### **Investment Benchmarking Analysis**

(for the 5-year period ending June 30, 2025)

**New Zealand Superannuation Fund** 



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Prepared September 11, 2025. Although the information in this report has been based upon and obtained from sources we believe to be reliable, CEM Benchmarking Inc. ("CEM") does not guarantee its accuracy or completeness. The information contained herein is proprietary and confidential and may not be disclosed to third parties without the express written mutual consent of both CEM and New Zealand Superannuation Fund.

#### **Key Takeaways**

#### **Returns**

- Your 5-year net total return was 11.0%. This was above both the Global median of 5.9% and the peer median of 6.9%.
- Your 5-year policy return was 9.1%. This was above both the Global median of 6.0% and the peer median of 5.9%.
- Differences in total returns reflect in large part home-market biases and the relative performance of currencies. So they are not the primary focus of this report.

#### Value added

• Your 5-year net value added was 1.8%. This was above both the Global median of 0.3% and the peer median of 0.6%.

#### **Long-term performance**

• Your 20-year net return of 10.0% was above both the Global median of 7.0% and the peer median of 6.7%.

#### Cost

- Your investment cost of 37.6 bps was below your benchmark cost of 47.4 bps. This suggests that your fund was low cost compared to your peers.
- Your fund was below benchmark cost because it had a lower cost implementation style and it paid less than peers for similar services.

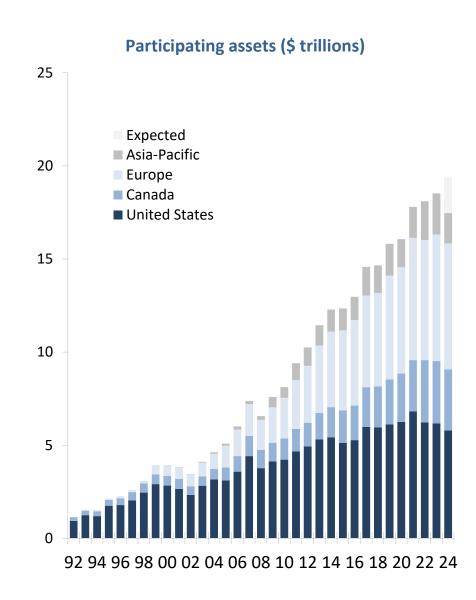
#### **Risk**

- Your asset risk of 11.3% was above the Global median of 9.3%.
- Your 20-year realized Sharpe ratio of 0.5 was equal to the Global median of 0.5.
- Your 20-year realized information ratio of 0.5 was above the Global median of 0.2.

### This benchmarking report compares your cost and performance to the 237 funds in CEM's extensive pension database.

- 134 U.S. pension funds participate. The median U.S. fund had assets of \$12.2 billion and the average U.S. fund had assets of \$43.2 billion. Total participating U.S. assets were \$5.8 trillion.
- 57 Canadian funds participate with assets totaling \$3.3 trillion.
- 39 European funds participate with aggregate assets of \$6.8 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Ireland, Denmark and the UK.
- 4 Asia-Pacific funds participate with aggregate assets of \$1.6 trillion. Included are funds from New Zealand, South Korea, and Australia.
- 3 funds from other regions participate.

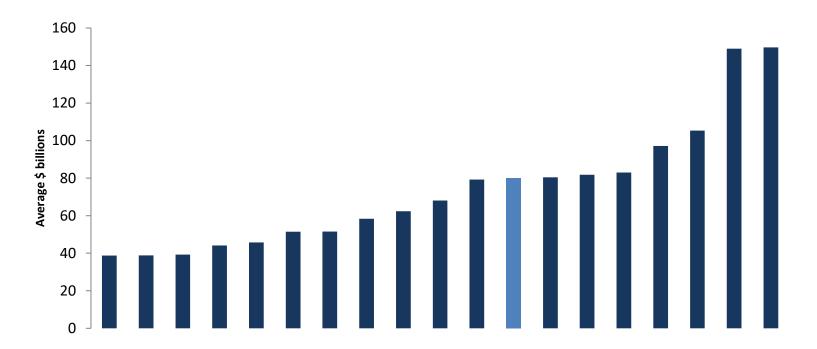
The most meaningful comparisons for your returns and value added are to the Global universe, which consists of 237 funds. The Global universe assets totaled \$17.7 trillion and the median fund had assets of \$14.0 billion.



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

#### **Peer group for New Zealand Superannuation Fund**

- 19 Global sponsors from \$38.8 billion to \$149.6 billion
- Median size of \$68.1 billion versus your \$80.0 billion



To preserve client confidentiality, given potential access to documents as permitted by the Freedom of Information Act, we do not disclose your peers' names in this document. For some of the peers, 2023 cost data was used as a proxy for 2024.

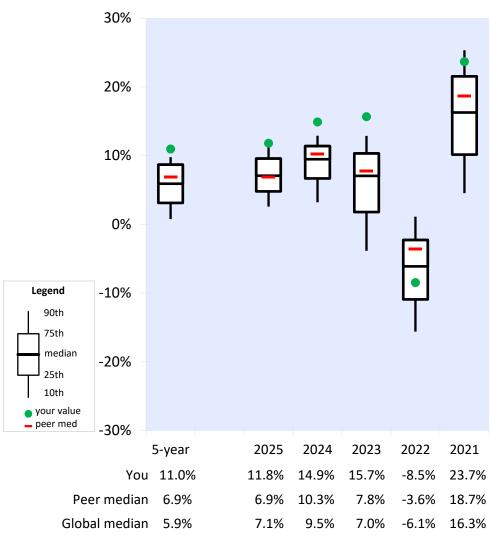
## Your 5-year net total return of 11.0% was above both the Global median of 5.9% and the peer median of 6.9%.

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

	Your 5-year
Net total fund return	11.0%
- Policy return	9.1%
= Net value added	1.8%

This approach enables you to understand the contribution from both policy mix decisions (which tend to be the board's responsibility) and implementation decisions (which tend to be management's responsibility).

#### **Global net total returns - quartile rankings**



Returns are reported in local currency.

## Your 5-year policy return of 9.1% was above both the Global median of 6.0% and the peer median of 5.9%.

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

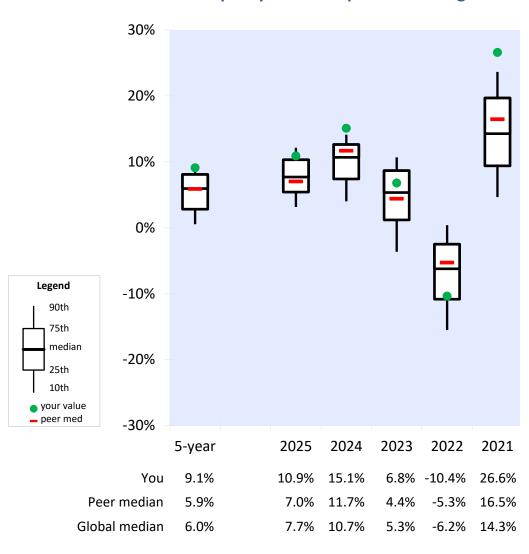
Having a higher or lower relative policy return is not necessarily good or bad. Your policy return reflects your investment policy, which should reflect your:

- Long term capital market expectations
- Liabilities
- Appetite for risk

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

To enable fairer comparisons, the policy returns of all participants with policy weight in private equity were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices.

#### **Global policy returns - quartile rankings**



# Differences in policy return are caused by differences in policy mix and benchmarks. At the end of 2024 your policy mix compared to your peers and the Global universe as follows:

#### **Policy asset mix**

- Your fund had substantially more stock than the peer and Global averages (your 80% versus a peer average of 40% and a Global average of 33%).
- Your fund also has no policy allocation to alternatives, while peers average 27% and the global average is 25%.

		Peer	Global
Asset class	Your fund	avg.	avg.
Stock - U.S.	0%	13%	9%
Stock - Europe & Far East	5%	4%	4%
Stock - Emerging	7%	3%	2%
Stock - Global	69%	12%	14%
Other Stock <sup>1</sup>	0%	8%	5%
Total Stock	80%	40%	33%
Fixed income - Long bonds	0%	7%	15%
Fixed income - Global	20%	6%	2%
Fixed income - Bundled LDI	0%	2%	3%
Cash	0%	0%	0%
Other Fixed Income <sup>1</sup>	0%	18%	20%
Total Fixed Income	20%	33%	41%
Hedge funds	0%	3%	2%
Real estate incl. REITs	0%	9%	8%
Other Real Assets <sup>1</sup>	0%	4%	4%
Private equity	0%	7%	7%
Private credit	0%	4%	4%
Total	100%	100%	100%

<sup>1.</sup> Other stock includes: Stock - ACWI x U.S.. Other fixed income includes: Fixed income - Canada, Fixed income - Europe gov't, Fixed income - U.S., Fixed income - U.S., Fixed income - Inflation indexed and Fixed income - EAFE. Other real assets include: Commodities, Natural resources and Infrastructure.

## Net value added is the component of total return from active management. Your 5-year net value added was 1.8%.

Net value added equals total net return minus policy return.

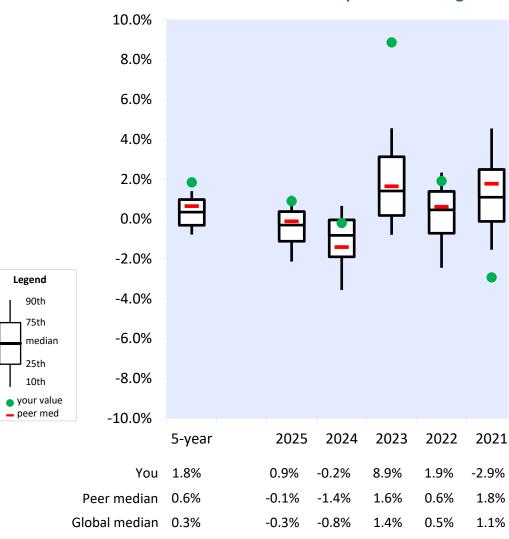
#### Value added for New Zealand Superannuation Fund

	Net	Policy	Net value
Year	return	return	added
2025	11.8%	10.9%	0.9%
2024	14.9%	15.1%	-0.2%
2023	15.7%	6.8%	8.9%
2022	-8.5%	-10.4%	1.9%
2021	23.7%	26.6%	-2.9%
5-Year	11.0%	9.1%	1.8%

Your 5-year net value added of 1.8% compares to a median of 0.6% for your peers and 0.3% for the Global universe.

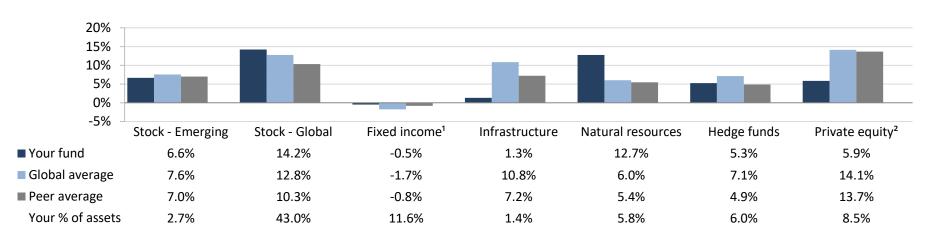
Your 1.8% 5-year value added translates into approximately \$5.5 billion of cumulative value added over 5 years.

#### **Global net value added - quartile rankings**

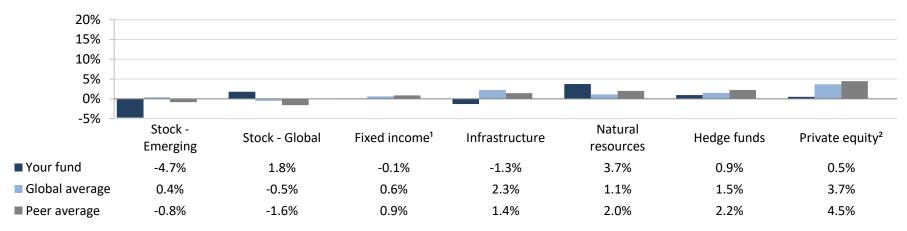


#### Comparisons of your 5-year net return and net value added by major asset class:

#### 5-year average net return by major asset class



#### 5-year average net value added by major asset class

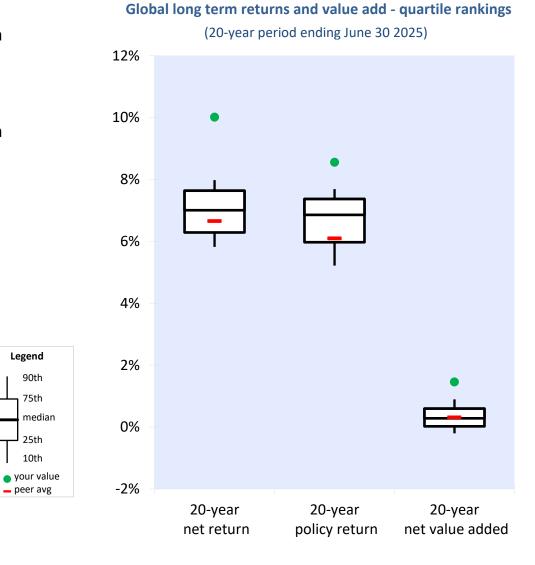


<sup>1.</sup> Excludes cash and leverage.

<sup>2.</sup> To enable fairer comparisons, the private equity benchmarks of all participants, including your fund were adjusted to reflect lagged, investable, public-market indices.

## Your long-term net return of 10.0% was above the Global median of 7.0%, and was the highest in the global universe.

- Your 20-year net return of 10.0% was above the Global median of 7.0% and above the peer median of 6.7%.
- Your 20-year policy return of 8.6% was above the Global median of 6.9% and above the peer median of 6.1%.
- Your 20-year net value added of 1.5% was above the Global median of 0.3% and above the peer median of 0.3%.



## Your investment costs, excluding private asset performance fees, were \$301.1 million or 37.6 basis points in fiscal 2025.

Asset management costs by asset	Inter	nal Mana	gement*	Exter	nal Managei	ment			
class and style (\$000s)	Passive	Active	Overseeing	Passive	Active	Perform.			
			of external	fees	base fees	fees 1	Total		
Stock - Europe & Far East	557	3,047	100		2,806	807	7,316		
Stock - Emerging			415	1,188			1,604		
Stock - Global	7,701		6,124	2,346	9,388		25,559		
Fixed income - Global	4,205		1,808	2,267			8,280		
Infrastructure <sup>1</sup>			173		1,917	868	2,090		
Natural resources <sup>1</sup>		11,964	593		9,860	613	22,417		
Natural resources - LP/Value add <sup>1</sup>			572		3,410	427	3,982		
Natural resources - Co-invest. 1			533		1,967		2,501		
Other real assets - LP/Value add <sup>1</sup>			181		2,667	151	2,848		
Other real assets - Co-invest. 1			609		2,955		3,564		
Real estate ex-REITs <sup>1</sup>		2,537	186		1,332	-654	4,056		
Real estate ex-REITs - LP/Value add <sup>1</sup>			2,377		17,476	740	19,853		
Real estate ex-REITs - Co-invest. 1			1,443		4,488		5,931		
Real estate ex-REITs - Joint venture <sup>1</sup>			141		970		1,112		
Hedge funds - External active			2,750		43,414	24,677	70,841		
Private equity - Diversified - LP/Value add <sup>1</sup>			727		10,258	8,939	10,985		
Private equity - Diversified - Co-invest. 1			162		523		684		
Private equity - Diversified - FoFs <sup>1</sup>			1				1		
Venture capital - LP/Value add <sup>1</sup>			738		7,115	1,517	7,853		
Venture capital - Co-invest. 1			144				144		
Private equity - Other - LP/Value add 1		7,929	713		5,136	2,740	13,778		
Private equity - Other - Co-invest. 1			1,746		14,073	-6,771	15,818		
Derivatives/Overlays	2,121	24,528					26,649		
Total excluding private asset performa	ance fees						257,865	32.2bp	
Oversight, custodial and other costs <sup>2</sup>	2								
Oversight & consulting							30,508		
Trustee & custodial							7,205		
Consulting and performance measure	ment						0		
Audit							1,652		
Other							3,877		
Total oversight, custodial & other cost	ts						43,241	5.4bp	
Total investment costs (excl. transacti	Total investment costs (excl. transaction costs & private asset performance fees) 301,106								

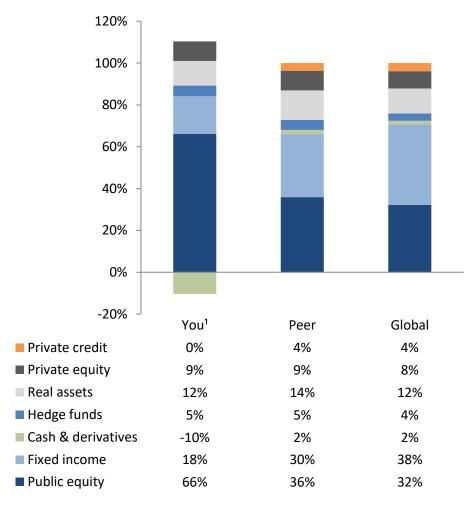
**Footnotes** 1. Total cost excludes carry/performance fees for real estate, infrastructure, natural resources and private equity. Performance fees are included for the public market asset classes and hedge funds. 2. Excludes noninvestment costs, such as benefit insurance premiums and preparing cheques for retirees. \* Internal FTE and support costs have been allocated to asset classes based on CEM methodology. Refer to Appendix A2 for details.

## High-cost assets equaled 26% of your assets at the end of June 2025 versus a peer average of 32%.

Alternative asset classes, such as, real estate (excl. REITs), infrastructure, hedge funds, private equity and private credit are typically higher cost asset classes than public asset classes such as public equity and fixed income. You had a combined public market allocation, including cash and derivatives, of 74% at the end of June 2025 versus a peer average of 68%.

Your alternative asset classes represent 26% of your assets, but 63% of your total costs.

#### June 2025 Actual asset allocation



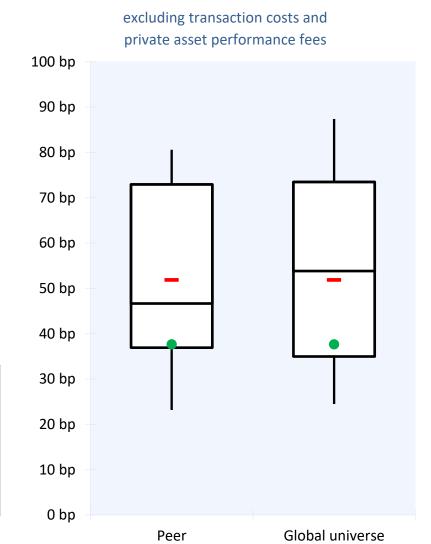
1. Effective mix includes the impact of derivatives.

## Before adjusting for asset mix differences, your total investment cost of 37.6 bps was below the peer median of 46.7 bps.

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

- Asset mix private asset classes are generally more expensive than public asset classes.
- 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.



**Total investment cost** 

90th
75th
median
25th
10th
your value
peer avg

## Benchmark cost analysis suggests that, after adjusting for fund size and asset mix, your fund was below benchmark cost by 9.7 basis points in fiscal 2025.

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

Your total cost of 37.6 bp was below your benchmark cost of 47.4 bp. Thus, your cost savings were 9.7 bp.

