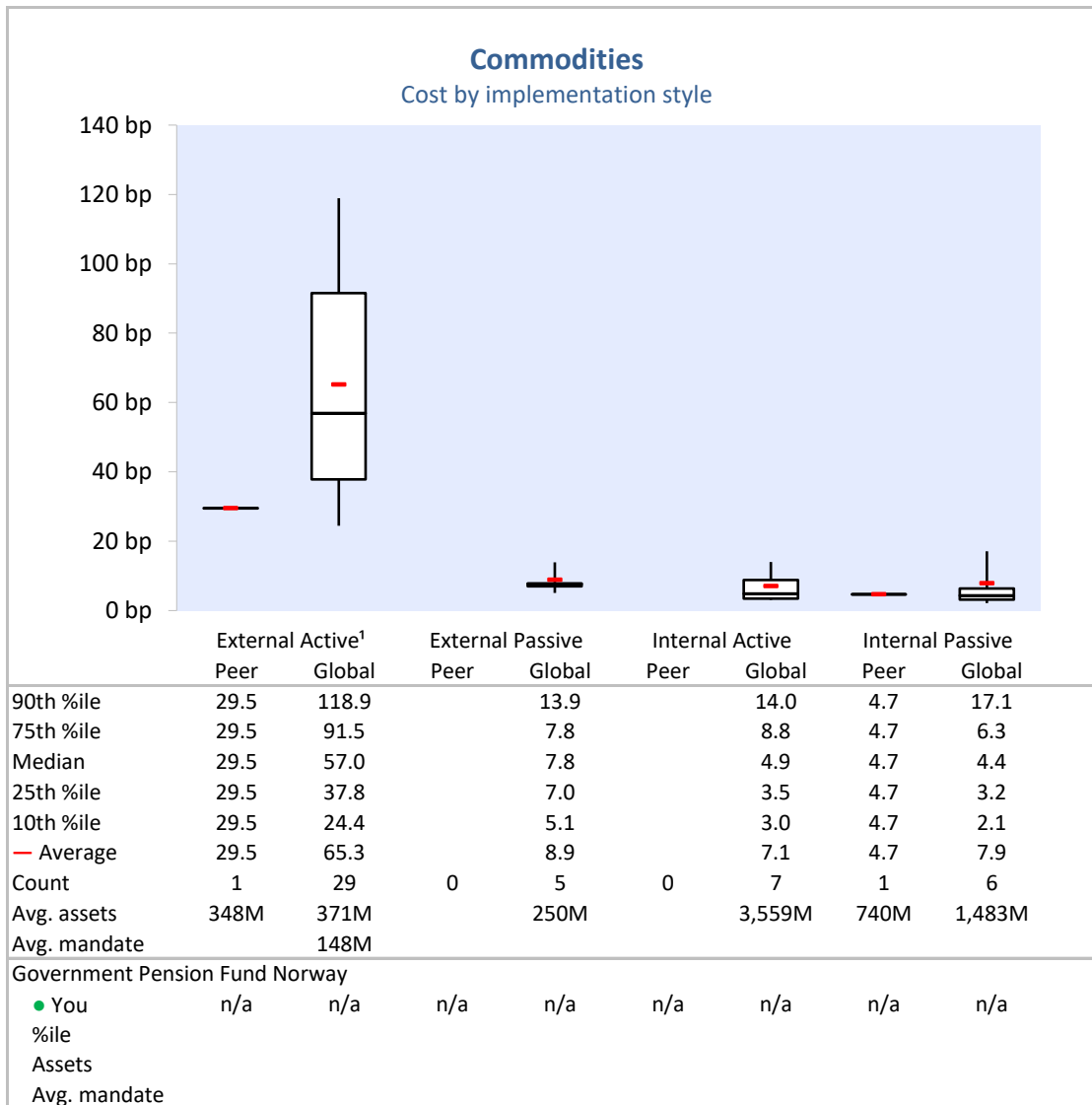
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 0.0 bps for peers (1 fund) and 34.1 bps for Global participants (15 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	3.0	9.2
Performance fees*	n/a	n/a	0.0
Internal and other	<u>n/a</u>	<u>-10.6</u>	<u>-1.0</u>
Total	n/a	-7.6	8.3

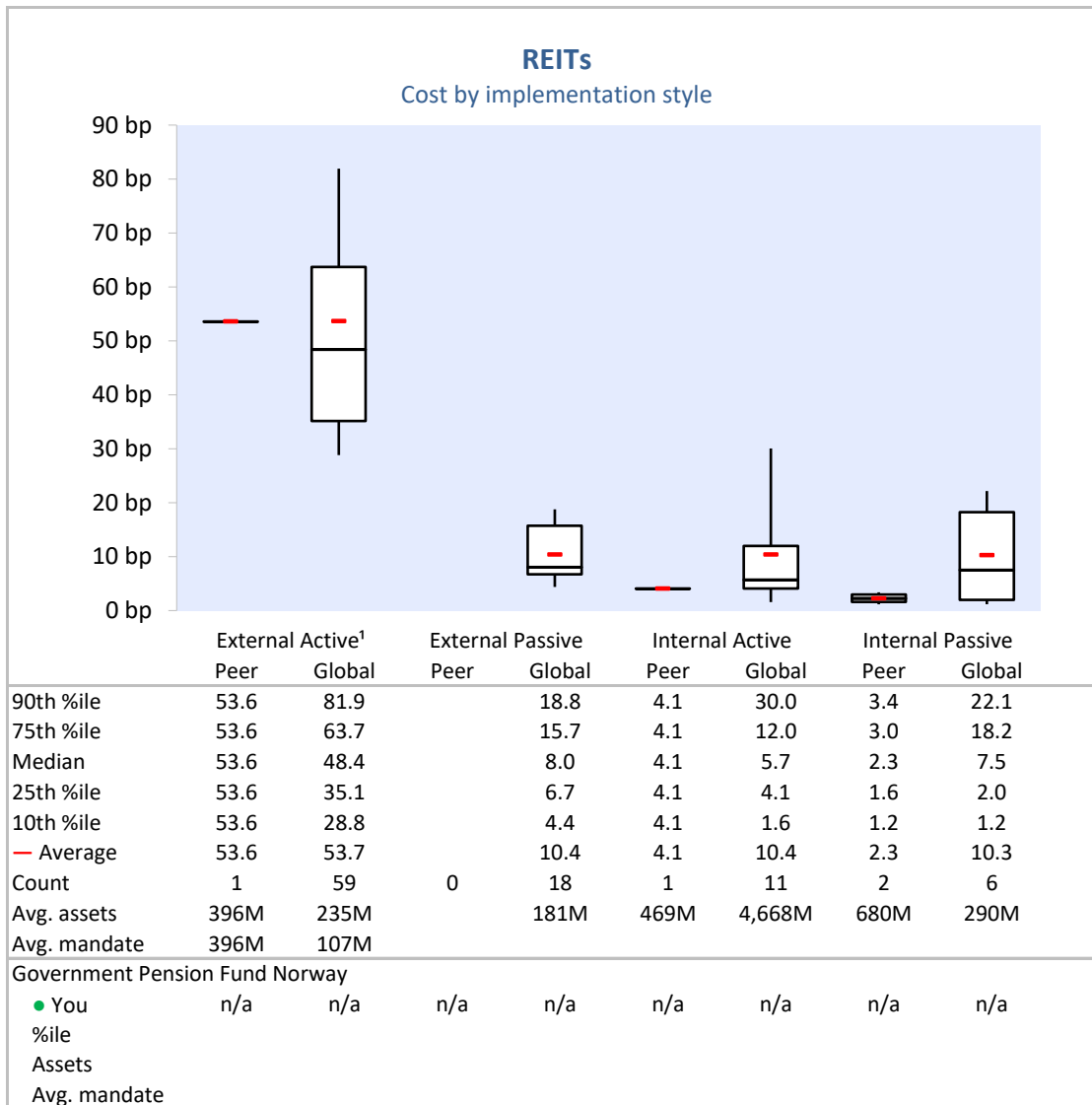
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 0.6 bps for Global participants (9 funds).



1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	27.0	61.7
Performance fees*	n/a	n/a	2.6
Internal and other	<u>n/a</u>	<u>2.5</u>	<u>1.0</u>
Total	n/a	29.5	65.3

* 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 12.5 bps for Global participants (6 funds).



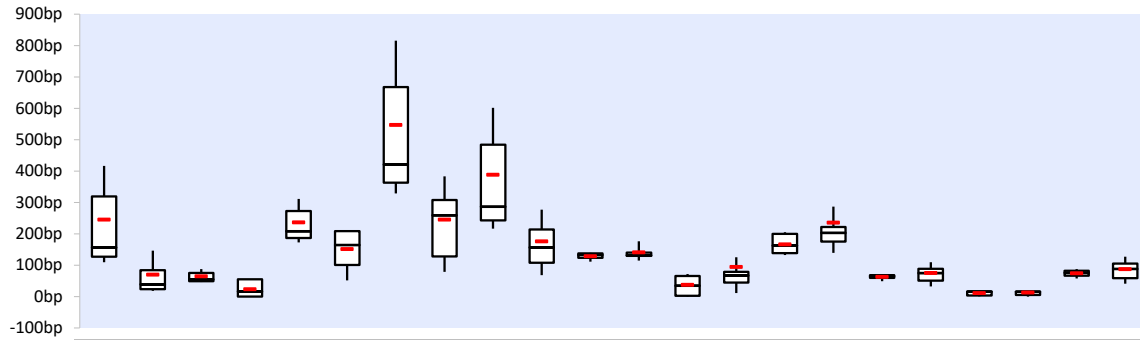
1. Breakdown of external active fees

	You	Peer Average	Global Average
Base fees	n/a	51.8	47.9
Performance fees*	n/a	n/a	4.9
Internal and other	<u>n/a</u>	<u>1.7</u>	<u>0.9</u>
Total	n/a	53.6	53.7

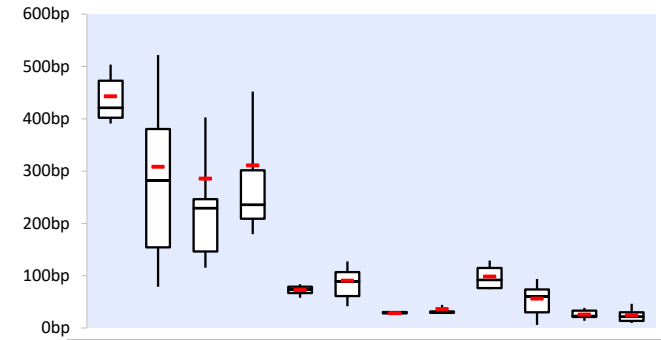
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 18.0 bps for Global participants (16 funds).