#### Your cost versus benchmark

	\$000s	basis points
Your total investment cost	301,106	37.6 bp
Your benchmark cost	378,716	47.4 bp
Your excess cost	(77,610)	(9.7) bp

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

#### Reasons for your low cost status

	Excess C (Saving	•
	\$000s	bps
<ol> <li>Lower cost implementation style</li> <li>Less active management, more lower cost passive</li> <li>Less external management, more lower cost internal</li> <li>More LPs as a percentage of external</li> <li>Less fund of funds</li> <li>More co-investment as a percentage of LP/Co</li> <li>More overlays</li> </ol>	(49,329) (2,249) 2,646 (2,811) (8,101) 20,325 (39,519)	(6.2) (0.3) 0.3 (0.4) (1.0) 2.5 (4.9)
<ul> <li>2. Paying less than peers for similar services</li> <li>External investment management costs</li> <li>Internal investment management costs</li> <li>Oversight, custodial &amp; other costs</li> </ul>	(76,834) 15,771 22,972 (38,091)	(9.6) 2.0 2.9 (4.8)
Total savings	(77,610)	(9.7)

#### Your implementation style was 4.9 bps lower cost than the peer average.

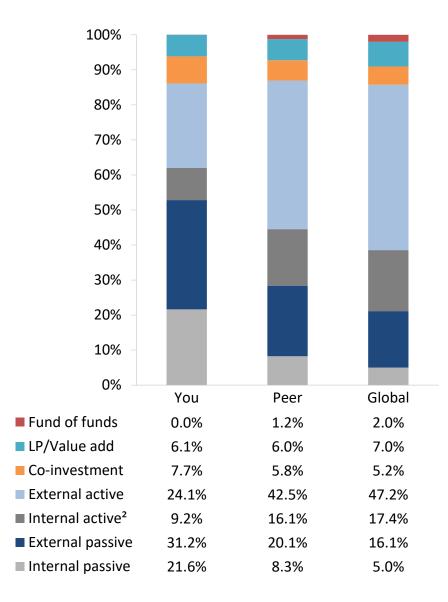
Implementation style is the way in which your fund implements asset allocation. Each implementation choice has a cost. Your first choice is how much to implement passively or actively. The table below summarizes your aggregate choices versus peers and their cost impact.

Implementation choices	Impact
Less active, more passive	(6.2) bp
More internal as a % of passive	(0.0) bp
Same internal as a % of active	$(0.3) bp^3$
More LPs as a % of external	0.3 bp
Less fund of funds	(0.4) bp
More co-investment as a percentage of LP/Co	(1.0) bp
More overlays	2.5 bp
Total impact	(4.9) bp

The peer and universe style was adjusted to match your asset mix. It equals their average style for each asset class weighted by your fee basis for the asset class. It shows how the average peer would implement your asset mix.

- 1. Implementation style is shown as a % of total fund fee basis because the fee basis is the primary driver of cost for private assets (e.g., new private equity LP commitments increase costs before LP NAV increases). Style weights are based on average holdings. Cash and derivatives are excluded.
- 2. Joint ventures are treated as an 'internal active' implementation style for the cost benchmarking.
- 3. Typically, same internal as a % of active is same cost. But your mix of internal by asset class decreased your cost.





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

#### Why are you high/(low) cost by asset class?

	Impl.	Paying		
	style	more/(less)	Total	Total
Asset class/category	\$000s	\$000s	\$000s	bps
Stock - Europe & Far East	(3,353)	2,521	(832)	(2.6) bp
Stock - Emerging	(7,512)	(56)	(7,568)	(38.4) bp
Stock - Global	(29,384)	(42,054)	(71,438)	(19.1) bp
Fixed income - Global	(7,862)	4,519	(3,342)	(3.0) bp
Real estate ex-REITs	1,457	703	2,160	5.2 bp
Infrastructure	(218)	(747)	(964)	(27.9) bp
Natural resources	(10,156)	8,003	(2,153)	(4.9) bp
Other real assets	428	3,007	3,435	47.5 bp
Hedge funds	(1,795)	(35,426)	(37,221)	(90.9) bp
Private equity - Diversified	(837)	(1,599)	(2,437)	(25.1) bp
Venture capital	(612)	65	(547)	(10.0) bp
Private equity - Other			Excluded	Excluded
Derivatives and overlays	20,325	0	20,325	2.5 bp
Oversight, custodial & other	n/a	22,972	22,972	2.9 bp
Total	(39,519)	(38,091)	(77,610)	(9.7) bp

### Your 5 and 20-year performances placed in the positive value added, low cost quadrant of the cost-effectiveness chart.

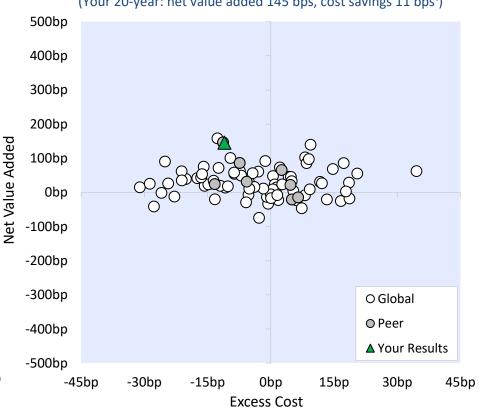
#### 5-year net value added versus excess cost

(Your 5-year: net value added 184 bps, cost savings 7 bps<sup>1</sup>)

#### 500bp 400bp 0 300bp 200bp **Net Value Added** 100bp 0bp -100bp 0 -200bp -300bp O Global O Peer -400bp ▲ Your Results 0 -500bp -30bp -45bp -15bp 0bp 15bp 30bp 45bp **Excess Cost**

#### 20-year net value added versus excess cost

(Your 20-year: net value added 145 bps, cost savings 11 bps<sup>1</sup>)



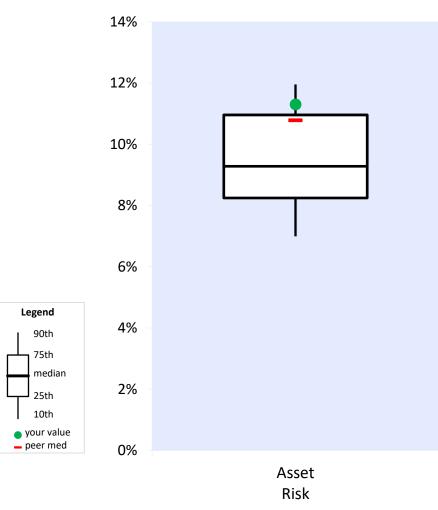
1. Your estimated 20-year savings of 11.0 basis points is the average of your peer-based benchmarks for the years available (2017 - 2023) and estimated benchmarks based on a simplified model for years where peerbased benchmarks were missing.

	20-year¹	5-year	2024	2023	2022	2021	2020
Net value added	145.5 bp	184.2 bp	90.0 bp	(20.0) bp	887.0 bp	190.0 bp	(293.0) bp
Excess cost	(11.0) bp	(7.2) bp	(9.7) bp	(0.7) bp	(3.6) bp	(12.0) bp	(10.1) bp

#### Your asset risk of 11.3% was above the Global median of 9.3%.

Asset risk is the standard deviation of your policy return. It is based on the historical variance of, and covariance between, the asset classes in your policy mix.

#### Global risk levels at June 30 2025



#### Your 20-year realized Sharpe ratio of 0.5 was equal<sup>1</sup> to the Global median of 0.5.

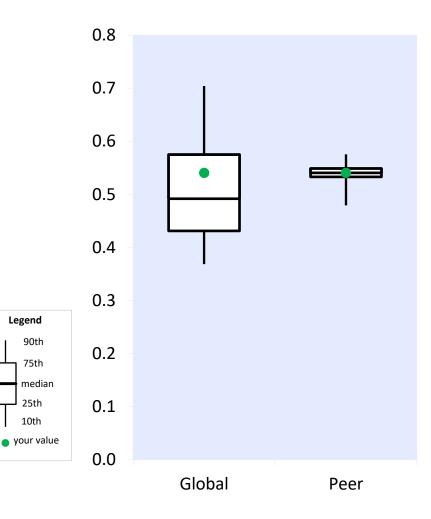
Realized Sharpe ratio measures your portfolio's performance on a risk-adjusted basis. It is calculated as your portfolio's actual net return, minus the risk-free rate, divided by the standard deviation (often called volatility) of your portfolio's excess return.

Sharpe ratios tend to be positive when equity markets have positive returns. Your 20-year realized Sharpe ratio was 0.5, which was the same as the Global universe median of 0.5.

A higher Sharpe ratio can be obtained through some combination of higher net returns and lower volatility. Lower volatility can be the result of either having less risky assets or having better diversification.

1. Numbers are rounded to one decimal point to avoid undue precision on the results.

#### 20-year realized Sharpe ratio



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Legend 90th

75th

10th

#### Your 20-year realized information ratio of 0.5 was above the Global median of 0.2.

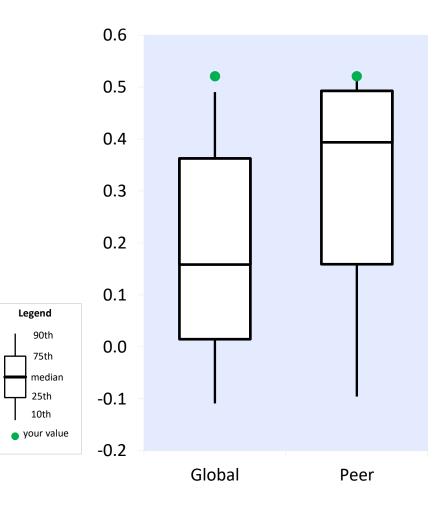
Realized information ratio measures your portfolio's active return per unit of active risk. It is calculated as your portfolio's net value added divided by the standard deviation of your portfolio's net value added, which is often called the active risk or tracking error of the portfolio.

Your 20-year realized information ratio of 0.5 was above the Global median of 0.2.

Information Ratio is positive when net value added is positive, and it is negative when net value added is negative. The median 20-year information ratio in the peer group was 0.4, meaning that most plans managed to generate positive net value added.

Using information ratio as a measure of risk-adjusted performance allows the comparison of success in generating positive net value between funds with different levels of active risk.

#### 20-year realized information ratio



### 2

### Description of peer group and universe

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Policy mix from 2020/21 to 2024/25	q

#### Peer group

Your peer group is comprised of 19 Global funds, with assets ranging from \$38.8 billion to \$149.6 billion versus your \$80.0 billion. The median size is \$68.1 billion.

#### **Peer group for New Zealand Superannuation Fund**

Anonymous Middle East Pension Fund AT&T Investment Management BT Pension Scheme Management Canada Post Corporation Första AP-fonden

Illinois Municipal Retirement Fund

Indiana Public Ret. Sys. Kentucky Teachers' Ret. Sys.

Keva

National Railroad Retirement Investment Trust

New Zealand Superannuation Fund

PERS of Nevada RTX Corporation State of Tennessee

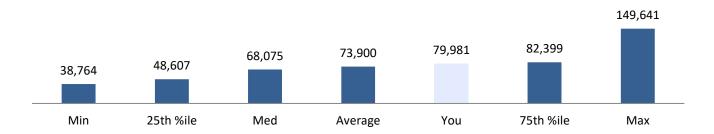
State Pension Fund of Finland BPF voor de Bouwnijverheid Stichting BPL Pensioen Tredje AP-fonden

Workplace Safety and Insurance Board of Ontario

The names of the above fund sponsors in your peer group are confidential and may not be disclosed to third parties. All other information in this report is confidential and may not be disclosed to third parties without the express written mutual consent of both CEM Benchmarking Inc. and New Zealand Superannuation Fund.

Your peer group is selected such that your fund size is usually close to the median of your peer group. Size is the primary criteria for choosing your peer group, because size greatly impacts how much you pay for services. Generally, the larger your fund, the smaller your unit operating costs (i.e., the economies of scale impact).

#### Total fund assets (\$ millions) - you versus peers

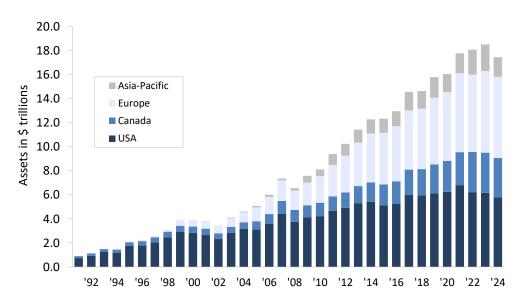


#### **CEM** global universe

CEM has been providing investment benchmarking solutions since 1991. The 2024/25 survey universe is comprised of 237 funds representing \$17.7 trillion in assets. The breakdown by region is as follows:

- 134 U.S. pension funds with aggregate assets of \$5.8 trillion.
- 57 Canadian pension funds with aggregate assets of \$3.3 trillion.
- 39 European pension funds with aggregate assets of \$6.8 trillion. Included are funds from the Netherlands, Norway, Sweden, Finland, Denmark, UK, and Ireland.
- 4 Asia-Pacific pension funds with aggregate assets of \$1.6 trillion.
- 3 funds from other regions participate.

#### **CEM** global universe



#### **Universe subsets**

CEM's global survey universe is comprised of 237 funds with total assets of \$17.7 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 19 Global funds ranging in size from \$38.8 \$149.6 billion. The peer median of \$68.1 billion compares to your \$80.0 billion.
- Global The global universe is comprised of 237 funds ranging in size from \$0.4 \$3,317.3 billion. The median fund is \$14.0 billion.

#### Universe subsets by number of funds and assets

	Global by type			Global by Country						
	Peer								Asia-	
	group <sup>1</sup>	Corp.	Public	Other	Total	U.S.	Canada	Europe	Pacific	Total
# of funds										
2025	19	112	86	39	237	134	57	39	7	237
2024	20	117	118	52	287	143	65	63	16	287
2023	20	129	114	60	303	148	71	66	18	303
2022	19	130	115	50	295	146	70	67	12	295
2021	20	135	130	47	312	160	68	73	11	312
# of funds with										
uninterrupted d	ata for:									
1 yr	19	112	86	39	237	134	57	39	7	237
2 yrs	19	103	85	37	225	125	56	37	7	225
3 yrs	19	99	81	35	215	117	55	37	6	215
4 yrs	18	93	76	33	202	109	52	35	6	202
5 yrs	18	90	75	31	196	104	51	35	6	196
Total assets (\$ b	oillions)									
2025	1,404	1,636	11,821	4,243	17,700	5,788	3,285	6,760	1,866	17,700
2024	1,400	1,619	12,154	5,057	18,830	6,168	3,351	6,793	2,517	18,830
2023	1,393	1,987	11,001	5,301	18,290	6,227	3,338	6,454	2,271	18,290
2022	1,404	2,660	10,926	4,498	18,084	6,808	2,755	6,565	1,956	18,084
2021	1,303	2,474	9,861	3,955	16,290	6,255	2,591	5,709	1,736	16,290
2025 asset distr	<u>ibution</u>									
(\$ billions)										
Avg	73.9	14.6	137.4	108.8	74.7	43.2	57.6	173.3	266.6	74.7
Max	149.6	129.4	3,317.3	1,131.5	3,317.3	779.2	835.4	3,317.3	1,180.2	3,317.3
75th %ile	82.4	16.6	115.7	103.0	44.1	37.9	26.4	84.2	245.1	44.1
Median	68.1	8.1	27.8	38.0	14.0	12.2	10.1	27.0	80.0	14.0
25th %ile	48.6	3.1	10.9	6.5	5.3	4.5	4.8	8.7	55.5	5.3
Min	38.8	0.4	0.5	1.1	0.4	0.4	0.5	1.3	5.1	0.4

<sup>1.</sup> Peer group statistics are for your 2025 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 - 2025

(as a % of year-end assets)

				Global	by type			Glob	al by Co	untry				
	Your	Peer					Asia-							
	fund <sup>1</sup>	group	Corp.	Public	Other	Total	U.S.	Canada	Europe	Pacific	Total			
Implementation style	2													
External active	35.1	58.1	73.1	54.2	64.0	64.7	72.7	58.9	48.7	49.8	64.7			
Fund of funds	0.0	2.8	3.0	2.6	2.8	2.8	2.9	2.1	3.9	1.5	2.8			
External passive	29.4	12.9	17.2	17.3	12.4	16.5	17.9	12.4	18.0	14.2	16.5			
Internal active	14.5	19.8	5.5	18.5	16.2	12.0	4.0	20.6	24.5	25.1	12.0			
Internal passive	<u>21.0</u>	6.4	<u>1.1</u>	<u>7.5</u>	<u>4.7</u>	4.0	<u>2.6</u>	<u>6.1</u>	4.8	9.3	4.0			
Total	100	100	100	100	100	100	100	100	100	100	100			
Actual asset mix														
Stock	53.2	35.9	23.5	41.6	36.9	32.3	29.3	31.9	40.1	48.1	32.3			
Fixed income	14.1	29.9	51.8	23.0	33.4	38.3	43.3	33.3	30.8	24.4	38.3			
Cash & derivatives <sup>2</sup>	6.4	2.2	3.2	0.6	0.4	1.8	2.9	-0.7	1.7	3.0	1.8			
Global TAA	0.0	0.1	0.4	0.4	0.3	0.4	0.4	0.2	0.3	0.0	0.4			
Real assets	11.9	14.0	7.8	16.4	14.1	12.0	7.7	20.1	14.9	11.5	12.0			
Hedge funds	5.1	3.7	3.2	2.6	2.8	2.9	3.7	2.1	1.6	2.6	2.9			
Balanced funds	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	1.0	0.3	0.3	0.0	0.2	0.4	0.0	0.0	0.0	0.2			
Private debt	0.0	3.6	2.9	4.5	5.3	3.9	2.9	5.9	4.7	1.1	3.9			
Private equity	<u>9.4</u>	<u>9.5</u>	<u>6.9</u>	<u>10.7</u>	<u>6.8</u>	<u>8.2</u>	<u>9.3</u>	<u>7.2</u>	<u>6.0</u>	<u>9.3</u>	<u>8.2</u>			
Total	100	100	100	100	100	100	100	100	100	100	100			
B. I														
Policy asset mix	00.0	20.5	24.2	42.2	27.2	22.0	20.5	20.0	40.0	F2.0	22.0			
Stock	80.0	38.5	24.2	42.2	37.2	32.9	30.5	30.9	40.0	53.8	32.9			
Fixed income Cash <sup>2</sup>	20.0	33.2	55.3	25.4 -1.0	34.8	41.1	46.7	35.1 -1.7	33.1 1.6	26.1	41.1 0.0			
	0.0	0.2	0.5	_	1.2	0.0	0.3		-	1.4				
Global TAA	0.0	0.0	0.3	0.4	0.2	0.3	0.4	0.2	0.1	0.0	0.3			
Real assets	0.0	13.0	7.8	16.8	13.9	12.1	8.1	20.5	14.1	9.4	12.1 2.2			
Hedge funds	0.0	3.0	3.0	1.4	2.0	2.2	2.9	1.5	1.1	1.6				
Balanced funds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0			
Risk parity	0.0	1.1	0.3	0.3 5.1	0.0 4.9	0.2	0.4 2.3	0.0 7.4	0.0 4.6	0.0	0.2 3.9			
Private debt	0.0	3.6				3.9				1.4				
Private equity	<u>0.0</u>	<u>7.3</u>	6.1	<u>9.4</u>	<u>5.8</u>	7.3	8.3 100	<u>6.3</u>	<u>5.2</u>	<u>6.4</u>	<u>7.3</u>			
Total	100	100	100	100	100	100	100	100	100	100	100			

<sup>1.</sup> Since your fund provided average assets, the above tables show your implementation style and asset mix using average assets rather than year-end.

<sup>2.</sup> Negative allocations indicate use of leverage.

#### Implementation style, actual mix and policy mix trends

### Implementation style, actual mix and policy mix - 2020/21 to 2024/25 (as a % of year-end assets)

	Your fund <sup>1</sup>						Pee	r avera	ge²		Global average <sup>2</sup>					
	2025	2024	2023	2022	2021	2025	2024	2023	2022	2021	2025	2024	2023	2022	2021	
Implementation style																
External active	35.1	34.3	33.4	12.9	14.0	57.4	57.0	58.6	55.3	55.2	64.2	64.6	64.5	62.8	62.4	
Fund of funds	0.0	0.0	0.0	0.0	0.0	2.9	3.1	3.0	2.5	2.4	2.9	3.1	3.0	2.6	2.2	
External passive	29.4	36.7	40.6	51.9	43.5	13.4	14.7	14.4	17.2	18.5	15.8	15.2	15.6	17.0	17.8	
Internal active	14.5	17.5	22.9	28.1	36.2	20.2	20.1	19.9	20.2	20.8	12.6	12.6	12.6	13.0	13.2	
Internal passive	21.0	<u>11.4</u>	3.0	<u>7.1</u>	6.2	<u>5.9</u>	<u>5.1</u>	4.2	<u>4.8</u>	3.0	<u>4.4</u>	<u>4.5</u>	4.4	<u>4.6</u>	<u>4.5</u>	
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
Actual asset mix																
Stock	53.2	47.5	53.6	51.6	43.4	34.6	34.0	36.5	40.7	40.8	32.5	32.1	33.8	37.7	38.8	
Fixed income	14.1	15.7	10.7	9.5	8.3	30.5	30.4	29.9	29.8	29.6	37.4	37.5	36.7	36.8	36.8	
Cash & derivatives	6.4	9.5	9.0	19.0	25.4	2.3	2.5	1.8	3.3	4.0	1.7	1.7	1.6	2.1	2.3	
Global TAA	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.3	0.3	0.3	0.4	0.5	0.6	0.8	
Real assets	11.9	11.2	10.5	7.7	9.0	14.3	14.5	14.4	11.3	11.8	12.6	12.9	12.6	10.1	9.9	
Hedge funds	5.1	6.5	7.1	5.6	6.0	3.9	4.4	4.4	4.0	4.1	2.9	3.1	3.1	2.9	2.9	
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	0.1	
Risk Parity	0.0	0.0	0.0	0.0	0.0	1.1	1.1	1.2	1.2	1.7	0.3	0.3	0.3	0.4	0.5	
Private credit	0.0	0.0	0.0	0.0	0.0	3.6	3.4	2.8	2.2	1.9	3.9	3.7	3.3	2.6	2.4	
Private equity	9.4	9.6	<u>9.1</u>	6.7	<u>7.9</u>	<u>9.5</u>	<u>9.5</u>	<u>8.7</u>	7.2	<u>5.9</u>	<u>8.4</u>	8.3	8.0	6.8	<u>5.6</u>	
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
Policy asset mix																
Stock	80.0	80.0	80.0	80.0	80.0	37.4	37.6	39.5	42.7	41.3	33.2	33.6	35.3	37.3	38.5	
Fixed income	20.0	20.0	20.0	20.0	20.0	33.8	33.5	33.0	33.0	33.4	40.5	40.6	40.2	39.5	38.4	
Cash <sup>3</sup>	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.8	0.6	1.2	-0.2	-0.3	-0.5	-0.2	-0.1	
Global TAA	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.2	0.2	0.3	0.3	0.3	0.4	0.5	0.9	
Real assets	0.0	0.0	0.0	0.0	0.0	13.3	12.5	11.7	10.4	11.1	12.6	12.4	12.0	11.0	11.1	
Hedge funds	0.0	0.0	0.0	0.0	0.0	3.1	3.1	3.5	3.4	4.1	2.2	2.2	2.3	2.4	2.6	
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	1.1	1.1	1.3	1.3	1.3	0.3	0.3	0.4	0.4	0.4	
Private credit	0.0	0.0	0.0	0.0	0.0	3.8	3.8	3.3	2.5	1.9	3.9	3.6	3.3	3.0	2.6	
Private equity	0.0	0.0	0.0	0.0	0.0	7.3	7.6	6.7	5.9	5.3	7.4	7.3	6.6	6.1	5.6	
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	

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

<sup>2.</sup> Trends are based on the 196 Global and 18 peer funds with 5 or more consecutive years of data ending 2025.

<sup>3.</sup> Negative allocations indicate use of leverage.

#### 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 - 2025

(as a % of average assets)

		Peer average %					Global average %								
	Ex	ternal		Inte	rnal	Е	xterna	I	Internal		External		I	Inter	rnal
	Active	FOFs In	ndex	Active Index		Active	Active FOFs Index		Active Index		Active FOFs Index		Index	Active Inde	
Stock - U.S.						29.7		32.9	27.2	10.2	30.6		50.1	9.8	9.5
Stock - Europe & Far East	26.4		0.0	44.9	28.7	53.0		8.8	37.1	1.0	55.4		21.0	20.4	3.2
Stock - Global	31.1	4	43.6	0.0	25.3	48.0		36.2	4.2	11.7	57.5		24.8	12.4	5.3
Stock - other						8.5		0.0	87.6	3.9	62.1		4.4	27.8	5.7
Stock - Emerging	0.0	10	0.00	0.0	0.0	73.6		15.5	3.5	7.4	74.2		17.6	4.3	3.8
Stock - ACWI x U.S.						63.0		37.0	0.0	0.0	63.5		33.9	0.9	1.6
Stock - Aggregate	29.3	4	42.9	3.4	24.3	42.6		26.6	23.3	7.5	50.9		30.5	12.6	6.0
Fixed income - U.S.						36.8		29.7	32.9	0.5	66.4		17.6	13.2	2.7
Fixed income - EAFE						70.9		0.2	29.0	0.0	36.6		31.0	21.3	11.1
Fixed income - Global	0.0	4	46.9	0.0	53.1	34.9		10.3	39.9	14.9	39.4		17.1	29.1	14.4
Fixed income - other						41.9		-24.5	82.2	0.5	54.2		14.6	24.1	7.1
Fixed income - Long bonds						73.3		3.2	14.9	8.6	82.4		9.8	4.9	2.9
Fixed income - Emerging						61.2		14.3	24.5	0.0	81.9		5.6	11.6	1.0
Fixed income - Inflation indexed						8.3		26.7	43.4	21.6	11.0		50.8	20.1	18.1
Fixed income - High yield						95.4		0.0	4.6	0.0	88.9		2.3	5.6	3.2
Fixed income - Bundled LDI						5.3		0.0	0.0	94.7	66.1		8.6	17.1	8.1
Fixed income - Convertibles						100.0		0.0	0.0	0.0	100.0		0.0	0.0	0.0
Public mortgages						100.0		0.0	0.0	0.0	48.5		0.0	51.5	0.0
Cash						81.7			18.3		84.9			15.1	
Fixed income - Aggregate	0.0	4	46.9	0.0	53.1	52.8		9.6	26.0	11.6	66.6		14.6	13.5	5.3
Commodities						0.0		0.0	0.0	0.0	22.8		11.7	40.5	25.0
Infrastructure	100.0	0.0		0.0		74.2	0.0		25.8		78.7	5.0		16.3	
Natural resources	41.9	0.0		58.1		67.6	0.0		32.4		73.1	0.0		26.9	
REITs						93.5		6.5	0.0	0.0	71.5		14.3	13.1	1.1
Real estate ex-REITs	84.4	0.0		15.6		70.4	3.2		26.4		79.9	5.5		14.6	
Other real assets	100.0	0.0		0.0		100.0	0.0		0.0		57.0	0.0		43.0	
Other listed real assets						100.0		0.0	0.0	0.0	75.0		7.4	1.0	16.6
Real assets - Aggregate	66.0	0.0	0.0	34.0	0.0	72.0	2.3	0.1	25.6	0.0	77.7	4.9	0.8	16.0	0.6
Hedge funds	100.0	0.0				88.8	11.2				75.6	24.4			
Global TAA						100.0			0.0		83.9			16.1	
Risk parity						100.0			0.0		97.0			3.0	
Private credit						100.0	0.0		0.0		89.0	2.5		8.5	
Private mortgages						100.0			0.0		90.7			9.3	
Private equity - Diversified	99.9	0.1		0.0		75.1	24.9		0.0		75.5	18.0		6.5	
Venture capital	100.0	0.0		0.0		72.8	27.2		0.0		56.9	40.6		2.5	
LBO						94.9	5.1		0.0		93.2	6.7		0.2	
Private equity - Other	64.1	0.0		35.9		58.4	0.0		41.6		72.2	10.4		17.4	
Private equity	69.7	0.0		30.3		76.3	21.7		2.0		77.1	17.3		5.7	
Total Fund - Avg. Holdings	35.1	0.0 2	29.4	14.5	21.0	58.1	2.8	12.9	19.8	6.4	64.7	2.8	16.5	12.0	4.0

#### **Actual mix**

#### Actual asset mix - 2020/21 to 2024/25

(as a % of total average assets)

	Your fund <sup>1</sup>						Peer average %					Global average %				
	2025	2024	2023	2022	2021	2025		2023	_	2021	2025 2024 2023 2022 2021					
Stock - U.S.						13.5	13.1	11.8	12.3	13.9	9.7	8.7	8.5	9.8	10.5	
Stock - Europe & Far East	4.0	3.9	4.1	4.3	4.3	5.9	6.3	4.9	5.8	5.7	4.4	4.8	4.9	5.9	6.5	
Stock - Global	46.7	41.3	47.0	44.5	35.7	8.3	8.4	11.1	12.3	11.2	11.7	13.3	14.0	14.1	14.0	
Stock - other						2.4	2.2	2.7	2.7	2.8	2.4	2.7	3.2	3.2	3.2	
Stock - Emerging	2.5	2.3	2.5	2.7	3.5	2.7	2.9	3.2	4.4	4.3	2.1	2.3	2.4	3.0	3.2	
Stock - ACWI x U.S.						3.2	3.2	4.3	3.8	4.8	1.9	1.8	1.9	2.0	2.4	
Stock - Aggregate	53.2	47.5	53.6	51.6	43.4	35.9	36.1	38.1	41.3	42.6	32.3	33.6	34.8	38.0	39.8	
Fixed income - U.S.				0.0	0.1	5.8	5.3	5.5	5.1	5.7	9.1	7.8	6.8	6.4	6.4	
Fixed income - EAFE						4.4	4.3	4.6	4.9	4.7	2.1	2.4	2.3	2.6	2.6	
Fixed income - Global	14.1	15.7	10.7	9.4	8.2	4.1	4.7	4.4	4.5	3.9	2.0	2.3	2.4	2.4	2.4	
Fixed income - other						0.7	0.5	0.8	0.9	1.7	4.8	5.0	5.2	4.9	4.7	
Fixed income - Long bonds						7.1	7.0	6.5	6.9	5.9	12.5	10.6	11.3	12.2	12.8	
Fixed income - Emerging						1.8	1.9	2.0	2.1	2.0	1.0	0.9	1.0	1.2	1.2	
Fixed income - Inflation indexed						2.2	1.9	1.9	2.0	1.5	1.7	2.0	1.7	1.5	1.4	
Fixed income - High yield						1.4	1.1	1.0	0.9	1.1	1.3	1.0	1.1	1.2	1.1	
Fixed income - Bundled LDI						2.1	1.9	1.6	1.5	1.3	3.3	3.7	3.4	3.4	3.2	
Fixed income - Convertibles						0.0	0.0				0.0	0.0	0.1	0.1	0.0	
Public mortgages						0.1	0.1	0.0			0.1	0.1	0.1	0.1	0.1	
Cash			10.0	16.2	21.6	2.0	1.7	1.7	2.2	2.9	1.1	1.1	1.5	1.4	1.5	
Fixed income - Aggregate	14.1	15.7	20.7	25.7	29.9	31.9	30.8	30.3	31.3	31.3	39.4	37.7	37.6	37.8	38.0	
Commodities									0.1	0.7	0.2	0.1	0.2	0.2	0.2	
Infrastructure	0.5	1.1	1.9	1.6	2.0	2.5	2.4	2.3	1.8	1.7	3.8	4.1	3.7	2.6	2.3	
Natural resources	5.6	5.7	5.9	5.2	6.4	0.9	0.9	0.8	0.6	0.7	0.4	0.5	0.4	0.4	0.3	
REITs						0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.5	0.6	0.5	
Real estate ex-REITs	5.1	4.4	2.7	0.9	0.7	10.1	10.0	10.0	7.9	7.6	6.5	6.6	6.9	5.5	5.3	
Other real assets	0.6					0.1	0.1	0.0	0.0	0.0	0.2	0.2	0.1	0.2	0.2	
Other listed real assets						0.2	0.2	0.2	0.1		0.1	0.2	0.2	0.1	0.1	
Real assets - Aggregate	11.9	11.2	10.5	7.7	9.0	14.0	14.2	14.2	11.3	11.5	12.0	12.8	12.7	10.1	9.7	
Hedge funds	5.1	6.5	7.1	5.6	6.0	3.7	4.0	4.0	3.8	3.7	2.9	3.1	3.2	3.1	3.0	
Global TAA						0.1	0.1	0.2	0.2	0.2	0.4	0.3	0.4	0.6	0.9	
Risk parity						1.0	1.0	1.1	1.2	1.5	0.2	0.2	0.3	0.4	0.4	
Private mortgages						0.3	0.3	0.3	0.3	0.3	0.7	0.6	0.8	0.6	0.6	
Private credit						3.3	3.2	2.6	2.0	1.7	3.2	3.1	2.5	2.3	1.6	
Private equity - Diversified	1.1	0.9	0.9	0.6	0.7	7.4	7.3	6.8	5.6	4.5	6.4	6.2	6.0	5.1	4.2	
Venture capital	0.4	0.3	0.3	0.0		0.6	0.5	0.6	0.5	0.4	0.4	0.4	0.3	0.3	0.3	
LBO						1.0	1.0	0.9	0.8	0.7	1.2	1.0	0.8	0.7	0.6	
Private equity - Other	7.9	8.3	8.0	6.1	7.2	0.5	0.8	0.7	0.6	0.6	0.2	0.3	0.2	0.2	0.2	
Private equity	9.4	9.6	9.1	6.7	7.9	9.5	9.6	9.0	7.5	6.2	8.2	7.8	7.3	6.4	5.3	
Derivatives/Overlays Mkt Value	6.4	9.5	-1.0	2.8	3.8	0.3	0.6	0.1	1.0	0.9	0.7	0.7	0.3	0.7	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	19	20	20	19	20	237	287	303	295	312	
Median Assets (\$ billions)	80.0	69.3	57.8	57.9	46.1	68.1	63.9	60.0	59.1	51.7	14.0	15.3	13.2	15.5	12.2	

<sup>1.</sup> Your asset mix is based on average assets rather than year-end.

#### **Policy mix**

#### Policy asset mix - 2020/21 to 2024/25

(as a % of total assets)

	Your fund %					Peer average %					Global average %				
	2025	2024	2023	2022	2021	2025	2024	2023	2022	2021	2025	2024	2023	2022	2021
Stock - U.S.						13.2	13.2	12.5	11.2	12.5	8.7	8.2	8.3	8.5	9.6
Stock - Europe & Far East	5.0	5.0	5.0	5.0	5.0	4.0	3.9	3.3	3.7	3.7	4.0	4.3	4.4	5.2	5.8
Stock - Global	68.5	69.0	67.8	75.0	65.0	12.0	12.6	14.5	17.2	15.0	13.8	14.8	15.6	16.1	15.8
Stock - other						3.2	2.3	2.4	2.5	2.3	2.5	3.1	3.3	3.2	3.2
Stock - Emerging	6.5	6.0	7.3		10.0	2.6	2.7	3.2	3.9	3.8	1.8	1.9	2.1	2.6	2.7
Stock - ACWI x U.S.						3.6	4.3	5.0	4.3	5.2	2.0	2.0	2.1	1.9	2.3
Stock - Aggregate	80.0	80.0	80.0	80.0	80.0	38.5	39.1	40.9	42.8	42.5	32.9	34.3	35.8	37.7	39.4
Fixed income - U.S.						6.1	5.6	5.5	4.9	6.0	7.8	8.0	7.1	7.0	6.8
Fixed income - EAFE						4.5	4.8	4.8	5.3	4.8	2.2	2.6	2.6	2.7	2.7
Fixed income - Global	20.0	20.0	20.0	20.0	20.0	6.2	5.9	5.6	6.1	7.0	2.4	2.7	2.6	2.9	2.7
Fixed income - other						1.0	0.8	0.8	0.7	1.4	5.5	5.3	5.6	5.0	4.7
Fixed income - Long bonds						7.3	7.0	7.6	8.0	6.7	15.3	12.4	13.1	13.6	13.3
Fixed income - Emerging						1.9	2.0	2.1	2.1	2.0	0.9	0.8	1.0	1.1	1.1
Fixed income - Inflation indexed						2.6	2.5	2.3	2.4	2.9	1.9	2.2	1.9	1.8	1.6
Fixed income - High yield						1.2	1.0	0.8	0.9	1.1	1.2	0.9	0.9	1.1	1.1
Fixed income - Bundled LDI						2.2	2.1	1.4	1.4		3.3	3.5	3.1	3.1	3.2
Fixed income - Convertibles											0.0	0.0	0.0	0.0	0.0
Public mortgages						0.2	0.1	0.1			0.2	0.2	0.1	0.1	0.1
Cash						0.2	0.3	0.9	0.6	1.2	0.0	0.1	0.1	0.1	0.2
Fixed income - Aggregate	20.0	20.0	20.0	20.0	20.0	33.5	32.3	32.3	32.8	33.4	41.2	39.4	38.9	39.0	38.0
Commodities						0.1	0.1	0.1	0.1	0.8	0.1	0.1	0.1	0.2	0.3
Infrastructure						2.3	2.3	2.0	2.0	1.6	3.6	3.9	3.9	3.1	2.8
Natural resources						1.0	0.4	0.2	0.2	0.2	0.4	0.4	0.3	0.3	0.3
REITs						0.1	0.1	0.1	0.1	0.2	0.3	0.4	0.4	0.5	0.5
Real estate ex-REITs						9.4	9.0	8.6	7.8	7.8	6.9	6.7	6.6	6.2	5.9
Other real assets						0.1	0.1	0.1			0.2	0.2	0.2	0.2	0.2
Other listed real assets						0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.1
Real assets - Aggregate						13.0	12.5	11.8	10.7	11.2	12.1	12.6	12.4	11.1	10.8
Hedge funds						3.0	2.8	3.1	3.2	3.7	2.2	2.3	2.5	2.4	2.7
Global TAA							0.4	0.2	0.2	0.3	0.3	0.4	0.4	0.5	0.9
Risk parity						1.1	1.0	1.2	1.3	1.2	0.2	0.2	0.3	0.4	0.4
Private mortgages						0.3	0.3	0.4	0.4	0.4	0.7	0.6	0.8	0.7	0.7
Private credit						3.3	3.4	2.8	2.3	1.6	3.2	3.1	2.6	2.5	1.8
Private equity - Diversified						6.5	6.8	6.2	5.6	5.1	6.3	6.1	5.5	4.9	4.6
Venture capital						0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
LBO						0.3	0.3	0.3	0.3	0.3	0.7	0.6	0.5	0.5	0.5
Private equity - Other						0.3	0.6	0.5	0.3	0.4	0.1	0.2	0.2	0.1	0.1
Private equity						7.3	7.9	7.1	6.3	5.8	7.3	7.0	6.2	5.7	5.3
Total Fund	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Count	1	1	1	1	1	19	20	20	19	20	236	284	299	292	312

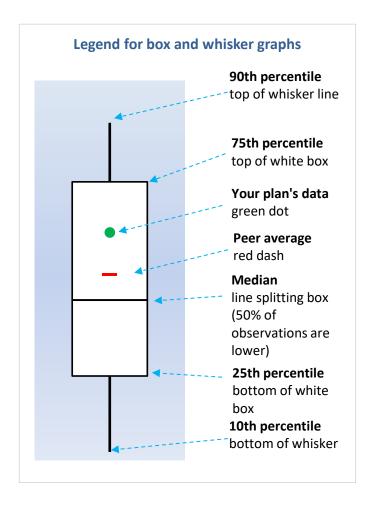
### 3

### **Returns, Benchmarks and Value Added**

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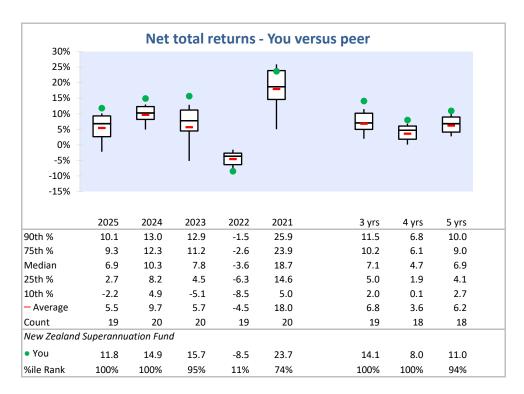
#### Interpreting box and whisker graphs

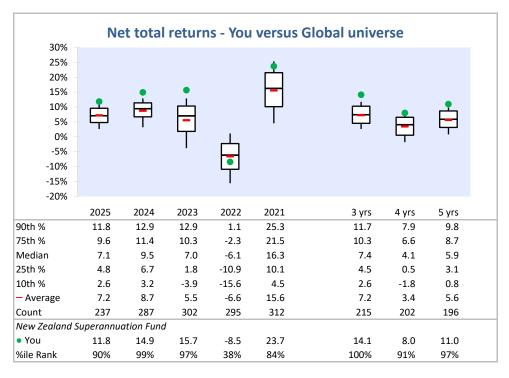
Box and whisker graphs are used extensively in this report because they show visually where you rank relative to all observations. At a glance you can see which quartile your data falls in.