Real Estate

Cost as a % of the amount fees are based on¹



Cost as a % of NAV

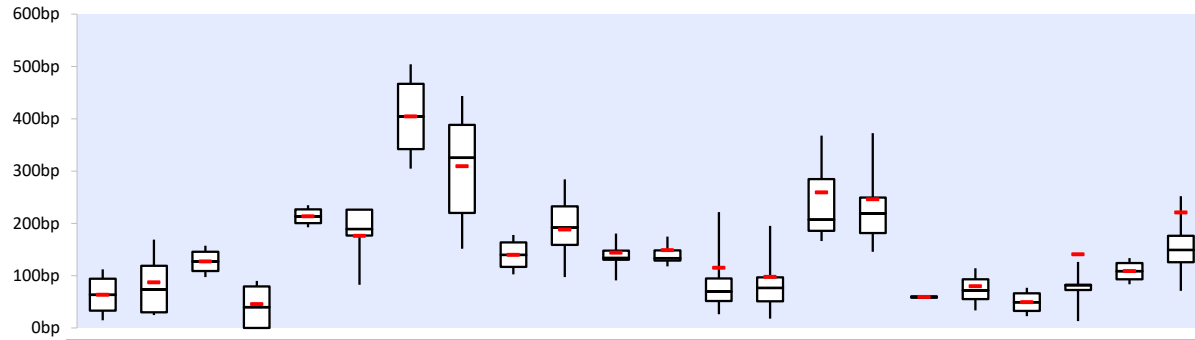


	Fund of Funds										Direct LP						Evergreen						Fund of Funds		Direct LP		Evergreen		Oper. Sub.		Co-Inv.		Internal		
	Mgmt fees (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees		Perf. fees		Total ³ incl. perf.		Mgmt fees		Perf. fees		Total ³ incl. perf.		Total ³ incl. perf.		Total		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	
90th %ile	416.9	146.7	87.7	56.3	311.0	209.0	815.6	383.1	601.9	276.7	139.7	176.4	72.2	125.6	205.1	286.6	71.5	109.3	16.9	17.0	88.0	127.1	503.7	521.9	402.5	452.1	83.8	127.4	30.5	43.9	128.6	93.4	38.6	46.1	
75th %ile	319.5	83.9	75.4	55.0	272.7	209.0	667.6	308.0	483.8	213.9	137.5	140.2	66.1	79.0	199.7	222.2	68.4	88.8	16.0	16.0	82.1	105.1	472.7	380.5	246.2	301.5	79.1	107.0	30.3	31.6	114.6	73.7	33.0	29.8	
Median	157.1	39.1	55.0	16.9	209.0	164.5	421.1	259.5	287.1	156.5	132.8	131.8	35.3	67.9	162.8	203.5	66.1	75.5	16.0	16.0	76.5	88.0	421.1	282.3	229.6	235.6	73.6	89.2	30.0	30.6	92.0	60.3	23.0	21.7	
25th %ile	127.3	23.5	49.4	0.0	186.5	100.4	363.1	128.2	242.8	108.2	123.2	130.0	2.8	44.4	138.8	175.6	59.8	50.9	3.5	4.8	66.6	59.0	402.2	154.1	146.1	209.0	66.6	61.0	27.6	28.9	76.1	30.0	21.0	13.5	
10th %ile	109.4	18.2	46.0	0.0	173.0	52.0	328.4	78.5	216.2	68.5	110.9	114.5	-0.2	11.2	132.3	139.2	49.4	32.0	0.4	0.0	57.9	40.8	390.9	78.7	115.2	179.3	58.1	41.4	26.1	26.9	73.9	5.8	13.5	9.6	
— Average	245.5	69.9	64.9	24.0	236.5	151.6	546.8	245.5	388.7	176.4	128.9	141.3	37.6	94.4	166.6	235.7	63.0	74.9	11.0	12.7	74.0	87.6	442.9	308.2	285.4	310.9	72.3	90.6	28.6	36.4	98.6	56.3	25.6	24.9	
Count	3	42	3	42	3	42	3	42	3	42	10	142	10	142	10	142	8	166	8	166	8	166	3	42	10	142	8	166	3	11	4	23	7	42	
Avg. assets	129M	355M	129M	355M	129M	355M	129M	355M	129M	355M	737M	1,161M	737M	1,161M	737M	1,161M	2,515M	1,017M	2,515M	1,017M	2,515M	1,017M	107M	300M	632M	946M	2,613M	986M	5,578M	6,405M	308M	1,092M	3,871M	2,895M	
Government Pension Fund Norway	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	n/a	n/a	n/a

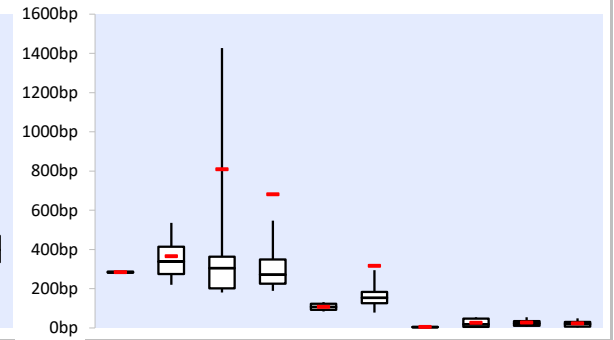
1. The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.
2. The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 130 bps (on amount fees are based on) for underlying management fees and 79 bps (on NAV) for underlying performance fees were used.
3. The total cost also includes the internal cost of monitoring and selecting real estate investments. The peer average cost of monitoring and selecting was 2.8 bps for fund of funds, 6.9 bps for LPs and 4.0 bps for external (not LPs).

Infrastructure

Cost as a % of the amount fees are based on¹



Cost as a % of NAV

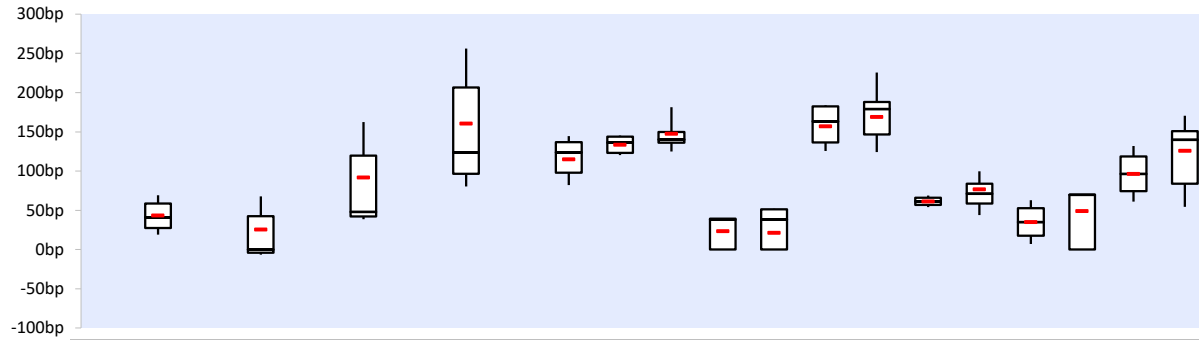


	Fund of Funds										Direct LP						Evergreen						Fund of Funds		Direct LP		Evergreen		Co-Inv.		Internal	
	Mgmt fees (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees		Perf. fees		Total ³ incl. perf.		Mgmt fees		Perf. fees		Total ³ incl. perf.		Total ³ incl. perf.		Total		Total		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
90th %ile	112.3	168.9	157.1	90.0	234.8	226.0	504.1	443.5	177.8	284.3	180.6	174.9	221.4	195.0	368.0	372.5	61.2	113.9	76.6	126.4	133.7	252.2	288.5	536.5	1427.3	547.4	131.7	293.9	5.4	55.1	55.1	49.5
75th %ile	94.0	119.0	145.9	79.2	226.9	226.0	466.8	388.5	163.6	232.3	148.0	148.5	94.7	97.0	284.9	249.3	60.4	93.3	66.4	82.8	124.4	176.1	287.0	414.2	363.8	349.1	122.7	183.4	5.3	47.9	34.4	30.3
Median	63.5	73.7	127.3	40.0	213.7	189.4	404.5	325.7	140.1	191.9	134.2	133.5	69.8	76.9	207.2	219.5	59.2	72.2	49.6	82.0	108.8	149.3	284.7	339.2	305.1	272.0	107.6	154.2	5.1	19.3	23.4	20.2
25th %ile	33.0	30.2	108.6	0.0	200.6	176.5	342.2	219.6	116.5	159.1	130.3	129.0	51.6	51.1	185.7	181.3	57.9	55.2	32.7	72.5	93.1	125.5	282.3	274.6	201.5	226.0	92.6	125.5	4.9	5.1	10.6	6.4
10th %ile	14.7	24.9	97.5	0.0	192.7	82.7	304.8	151.4	102.4	97.2	90.9	118.0	26.4	17.9	166.5	145.7	57.2	33.8	22.6	12.9	83.8	71.0	280.9	219.5	180.4	189.8	83.6	77.9	4.7	1.3	6.3	2.7
Average	63.5	87.1	127.3	45.9	213.7	176.1	404.5	309.2	140.1	188.3	144.1	148.8	115.2	97.6	259.3	246.4	59.2	79.8	49.6	140.9	108.8	220.7	284.7	365.5	810.0	682.4	107.6	317.6	5.1	26.5	28.3	24.1
Count	2	23	2	23	2	23	2	23	2	23	9	103	9	103	9	103	2	58	2	58	2	58	2	23	9	103	2	58	2	23	6	29
Avg. assets	95M	122M	95M	122M	95M	122M	95M	122M	95M	122M	511M	514M	511M	514M	511M	514M	2,272M	600M	2,272M	600M	2,272M	600M	103M	104M	404M	392M	2,305M	554M	149M	473M	4,235M	3,710M
Government Pension Fund Norway																																
You %ile Assets	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
	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM

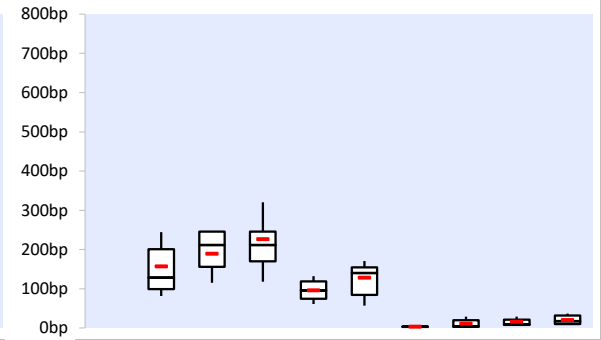
1. The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.
2. The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 77 bps (on amount fees are based on) for underlying management fees and 137 bps (on NAV) for underlying performance fees were used.
3. The total cost also includes the internal cost of monitoring and selecting infrastructure investments. The peer average cost of monitoring and selecting was 1.9 bps for fund of funds, 24.3 bps for LPs and 4.1 bps for external (not LPs).