#### **Net total returns**

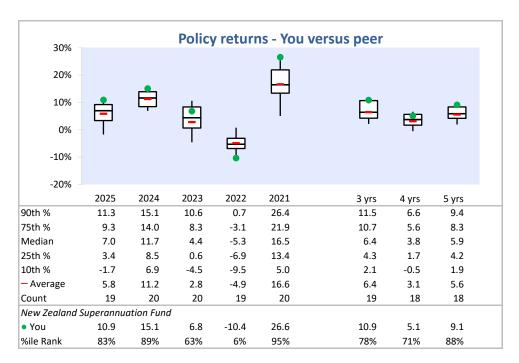
Your 5-year net total return of 11.0% was among the highest in your peer group and among the highest in the Global universe. Comparisons of total return do not help you understand the reasons behind relative performance. To understand the relative contributions from policy asset mix decisions and implementation decisions we separate total return into its more meaningful components - policy return and implementation value added.

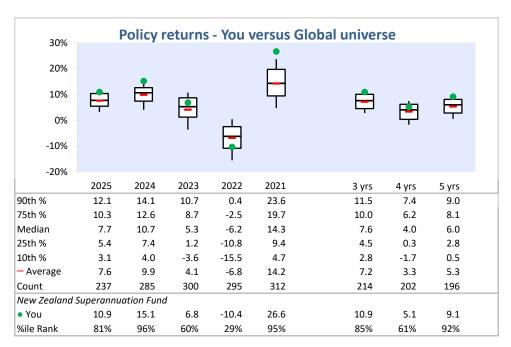




#### **Policy returns**

Your 5-year policy return of 9.1% was among the highest in your peer group and among the highest in 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.

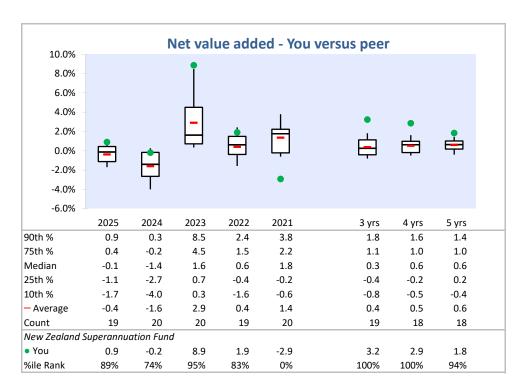


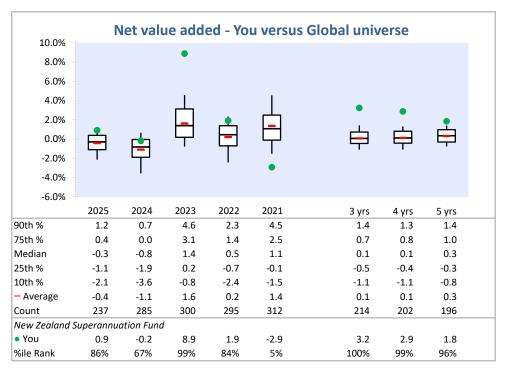


To enable fairer comparisons, the policy returns of all participants except your fund were adjusted to reflect private equity benchmarks based on lagged, investable, public-market indices. The correlation between your private equity returns and the benchmark based on investable, public market indices lagged by 85 business days is 0.85 versus a correlation of -0.35 using your reported benchmarks. Refer to the appendix of this section for details.

#### Net value added

Your 5-year net value added of 1.8% was among the highest in your peer group and among the highest in the Global universe. Net value added is the difference between your net total return and your policy return.





## Net returns by asset class

	Your fund %					Pe	er av	erage	%			Glo	bal a	verag	e %			
Asset class	2025	2024	2023	2022	2021	5-yr1	2025	2024	2023	2022	2021	5-yr <sup>1</sup>	2025	2024	2023	2022	2021	5-yr <sup>1</sup>
Stock - U.S.							9.8	24.9	18.2	-10.5	41.2	16.2	11.2	21.8	18.2	-11.2	40.1	14.8
Stock - Europe & Far East	5.5	-2.6	15.9	-25.2	37.6	4.2	12.1	8.7	15.5	-13.1	33.5	8.7	16.8	11.2	16.0	-13.1	32.3	11.5
Stock - Global	13.1	22.1	13.0	-5.4	31.5	14.2	2.2	16.4	12.9	-10.8	32.6	10.3	11.7	18.9	17.2	-12.5	32.4	12.8
Stock - other							17.2	7.6	24.6	-29.1	113.7	12.8	17.6	10.9	17.4	-14.9	35.0	13.1
Stock - Emerging	12.7	11.4	-0.8	-21.7	41.4	6.6	7.4	7.7	0.4	-19.2	33.6	7.0	13.1	14.7	1.2	-19.8	35.5	7.6
Stock - ACWI x U.S.							18.9	14.0	13.5	-16.6	40.9	12.7	18.9	13.0	11.0	-18.0	39.2	11.8
Stock - Aggregate	12.5	19.6	12.5	-7.9	32.9	13.1	11.1	18.3	15.3	-10.8	35.1	12.5	13.7	17.6	15.5	-12.1	34.6	12.9
Fixed income - U.S.				3.3	2.3		4.4	3.1	0.4	-2.3	-0.9	0.0	3.2	4.4	-5.7	-8.0	1.9	-0.8
Fixed income - EAFE							4.3	4.4	-3.0	-12.7	3.1	-1.4	5.3	5.3	-8.1	-11.8	2.2	-1.5
Fixed income - Global	5.7	3.4	-2.6	-6.0	-2.5	-0.5	3.7	5.8	-4.4	-6.2	-0.1	-1.2	6.8	6.8	-1.4	-6.6	-1.8	-0.3
Fixed income - other							13.2	8.6	11.8	-2.3	-6.7	3.2	11.1	10.0	3.6	-7.5	-2.2	3.1
Fixed income - Long bonds							-0.1	-2.1	-0.5	-19.4	-4.8	-7.4	3.9	-0.8	0.6	-19.4	-5.7	-4.9
Fixed income - Emerging							-0.5	11.3	7.4	-13.6	2.7	0.6	2.3	11.1	5.8	-16.2	2.3	0.4
Fixed income - Inflation indexed							3.0	3.7	0.9	-7.0	1.1	-0.2	5.0	2.0	-2.7	-9.8	0.6	1.0
Fixed income - High yield							6.6	7.0	11.8	-11.2	11.8	4.4	8.3	8.4	11.9	-10.7	14.0	5.8
Fixed income - Bundled LDI								1.9	-59.7	-10.7			0.5	-4.8	-15.3	-15.9	5.1	-11.3
Public mortgages							6.7	2.2	-13.1				10.2	3.4	2.9	-7.1	-1.0	1.2
Fixed income - Convertibles							12.6	1.6					10.0	1.8	13.0	-22.6	22.1	
Cash			7.4	2.3	2.2		2.0	4.1	1.4	-0.8	0.3	1.1	3.6	4.6	3.0	-0.4	-0.2	2.5
Fixed income - Aggregate	5.7	3.4	2.2	-0.7	0.9	2.3	3.0	4.0	-1.7	-9.8	1.1	-0.7	4.5	3.8	-1.7	-11.9	0.7	-1.4
Commodities										49.1	39.3		-0.3	18.8	-26.9	30.5	73.2	15.3
Infrastructure	5.6	8.0	-7.0	18.3	-14.8	1.3	17.5	7.9	3.6	6.2	-2.1	7.2	26.8	11.5	9.3	6.1	2.9	10.8
Natural resources	2.0	10.6	9.2	64.8	-10.3	12.7	-2.5	-14.4	13.3	79.7	-22.6	5.4	1.8	-15.5	13.0	101.4	-29.7	6.0
REITs							9.6	8.3	-4.2	-8.9	41.3	7.7	8.9	6.6	0.8	-15.0	39.6	6.7
Real estate ex-REITs	5.4	19.9	12.8	47.9	-32.1	7.4	5.5	-4.9	1.2	49.9	-20.5	3.7	1.5	-5.7	1.2	47.1	-24.2	0.8
Other real assets	-22.2						0.7	-14.2	14.2	-1.5	-7.1	5.9	4.5	6.5	24.0	5.7	-6.8	2.8
Real assets - Aggregate	2.3	14.2	7.2	53.4	-13.0	10.8	8.0	-2.7	1.9	43.7	-13.3	6.0	8.5	-0.5	3.2	34.1	-10.8	5.2
Hedge funds	4.1	10.4	15.6	-8.6	6.4	5.3	5.4	1.6	22.7	-5.1	10.6	4.9	9.4	5.5	23.0	-9.6	12.4	7.1
Global TAA								10.3	4.5	-9.0	2.0		6.6	7.2	13.8	-11.0	11.8	6.2
Risk parity							11.3	36.4	8.4	-13.3	8.0	4.6	10.6	14.3	2.5	-10.6	11.3	5.1
Private mortgages							7.3	5.5	-8.8	-4.8	-0.2	-0.9	8.8	3.4	6.3	-3.9	-2.4	1.4
Private credit							11.4	7.1	18.6	-3.7	21.8	12.5	10.7	8.0	19.1	-3.2	10.5	9.3
Private equity - Diversified	8.9	-3.7	4.8	-9.7	33.9	5.8	-1.0	19.7	10.3	8.3	30.7	12.8	-0.3	19.2	11.0	8.2	33.5	13.7
Venture capital	-8.0	-26.3	14.0	-34.5			-5.0	4.2	0.6	24.6	53.6	12.1	-5.0	8.7	1.7	20.9	43.8	12.7
LBO							-9.1	22.3	13.2	14.0	32.8	12.6	-1.5	22.9	12.3	8.1	33.5	14.6
Private equity - Other	9.3	1.3	25.2	-9.5	8.0	6.3	8.0	22.6	14.1	-13.3	21.8	8.9	0.5	19.6	13.0	-7.8	29.3	11.5
Private equity	8.6	-0.2	22.9	-9.6	10.3	5.9	0.2	20.6	10.9	9.9	32.0	13.7	0.2	18.6	11.0	9.6	33.7	14.1
Total Fund Return	11.8	14.9	15.7	-8.5	23.7	11.0	5.5	9.7	5.7	-4.5	18.0	6.2	7.2	8.7	5.5	-6.6	15.6	5.6

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.

 $<sup>{\</sup>bf 1.}\ {\bf The}\ {\bf 5-year}\ {\bf return}\ {\bf number}\ {\bf only}\ {\bf includes}\ {\bf funds}\ {\bf with}\ {\bf continuous}\ {\bf data}\ {\bf over}\ {\bf the}\ {\bf last}\ {\bf 5}\ {\bf years}.$ 

## Benchmark returns by asset class

		Your fund %					PΔ	er av	erage	%			Glo	hal a	verag	e %		
Asset class	2025					5-vr1	2025			_		5_vr1	2025			_		5-vr1
Stock - U.S.	2023	2024	2023	2022	2021	J-yı	10.4	22.6		-10.2	41.1	15.1	11.8	22.3		-11.7	41.2	14.9
Stock - Europe & Far East	7.5	-1.5	16.0	-24.8	34.7	4.5	11.8	10.3		-13.4	31.4	9.5	16.5	11.6		-11.7	29.6	11.2
Stock - Global	12.8	20.6	9.8	-24.8 -9.8	33.1	12.4	7.5	19.0	14.2	-7.3	30.2	11.5	13.5	19.9		-12.7	31.3	13.3
Stock - other	12.0	20.0	9.0	-9.0	33.1	12.4	11.3	8.0		-7.5	30.6	13.3	12.1	11.3	16.8		32.3	12.2
	12.0	11 5	2.2	1.0	26.0	11 1	8.7	8.1	21.7		34.1		13.4					7.2
Stock - Emerging	12.8	11.5	-2.2	1.8	36.9	11.4	17.8			-15.9		7.9		13.7		-20.3	35.3	
Stock - ACWI x U.S.	12.4	10.5	0.1	10.7	22.7	11.7	-	13.3		-17.3	35.7	10.9	18.1	12.1		-18.4	36.2	10.4
Stock - Aggregate	12.4	18.5	9.1	-10.7	33.7	11.7	10.9	18.8		-10.3	35.0	12.2	14.2	18.2		-12.0	33.9	12.9
Fixed income - U.S.				-4.0	-3.5		4.5	3.3	1.8	-4.3	-1.0	0.4	2.3	3.7	-5.4	-8.4	1.0	-1.3
Fixed income - EAFE							5.5	4.1		-13.1	2.7	-1.6	6.0	4.5		-12.0	1.8	-1.3
Fixed income - Global	5.5	3.8	-2.3	-6.2	-2.4	-0.4	1.9	4.6	-4.4	-5.9	-0.7	-1.4	6.0	6.0	-0.6	-7.5	-3.0	-0.1
Fixed income - other							9.8	10.0	6.5	-5.0	-6.7	2.3	10.2	9.7	2.1	-8.5	-2.7	2.0
Fixed income - Long bonds							3.4	-1.5		-19.8	-5.9	-5.7	3.2	-1.4		-19.5	-7.0	-5.3
Fixed income - Emerging							-3.1	10.4	5.9	-11.8	1.5	-0.2	1.3	11.0	5.7		1.9	-0.1
Fixed income - Inflation indexed							1.2	2.7	-9.5	-9.8	1.6	-1.9	4.4	1.4	-4.4	-9.9	1.3	0.5
Fixed income - High yield							7.0	8.2		-11.7	12.3	4.1	8.5	9.1	10.6	-11.9	13.6	5.3
Fixed income - Bundled LDI							-0.7	2.3	-59.6	-10.7			-1.7	-7.2	-15.9	-17.8	4.9	-10.4
Public mortgages							5.3	5.9	-12.0				8.7	2.7	3.9	-8.4	-1.4	0.2
Fixed income - Convertibles							10.0	2.1					10.1	4.6	11.8	-17.5	24.9	
Cash	4.6	5.7	3.8	2.3	0.4	3.3	2.4	4.2	2.1	-0.5	0.2	1.6	3.9	5.0	3.4	0.1	0.0	2.4
Fixed income - Aggregate	5.5	3.8	-2.3	-6.2	-2.4	-0.4	2.2	3.2	-3.0	-11.0	-0.2	-1.9	3.5	2.4	-1.8	-13.4	-0.7	-2.6
Commodities							1.0	16.4	-34.4	32.9	65.4	8.2	-3.3	17.5	-27.0	31.1	73.1	14.6
Infrastructure	9.9	12.8	-21.0	16.3	0.0	2.6	22.1	13.8	-3.6	4.2	0.2	5.5	25.7	12.4	3.5	3.4	2.9	8.7
Natural resources	7.5	10.4	-15.5	60.9	-4.6	9.0	3.4	-7.4	2.3	87.8	-19.6	5.7	2.2	-15.9	8.5	103.7	-26.5	5.2
REITs							4.2	8.5	-7.1	-16.9	36.7	4.5	9.9	5.5	0.3	-16.0	38.6	7.3
Real estate ex-REITs	11.9	16.6	-20.3	28.0	-11.9	3.2	5.9	-3.1	-2.9	46.4	-20.9	1.8	3.8	-2.6	-0.2	45.6	-23.6	1.6
Other real assets	11.3						10.1	7.4	5.5	10.4	7.5	14.2	8.9	11.6	13.4	5.2	-1.7	4.2
Real assets - Aggregate	9.7	13.1	-17.7	48.0	-4.2	7.7	8.1	-1.2	-2.9	40.5	-12.5	4.9	9.0	0.9	1.4	32.5	-10.2	5.1
Hedge funds	6.0	7.8	9.0	-13.5	14.6	4.3	1.3	6.3	19.6	-11.4	13.9	4.9	7.1	6.3	18.3	-12.7	13.9	5.9
Global TAA									2.0	-3.2	14.7		6.3	7.5	12.4	-9.8	12.0	4.8
Risk parity							16.4	5.4	12.1	-10.7	8.3	5.5	13.9	6.3	7.8	-9.6	11.5	4.4
Private mortgages							5.5	6.3	-7.7	-11.1	0.8	-1.5	7.4	4.5	2.2	-8.6	-1.7	0.5
Private credit							9.5	8.5	15.0	-9.8	10.7	5.9	10.2	9.4	14.2	-8.9	9.4	6.8
Private equity - Diversified	14.1	22.1	-14.5	-2.3	26.5	8.0	4.1	26.7	-8.6	12.6	17.0	9.7	2.8	24.9	-5.9	13.9	17.1	10.5
Venture capital	14.0		-15.1	-2.3			7.0	26.4	-9.9	10.2	18.3	10.2	2.8	25.0	-6.3	13.5	17.3	10.4
LBO							0.0	27.2	-9.0	13.5	17.4	10.2	1.7	25.5	-6.4	13.4	18.0	10.2
Private equity - Other	10.1	15.0	-11.1	-7.6	22.8	5.0	5.6	24.8	-10.1	8.8	16.1	7.1	3.3	24.2	-6.5	13.1	15.8	9.4
Private equity	10.7	15.9	-11.6	-7.1	23.1	5.4	3.8	26.4	-8.5	12.3	16.8	9.5	2.7	25.0	-5.8	14.0	17.1	10.5
Total Policy Return	10.9	15.1		-10.4	26.6	9.1	5.8	11.2	2.8	-4.9	16.6	5.6	7.6	9.9	4.1	-6.8	14.2	5.3
1 The Francisco and an arrival						J.1		11.2	2.0	7.5	10.0	5.0	7.0	٥.٥	7.1	0.0	17.2	J.J

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

<sup>2.</sup> 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. The correlation between your private equity returns and the benchmark based on investable, public market indices lagged by 85 business days is 0.85 versus a correlation of -0.35 using your reported benchmarks. Refer to the appendix of this section for details.

## Net value added by asset class

		Υ	our f	und %	6			Pe	er av	erage	%			Glo	bal av	/erage	e %	
Asset class	2025	2024	2023	2022	2021	5-yr <sup>1</sup>	2025	2024	2023	2022	2021	5-yr <sup>1</sup>	2025	2024	2023	2022	2021	5-yr <sup>1</sup>
Stock - U.S.						,	-0.6	2.3	0.1	-0.2	0.1	0.2	-0.8	-0.5	0.2	0.5	-0.6	-0.1
Stock - Europe & Far East	-2.0	-1.1	-0.2	-0.4	2.9	-0.3	0.3	-1.6	-1.7	0.2	2.0	-0.8	0.5	-0.6	-1.2	-0.4	2.7	0.3
Stock - Global	0.4	1.5	3.2	4.4	-1.6	1.8	-4.5	-2.8	-0.7	-4.9	3.1	-1.6	-1.1	-1.2	-0.2	-1.1	1.1	-0.5
Stock - other							0.6	-1.1	3.2	-13.6	83.1	-0.2	4.7	0.2	0.3	-0.5	5.2	0.6
Stock - Emerging	-0.1	-0.1	1.4	-23.5	4.5	-4.7	-1.4	-0.1	-1.2	-3.3	-0.5	-0.8	-0.2	1.1	-0.9	0.2	0.3	0.4
Stock - ACWI x U.S.							1.5	0.8	0.1	0.7	5.2	2.0	0.9	0.9	-1.3	0.7	3.6	1.6
Stock - Aggregate	0.1	1.0	3.4	2.8	-0.8	1.5	0.3	-0.4	1.9	-0.5	0.1	0.3	-0.2	-0.6	-0.1	-0.2	0.8	0.0
Fixed income - U.S.				7.2	5.8		-0.1	-0.2	-1.4	2.0	0.1	-0.4	0.7	0.7	-0.3	0.6	0.8	0.5
Fixed income - EAFE							-1.2	-0.4	1.1	0.4	0.4	0.2	-0.1	1.0	-1.5	0.1	0.4	-0.2
Fixed income - Global	0.2	-0.4	-0.3	0.2	-0.2	-0.1	-0.3	1.2	0.4	-0.3	0.9	0.2	0.7	0.9	-0.3	0.2	0.8	0.1
Fixed income - other							3.4	-1.4	5.2	2.7	0.0	0.9	0.6	0.5	1.1	1.1	0.2	0.9
Fixed income - Long bonds							-3.5	-0.6	-1.7	0.4	1.1	-1.7	0.5	0.5	-0.7	0.1	1.2	0.4
Fixed income - Emerging							2.4	0.6	-0.5	-1.7	1.2	0.8	0.8	0.1	0.5	-0.1	0.5	0.6
Fixed income - Inflation indexed							1.8	1.0	10.3	1.6	-1.8	1.7	0.9	0.4	1.1	0.6	-0.4	0.6
Fixed income - High yield							-0.8	-1.5	1.4	1.2	-0.5	-0.3	0.2	0.3	0.9	1.0	0.3	0.5
Fixed income - Bundled LDI								-0.4	0.0	0.0			-0.6	0.6	-1.3	0.6	0.8	-0.3
Public mortgages							1.4	-3.7	-1.0				0.9	1.5	-1.6	0.8	1.8	1.1
Fixed income - Convertibles							2.7	-0.5					-0.1	-2.8	-1.6	-2.5	-2.8	
Cash			3.6	0.0	1.8		-0.8	-0.1	-0.5	-0.3	0.0	-0.2	-0.4	-0.4	-0.3	-0.5	-0.2	0.0
Fixed income - Aggregate	0.2	-0.4	4.5	5.5	3.2	2.7	0.8	0.8	1.3	1.2	1.4	1.2	1.0	1.4	0.1	1.5	1.4	1.0
Commodities										-0.7	-26.1		2.4	1.3	-0.1	-3.5	-1.0	-0.2
Infrastructure	-4.3	-4.8	14.0	2.0	-14.8	-1.3	-5.3	-5.5	7.2	1.9	-2.3	1.4	1.8	-1.0	5.8	2.4	-0.1	2.3
Natural resources	-5.5	0.2	24.7	3.9	-5.7	3.7	-7.4	-4.9	6.7	-8.2	-3.1	2.0	0.8	1.0	4.1	-2.2	-3.6	1.1
REITs							2.9	-0.2	3.3	8.0	4.6	1.9	-0.5	0.8	-0.8	0.7	1.8	-0.3
Real estate ex-REITs	-6.5	3.3	33.1	19.9	-20.2	4.2	-0.4	-1.8	3.9	3.7	0.4	2.0	-2.2	-2.7	1.2	1.9	-0.6	-0.7
Other real assets	-33.5						-22.9	-108.2	1.0	-11.8	-14.6		-4.4	-8.0	17.5	-0.8	-5.0	0.2
Real assets - Aggregate	-7.4	1.2	25.0	5.4	-8.8	3.2	-0.1	-1.5	4.7	3.1	-0.8	1.5	-0.4	-1.2	1.7	2.2	-1.0	0.2
Hedge funds	-1.9	2.6	6.6	4.9	-8.2	0.9	4.5	0.2	3.2	7.1	-3.4	2.2	2.2	-0.5	3.7	3.0	-1.8	1.5
Global TAA									2.5	-5.8	-17.2		1.7	0.1	1.4	-1.4	-1.4	2.0
Risk parity							-5.1	0.0	-0.4	-2.7	-0.2	-0.9	-2.0	3.6	-3.4	-0.8	-1.1	-0.7
Private mortgages							1.8	-3.6	-1.2	6.2	-1.0	0.5	1.4	-1.3	3.8	4.5	-1.0	1.0
Private credit							1.3	-0.2	4.3	6.1	11.0	3.3	0.7	-1.1	4.6	5.3	0.5	2.4
Private equity - Diversified	-5.2	-25.8	19.3	-7.4	7.4	-2.2	-5.1	-6.9	18.9	-4.5	14.1	3.4	-3.1	-5.8	17.0	-5.7	16.3	3.2
Venture capital	-22.0	-48.5	29.1	-32.2			-12.0	-22.2	10.5	14.4	35.3	1.9	-7.9	-16.8	8.0	8.8	25.5	2.3
LBO							-9.0	-4.9	22.2	0.5	15.5	2.5	-3.3	-3.1	18.7	-4.8	14.9	4.5
Private equity - Other		-13.7	36.4		-14.8	1.3	0.6	-1.0	24.9	-21.7	5.6	1.8	-3.2	-4.6	19.4	-20.2	13.0	2.2
Private equity		-16.1	34.5	-2.5	-12.8	0.5	-3.7	-5.8	19.4	-2.4	15.1	4.5	-2.7	-6.3	17.1	-4.3	16.6	3.7
Total Net Value Added	0.9	-0.2	8.9	1.9	-2.9	1.8	-0.4	-1.6	2.9	0.4	1.4	0.6	-0.4	-1.1	1.6	0.2	1.4	0.3

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

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.

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

<sup>2.</sup> 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. The correlation between your private equity returns and the benchmark based on investable, public market indices lagged by 85 business days is 0.85 versus a correlation of -0.35 using your reported benchmarks. Refer to the appendix of this section for details.

## Your policy return and value added calculation - 2024/25

## 2024/25 Policy Return and Value Added

	Policy	Benchmark		Net	Value
Asset class	weight	Description	Return	return	added
Stock - Europe & Far East	5.0%	NZX 50 Custom	7.5%	5.5%	-2.0%
Stock - Global	68.5%	MSCI World Climate Paris Aligned Index	12.8%	13.1%	0.4%
Stock - Emerging	6.5%	MSCI Emerging Markets Climate Paris Aligned Index	12.8%	12.7%	-0.1%
Fixed income - Global	20.0%	Barclays Global Aggregate	5.5%	5.7%	0.2%
Cash		Cash Benchmark	4.6%		
Infrastructure		Infrastructure BM	9.9%	5.6%	-4.3%
Natural resources		Natural Resources BM	7.5%	2.0%	-5.5%
Real estate ex-REITs		Real Estate BM	11.9%	5.4%	-6.5%
Other real assets		Other Non-Listed Assets BM	11.3%	-22.2%	-33.5%
Hedge funds		Hedge Fund BM	6.0%	4.1%	-1.9%
Private equity - Diversified		Diversified or All BM	14.1%	8.9%	-5.2%
Venture capital		Venture Capital BM	14.0%	-8.0%	-22.0%
Private equity - Other		Other Non-Listed Assets BM	10.1%	9.3%	-0.8%
Total	100.0%				
Net Actual Return (reported by yo	ou)				11.8%
Calculated Policy Return = sum	of (policy	weights X benchmark returns)		11.0%	
Adjustment to reflect rebalanci	ng and ov	rerlay impacts		<u>-0.1%</u>	
Policy Return (reported by you)					<u>10.9%</u>
Net Value Added (Net Return - Po	olicy Retur	n)			0.9%

## Your policy return and value added calculations - 2020/21 to 2023/24

#### 2023/24 Policy Return and Value Added

	Policy	Benchma	rk	Net	Value						
Asset class	weight	Description	Return	return	added						
Stock - Europe & Far East	5.0%	NZX 50 Custom	-1.5%	-2.6%	-1.1%						
Stock - Global	69.0%	Mariahanan Walinda sana Mariahanan tahayar da	20.6%	22.1%	1.5%						
Stock - Emerging	6.0%		11.5%	11.4%	-0.1%						
Fixed income - Global	20.0%	Barclays Global Aggregate	3.8%	3.4%	-0.4%						
Cash		Cash BM	5.7%								
Infrastructure		Infrastructure BM	12.8%	8.0%	-4.8%						
Natural resources		Natural Resources BM	10.4%	10.6%	0.2%						
Real estate ex-REITs		Real Estate BM	16.6%	19.9%	3.3%						
Hedge funds		Hedge Fund BM	7.8%	10.4%	2.6%						
Private equity - Diversified		Diversified or All BM	22.1%	-3.7%	-25.8%						
Venture capital		Venture Capital BM	22.2%	-26.3%	-48.5%						
Private equity - Other		Other Non-Listed Assets BM	15.0%	1.3%	-13.7%						
Total	100.0%										
Net Return (reported by you)					14.9%						
Calculated policy return (sum	n: Policy w	eights x benchma	ırks)	15.6%							
Adjustment to reflect rebalancing and overlay impacts <u>-0.5%</u>											
Policy return (reported by you	1)				<u>15.1%</u>						
Net Value Added (Net Return	- Policy Re	turn)			-0.2%						

#### 2021/22 Policy Return and Value Added

	Policy	Benchma	rk	Net	Value						
Asset class	weight	Description	Return	return	added						
Stock - Europe & Far East	5.0%	NZX 50 Custom	-24.8%	-25.2%	-0.4%						
Stock - Global	75.0%	MSCI All Countries World Index Custom	-9.8%	-5.4%	4.4%						
Stock - Emerging		MSCI All Countries World Index Custom	1.8%	-21.7%	-23.5%						
Fixed income - U.S.		Barclays Global Aggregate	-4.0%	3.3%	7.2%						
Fixed income - Global	20.0%	Barclays Global Aggregate	-6.2%	-6.0%	0.2%						
Cash		NZD Cash Benchmark	2.3%	2.3%	0.0%						
Infrastructure		Infrastructure BM	16.3%	18.3%	2.0%						
Natural resources		Natural Resources Benchmark	60.9%	64.8%	3.9%						
Real estate ex-REITs		Property BM	28.0%	47.9%	19.9%						
Hedge funds		Hedge Fund BM	-13.5%	-8.6%	4.9%						
Private equity - Diversified		Private Equity BM	-2.3%	-9.7%	-7.4%						
Venture capital		Private Equity BM	-2.3%	-34.5%	-32.2%						
Private equity - Other		Other Private Equity BM	-7.6%	-9.5%	-2.0%						
Total	100.0%										
Net Return (reported by you)					-8.5%						
Calculated policy return (sum:	Policy w	eights x benchma	ırks)	-9.8%							
Adjustment to reflect rebalancing and overlay impacts <u>-0.6%</u>											
Policy return (reported by you)					<u>-10.4%</u>						
Net Value Added (Net Return - Policy Return)											

#### 2022/23 Policy Return and Value Added

	Policy	Benchma	rk	Net	Value						
Asset class	weight	Description	Return	return	added						
Stock - Europe & Far East	5.0%	NZX 50 Custom	16.0%	15.9%	-0.2%						
Stock - Global	67.8%		9.8%	13.0%	3.2%						
Stock - Emerging	7.3%		-2.2%	-0.8%	1.4%						
Fixed income - Global	20.0%	Barclays Global Aggregate	-2.3%	-2.6%	-0.3%						
Cash		Cash BM	3.8%	7.4%	3.6%						
Infrastructure		Infrastructure BM	-21.0%	-7.0%	14.0%						
Natural resources		Natural Resources BM	-15.5%	9.2%	24.7%						
Real estate ex-REITs		Real Estate BM	-20.3%	12.8%	33.1%						
Hedge funds		Hedge Fund BM	9.0%	15.6%	6.6%						
Private equity - Diversified		Diversified or All BM	-14.5%	4.8%	19.3%						
Venture capital		Venture Capital BM	-15.1%	14.0%	29.1%						
Private equity - Other		Other Non-Listed Assets BM	-11.1%	25.2%	36.4%						
Total	100.0%										
Net Return (reported by you)					15.7%						
Calculated policy return (sum	: Policy w	eights x benchma	rks)	6.8%							
Adjustment to reflect rebalancing and overlay impacts 0.0%											
Policy return (reported by you)					6.8%						
Net Value Added (Net Return - Policy Return)											

#### 2020/21 Policy Return and Value Added

	Policy	Benchma	rk	Net	Value						
Asset class	weight	Description	Return	return	added						
Stock - Europe & Far East	5.0%	NZX 50	34.7%	37.6%	2.9%						
Stock - Global	65.0%	MSCI Developed Markets	33.1%	31.5%	-1.6%						
Stock - Emerging	10.0%	MSCI Emerging Markets	36.9%	41.4%	4.5%						
Fixed income - U.S.		Barclays Global Aggregate	-3.5%	2.3%	5.8%						
Fixed income - Global	20.0%	Barclays Global Aggregate	-2.4%	-2.5%	-0.2%						
Cash		NZD Cash Benchmark	0.4%	2.2%	1.8%						
Infrastructure		Infrastructure BM	0.0%	-14.8%	-14.8%						
Natural resources		Timber Benchmark	-4.6%	-10.3%	-5.7%						
Real estate ex-REITs		NZ Property Benchmark	-11.9%	-32.1%	-20.2%						
Hedge funds		Custom	14.6%	6.4%	-8.2%						
Private equity - Diversified		Private Equity Benchmark	26.5%	33.9%	7.4%						
Venture capital											
Private equity - Other		Private Equity Benchmark	22.8%	8.0%	-14.8%						
Total	100.0%										
Net Return (reported by you)					23.7%						
Calculated policy return (sum:	Policy w	eights x benchma	ırks)	26.5%							
Adjustment to reflect rebalancing and overlay impacts 0.1%											
Policy return (reported by you)					26.6%						
Net Value Added (Net Return - Policy Return)											

## **Profit/Loss on overlay programs**

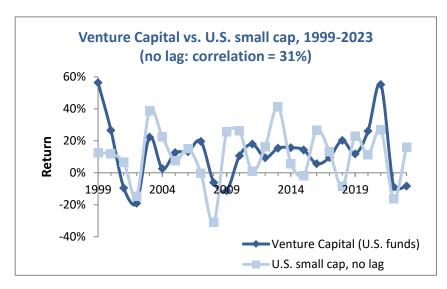
	Your	Pe	eer i	median	)	Glo	bal	media	n	
	2025	2024	202	25	202	24	202	25	202	24
Overlay type	bps	bps	bps	#	bps	#	bps	#	bps	#
Int. Discretionary Currency			65.3	2	-29.0	2	11.7	6	2.4	7
Ext. Discretionary Currency							2.4	7	6.3	8
Internal Global TAA			-14.1	2	7.2	2	2.2	6	4.0	7
External Global TAA			27.2	1			9.3	3	-2.0	2
Internal PolicyTilt TAA	108.5	-21.2	108.5	1	-21.2	1	16.4	3	0.2	5
External PolicyTilt TAA										
Internal Commodities							0.3	1	0.1	1
<b>External Commodities</b>							6.3	1	3.0	1
Internal Long/Short	0.6	2.4	1.0	2	5.5	2	1.0	4	-1.0	4
External Long/Short			-1.2	1	-1.2	1	-24.0	3	-1.2	1
Internal Other	97.7	148.2	-15.2	4	-2.4	3	-10.3	7	1.9	6
External Other							0.1	3	8.1	7

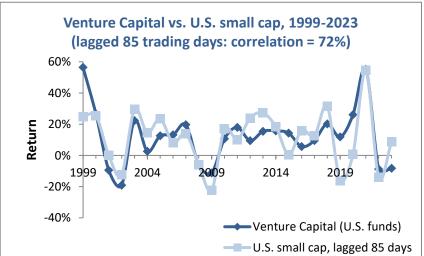
Profit/loss in basis points was calculated using total fund average holdings. This was done to measure the impact of the program at the total fund level.

#### 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 2014 the U.S. small cap index return was 5.8% versus 18.3% if lagged 85 trading days. Thus if a fund earned the average reported venture capital return for 2014 of 15.7%, they would have mistakenly believed that their value added from venture capital was 9.9% using the un-lagged benchmark versus -2.6% using the same benchmark lagged by 85 trading days.





- 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 standardized private equity benchmarks.

Benchmarks used for private equity by most participants in the CEM universe are flawed (see previous page). To enable fairer comparisons, CEM replaced the reported private equity benchmarks of all funds except yours with a standardized benchmark, which is:

- Investable. They are comprised of a blend of small cap indices that are investable.
- Lagged. CEM estimates the lag on private equity portfolios with multi-year histories by comparing annual private equity returns to public market proxies with 0 day of lag, 1 days of lag, 2 days of lag, etc. At 85 days (i.e., approximately 119 calendar days or 3.9 calendar months), the correlation between the two series is maximized for most plans.
- Regional mix adjusted based on the average estimated mix of regions in private equity portfolios for a given region.

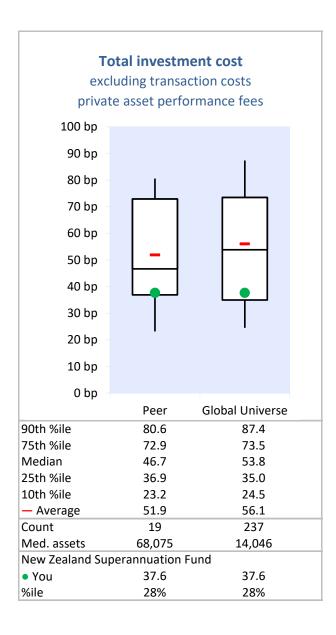
## Cost: total, benchmark, trend

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### **Comparisons of total investment cost**

Your total investment cost, excluding transaction costs and private asset performance fees, of 37.6 bps was below the peer median of 46.7 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.