Natural Resources

Cost as a % of the amount fees are based on¹

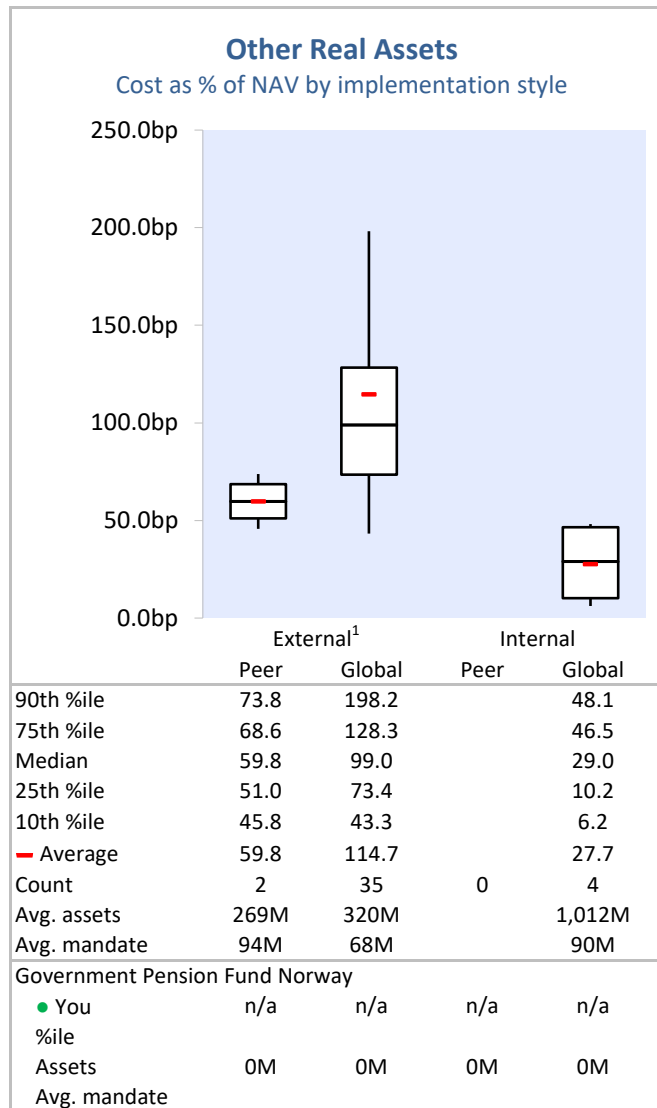


Cost as a % of NAV



	Fund of Funds										Direct LP						Evergreen						Fund of Funds		Direct LP		Evergreen		Co-Inv.		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.		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	Peer	Global	Peer	Global			
90th %ile		69.0		67.7		162.4		256.1		144.4		145.1	181.4	39.8	52.0	184.0	225.6	68.9	99.8	63.0	70.0	131.9	170.4			3.8	29.2	28.5	36.8						
75th %ile		58.5		42.3		119.5		206.6		136.7		143.9	149.8	39.2	51.2	182.3	188.1	66.1	84.0	52.5	70.0	118.6	150.9			3.6	20.1	21.4	31.5						
Median		41.2		0.0		48.0		123.9		123.9		136.4	140.3	38.4	38.4	163.5	179.2	61.4	71.4	35.0	70.0	96.4	140.0			3.3	4.0	9.5	17.4						
25th %ile		27.4		-4.1		42.2		96.7		97.8		123.3	136.0	0.0	0.0	136.4	146.5	56.8	58.6	17.5	0.0	74.3	84.0			2.9	2.9	8.0	10.1						
10th %ile		19.1		-6.5		38.7		80.3		82.2		120.4	124.9	0.0	0.0	125.7	124.3	54.0	44.0	7.0	0.0	61.0	54.4			2.7	1.5	7.1	8.1						
— Average		43.6		25.5		91.8		160.8		115.1		133.6	147.6	23.5	21.4	157.2	169.0	61.4	77.0	35.0	49.0	96.4	126.0			3.3	11.6	16.4	20.6						
Count	0	3	0	3	0	3	0	3	0	3	5	43	5	43	5	43	2	24	2	24	2	24	2	24	0	3	5	43	2	24	2	7	3	11	
Avg. assets		36M		36M		36M		36M		36M	358M	600M	358M	600M	358M	600M	478M	156M	478M	156M	478M	156M	478M	156M	0	37M	299M	444M	478M	150M	82M	403M	652M	1,845M	
Government Pension Fund Norway		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		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
	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM	OM

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 n/a bps (on amount fees are based on) for underlying management fees and n/a bps (on NAV) for underlying performance fees were used.
3. The total cost also includes the internal cost of monitoring and selecting natural resource investments. The peer average cost of monitoring and selecting was 5.0 bps for LPs and 4.2 bps for external (not LPs).



1. Breakdown of external fees

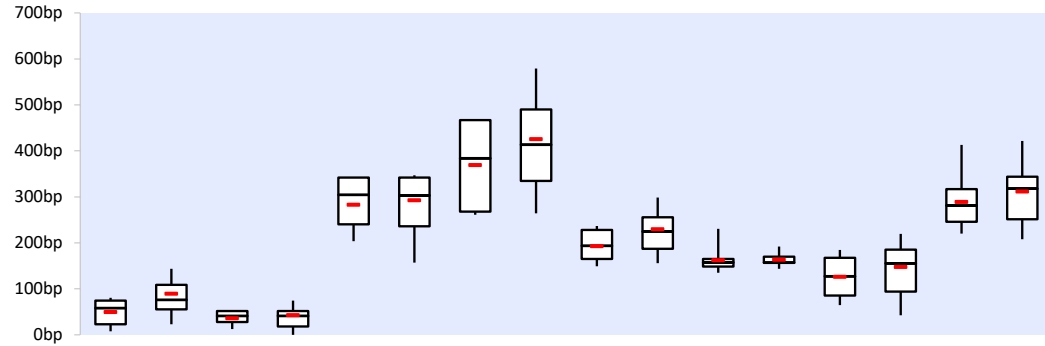
	Your Plan	Peer Average	Global Average
Base fees	n/a	38.0	97.3
Internal and other	<u>n/a</u>	<u>21.8</u>	<u>35.8</u>
Total*	n/a	59.8	114.7
Performance fees**	n/a	13.8	44.3

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

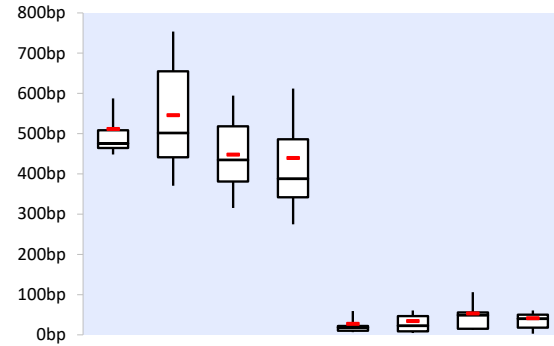
** For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 13.8 bps for peers (2 funds) and 44.3 bps for Global participants (35 funds).

Diversified Private Equity

Cost as a % of the amount fees are based on¹



Cost as a % of NAV



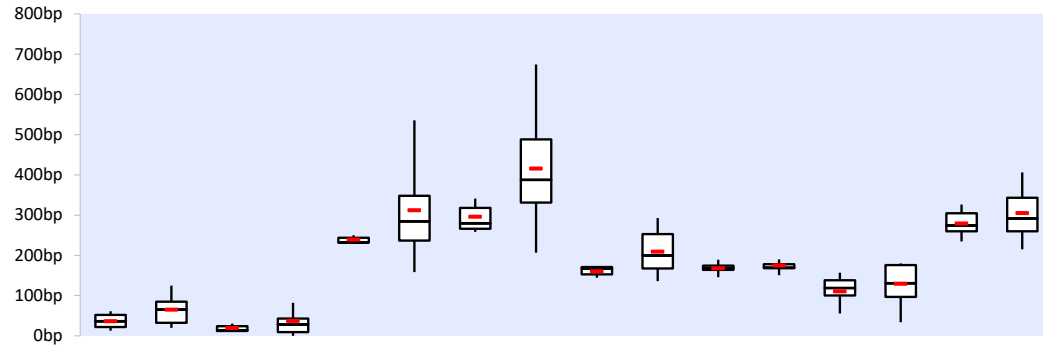
	Fund of Funds										Direct LP					
	Mgmt fees (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees		Perf. fees		Total ³ incl. perf.	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	80.4	143.9	53.6	74.2	342.0	346.7	468.6	579.1	236.4	298.5	230.5	191.8	184.4	219.4	413.2	421.7
75th %ile	74.5	108.6	52.0	52.0	342.0	342.0	466.8	490.1	228.4	255.6	164.9	170.2	167.6	185.0	317.1	343.7
Median	58.3	76.0	41.6	41.4	304.9	303.6	384.5	413.6	193.6	225.1	157.6	157.0	127.7	155.7	281.1	318.0
25th %ile	22.9	55.3	27.7	18.2	240.6	236.2	267.9	334.6	165.3	186.9	148.6	157.0	85.5	94.2	245.9	251.2
10th %ile	7.9	23.2	12.7	0.0	203.7	157.0	261.4	264.0	149.4	156.1	135.4	143.7	64.7	42.6	220.0	208.1
Average	49.7	89.5	36.7	43.4	283.3	293.2	369.6	426.2	193.5	229.9	162.8	164.0	126.4	148.1	289.3	312.2
Count	8	125	8	125	8	125	8	125	8	125	12	163	12	163	12	163
Avg. assets	420M	461M	420M	461M	420M	461M	420M	461M	420M	461M	3,158M	1,945M	3,158M	1,945M	3,158M	1,945M
Government Pension Fund Norway																
● You %ile	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
Assets	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M

	Fund of Funds		Direct LP		Co-Investment		Internal	
	Total ³ incl. 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
90th %ile	587.3	753.6	594.8	612.1	58.9	60.5	106.2	60.6
75th %ile	508.7	655.0	518.1	486.3	21.8	46.6	55.3	50.1
Median	476.3	502.0	434.7	388.3	18.8	22.6	49.6	40.3
25th %ile	464.0	441.1	380.8	342.0	10.3	8.8	15.2	17.8
10th %ile	448.2	370.5	315.6	274.8	7.0	4.5	12.3	2.9
Average	512.0	546.2	448.5	439.6	27.9	35.0	53.9	41.5
Count	8	125	12	163	5	30	7	21
Avg. assets	304M	436M	2,246M	1,467M	1,035M	1,141M	1,662M	3,098M
● You %ile	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Assets	0M	0M	0M	0M	0M	0M	0M	0M

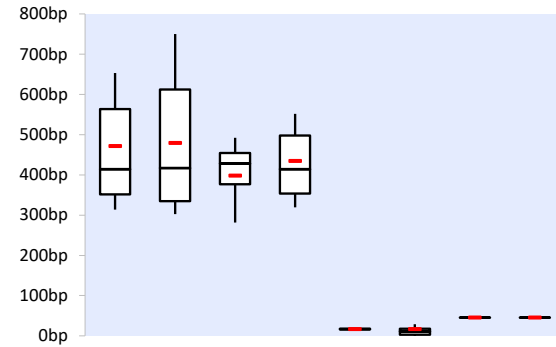
- The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.
- The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so defaults of 157 bps (on amount fees are based on) for underlying management fees and 185 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 4.3 bps for fund of funds.

LBO

Cost as a % of the amount fees are based on¹



Cost as a % of NAV

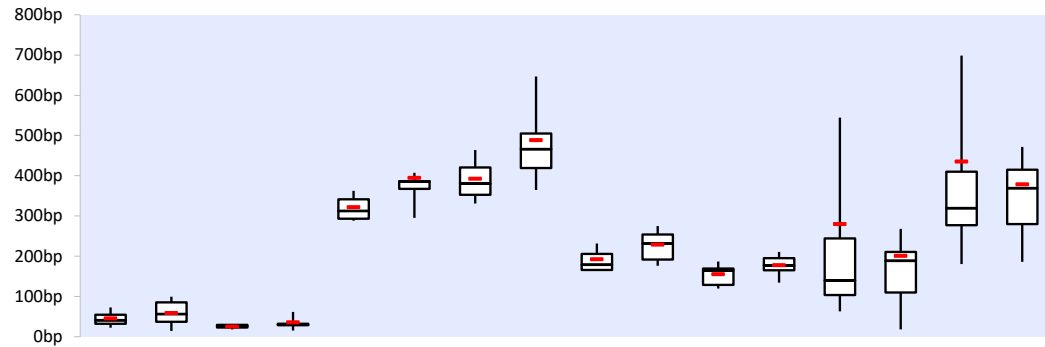


	Fund of Funds										Direct LP					
	Mgmt fees (Top layer)		Perf. fees (Top layer)		Underlying mgmt. & perf. ²		Total ³ incl. perf.		Total ³ excl. perf.		Mgmt fees		Perf. fees		Total ³ incl. perf.	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	61.2	124.9	30.4	82.3	250.3	535.9	341.2	674.4	173.5	292.9	189.0	190.1	157.2	180.0	326.7	406.1
75th %ile	52.0	84.6	24.3	42.9	243.7	348.0	318.2	488.2	171.2	252.6	174.7	177.7	138.3	175.6	304.7	343.3
Median	36.5	65.3	14.2	28.9	232.7	285.0	279.9	388.0	167.3	200.7	168.7	169.3	119.3	131.1	274.3	292.3
25th %ile	21.8	32.7	12.4	9.3	232.3	236.7	266.5	331.0	153.1	167.8	163.8	168.0	100.5	96.7	259.6	260.1
10th %ile	12.9	19.5	11.4	0.0	232.1	158.2	258.5	206.9	144.5	135.7	145.9	150.4	55.3	33.5	234.7	214.8
Average	37.0	65.6	19.8	37.5	239.8	312.5	296.5	415.7	160.4	209.5	168.5	175.2	111.0	129.8	279.5	305.0
Count	3	16	3	16	3	16	3	16	3	16	8	38	8	38	8	38
Avg. assets	440M	331M	440M	331M	440M	331M	440M	331M	440M	331M	2,410M	2,537M	2,410M	2,537M	2,410M	2,537M
Government Pension Fund Norway	n/a															
● You %ile	n/a															
Assets	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M

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 102 bps (on amount fees are based on) for underlying management fees and 180 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 2.2 bps for fund of funds.

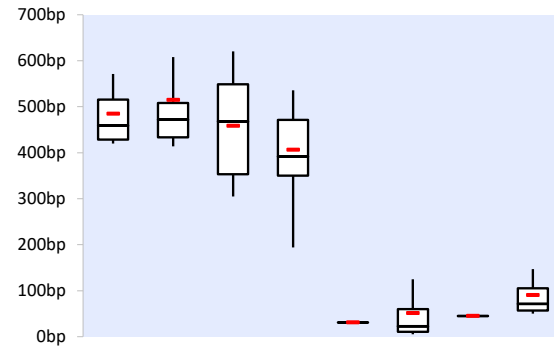
Venture Capital

Cost as a % of the amount fees are based on¹



	Fund of Funds										Direct LP					
	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.	
	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	73.1	99.3	30.0	61.4	362.5	407.4	463.8	646.8	231.5	275.3	186.7	210.5	544.0	267.9	698.5	471.9
75th %ile	54.3	85.6	29.2	32.3	341.6	386.0	420.7	504.9	205.8	253.8	169.6	195.2	243.8	210.6	410.3	415.0
Median	40.9	56.4	27.0	30.0	312.7	386.0	380.6	466.4	179.2	232.4	165.4	177.4	139.8	188.8	320.0	369.1
25th %ile	32.3	36.9	22.8	28.6	292.8	367.1	352.4	419.0	165.8	191.5	129.0	165.1	103.3	110.0	276.7	279.7
10th %ile	22.3	14.2	18.5	15.6	288.3	295.4	330.8	364.4	163.8	176.0	119.8	134.4	62.7	18.3	180.7	186.2
Average	45.7	58.5	25.0	35.7	321.8	394.3	392.5	488.5	192.4	228.9	155.0	177.8	279.9	201.0	434.9	378.8
Count	4	21	4	21	4	21	4	21	4	21	8	43	8	43	8	43
Avg. assets	326M	213M	326M	213M	326M	213M	326M	213M	326M	213M	446M	458M	446M	458M	446M	458M
Government Pension Fund Norway																
You %ile	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
Assets	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M

Cost as a % of NAV



	Fund of Funds		Direct LP		Co-Investment		Internal	
	Total ³ incl. 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
90th %ile	571.1	608.1	620.4	535.8	31.3	125.1	45.5	146.9
75th %ile	515.6	508.2	548.8	471.2	31.3	59.9	45.5	105.5
Median	459.0	472.2	468.2	392.1	31.3	23.0	45.5	71.6
25th %ile	428.5	433.2	353.4	350.5	31.3	10.6	45.5	56.9
10th %ile	419.9	414.1	305.0	194.1	31.3	5.3	45.5	50.1
Average	485.0	514.7	458.8	406.4	31.3	51.1	45.5	90.8
Count	4	21	8	43	1	6	1	4
Avg. assets	326M	213M	372M	393M	170M	54M	104M	42M
Government Pension Fund Norway								
You %ile	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Assets	0M	0M	0M	0M	0M	0M	0M	0M

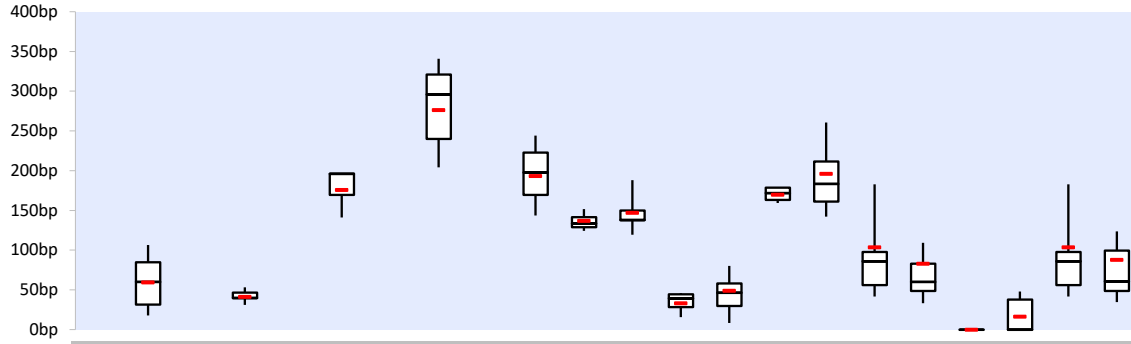
1. The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.

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 146 bps (on amount fees are based on) for underlying management fees and 210 bps (on NAV) for underlying performance fees were used.

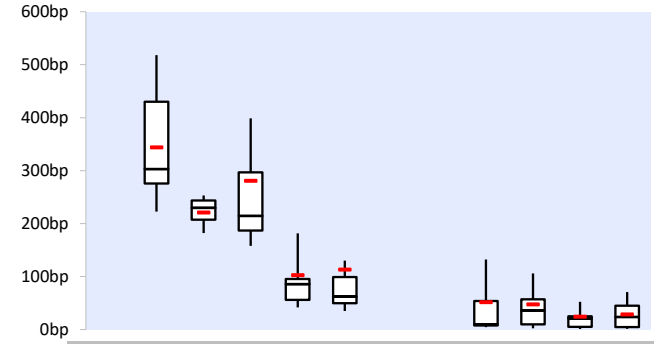
3. The total cost also includes the internal cost of monitoring and selecting private equity investments. The peer average cost of monitoring and selecting was 2.4 bps for fund of funds.

Private Credit

Cost as a % of the amount fees are based on¹



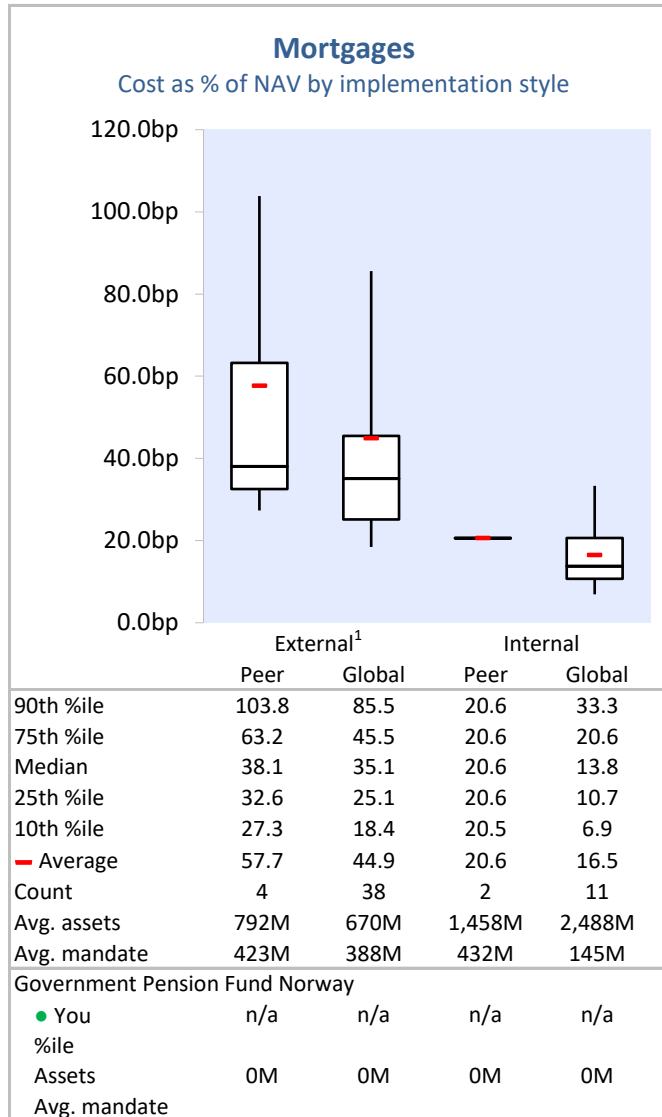
Cost as a % of NAV



	Fund of Funds									Direct LP						Evergreen						
	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.	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
	90th %ile	106.3	53.3	196.0	340.8	244.3	151.5	188.1	45.7	80.0	179.3	260.6	182.9	109.3	0.0	48.0	182.9	123.7				
75th %ile	84.7	46.5	196.0	320.9	222.7	141.6	149.8	44.5	58.0	178.5	211.6	97.8	82.9	0.0	37.9	97.8	99.4					
Median	60.0	40.0	196.0	296.0	198.0	133.8	138.0	39.4	46.6	171.8	183.6	86.0	60.2	0.0	0.0	86.0	61.0					
25th %ile	31.6	40.0	169.5	239.9	169.6	128.9	137.9	28.1	29.6	163.3	161.2	55.9	48.6	0.0	0.0	55.9	48.6					
10th %ile	17.8	31.0	141.0	204.1	143.6	124.4	119.3	15.8	8.2	159.2	142.0	41.7	33.3	0.0	0.0	41.7	34.4					
Average	59.5	41.2	175.8	276.5	193.1	136.8	147.2	33.2	49.0	170.0	196.1	103.5	83.0	0.0	16.5	103.5	88.0					
Count	0	7	0	7	0	7	0	7	0	7	4	85	4	85	4	85	6	60	2	18	6	60
Avg. assets	111M	111M	111M	111M	111M	1,491M	589M	1,491M	589M	1,491M	589M	830M	365M	2,490M	1,216M	830M	365M					
Government Pension Fund Norway																						
● You %ile Assets	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

	Fund of Funds		Direct LP		Evergreen		Oper. Sub.		Co-Inv.		Internal	
	Total ³ incl. perf.		Total ³ incl. perf.		Total ³ incl. perf.		Total		Total incl. perf.		Total	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
	90th %ile	518.1	253.0	398.6	181.5	130.5			132.5	106.0	52.5	70.7
75th %ile	430.1	243.5	296.5	95.6	99.4			53.8	56.9	25.0	45.0	
Median	303.2	230.0	214.7	86.0	62.5			10.0	36.3	21.5	23.8	
25th %ile	275.6	207.7	187.1	55.9	49.7			8.0	10.0	4.9	4.7	
10th %ile	222.5	182.5	158.1	41.7	34.9			4.4	2.7	1.1	1.2	
Average	344.2	221.2	281.2	103.1	113.4			51.7	47.8	24.3	28.8	
Count	0	7	4	85	6	60	0	0	4	9	9	20
Avg. assets	103M	1,250M	461M	831M	353M			95M	297M	739M	1,200M	
Government Pension Fund Norway												
● You %ile Assets	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	

- 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 n/a bps (on amount fees are based on) for underlying management fees and n/a 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 7.3 bps for LPs and 5.5 bps for external (not LPs).