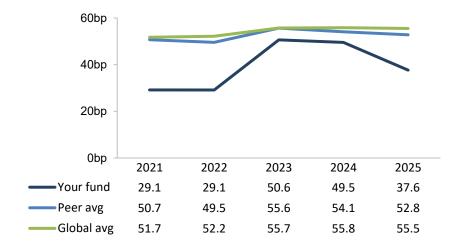


## Trend in total investment cost, you versus peers and universe

Your total investment cost, excluding transaction costs and private asset performance fees, increased from 29.1 bps in 2021 to 37.6 bps in 2025.

**Trend in total investment cost** 

(excluding transaction costs and private asset performance fees)



Trend analysis is based on 196 Global funds and 18 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.

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

<sup>\*</sup>External manager base fees represent gross contractual management fees.

- ✓ indicates cost is included.
- **x** 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 2025 total investment cost, excluding transaction costs and private asset performance fees, was 37.6 bp or \$301.1 million.

	Inter	nal	External	passive	Ext	ernal act	ive		Total <sup>1</sup>	
				onitoring	Base	Perform.	Monitor.			% of
	Passive	Active		& Other	Fees	Fees	& Other	\$000s	bps	Total
Asset management										
Stock - Europe & Far East	557	3,047			2,806	807	100	7,316		2%
Stock - Emerging	337	3,047	1,188	415	2,000	007	100	1,604		1%
Stock - Global	7,701		2,346	3,215	9,388		2,909	25,559		8%
Fixed income - U.S.	,,,,,		2,3 .0	3,213	3,300		2,303	23,333		0,0
Fixed income - Global	4,205		2,267	1,808				8,280		3%
Cash	.,_00		_,,	_,000				0,200		• , ,
Real estate ex-REITs <sup>1</sup>		2,537			1,332	-654	186	4,056		1%
Real estate ex-REITs - LP/Value a	dd¹	,			17,476	740	2,377	19,853		7%
Real estate ex-REITs - Joint ventu					970		141	1,112		0%
Real estate ex-REITs - Co-invest. <sup>1</sup>					4,488		1,443	5,931		2%
Infrastructure <sup>12</sup>					1,917	868	173	2,090		1%
Infrastructure - LP/Value add <sup>1</sup>										
Natural resources <sup>12</sup>		11,964			9,860	613	593	22,417		7%
Natural resources - LP/Value add	12				3,410	427	572	3,982		1%
Natural resources - Co-invest.1					1,967		533	2,501		1%
Other real assets <sup>12</sup>								6,412		2%
Hedge funds					43,414	24,677	2,750	70,841		24%
Private equity - Diversified - LP/V	'alue add¹				10,258	8,939	727	10,985		4%
Private equity - Diversified - FoFs	1				0	0	1	1		0%
Underlying FoF fees <sup>1</sup>					0	0				
Private equity - Diversified - Co-ir	nvest.1				523	0	162	684		0%
Venture capital - LP/Value add <sup>12</sup>					7,115	1,517	738	7,853		3%
Venture capital - Co-invest.1							144	144		0%
Private equity - Other - LP/Value	add¹	7,929			5,136	2,740	713	13,778		5%
Private equity - Other - Co-invest	. 1				14,073	-6,771	1,746	15,818		5%
Derivatives/Overlays	2,121	24,528						26,649		9%
Total asset management costs ex	cluding priva	ite asset p	erforman	ce fees				257,865	32.2bp	86%
Oversight, custodial & other asse	et related cos	ts								
Oversight of the fund								30,508		10%
Trustee & custodial								7,205		2%
Audit								1,652		1%
Other								3,877	F 41	1%
Total oversight, custodial & other			• .					43,241	5.4bp	14%
Total investment costs excluding	transaction (	costs and p	private ass	set perfor	mance fee	es		301,106	37.6bp	100%

<sup>1.</sup> Total cost excludes carry/performance fees for real estate, infrastructure, natural resources, private equity, and private debt. Performance fees are included for the public market asset classes and hedge funds.

<sup>2.</sup> CEM-imputed costs are applied. Refer to Appendix A.

## **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 (2025 - 2021)

	1	nvestme	nt costs	(\$000s)			Change	: (\$000s)		Change (%)			
	2025	2024	2023	(3000s) 2022	2021	2025	2024	(3000s) 2023	2022	2025	_	2023	2022
	2023	2024	2023	2022	2021	2023	2024	2023	2022	2023	2024	2023	2022
Asset management													
Stock - Europe & Far East	7,316	10,093	8,886	8,329	7,036	-2,777	1,207	557	1,293	-28%	14%	7%	18%
Stock - Emerging	1,604	1,554	1,786	1,665	2,181	50	-232	121	-516	3%	-13%	7%	-24%
Stock - Global	25,559	21,006	16,806	13,753	11,734	4,554	4,200	3,053	2,019	22%	25%	22%	17%
Fixed income - U.S.				314	262				52				20%
Fixed income - Global	8,280	9,288	3,916	2,598	2,473	-1,008	5,372	1,318	125	-11%	137%	51%	5%
Cash			4,851	3,454	3,296			1,397	158			40%	5%
Real estate ex-REITs <sup>1</sup>	4,056	2,022	1,124	1,023	459	2,034	898	101	564	101%	80%	10%	123%
Real estate ex-REITs - LP/Value add <sup>1</sup>	19,853	22,373	8,111	4,061	736	-2,520	14,262	4,050	3,325	-11%	176%	100%	452%
Real estate ex-REITs - Joint venture <sup>1</sup>	1,112												
Real estate ex-REITs - Co-invest.1	5,931	5,493	4,357	3,556	2,436	438	1,136	801	1,120	8%	26%	23%	46%
Infrastructure <sup>12</sup>	2,090	5,253	3,047	2,575	2,018	-3,163	2,205	472	557	-60%	72%	18%	28%
Infrastructure - LP/Value add¹		1,086	6,785	2,531	2,519		-5,700	4,254	12		-84%	168%	0%
Natural resources <sup>12</sup>	22,417	43,513	8,449	5,873	5,843	-21,096	35,064	2,576	30	-48%	415%	44%	1%
Natural resources - LP/Value add12	3,982												
Natural resources - Co-invest.1	2,501												
Other real assets <sup>12</sup>	6,412												
Hedge funds	70,841	103,943	128,550	47,124	28,515	-33,102	-24,607	81,426	18,609	-32%	-19%	173%	65%
Private equity - Diversified - LP/Value add <sup>1</sup>	10,985	8,915	13,162	12,761	11,019	2,070	-4,248	401	1,743	23%	-32%	3%	16%
Private equity - Diversified - FoFs1	1	7	819	988	1,066	-6	-813	-169	-78	-92%	-99%	-17%	-7%
Underlying FoF fees <sup>1</sup>	0	0	0	169	217			-169	-47			-100%	-22%
Private equity - Diversified - Co-invest.1	684	731	753	620		-46	-22	133		-6%	-3%	21%	
Venture capital - LP/Value add <sup>12</sup>	7,853	7,516	3,265	315		338	4,250	2,951		4%	130%	938%	
Venture capital - Co-invest.1	144	336	390	317		-191	-54	73		-57%	-14%	23%	
Private equity - Other - LP/Value add <sup>1</sup>	13,778	13,153	4,580	5,022	6,219	625	8,573	-442	-1,197	5%	187%	-9%	-19%
Private equity - Other - Co-invest.1	15,818	23,296	27,209	18,644	14,977	-7,478	-3,913	8,565	3,667	-32%	-14%	46%	24%
Derivatives/Overlays	26,649	25,842	16,135	12,669	11,365	807	9,707	3,466	1,304	3%	60%	27%	11%
Total excl. private asset perf. fees	257,865	305,417	262,981	148,361	114,370	-47,552	42,436	114,620	33,991	-16%	16%	77%	30%
Oversight, custodial & other asset	related (	costs											
Oversight of the fund	30,508	26,429	22,494	14,014	12,307	4,079	3,935	8,480	1,707	15%	17%	61%	14%
Trustee & custodial	7,205	6,521	6,275	5,510	6,980	684	246	765	-1,470	10%	4%	14%	-21%
Audit	1,652	1,327	704	612	596	325	623	92	16	24%	88%	15%	3%
Other	3,877	3,396				481				14%			
Total oversight, custodial & other	43,241	37,673	29,473	20,136	19,883	5,568	8,200	9,337	253	15%	28%	46%	1%
Total investment costs <sup>1</sup>	301,106	343,090	292,453	168,497	134,253	-41,984	50,636	123,957	34,244	-12%	17%	74%	26%
Total in basis points	37.6bp	49.5bp	50.6bp	29.1bp	29.1bp								

<sup>1.</sup> Total cost excludes carry/performance fees for real estate, infrastructure, natural resources, private equity, and private debt. Performance fees are included for the public market asset classes and hedge funds.

<sup>2.</sup> CEM-imputed costs are applied. Refer to Appendix A.

#### **Total cost versus benchmark cost**

Your fund's total investment cost, excluding transaction costs and private asset performance fees, was 9.7 bps below your benchmark cost of 47.4 bps. This implies that your fund was low cost by 9.7 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	301,106	37.6 bp
- Your fund's benchmark	378,716	47.4 bp
= Your fund's cost savings	-77,610	-9.7 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/-Sav	•
	\$000s	bps
Differences in implementation style:		
More passive	-49,329	-6.2 bp
More int. pass. % of total passive	-203	0.0 bp
More int. active % of total active	-2,047	-0.3 bp
Less evergreen % of external	2,646	0.3 bp
Less fund of funds	-2,811	-0.4 bp
More co-investment	-8,101	-1.0 bp
More overlays and unfunded strategies	20,325	2.5 bp
Total style impact	-39,519	-4.9 bp
Paying more/-less for similar services:		
External investment management	-76,834	-9.6 bp
Internal investment management <sup>1</sup>	15,771	2.0 bp
Oversight, custodial and other	22,972	2.9 bp
Total impact of paying more /-less	-38,091	-4.8 bp
Total savings	-77,610	-9.7 bp

<sup>1.</sup> Operating subsidiaries and Joint ventures are treated as Internal styles in the CEM benchmark cost model.

#### **Benchmark cost calculation**

Your 2025 benchmark cost was 47.4 basis points or 378.7 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).

	Your	Weighted	
	average	peer median	Benchmark
Asset class	assets	cost <sup>1</sup>	\$000s
	(A)	(B)	(A X B)
Asset management costs			
Stock - Europe & Far East	3,184	25.6 bp	8,148
Stock - Emerging	1,972	46.5 bp	9,171
Stock - Global	37,356	26.0 bp	96,997
Fixed income - Global	11,267	10.3 bp	11,622
Real estate ex-REITs	4,135	69.6 bp	28,791
Infrastructure	346	88.2 bp	3,054
Natural resources	4,426	70.2 bp	31,053
Other real assets	724	41.1 bp	2,977
Hedge funds	4,097	132.7 bp	54,347
Perf. fees	4,097	131.1 bp	53,716
Private equity - Diversified	970	145.4 bp	14,107
Venture capital	547	156.2 bp	8,545
Private equity - Other	6,481	45.7 bp	29,596
Overlay Programs <sup>2</sup>	79,981	0.8 bp	6,323
Benchmark for asset management	79,981	44.8 bp	358,447
Oversight, custody and other costs <sup>3</sup>			
Oversight	79,981	1.9 bp	
Trustee & custodial	79,981	0.3 bp	
Consulting	79,981	0.1 bp	
Audit	79,981	0.0 bp	
Other	79,981	0.1 bp	
Benchmark for oversight, custody, other	79,981	2.5 bp	20,270
Total benchmark cost		47.4 bp	378,716

<sup>1.</sup> 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 16 of this section.

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

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

## Cost impact of differences in implementation style

Differences in implementation style (passive vs. active, internal vs. external, etc.) relative to your peers saved you 4.9 bps.