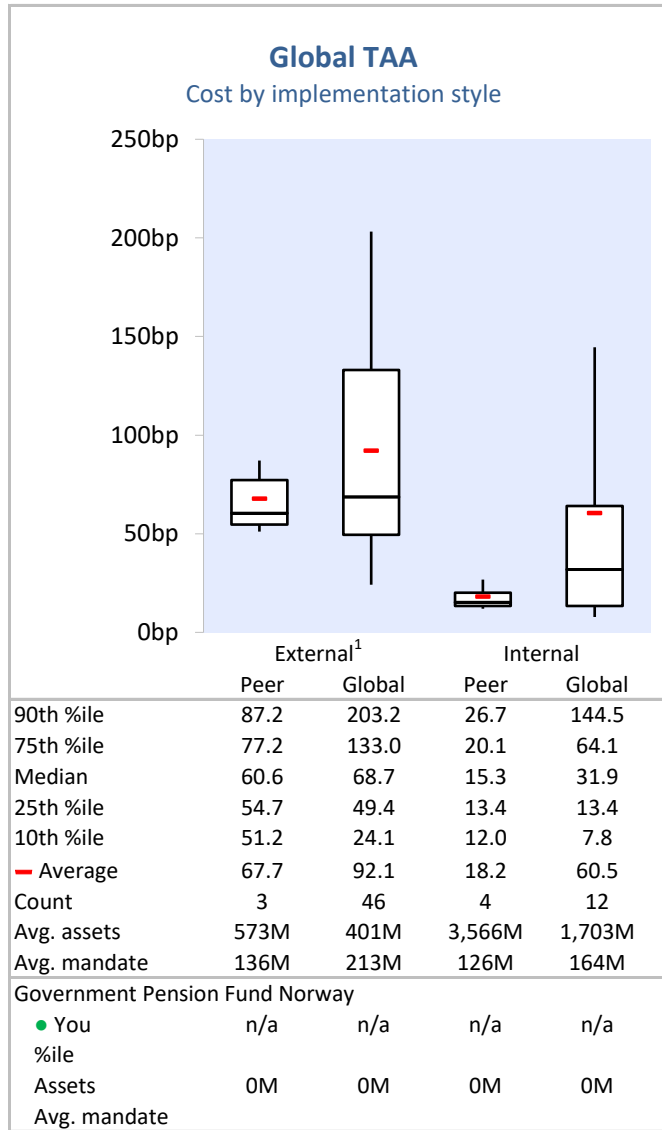


1. Breakdown of external fees

	Your Plan	Peer Average	Global Average
Base fees	n/a	55.7	40.3
Internal and other	<u>n/a</u>	<u>2.1</u>	<u>4.4</u>
Total*	n/a	57.7	44.9
Performance fees**	n/a	0.0	6.2

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

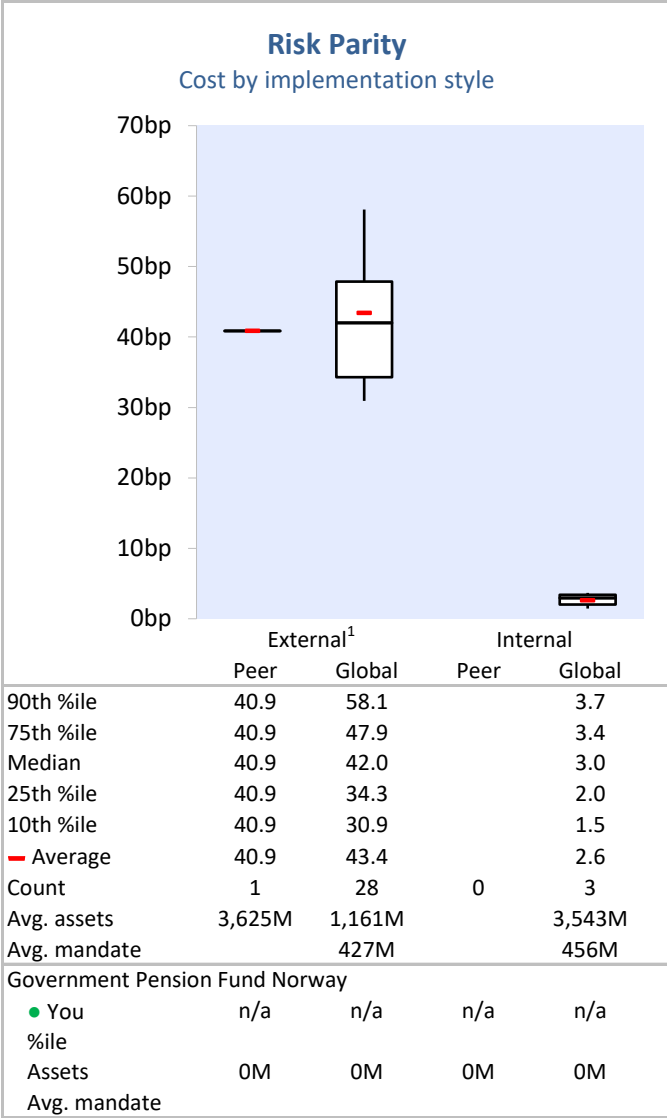
** For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for only those funds that reported a performance fee is 13.8 bps for peers (2 funds) and 44.3 bps for Global participants (35 funds).



1. Breakdown of external fees

	Your Plan	Peer Average	Global Average
Base fees	n/a	65.1	80.8
Internal and other	<u>n/a</u>	<u>2.6</u>	<u>14.2</u>
Performance fees	n/a	0.0	9.9
Total*	n/a	67.7	92.1

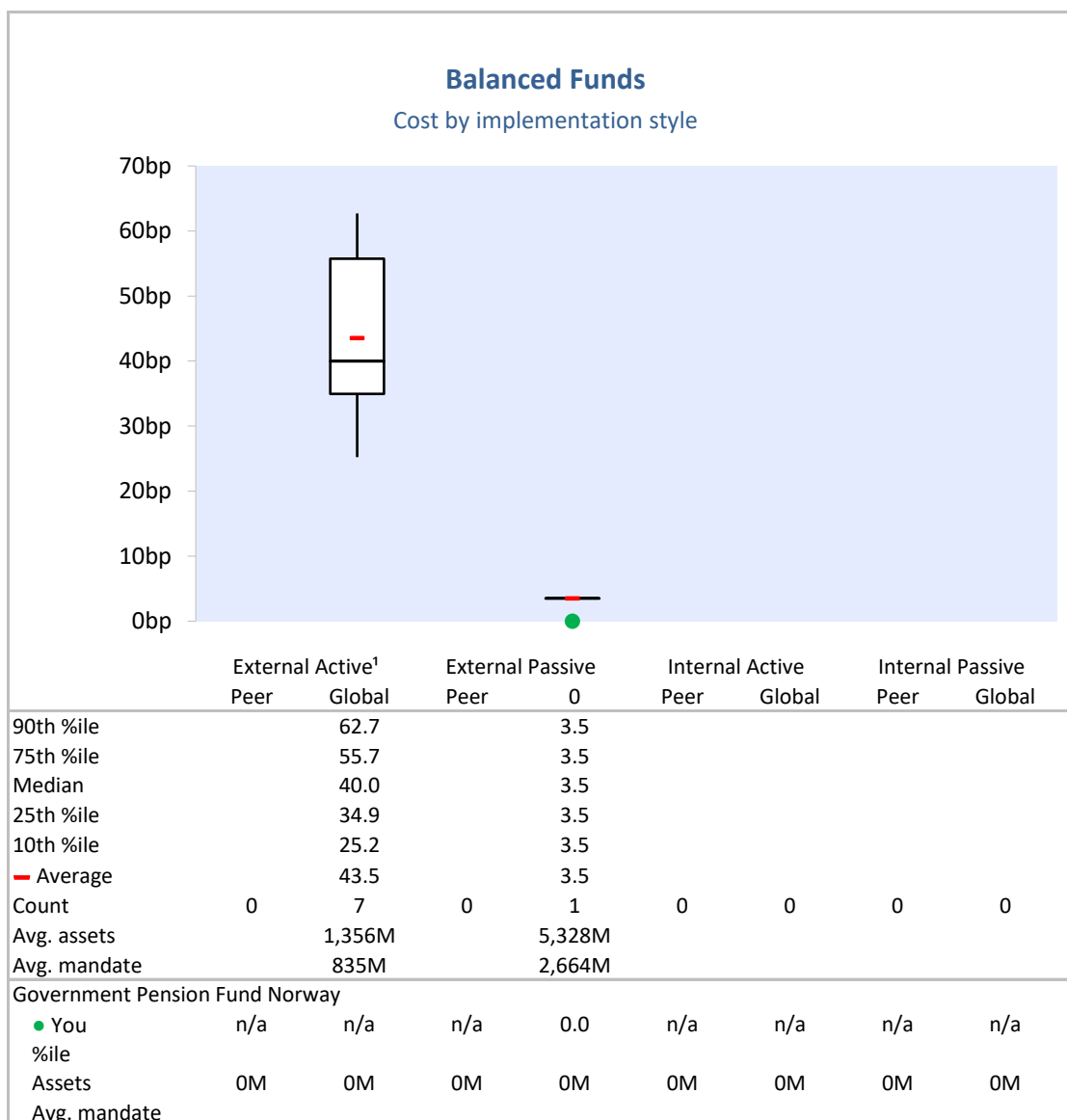
* For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 0.0 bps for peers (1 fund) and 9.9 bps for Global participants (27 funds).



1. Breakdown of external fees

	Your Plan	Peer Average	Global Average
Base fees	n/a	40.0	40.2
Internal and other	<u>n/a</u>	<u>0.8</u>	<u>3.5</u>
Performance fees	n/a	0.0	2.9
Total*	n/a	40.9	43.4

* 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 0.0 bps for peers (1 fund) and 2.9 bps for Global participants (15 funds).