Peer box   Peer box   Style 1   Style 2   Savings   Style 1   S										
Implementation choices			Peer bench	mark cost			•			
Passive vs active   Total assets   Passive   Active   Stock - Europe & Far East   3.184   5 bp   28 bp   -3.3 bp   29%   10%   19%   -7.762   5 tock - Global   37,356   5 bp   46 bp   -51 bp   100%   25%   -7.762   5 tock - Global   11,267   3 bp   13 bp   -9 bp   100%   25%   -7.762   -7.762   5 tock - Global   11,267   3 bp   13 bp   -9 bp   100%   25%   -7.763   -7.762   5 tock - Global   11,267   3 bp   3 bp   -9 bp   100%   25%   -7.763   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7.762   -7							Peer	More/	_	
Passive vs.active   Total assets   Passive vs.active   Passive vs.active   Passive vs.active   Passive vs.active   Passive vs.active   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,379   1,37	Implementation choices	by style	Style 1	Style 2		Your	average	-Less		bps
Stock - Europe & Far East   3,184   5 bp   28 bp   -23 bp   29%   10%   19%   -1,379   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,762   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,962   -7,9					d = b - c			-	a x d x e	
Stock - Emerging   1.972   7 bp   58 bp   -51 bp   100%   23%   77%   -7.762   510ck - Global   37.356   5 bp   46 bp   -41 bp   100%   25%   75%   -7.903   -7.903   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.793   -7.79	Passive vs active	Total assets	Passive	Active			e % of tota	l assets		
Stock - Global   11,267   3 bp   13	•	3,184	5 bp	28 bp	-23 bp	29%	10%	19%		
Fixed income - Global   11,267   3 bp   13 bp   -9 bp   100%   25%   75%   7,903   -49,329   -6.2 bp	Stock - Emerging	1,972	7 bp	58 bp			23%	77%	-7,762	
More passive   Passive   Internal   External   passive   Stock - Europe & Far East   913   5 bp   5 bp   0 bp   100%   10%   90%   11   5 tock - Europe & Far East   913   5 bp   5 bp   0 bp   100%   10%   90%   12%   5 tock - Europe & Far East   11,267   3 bp   5 bp   -2 bp   37%   25%   12%   -505   5 tock - Europe & Far East   11,267   3 bp   5 bp   -2 bp   37%   25%   12%   -505   5 tock - Europe & Far East   11,267   3 bp   4 bp   -1 bp   53%   59%   -6%   42   -203   0.0 bp   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100   100	Stock - Global	37,356	5 bp	46 bp	-41 bp	69%	48%	21%	-32,285	
Passive   Pass	Fixed income - Global	11,267	3 bp	13 bp	-9 bp	100%	25%	75%	-7,903	
Stock - Europe & Far East   913   5 bp   5 bp   5 bp   0 bp   10%   90%   11   5 bb   5 bp   5 bp   6 bp   10%   10%   90%   12   5 bb   5 bb   -4 bp   0%   32%   -32%   250   5 bb   -4 bp   0%   32%   -32%   250   5 bb   -2 bp   37%   25%   12%   -505   5 bb   -2 bb   bb	More passive								-49,329	-6.2 bp
Stock - Europe & Far East         913         5 bp         5 bp         6 bp         10 bp         10%         90%         11           Stock - Global         25,722         3 bp         5 bp         -2 bp         37%         22%         12%         -505           Fixed income - Global         11,267         3 bp         4 bp         -1 bp         53%         59%         -6%         42           More int, pass. % of total passive         Letternal active vs external active         active         active         letternal active vs external active         active         Internal active		Passive	Internal	External		Inter	nal passive	e % of		
Stock - Europe & Far East         913         5 bp         5 bp         6 bp         10 bp         10%         90%         11           Stock - Global         25,722         3 bp         5 bp         -2 bp         37%         22%         12%         -505           Fixed income - Global         11,267         3 bp         4 bp         -1 bp         53%         59%         -6%         42           More int, pass. % of total passive         Letternal active vs external active         active         active         letternal active vs external active         active         Internal active	Internal passive vs external passive	assets	passive	passive			passive			
Stock - Emerging		913	5 bp	5 bp	0 bp	100%	10%	90%	11	
Stock - Global   Capta		1,972	4 bp	8 bp	-4 bp	0%	32%	-32%	250	
Fixed income - Global   11,267   3 bp   4 bp   -1 bp   53%   59%   -6%   42				•	•		25%	12%	-505	
Nore int. pass. % of total passive					•		59%	-6%	42	
Internal active vs external active   Stock - Europe & Far East   Stock - Europe & Far East   C	More int. pass. % of total passive	,	·	·					-203	0.0 bp
Internal active vs external active   Stock - Europe & Far East   2,272   4 bp   44 bp   -40 bp   63%   41%   22%   -1,984   Stock - Global   11,634   12 bp   48 bp   -30 bp   88%   -8%   3,406   Real estate ex-REITS   4,135   22 bp   85 bp   -64 bp   15%   25%   -9%   2,475   Infrastructure   346   31 bp   108 bp   -77 bp   0%   26%   -26%   698   Natural resources   4,426   31 bp   90 bp   -59 bp   58%   33%   25%   -6,641   Private equity - Diversified   970   45 bp   145 bp   -100 bp   0%   0%   0%   0%   0%   0%   0%   0	, , , , , , , , , , , , , , , , , , ,	Active	Internal	External						
Stock - Europe & Far East   2,272    4 bp   44 bp   -40 bp   63%   41%   22%   -1,984   Stock - Global   11,634   12 bp   48 bp   -37 bp   0%   8%   -8%   3,406   Real estate ex-REITS   4,135   22 bp   85 bp   -64 bp   15%   25%   -9%   2,475   Infrastructure   346   31 bp   108 bp   -77 bp   0%   26%   -26%   698   Natural resources   4,426   31 bp   90 bp   -59 bp   58%   33%   25%   -6,641   Private equity - Diversified   970   45 bp   145 bp   -100 bp   0%   0%   0%   0%   0%   0%   0%   0	Internal active vs external active					Interna	Lactive %	of active		
Stock - Global   11,634					-40 hp				_1 09/	
Real estate ex-REITS   4,135   22 bp   85 bp   -64 bp   15%   25%   -9%   -96   698   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -98   -9	·			•	•					
Infrastructure		•		•						
Natural resources		•		•	•					
Private equity - Diversified Private equity - Other         970 (A81)         45 bp 35 bp 52 bp         145 bp 52 bp         -100 bp 35% 35%         0% 0% 0% 0% 0% 0         0           More int. active % of total active         External Exernal Exer- LP/Co & LP/Co & Fund of funds         Exernal Exer- LP/Co & Exergreen fund % of Exergreen sus LP/Co & Evergreen fund % of Exergreen fund fund fund fund fund fund fund fun				•	•					
Private equity - Other   6,481   35 bp   52 bp   -17 bp   35%   35%   0%   0   0				•						
External   Every   LP/Co &   Every   Every   Co.3 bp					•					
External   Ever-		6,481	35 bp	52 bp	-17 bp	35%	35%	0%	-	0.21
Real estate ex-REITs   3,501   68 bp   108 bp   -40 bp   9%   57%   -47%   6,601     Infrastructure   346   82 bp   112 bp   -30 bp   100%   11%   89%   -916     Natural resources   1,842   74 bp   104 bp   -29 bp   53%   48%   4%   -232     Other real assets   724   91 bp   27 bp   64 bp   0%   22%   -22%   -1,011     Hedge funds   4,097   129 bp   159 bp   -29 bp   100%   89%   11%   -1,341     Perf. fees   4,097   130 bp   140 bp   -10 bp   100%   89%   11%   -455     Less evergreen % of external   LP/Co & Fund of     LP/Co vs fund of funds   Fund of F.     Fund of Funds   Fund	More int. active % of total active		_	1		_			-2,047	-0.3 pp
Real estate ex-REITS   3,501   68 bp   108 bp   -40 bp   9%   57%   -47%   6,601     Infrastructure   346   82 bp   112 bp   -30 bp   100%   11%   89%   -916     Natural resources   1,842   74 bp   104 bp   -29 bp   53%   48%   4%   -232     Other real assets   724   91 bp   27 bp   64 bp   0%   22%   -22%   -1,011     Hedge funds   4,097   129 bp   159 bp   -29 bp   100%   89%   11%   -1,341     Perf. fees   4,097   130 bp   140 bp   -10 bp   100%   89%   11%   -455     Less evergreen % of external						Ever	_	l % of		
Infrastructure	-									
Natural resources   1,842   74 bp   104 bp   -29 bp   53%   48%   4%   -232	Real estate ex-REITs			•	•					
Other real assets         724         91 bp         27 bp         64 bp         0%         22%         -22%         -1,011           Hedge funds         4,097         129 bp         159 bp         -29 bp         100%         89%         11%         -1,341           Perf. fees         4,097         130 bp         140 bp         -10 bp         100%         89%         11%         -455           Less evergreen % of external         LP/Co & Fund of LP/Co & Fund of Funds         LP/Co & Fund of LP/Co & Fund of LP/Co & Fund of External           LP/Co vs fund of funds         Fund of Funds         LP/Co funds         LP/Co funds         Of F.           Real estate ex-REITs         3,172         103 bp         150 bp         -47 bp         100%         89%         11%         -1,691           Private equity - Diversified         970         138 bp         173 bp         -35 bp         100%         78%         22%         -737           Venture capital         547         149 bp         182 bp         -32 bp         100%         78%         22%         -383           Less fund of funds         LP/Co         Co-investment vs LP         Co-invest & of LP/Co		346		•						
Hedge funds	Natural resources	1,842	74 bp	104 bp			48%	4%	-232	
Perf. fees         4,097         130 bp         140 bp         -10 bp         100%         89%         11%         -455           Less evergreen % of external         LP/Co & Fund of LP/Co & Fund of F.         LP/Co & Fund of F.         LP/Co & Fund of LP/Co & Fund of F.         LP/Co & Fund of F.         LP/Co & Fund of F.         LP/Co & Fund of LP/Co & Fund of F.         LP/Co & Fund of LP/Co & Fund of F.         LP/Co & Fund of LP/Co & Fund of F.         LP/Co & Fund of LP/Co & Fund of F.         LP/Co & Fund of LP/Co & Fund of F.         LP/Co & Fund of LP/Co & Fund of F.         LP/Co & Fund of LP/Co & Fund of F.         LP/Co & Fund of LP/Co & Fund of F.         LP/Co & Fund of LP/Co & Fund of F.         LP/Co & Fund of LP/Co & Fund	Other real assets	724	91 bp	27 bp	64 bp	0%	22%	-22%	-1,011	
Less evergreen % of external         2,646         0.3 bp           LP/Co vs fund of funds         Fund of F.         LP/Co funds         Fund of F.         LP/Co funds         LP/Co % of LP/Co % Fund         0.3 bp         0.3 bp         0.3 bp         1.0 cm         0.3 bp         0.3 bp         0.3 bp         0.3 bp         0.47 bp         1.0 cm         0.3 bp         0.3 bp         0.47 bp         1.00 cm         89% fund         1.1% fund         -1,691 fund	Hedge funds	4,097	129 bp	159 bp	-29 bp	100%	89%	11%	-1,341	
LP/Co & LP/Co & LP/Co & LP/Co & Fund of Fund o	Perf. fees	4,097	130 bp	140 bp	-10 bp	100%	89%	11%	-455	
LP/Co vs fund of funds   Real estate ex-REITs   3,172   103 bp   150 bp   -47 bp   100%   89%   11%   -1,691	Less evergreen % of external								2,646	0.3 bp
Real estate ex-REITS         3,172         103 bp         150 bp         -47 bp         100%         89%         11%         -1,691           Private equity - Diversified         970         138 bp         173 bp         -35 bp         100%         78%         22%         -737           Venture capital         547         149 bp         182 bp         -32 bp         100%         78%         22%         -383           Less fund of funds         Co-investment vs LP         LP/Co         Co-invest         LP         Co-invest % of LP/Co           Real estate ex-REITS         3,172         46 bp         110 bp         -64 bp         41%         11%         29%         -5,928           Natural resources         871         18 bp         113 bp         -94 bp         49%         9%         40%         -3,283           Other real assets         724         5 bp         130 bp         -125 bp         67%         83%         -16%         1,439           Private equity - Diversified         969         11 bp         150 bp         -139 bp         10%         9%         1%         -100           Venture capital         547         13 bp         162 bp         -150 bp		LP/Co &		Fund of		LP/Co 9	% of LP/Co	& Fund		
Real estate ex-REITS         3,172         103 bp         150 bp         -47 bp         100%         89%         11%         -1,691           Private equity - Diversified         970         138 bp         173 bp         -35 bp         100%         78%         22%         -737           Venture capital         547         149 bp         182 bp         -32 bp         100%         78%         22%         -383           Less fund of funds         Co-investment vs LP         LP/Co         Co-invest         LP         Co-invest % of LP/Co           Real estate ex-REITS         3,172         46 bp         110 bp         -64 bp         41%         11%         29%         -5,928           Natural resources         871         18 bp         113 bp         -94 bp         49%         9%         40%         -3,283           Other real assets         724         5 bp         130 bp         -125 bp         67%         83%         -16%         1,439           Private equity - Diversified         969         11 bp         150 bp         -139 bp         10%         9%         1%         -100           Venture capital         547         13 bp         162 bp         -150 bp	LP/Co vs fund of funds	Fund of F.	LP/Co	funds			of F.			
Private equity - Diversified         970         138 bp         173 bp         -35 bp         100%         78%         22%         -737           Venture capital         547         149 bp         182 bp         -32 bp         100%         78%         22%         -383           Less fund of funds         Co-investment vs LP         LP/Co         Co-invest         LP         Co-invest % of LP/Co           Real estate ex-REITs         3,172         46 bp         110 bp         -64 bp         41%         11%         29%         -5,928           Natural resources         871         18 bp         113 bp         -94 bp         49%         9%         40%         -3,283           Other real assets         724         5 bp         130 bp         -125 bp         67%         83%         -16%         1,439           Private equity - Diversified         969         11 bp         150 bp         -139 bp         10%         9%         1%         -100           Venture capital         547         13 bp         162 bp         -150 bp         12%         9%         3%         -229           Private equity - Other         4,203         45 bp         82 bp         -37 bp					-47 bp	100%		11%	-1,691	
Venture capital         547         149 bp         182 bp         -32 bp         100%         78%         22%         -383           Less fund of funds         Co-invest ment vs LP         LP/Co         Co-invest         LP         Co-invest % of LP/Co           Real estate ex-REITs         3,172         46 bp         110 bp         -64 bp         41%         11%         29%         -5,928           Natural resources         871         18 bp         113 bp         -94 bp         49%         9%         40%         -3,283           Other real assets         724         5 bp         130 bp         -125 bp         67%         83%         -16%         1,439           Private equity - Diversified         969         11 bp         150 bp         -139 bp         10%         9%         1%         -100           Venture capital         547         13 bp         162 bp         -150 bp         12%         9%         3%         -229           Private equity - Other         4,203         45 bp         82 bp         -37 bp         83%         83%         0%         0           More co-investment				•			78%			
Co-investment vs LP         LP/Co         Co-invest         LP         Co-invest % of LP/Co         Co-invest % of LP/Co           Real estate ex-REITs         3,172         46 bp         110 bp         -64 bp         41%         11%         29%         -5,928           Natural resources         871         18 bp         113 bp         -94 bp         49%         9%         40%         -3,283           Other real assets         724         5 bp         130 bp         -125 bp         67%         83%         -16%         1,439           Private equity - Diversified         969         11 bp         150 bp         -139 bp         10%         9%         1%         -100           Venture capital         547         13 bp         162 bp         -150 bp         12%         9%         3%         -229           Private equity - Other         4,203         45 bp         82 bp         -37 bp         83%         83%         0%         0           More co-investment         -8,101         -1.0 bp           More overlays and unfunded strategies         20,325         2.5 bp					•					
Co-investment vs LP         LP/Co         Co-invest         LP         Co-invest % of LP/Co           Real estate ex-REITs         3,172         46 bp         110 bp         -64 bp         41%         11%         29%         -5,928           Natural resources         871         18 bp         113 bp         -94 bp         49%         9%         40%         -3,283           Other real assets         724         5 bp         130 bp         -125 bp         67%         83%         -16%         1,439           Private equity - Diversified         969         11 bp         150 bp         -139 bp         10%         9%         1%         -100           Venture capital         547         13 bp         162 bp         -150 bp         12%         9%         3%         -229           Private equity - Other         4,203         45 bp         82 bp         -37 bp         83%         83%         0%         0           More co-investment         -8,101         -1.0 bp           More overlays and unfunded strategies         20,325         2.5 bp										-0.4 bp
Real estate ex-REITs       3,172       46 bp       110 bp       -64 bp       41%       11%       29%       -5,928         Natural resources       871       18 bp       113 bp       -94 bp       49%       9%       40%       -3,283         Other real assets       724       5 bp       130 bp       -125 bp       67%       83%       -16%       1,439         Private equity - Diversified       969       11 bp       150 bp       -139 bp       10%       9%       1%       -100         Venture capital       547       13 bp       162 bp       -150 bp       12%       9%       3%       -229         Private equity - Other       4,203       45 bp       82 bp       -37 bp       83%       83%       0%       0         More co-investment       -8,101       -1.0 bp         More overlays and unfunded strategies       20,325       2.5 bp									_,	
Real estate ex-REITs       3,172       46 bp       110 bp       -64 bp       41%       11%       29%       -5,928         Natural resources       871       18 bp       113 bp       -94 bp       49%       9%       40%       -3,283         Other real assets       724       5 bp       130 bp       -125 bp       67%       83%       -16%       1,439         Private equity - Diversified       969       11 bp       150 bp       -139 bp       10%       9%       1%       -100         Venture capital       547       13 bp       162 bp       -150 bp       12%       9%       3%       -229         Private equity - Other       4,203       45 bp       82 bp       -37 bp       83%       83%       0%       0         More co-investment       -8,101       -1.0 bp         More overlays and unfunded strategies       20,325       2.5 bp	Co-investment vs LP	LP/Co	Co-invest	ΙP		Co-ir	vest % of	LP/Co		
Natural resources       871       18 bp       113 bp       -94 bp       49%       9%       40%       -3,283         Other real assets       724       5 bp       130 bp       -125 bp       67%       83%       -16%       1,439         Private equity - Diversified       969       11 bp       150 bp       -139 bp       10%       9%       1%       -100         Venture capital       547       13 bp       162 bp       -150 bp       12%       9%       3%       -229         Private equity - Other       4,203       45 bp       82 bp       -37 bp       83%       83%       0%       0         More co-investment       More overlays and unfunded strategies       20,325       2.5 bp					-64 hn				-5 928	
Other real assets       724       5 bp       130 bp       -125 bp       67%       83%       -16%       1,439         Private equity - Diversified       969       11 bp       150 bp       -139 bp       10%       9%       1%       -100         Venture capital       547       13 bp       162 bp       -150 bp       12%       9%       3%       -229         Private equity - Other       4,203       45 bp       82 bp       -37 bp       83%       83%       0%       0         More co-investment       More overlays and unfunded strategies       -2,325       2.5 bp					-					
Private equity - Diversified         969         11 bp         150 bp         -139 bp         10%         9%         1%         -100           Venture capital         547         13 bp         162 bp         -150 bp         12%         9%         3%         -229           Private equity - Other         4,203         45 bp         82 bp         -37 bp         83%         83%         0%         0           More co-investment         -8,101         -1.0 bp           More overlays and unfunded strategies         20,325         2.5 bp					•					
Venture capital         547         13 bp         162 bp         -150 bp         12%         9%         3%         -229           Private equity - Other         4,203         45 bp         82 bp         -37 bp         83%         83%         0%         0           More co-investment         -8,101         -1.0 bp           More overlays and unfunded strategies         20,325         2.5 bp									,	
Private equity - Other         4,203         45 bp         82 bp         -37 bp         83%         83%         0%         0           More co-investment         -8,101         -1.0 bp           More overlays and unfunded strategies         20,325         2.5 bp	, ,			•						
More co-investment -8,101 -1.0 bp  More overlays and unfunded strategies 20,325 2.5 bp				•						
More overlays and unfunded strategies 20,325 2.5 bp		4,203	45 bh	ος υμ	-37 up	03/0	03/0	070		-1 0 hr
	INIOI E CO-IIIVESTITIETIL								-0,101	-1.0 ph
Total impact of differences in implementation style -39,519 -4.9 bp								20,325		
	Total impact of differences in implem	entation style							-39,519	-4.9 bp

## **Cost impact of overlays**

As summarized on the previous page, the style impact of overlays cost you 2.5 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	Cost as % of to	J	Cost/-Savings Impact
	(mils)	You	Peer avg.	(000s)
	(A)	(B)	(C)	A X (B - C)
Internal Overlays				
Currency - Hedge	79,981	0.13 bp	0.02 bp	894
Currency - Discretionary	79,981	NA	0.06 bp	-470
Rebalancing / Passive beta - Hedge	79,981	0.13 bp	0.01 bp	947
Duration management - Hedge	79,981	NA	0.00 bp	-3
Global TAA - Discretionary	79,981	NA	0.07 bp	-525
Policy tilt TAA - Discretionary	79,981	1.34 bp	0.07 bp	10,175
Long/Short - Discretionary	79,981	1.33 bp	0.09 bp	9,892
Other overlay - Discretionary	79,981	0.40 bp	0.07 bp	2,658
External Overlays				
Currency - Hedge	79,981	NA	0.03 bp	-251
Currency - Discretionary	79,981	NA	0.05 bp	-367
Rebalancing / Passive beta - Hedge	79,981	NA	0.04 bp	-325
Duration management - Hedge	79,981	NA	0.08 bp	-670
Global TAA - Discretionary	79,981	NA	0.03 bp	-245
Commodity futures - Discretionary	79,981	NA	0.12 bp	-953
Long/Short - Discretionary	79,981	NA	0.00 bp	-36
Other overlay - Discretionary	79,981	NA	0.05 bp	-395
Total impact in 000s				20,325
Total impact in basis points				2.5 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 4.8 bps.

		Your avg		Cost in bps	;	Cost	/
		holdings		Peer	More/	-Savin	
	Style	(mils)	Your	median	-less	\$000s	bps
External asset management	Style	(A)	1041	median	(B)	(A X B)	op3
Stock - Europe & Far East	active	841	44.2	44.2	0.0	0	
Stock - Emerging	passive	1,972	8.1	8.4	-0.3	-56	
Stock - Global	passive	16,283	3.4	5.0	-1.5	-2 <i>,</i> 520	
Stock - Global	active	11,634	10.6	48.5	-37.9	-44,077	
Fixed income - Global <sup>1</sup>	passive	5,283	7.7	3.7	4.0	2,136	
Real estate ex-REITs	active	330	46.1	68.0	-22.0	-723	
Real estate ex-REITs	CO		46.0	46.0	0.0	-723	
Real estate ex-REITs	LP	1,290	105.5	46.0 110.0	-4.5	-840	
		1,881					
Infrastructure	active	346	60.4	82.0	-21.6	-747 2.226	
Natural resources	active	971	107.7	74.5	33.2	3,226	
Natural resources <sup>1</sup>	CO	430	58.2	18.3	39.8	1,713	
Natural resources	LP	441	90.2	112.7	-22.5	-992	
Other real assets	CO	482	73.9	5.5	68.5	3,301	
Other real assets <sup>1</sup>	LP	242	117.8	130.0	-12.2	-294	
Hedge funds	active	4,097	112.7	129.4	-16.7	-6,842	
Top layer perf. fees	active	4,097	60.2	130.0	-69.8	-28,584	
Private equity - Diversified	CO	93	74.0	11.2	62.8	581	
Private equity - Diversified	LP	877	125.3	150.0	-24.7	-2,167	
Private equity - Diversified	FoF	1	7.0	56.8	-49.8	-4	
Underlying base fees	FoF	1	0.0	116.3	-116.3	-9	
Venture capital <sup>1</sup>	СО	63	22.8	12.6	10.2	65	
Venture capital	LP	484	162.4	162.4	0.0	0	
Private equity - Other <sup>2</sup>	СО	3,490	45.3	45.3	0.0	0	
Private equity - Other <sup>2</sup>	LP	713	82.0	82.0	0.0	0	
Total for external management						-76,834	-9.6 bp
Internal asset management		(A)			(B)	(A X B)	
Stock - Europe & Far East <sup>1</sup>	passive	913	6.1	5.0	1.1	100	
Stock - Europe & Far East	active	1,431	21.3	4.4	16.9	2,421	
Stock - Global <sup>1</sup>	passive	9,438	8.2	3.3	4.8	4,543	
Fixed income - Global <sup>1</sup>	passive	5,984	7.0	3.0	4.0	2,384	
Real estate	active	634	57.5	21.8	35.7	2,267	
Natural resources <sup>1</sup>	active	2,585	46.3	30.6	15.7	4,056	
Private equity - Other <sup>2</sup>	active	2,278	34.8	34.8	0.0	0	
Total for internal management						15,771	2.0 bp
Oversight, custody and other costs <sup>3</sup>			l		1		
			3.8	1.0	1.9		
Oversight Trustee & custodial			0.9				
Consulting					0.6 -0.1		
_			0.0				
Audit			0.2		0.2		
Other  Renchmark for evereight, custody, other	r	79,981	0.5		0.4	22.072	20 hr
Benchmark for oversight, custody, othe	I	79,981	5.4	2.5	2.9	22,972	2.9 bp
Total						-38,091	-4.8 bp

<sup>1.</sup> Universe median is used because peer data was insufficient.

<sup>2.</sup> The impact of this line is neutralized by setting the benchmark cost to You.