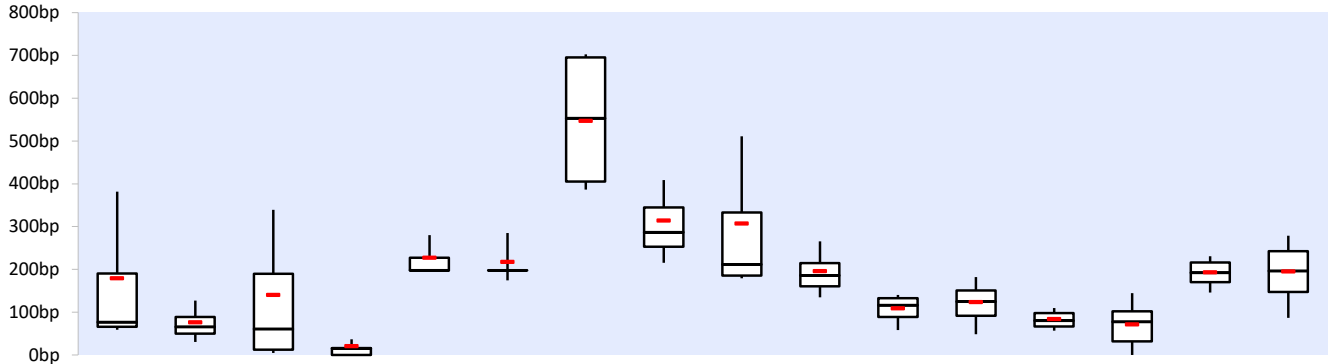
1. Breakdown of external fees

	Your Plan	Peer Average	Global Average
Base fees	n/a	n/a	43.5
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>n/a</u>
Performance fees	n/a	n/a	0.0
Total*	n/a	n/a	43.5

* 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 0.0 bps for Global participants (4 funds).

Hedge Funds

Cost by implementation style

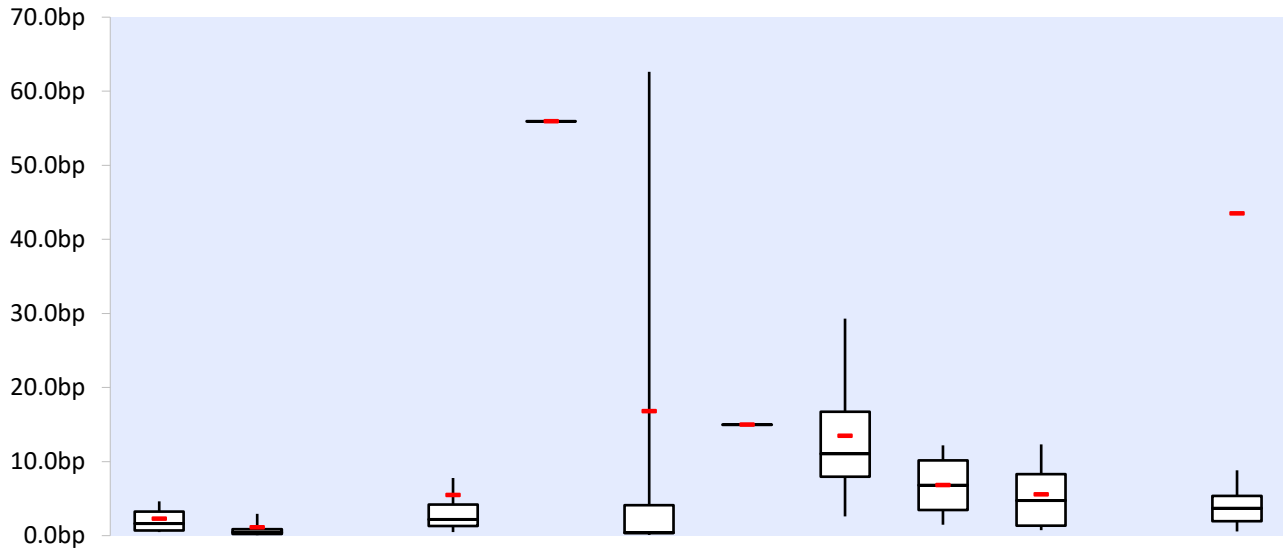


	Fund of Funds										External Direct					
	Mgmt fees (Top layer)		Perf. fees (Top layer)		Underlying mgmt. and perf. ¹		Total ² incl. perf.		Total ² excl. perf.		Mgmt fees		Perf. fees		Total ² incl. perf.	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile	381.7	126.8	339.2	36.5	280.4	285.2	702.5	408.5	510.8	265.5	140.5	182.0	109.6	144.2	230.5	279.0
75th %ile	190.3	88.6	189.5	16.0	227.4	198.0	695.4	344.5	333.0	214.4	132.7	150.8	98.0	102.3	216.1	242.3
Median	76.8	66.0	61.2	16.0	198.0	198.0	553.6	287.2	211.9	186.0	116.3	124.9	80.3	78.0	192.5	196.6
25th %ile	65.8	49.9	12.0	0.0	198.0	198.0	405.3	252.7	185.8	160.7	89.1	91.4	66.6	32.0	170.2	147.6
10th %ile	59.0	30.6	4.8	0.0	198.0	174.2	386.5	215.6	179.0	134.6	58.6	48.8	56.6	0.0	145.8	86.5
— Average	179.3	76.1	140.3	20.5	227.4	217.6	547.1	314.2	306.9	195.8	109.0	123.8	84.2	71.3	193.2	195.1
Count	4	73	4	73	4	73	4	73	4	73	10	115	10	115	10	115
Avg. assets	207M	617M	207M	617M	207M	617M	207M	617M	207M	617M	3,320M	1,645M	3,320M	1,645M	3,320M	1,645M
Government Pension Fund Norway																
● You %ile	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
Assets	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M	0M

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 120 bps (on NAV) for underlying management fees and 78 bps (on NAV) for underlying performance fees were used.

2. The total cost also includes the internal cost of monitoring and selecting real estate investments. The peer average cost of monitoring and selecting was 3.5 bps for fund of

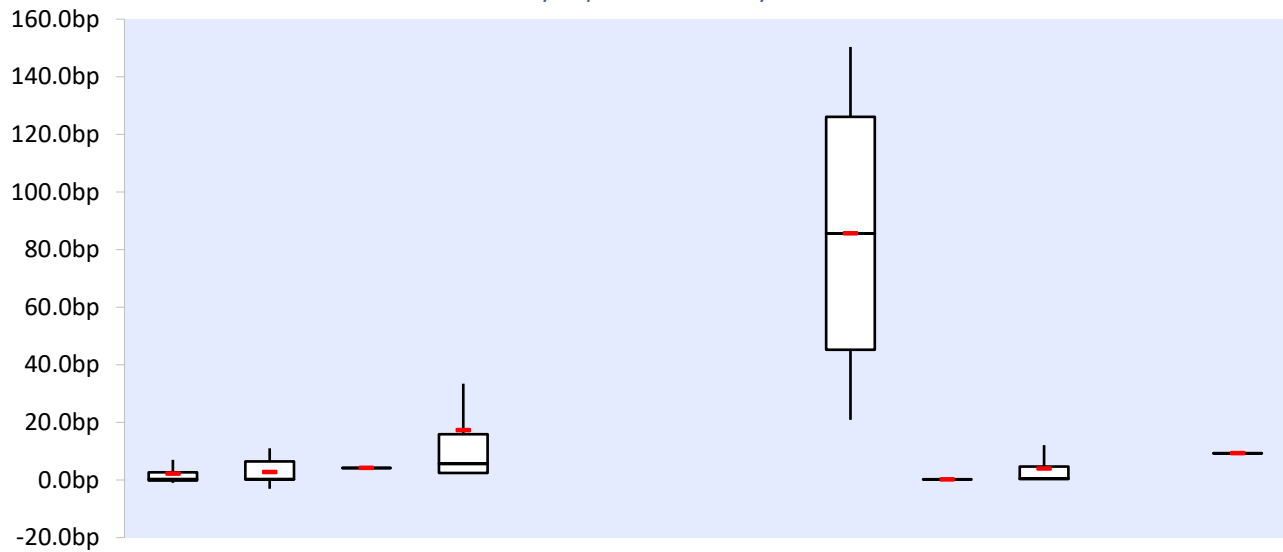
Overlays: currency, duration
Cost by implementation style



	Currency Hedge				Discretionary Currency				Duration Management			
	Internal		External		Internal		External		Internal		External	
	% of notional	% of notional	% of notional	% of notional	% of notional	% 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	4.6	3.0	7.8	56.0	62.6	15.0	29.3	12.2	12.3	8.8		
75th %ile	3.3	0.9	4.2	56.0	4.1	15.0	16.7	10.2	8.3	5.4		
Median	1.7	0.5	2.2	56.0	0.4	15.0	11.1	6.8	4.7	3.7		
25th %ile	0.7	0.2	1.3	56.0	0.4	15.0	7.9	3.5	1.3	1.9		
10th %ile	0.5	0.1	0.5	56.0	0.1	15.0	2.6	1.5	0.7	0.6		
— Average	2.3	1.1	5.5	56.0	16.8	15.0	13.5	6.8	5.6	43.5		
Count	4	20	0	34	1	9	1	16	2	8	0	16
Avg. notional	8,709M	303,025M		2,514M	73M	205,613M	1,286M	1,260M	821M	3,418M		2,839M
Government Pension Fund Norway												
● 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												
Avg. notional	928M	928M							11,005M	11,005M		

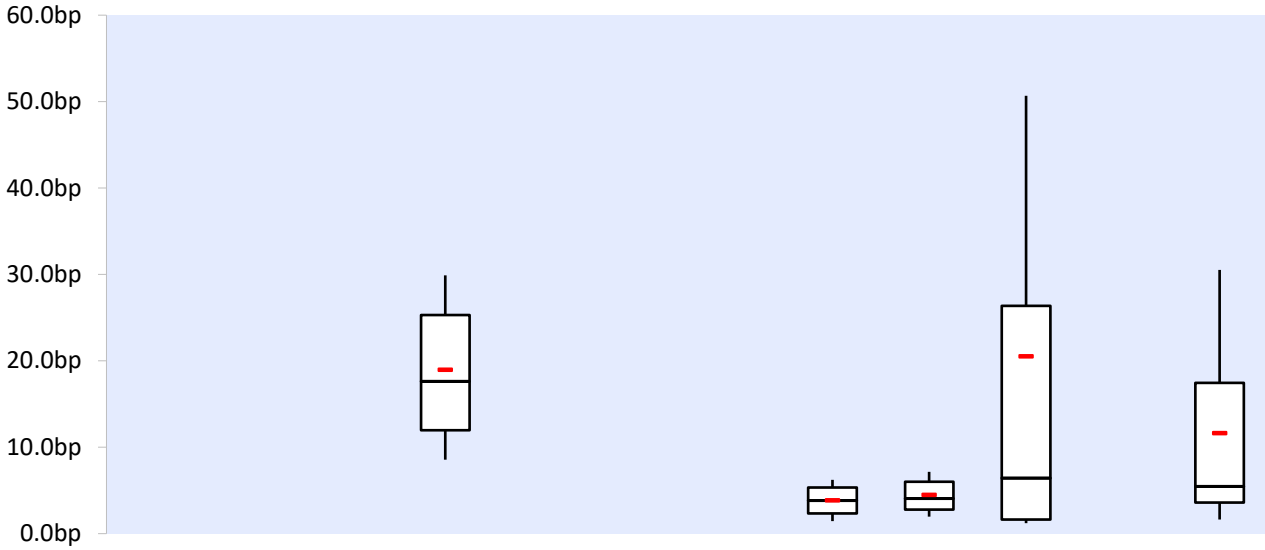
Overlays: passive beta/rebalancing, global TAA, policy tilt TAA

Cost by implementation style



	Passive Beta/Rebalancing				Global TAA				Policy Tilt TAA			
	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	7.0	11.1	4.3	33.4				150.4	0.3	12.1		9.3
75th %ile	2.7	6.4	4.3	15.9				126.1	0.3	4.7		9.3
Median	0.3	0.3	4.3	5.7				85.7	0.3	0.6		9.3
25th %ile	-0.2	0.2	4.3	2.5				45.2	0.3	0.4		9.3
10th %ile	-1.0	-3.0	4.3	2.2				20.9	0.3	0.2		9.3
— Average	2.2	2.8	4.3	17.4				85.7	0.3	4.1		9.3
Count	4	9	1	31	0	0	0	2	1	8	0	1
Avg. notional	18,937M	10,840M	9,579M	1,231M				778M	48,768M	38,596M		46M
Government Pension Fund Norway												
● 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												
Avg. notional												

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



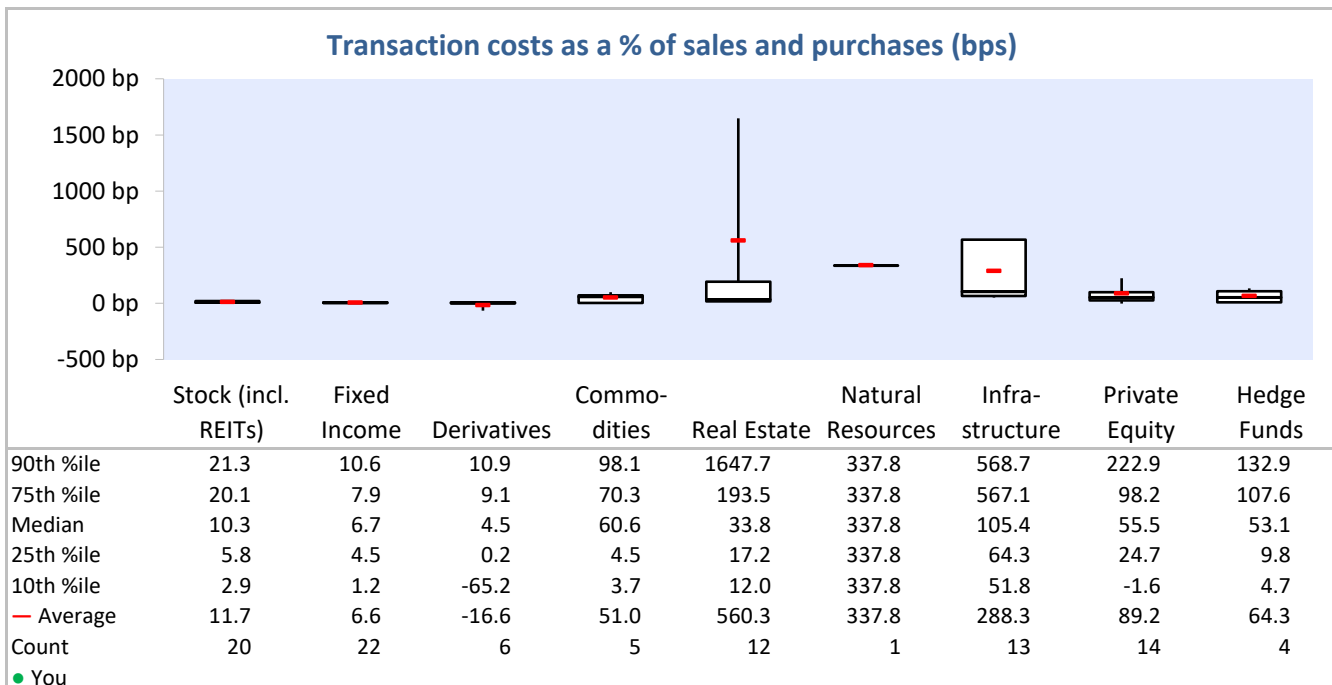
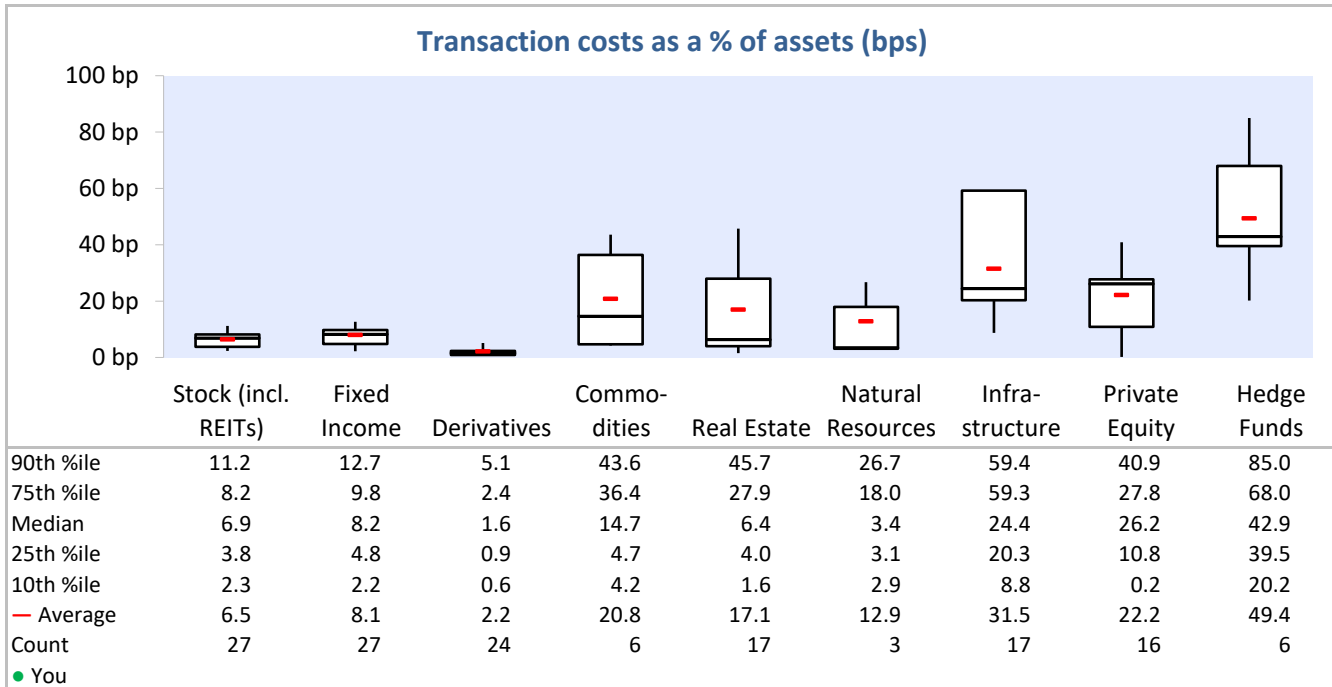
	Commodity				Long/ Short				Other			
	Internal % of notional		External % of notional		Internal % of notional		External % of notional		Internal % of notional		External % of notional	
	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global	Peer	Global
90th %ile				29.9				6.2	7.2	50.7		30.5
75th %ile				25.3				5.3	6.0	26.4		17.5
Median				17.6				3.8	4.1	6.4		5.5
25th %ile				12.0				2.4	2.8	1.6		3.6
10th %ile				8.6				1.5	2.0	1.2		1.6
— Average				19.0				3.8	4.5	20.5		11.6
Count	0	0	0	3	0	0	0	2	3	9	0	19
Avg. notional				803M				3,987M	4,351M	2,613M		616M
Government Pension Fund Norway												
● 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												
Avg. notional												

Transaction costs

Throughout this report transaction costs are excluded as at this point not enough plans are able to provide consistent data. However, efforts to obtain these costs is increasing globally. This section provides some of the insights obtained from the data that was collected from the transaction cost survey.

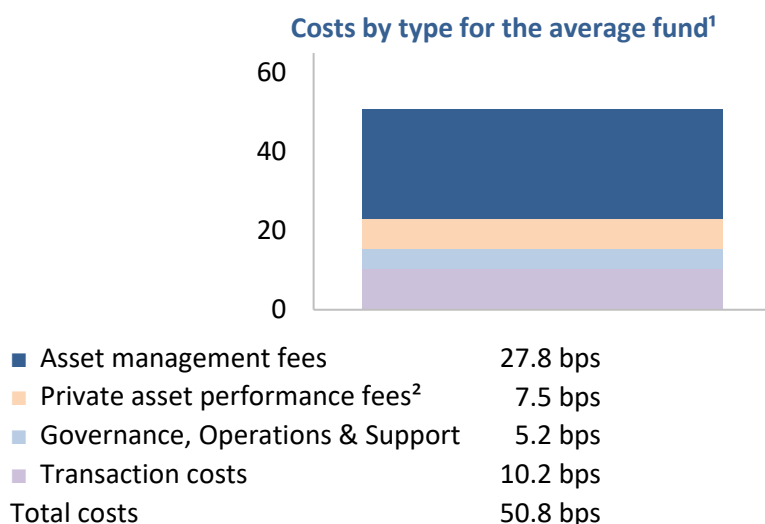
Variance in transaction costs by asset class

Variance in reported cost for public equity and fixed income is smaller compared to the private asset classes. This can in part be explained by differences in transaction volumes.



An estimate of total portfolio transaction costs for the average fund.

Transaction costs are estimated to be 10.2 bps and account for 20% of the average fund's total investment costs.



Calculation of transaction costs for the average fund.

Asset class	Benchmark cost ³	Average holdings	Impact
	<i>C</i>	<i>P</i>	$I = C \times P$
Stock (incl. REITs)	6.9 bps	31%	2.1 bps
Fixed Income	8.2 bps	53%	4.4 bps
Commodities	14.7 bps	1%	0.1 bps
Real Estate	21.6 bps	6%	1.2 bps
Natural Resources	32.6 bps	0%	0.1 bps
Infrastructure	24.5 bps	2%	0.5 bps
Private Equity	27.0 bps	3%	0.8 bps
Hedge Funds	45.3 bps	1%	0.4 bps
Total (ex. derivatives)			9.6 bps
Derivatives	1.6 bps	42%	0.7 bps
Total transaction costs			10.2 bps

1. Total investment cost is calculated as the sum of the median fees paid for the different cost types by the funds that participated in the transaction cost survey.
2. Includes performance fees for real estate, infrastructure, natural resources, private credit and private equity. Performance fees for the public market asset classes, hedge funds and mortgages are included with asset management fees.
3. Benchmark cost is based on median costs of all transaction survey participants. For private assets medians are adjusted to exclude funds with unusually low transaction costs (i.e., lower than 5 bps).

Your total portfolio transaction costs

Your transaction costs can be estimated based on your asset mix and the median universe costs and are estimated to account for 55% of your total investment costs (excl. private asset performance fees). Interpret this number with caution. Funds are working to collect more complete and comparable transaction cost data.

Your estimated transaction costs as part of your total investment costs



	You
■ Asset management fees	5.8 bps
■ Private asset performance fees ¹	Excluded
■ Governance, Operations & Support	0.9 bps
■ Transaction costs	8.1 bps
Total costs	14.8 bps

Calculation of your estimated transaction costs.

Asset class	Benchmark cost ²	Your holdings	Impact
	<i>C</i>	<i>P</i>	<i>I = C x P</i>
Stock (incl. REITs)	6.9 bps	62%	4.3 bps
Fixed Income	8.2 bps	38%	3.1 bps
Commodities	14.7 bps	0%	0.0 bps
Real Estate	21.6 bps	0%	0.0 bps
Natural Resources	32.6 bps	0%	0.0 bps
Infrastructure	24.5 bps	0%	0.0 bps
Private Equity	27.0 bps	0%	0.0 bps
Hedge Funds	45.3 bps	0%	0.0 bps
Total (excl. derivatives)		100%	7.4 bps
Derivatives	1.6 bps	44%	0.7 bps
Total transaction costs		144%	8.1 bps

1. Includes performance fees for real estate, infrastructure, natural resources, private credit and private equity. Performance fees for the public market asset classes, hedge funds and mortgages are included with asset management fees.

2. Benchmark cost is based on median costs of all transaction survey participants. For private assets medians are adjusted to exclude funds with unusually low transaction costs (i.e., lower than 5 bps).

7

Appendices

Appendix A - Data Summary

Appendix B - Currency conversion

Appendix C - Data quality

Appendix D - Glossary of terms

Appendix A - Data Summary

Government Pension Fund Norway

Plan Info	2019	2018	2017	2016	2015
Survey Preparer	Jørn Terje Krekling	Jørn Terje Krekling	Rune Møien	Rune Møien	Rune Møien
Additional Contact	Jørn Nilsen	Jørn Nilsen	Jørn Nilsen	Jørn Nilsen	Jørn Nilsen
Type of fund (corporate, public, other)	Public	Public	Public	Public	Public
Total fund size (€mils) as at December 31	27,245.0	24,165.0	23,918.0	23,380.0	20,638.0
Asset-class level holdings provided on survey are: year end or average?	Year End	Average	Average	Year End	Year End
Total return for year ended	12.42%	-0.36%	13.25%	7.06%	6.95%
Is the return net or gross?	Gross	Gross	Gross	Gross	Gross
Total fund policy or benchmark return	12.02%	-1.12%	12.79%	5.89%	6.47%

Ancillary Data	2019	2018	2017	2016	2015
What is your hedging policy for: Foreign non-U.S. Holdings?					
What were your actuarial fees in 000s?		6	10	23	88
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 %	0%	0%	0%	0%	0%
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					2.7%
Salary progression rate				2.4%	2.5%
What was your actuarial assumption for expected rate of return?					2.7%

Appendix A - Data Summary: Policy Weights and Benchmarks

Government Pension Fund Norway

Asset Class	Year	Policy Weight	Benchmark	
			Description	Return
Stock - Europe	2019	62.0	CMVINXBXINN - Custom Index 15 % - OSEBX 85 %	17.7
	2018	59.0	CMVINXBXINN - Custom Index - OSEBX	-2.6
	2017	64.5	CMVINXBXINN - Custom Index - OSEBX	19.1
	2016	61.1	CMVINXBXINN - Custom Index - OSEBX	8.7
	2015	59.5	CMVINXBXINN - Custom Index - OSEBX	9.2
	2014	58.1	CMVINXBXINN - Custom Index - OSEBX	7.4
	2013	62.8	CMVINXBXINN - Custom Index, OSEBX	26.3
	2012	62.4	CMVINXBXINN - Custom Index, OSEBX	15.3
	2011	60.7	CMVINXBXINN - Custom Index, OSEBX	-13.0
	2010	65.3	CMVINXBXINN - Custom Index, OSEBX	19.8
Fixed Income - Europe	2019	38.0	Barclays Capital Global Aggregate Nordic ex Norway Custom Index 30% 70% Barclays Capital Clobal Aggregated Norway ex. treasuries Barclays Capital Treasuries Norway	3.8
	2018	41.0	Barclays Capital Global Aggregate Nordic ex Norway Custom Index 30% 70% Barclays Capital Clobal Aggregated Norway ex. treasuries Barclays Capital Treasuries Norway	1.0
	2017	35.5	Barclays Capital Global Aggregate Nordic ex Norway Custom Index 30% 70% Barclays Capital Clobal Aggregated Norway ex. treasuries Barclays Capital Treasuries Norway	2.9
	2016	38.9	Barclays Capital Global Aggregate Nordic ex Norway Custom Index 30% 70% Barclays Capital Clobal Aggregated Norway ex. treasuries Barclays Capital Treasuries Norway	1.8
	2015	40.5	Barclays Capital Global Aggregate Nordic ex Norway Custom Index 30% 70% Barclays Capital Clobal Aggregated Norway ex. treasuries Barclays Capital Treasuries Norway	2.7
	2014	41.9	Barclays Capital Global Aggregate Nordic ex Norway Custom Index - 70% Barclays Capital Clobal Aggregated Norway ex. treasuries - 30% Barclays Capital Treasuries Norway	9.2
	2013	37.2	Barclays Capital Global Aggregate Nordic ex Norway Custom Index, 70% Barclays Capital Clobal Aggregated Norway ex. treasuries 30% Barclays Capital Treasuries Norway	2.5
	2012	37.6	Barclays Capital Global Aggregate Nordic ex Norway Custom Index, 70% Barclays Capital Clobal Aggregated Norway ex. treasuries 30% Barclays Capital Treasuries Norway	6.7
	2011	39.3	Barclays Capital Global Aggregate Nordic ex Norway Custom Index, 70% Barclays Capital Clobal Aggregated Norway ex. treasuries 30% Barclays Capital Treasuries Norway	6.5
	2010	34.7	Barclays Capital Global Aggregate Nordic ex Norway Custom Index, 70% Barclays Capital Clobal Aggregated Norway ex. treasuries 30% Barclays Capital Treasuries Norway	6.2
Cash	2019			
--	2018			

Appendix A Data Summary - Assets, Returns and Costs: Public Market

Government Pension Fund Norway

Asset Class/Style		Year	Asset (€millions)	Return %	Cost (€000)				
					Internal & Other	Base Fees	Perf Fees	Total	Bps
Stock - Europe	Internal Active	2019	16,888.3	18.15	7,016.5			7,016.5	4.5
		2018	14,255.5	-1.83	7,472.3			7,472.3	5.2
		2017	14,312.0	19.34	7,445.3			7,445.3	5.2
		2016	14,290.0	10.46	8,622.0			8,622.0	6.5
		2015	12,288.0	9.89	7,910.0			7,910.0	6.5
Fixed Income - Europe	Internal Active	2019	10,356.9	4.19	7,920.8			7,920.8	7.8
		2018	9,909.2	1.69	6,426.2			6,426.2	6.5
		2017	8,556.0	3.64	6,646.7			6,646.7	7.8
		2016	9,090.0	2.17	7,217.0			7,217.0	8.3
		2015	8,350.0	2.93	6,353.0			6,353.0	7.5
Cash	Internal Active	2019	64.7						

Appendix A Data Summary - Assets, Returns and Costs: Hedge Funds and Private Market

Government Pension Fund Norway

Asset Class/Style	Year	Asset (€millions)	Fee basis (€millions)	Return %	Cost (€000)					
					Internal & Other	Base Fees	Perf Fees	Underlying Base Fees	Underlying Perf Fees	Total

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

Government Pension Fund Norway

Oversight, Custodial and Other Costs			
		000s	bps
Oversight of the fund assets ¹	2019	1,270.0	0.5bp
	2018	937.0	0.4bp
	2017	1,604.0	0.7bp
	2016	1,519.0	0.7bp
	2015	1,721.0	0.8bp
Custodial total	2019	582.0	0.2bp
	2018	624.0	0.3bp
	2017	721.0	0.3bp
	2016	895.0	0.4bp
	2015	763.0	0.4bp
Consulting / performance measurement	2019	56.0	0.0bp
	2018	66.0	0.0bp
	2017	45.0	0.0bp
	2016	52.0	0.0bp
	2015	71.0	0.0bp
Audit	2019	252.0	0.1bp
	2018	227.0	0.1bp
	2017	270.0	0.1bp
	2016	306.0	0.1bp
	2015	267.0	0.1bp
Other (legal etc)	2019	131.0	0.1bp
	2018	155.0	0.1bp
	2017	105.0	0.0bp
	2016	293.0	0.1bp
	2015	400.0	0.2bp
Total	2019	2,291.0	0.9bp
	2018	2,009.0	0.8bp
	2017	2,745.0	1.2bp
	2016	3,065.0	1.4bp
	2015	3,222.0	1.6bp

Summary of All Asset Management Costs			
		000s	bps
Investment Management Costs	2019	14,937.3	5.8bp
	2018	13,898.5	5.7bp
	2017	14,092.0	6.1bp
	2016	15,839.0	7.2bp
	2015	14,263.0	6.9bp
Oversight, Custodial & Other Costs	2019	2,291.0	0.9bp
	2018	2,009.0	0.8bp
	2017	2,745.0	1.2bp
	2016	3,065.0	1.4bp
	2015	3,222.0	1.6bp
Total	2019	17,228.3	6.7bp
	2018	15,907.5	6.6bp
	2017	16,837.0	7.3bp
	2016	18,904.0	8.5bp
	2015	17,485.0	8.5bp

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 A - Data Summary: Overlays

Government Pension Fund Norway

Overlays		Internal					External									
		Notional amount (mils)	Market value (mils)	Profit/Loss (000s)	Cost (000s)	% of Notion. (bps)	Duration (years)	Notional amount (mils)	Market value (mils)	Profit/Loss (000s)	Base fees (000s)	Perf. fees (000s)	Over-sight (000s)	Total (000s)	% of Notion. (bps)	Duration (years)
Currency Hedge	2019	973.5														
	2018	882.6	-14.0													
	2017	874.8	1.7													
Duration Management	2019	9,613.2														
	2018	12,396.1	70.4													
	2017	10,889.4	116.6													

Appendix B - Currency conversion

Government Pension Fund Norway

#N/A

Currency conversion table					
	2019	2018	2017	2016	2015
United States Dollars - USD*	0.714	0.723	0.747	0.732	0.761
Canada Dollars - CAD	0.572	0.580	0.597	0.576	0.624
Euro - EUR*	1.000	1.000	1.000	1.000	1.000
Sweden Kronor - SEK	0.079	0.080	0.084	0.081	0.084
United Kingdom Pounds - GBP	1.015	1.013	1.048	1.055	1.087
Australia Dollars - AUD	0.493	0.496	0.500	0.499	0.527
New Zealand Dollars - NZD	0.480	0.498	0.507	0.505	0.536

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 29th 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.