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

#### 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).

Total	37.6 bp	47.4 bp	-9.7 bp	79,981	-77,610	-39,519	-38,091
Total oversight, custody & other	5.4 bp	2.5 bp	2.9 bp	79,981	22,972	n/a	22,972
Other	0.5 bp	0.1 bp	0.4 bp				
Audit	0.2 bp	0.0 bp	0.2 bp				
Consulting	0.0 bp	0.1 bp	-0.1 bp				
Trustee & custodial	0.9 bp	0.3 bp	0.6 bp				
Oversight of the fund	3.8 bp	1.9 bp	1.9 bp				
Oversight, custody and other costs <sup>3</sup>							
Total asset management	32.2 bp	44.8 bp	-12.6 bp	79,981	-100,582	-39,519	-61,063
Overlay Programs <sup>2</sup>	3.3 bp	0.8 bp	2.5 bp	79,981	20,325	20,325	0
Private equity - Other	45.7 bp	45.7 bp	0.0 bp	6,481	0	0	0
Venture capital	146.2 bp	156.2 bp	-10.0 bp	547	-547	-612	65
Private equity - Diversified	120.3 bp	145.4 bp	-25.1 bp	970	-2,437	-837	-
Perf. fees	60.2 bp	131.1 bp	-70.9 bp	4,097	-29,038	-455	-28,584
Hedge funds	112.7 bp	132.7 bp		4,097	-8,183	-1,341	-
Other real assets	88.6 bp	41.1 bp	47.5 bp	724	3,435	428	,
Natural resources	65.3 bp	70.2 bp	-4.9 bp	4,426	-2,153	-10,156	
Infrastructure	60.4 bp	88.2 bp	-27.9 bp	346	-964	-218	
Real estate ex-REITs	7.3 bp	69.6 bp	5.2 bp	4,135	2,160	1,457	703
Fixed income - Global	7.3 bp	10.3 bp	-3.0 bp	11,267	-71,436	-29,364 -7,862	-
Stock - Emerging Stock - Global	8.1 bp 6.8 bp	46.5 bp 26.0 bp	-38.4 bp -19.1 bp	1,972 37,356	-7,508 -71,438	-7,512 -29,384	-56 42,054-
Stock - Europe & Far East	23.0 bp	25.6 bp	-2.6 bp	3,184	-832 -7,568	-3,353	2,521
Asset management costs	(A)	(B)	(C = A - B)	(D)	(C X D)	2.252	2.524
Assat management south	cost	median cost <sup>1</sup>	-less	basis)	-less	style	more/less
	Your	weighted	More/	(or fee	More/	Impl.	paying
	Vous	= peer	Naral	assets	Total	Due to	Due to
		Benchmark		average		e/-less in \$0	
		Danalanaanla		Your	0.4	- / laaa ::a ¢(	200-

<sup>1.</sup> 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 16 of this section.

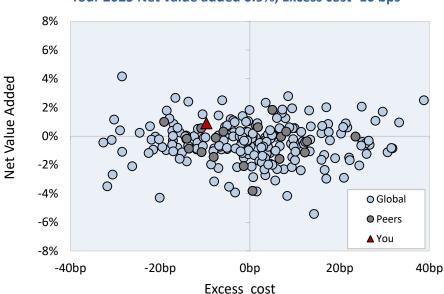
<sup>2.</sup> Total fund average holdings is used as the base when calculating the relative cost impact of the overlay programs.

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

#### Your cost impact ranking

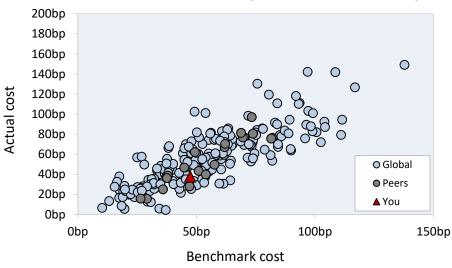
Being high or low cost is neither good nor bad. More important is whether you are receiving sufficient value for your excess cost. At the total fund level, we provide insight into this question by combining your excess return above benchmark and excess cost to show your cost impact performance relative to that of the global universe.

In 2025, your fund ranked in the positive net value added, low cost quadrant.



Your 2025 Net value added 0.9%, Excess cost -10 bps





For all funds except your fund, benchmark cost equals the sum of group median costs times the fund's average holdings by asset class plus group median cost of derivatives/overlays plus group median cost of oversight/support. Group is 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 14 of this section.

#### Benchmarking methodology formulas and data

#### a) Formulas

Example calculations for 'Stock - Europe & Far East'

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

=  $(1\% \times 5.0 \text{ bp}) + (37\% \times 4.4 \text{ bp}) + (9\% \times 4.9 \text{ bp}) + (53\% \times 44.2 \text{ bp}) = 25.6 \text{ bp}$ 

Your cost versus benchmark (-savings/+excess) = asset class your cost - asset class peer cost = 23.0 bp - 25.6 bp = -2.6 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)
- = -4.3 bp + 0.0 bp + -6.2 bp = -10.5 bp
- A) Impact of Passive vs Active management (-savings/+excess)
  - = (peer average passive cost peer average active cost) x (passive % of asset, you passive % of asset, peer average)
  - =  $(4.9 \text{ bp} 27.8 \text{ bp}) \times (29\% 10\%) = -4.3 \text{ bp}$

Peer average passive cost = weighted average by peer average style of peer median costs for

internal passive and external passive management

 $= [(1\% \times 5.0 \text{ bp}) + (9\% \times 4.9 \text{ bp})] / (1\% + 9\%) = 4.9 \text{ bp}$ 

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

 $= [(37\% \times 4.4 \text{ bp}) + (53\% \times 44.2 \text{ bp})] / (37\% + 53\%) = 27.8 \text{ bp}$ 

- B) Impact of Internal Passive vs External Passive management (-savings/+excess)
  - = (peer average internal passive cost peer average external passive cost) x (internal passive % of passive, you - internal passive % of passive, peer average) x passive % of asset, you
  - $= (5.0 \text{ bp} 4.9 \text{ bp}) \times (100\% 10\%) \times 29\% = 0.0 \text{ bp}$
- C) Impact of Internal Active vs External Active management (-savings/+excess)
  - = (peer average internal active cost peer average external active cost) x (internal passive % of active, you - internal active % of active, peer avg) x active % of asset, you
  - $= (4.4 \text{ bp} 44.2 \text{ bp}) \times (63\% 41\%) \times 71\% = -6.2 \text{ bp}$

#### Cost impact of paying more/-less

- = (cost internal passive, you cost internal passive, peer) x internal passive % of asset, you + (cost internal active, you cost internal active, peer) x internal active % of asset, you +
- (cost external passive, you cost external passive, peer) x external passive % of asset, you +
- (cost external active, you cost external active, peer) x external active % of asset, you
- = (6.1 bp 5.0 bp) \* 29% + (21.3 bp 4.4 bp) \* 45% + (0.0 bp 4.9 bp) \* 0% + (44.2 bp 44.2 bp) \* 26% = 7.9 bp

#### Your cost versus benchmark (-savings/+excess)

- = cost impact of differences in implementation style + cost impact of paying more/-less
- = -10.5 bp + 7.9 bp = -2.6 bp

## Benchmarking methodology formulas and data

#### b) 2025 cost data used to calculate weighted peer median costs and impact of mix differences.

			Your co	sts (basi	s points)					Peer me	edian co	sts (basis	s points)		
Asset Class	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
		24.2		44.2											
Stock - Europe & Far East	6.1	21.3	8.1	44.2				5.0	4.4 10.2	4.9 8.4	44.2 60.5				25.6 46.5
Stock - Emerging	0.0			10.0				4.5							
Stock - Global	8.2		3.4	10.6				3.3	11.7	5.0	48.5				26.0
Fixed income - Global	7.0		7.7					3.0	7.5	3.7	18.5				10.3
Real estate ex-REITs		57.5		46.1	46.0	105.5			21.8		68.0	46.0	110.0	40.1	
Underlying base fees														110.0	
Infrastructure				60.4					31.0		82.0	13.2	123.6		88.2
Underlying base fees															0.0
Natural resources		46.3		107.7	58.2	90.2			30.6		74.5	18.3	112.7		70.2
Underlying base fees															0.0
Other real assets					73.9	117.8					90.8	5.5	130.0		41.1
Underlying base fees															0.0
Hedge funds				112.7							129.4			33.9	118.8
Top layer perf. fees				60.2							130.0			10.0	116.7
Underlying base fees														125.0	13.9
Underlying perf. fees														130.0	14.4
Private equity - Diversified					74.0	125.3	7.0		45.3			11.2	150.0	56.8	120.3
Underlying base fees							0.0							116.3	25.1
Venture capital					22.8	162.4						12.6	162.4	31.6	123.8
Underlying base fees														150.0	32.4
Private equity - Other		34.8			45.3	82.0			34.8			45.3	82.0		45.7
Underlying base fees															0.0

## Benchmarking methodology formulas and data

#### c) 2025 Style weights used to calculate the weighted peer median costs and impact of mix differences.

Style Weights				You (%)						Peer	average	e (%)		
	Internal	Internal	External	External	Co-invest	Limited	Fund of	Internal	Internal	External	External	Co-invest	Limited	Fund of
	Passive	Active	Passive	Active	Co-invest	Partner.	Funds	Passive	Active	Passive	Active	Co-invest	Partner.	Funds
Stock - Europe & Far East	28.7%	44.9%	0.0%	26.4%				1.0%	37.0%	8.8%	53.2%			
Stock - Emerging	0.0%	0.0%	100.0%	0.0%				7.4%	3.5%	15.5%	73.6%			
Stock - Global	25.3%	0.0%	43.6%	31.1%				11.7%	4.2%	36.0%	48.1%			
Fixed income - Global	53.1%	0.0%	46.9%	0.0%				14.9%	39.9%	10.3%	34.9%			
Real estate ex-REITs		15.3%		8.0%	31.2%	45.5%	0.0%		24.8%		42.6%	3.3%	25.6%	3.7%
Underlying base fees		15.3%		8.0%	31.2%	45.5%	0.0%		24.8%		42.6%	3.3%	25.6%	3.7%
Infrastructure		0.0%		100.0%	0.0%	0.0%			26.1%		8.0%	7.1%	58.8%	
Underlying base fees		0.0%		100.0%	0.0%	0.0%			26.1%		8.0%	7.1%	58.8%	
Natural resources		58.4%		21.9%	9.7%	10.0%			33.0%		32.4%	3.3%	31.3%	
Underlying base fees		58.4%		21.9%	9.7%	10.0%			33.0%		32.4%	3.3%	31.3%	
Other real assets				0.0%	66.6%	33.4%					21.9%	64.5%	13.6%	
Underlying base fees				0.0%	66.6%	33.4%					21.9%	64.5%	13.6%	
Hedge funds				100.0%			0.0%				88.9%			11.1%
Top layer perf. fees				100.0%			0.0%				88.9%			11.1%
Underlying base fees				100.0%			0.0%				88.9%			11.1%
Underlying perf. fees				100.0%			0.0%				88.9%			11.1%
Private equity - Diversified		0.0%			9.5%	90.4%	0.1%		0.0%			6.9%	71.5%	21.6%
Underlying base fees		0.0%			9.5%	90.4%	0.1%		0.0%			6.9%	71.5%	21.6%
Venture capital					11.6%	88.4%	0.0%					6.9%	71.5%	21.6%
Underlying base fees					11.6%	88.4%	0.0%					6.9%	71.5%	21.6%
Private equity - Other		35.1%			53.9%	11.0%			35.1%			53.9%	11.0%	
Underlying base fees		35.1%			53.9%	11.0%			35.1%			53.9%	11.0%	

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**

<u>Asset value.</u> 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 stuff (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.

<u>Asset mix.</u> 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.

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

<u>Paying more/less for similar services</u>. 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

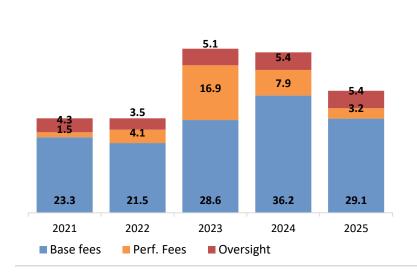
Cost difference in bps = impact of asset mix + impacts of style & paying =

[ CostBpsL x (HavgHpct - HavgLpct) ] + [ HavgHpct x (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 x (WgH - WgL) ] + paying impact [ WgH x (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**

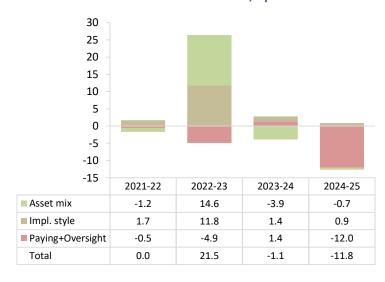
#### Total plan cost over time, bps



#### Cost differences, 2025 versus 2021, bps



#### Reasons for cost differences over time, bps



#### Impact of base and performance fees, 2025 vs. 2021, bps



## Summary of cost differences, 2025 versus 2021

Your total cost increased by 8.5 bps between 2021 and 2025 because of changes in: asset mix (6.0 bps), implementation style (5.8 bps), and paying more/less for similar services (-3.3 bps).

	bps	\$000s
Starting total cost, 2021	29.1	134,253
Growth in asset value		98,789
Asset mix	<u>6.0</u>	<u>47,822</u>
Stock	0.5	4,306
Fixed income	-0.4	-3,094
Real estate ex-REITs	4.6	36,843
Real assets ex real estate	-0.1	-1,043
Hedge funds & multi-asset	-0.9	-6,922
Private equity	2.2	17,731
Implementation style (less expensive vs. more )	<u>5.8</u>	46,263
Less passive, more active	3.3	26,095
More int. pass. % of total passive	0.1	743
Less int. active % of total active	3.8	30,582
Mix of evergreen vs. LP/Co/FoF	-1.2	-9,490
More LP, less fund of funds	-0.2	-1,949
Less co-investment	0.0	281
Paying more/-less for	<u>-4.3</u>	<u>-34,748</u>
Stock	-4.1	-32,657
Fixed income	0.1	1,123
Real estate ex-REITs	-1.7	-13,992
Real assets ex real estate	0.7	5,950
Hedge funds & multi-asset	1.8	14,070
Performance fees	1.8	14,196
Private equity	-3.8	-30,359
Overlays and unfunded strategies	0.9	6,921
Oversight, custodial, other (pay more/-less)	<u>1.1</u>	<u>8,727</u>
Total difference	8.5	166,853
Ending total cost, 2025	37.6	301,106

## Summary of cost differences, year over year

	bps	\$000s	bps	\$000s	bps	\$000s	bps	\$000s	bps	\$000s
	20	021	20	022	20	023	20	024	20	021
Starting total cost	29.1	134,253	29.1	168,497	50.6	292,453	49.5	343,090	29.1	134,253
Growth in asset value		34,310		-153		58,394		52,653		98,789
Asset mix	<u>-1.2</u>	<u>-6,672</u>	<u>14.6</u>	<u>84,519</u>	<u>-3.9</u>	<u>-27,040</u>	<u>-0.7</u>	<u>-5,207</u>	<u>6.0</u>	<u>47,822</u>
Stock	0.5	3,153	0.0	233	-0.5	-3,202	0.4	3,528	0.5	4,306
Fixed income	-0.1	-658	-0.2	-1,279	-0.5	-3,622	-0.1	-1,115	-0.4	-3,094
Real estate ex-REITs	0.2	1,379	4.6	26,679	0.2	1,566	0.7	5,938	4.6	36,843
Real assets ex real estate	-0.4	-2,512	0.3	1,874	-0.8	-5,285	0.0	158	-0.1	-1,043
Hedge funds & multi-asset	-0.4	-2,367	2.2	12,744	-1.8	-12,458	-3.2	-25,352	-0.9	-6,922
Private equity	-1.0	-5,666	7.7	44,268	-0.6	-4,039	1.5	11,635	2.2	17,731
Implementation style (less expensive vs. more )	<u>1.7</u>	<u>9,699</u>	<u>11.8</u>	<u>68,067</u>	<u>1.4</u>	<u>9,511</u>	<u>0.9</u>	<u>6,900</u>	<u>5.8</u>	<u>46,263</u>
Passive vs. active	1.6	9,002	1.0	5,660	0.1	377	-0.2	-1,424	3.3	26,095
Internal passive vs. external passive	0.0	-53	0.0	96	0.0	248	0.9	6,900	0.1	743
Internal active vs. external active	0.1	742	1.5	8,704	1.0	6,939	0.2	1,651	3.8	30,582
Evergreen vs. LP/Co & fund of funds	0.0	-128	0.1	342	-0.2	-1,258	-0.8	-6,059	-1.2	-9,490
LP/Co vs. fund of funds	0.0	-232	-0.2	-1,103	0.0	-65	0.0	45	-0.2	-1,949
Co-investment vs. LP	0.1	368	9.4	54,368	0.5	3,271	0.7	5,786	0.0	281
Paying more/-less for	<u>0.3</u>	<u>1,736</u>	<u>-6.5</u>	<u>-37,832</u>	<u>1.1</u>	<u>7,455</u>	<u>-12.0</u>	<u>-96,116</u>	<u>-4.3</u>	<u>-34,748</u>
Stock	-2.5	-14,661	-0.4	-2,059	0.3	2,154	-1.5	-12,254	-4.1	-32,657
Fixed income	-0.1	-495	0.6	3,590	0.4	2,518	-0.2	-1,320	0.1	1,123
Real estate ex-REITs	0.5	2,626	-8.3	-47,773	1.5	10,144	-0.8	-6,796	-1.7	-13,992
Real assets ex real estate	0.2	984	0.4	2,230	4.6	32,060	-2.1	-16,715	0.7	5,950
Hedge funds & multi-asset	2.4	13,689	11.9	68,725	-5.5	-37,817	-3.0	-23,703	3.5	28,266
Private equity	0.2	1,192	-11.4	-66,022	-1.2	-8,089	-4.0	-32,170	-3.8	-30,359
Overlays and unfunded strategies	-0.3	-1,600	0.6	3,477	0.9	6,485	-0.4	-3,159	0.9	6,921
Oversight, custodial, other (pay more/-less)	<u>-0.8</u>	<u>-4,829</u>	<u>1.6</u>	<u>9,355</u>	<u>0.3</u>	<u>2,315</u>	0.0	<u>-213</u>	<u>1.1</u>	<u>8,727</u>
Total difference	0.0	34,244	21.5	123,957	-1.1	50,636	-11.8	-41,984	8.5	166,853
Ending total cost	29.1	168,497	50.6	292,453	49.5	343,090	37.6	301,106	37.6	301,106
	20	022	20	023	20	024	20	025	20	025

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 increased by \$167 million in 2025 compared to 2021. An increase of \$99 million was due to the \$34 billion rise in plan total average nav holdings. The remaining increase of \$68 million is explained by the changes in the asset mix (\$48 million), implementation style (\$46 million), and paying more/less for similar services (-\$26 million).

	2021	Asset	Implement.	Paying	Total	Total	Growth in	2025
	cost	mix	style	more/-less	ex asset gr.	difference	asset value	cost
Asset class <sup>1</sup>	\$000s	\$000s	\$000s	\$000s	\$000s	\$000s	\$000s	\$000s
	Α	В	С	D	E=B+C+D	F=G-A	F-E	G
Stock - Europe & Far East	7,036	-887	21,512	-25,524	-4,898	280	5,178	7,316
Stock - Emerging	2,181	-1,119	0	-1,064	-2,182	-578	1,605	1,604
Stock - Global	11,734	6,312	4,949	-6,070	5,191	13,825	8,634	25,559
Fixed income - U.S.	262	-454	0	0	-454	-262	193	n/a
Fixed income - Global	2,473	3,081	-217	1,123	3,987	5,807	1,820	8,280
Cash	3,296	-5,721	0	0	-5,721	-3,296	2,425	n/a
Real estate ex-REITs	3,631	36,843	1,797	-13,992	24,649	27,320	2,672	30,951
Infrastructure	4,537	-6,134	559	-212	-5,786	-2,448	3,339	2,090
Natural resources	5,843	-1,321	13,917	6,161	18,757	23,057	4,300	28,900
Other real assets	n/a	6,412	0	0	6,412	6,412	0	6,412
Hedge funds	21,495	-5,218	0	14,070	8,852	24,669	15,817	46,164
Top layer perf. fees	7,020	-1,704	0	14,196	12,492	17,658	5,165	24,677
Private equity - Diversified	12,084	4,874	-3,132	-11,048	-9,306	-414	8,892	11,670
Underlying base fees	217	87	-451	-13	-376	-217	159	0
Venture capital	n/a	7,998	0	0	7,998	7,998	0	7,998
Private equity - Other	21,196	4,773	7,329	-19,298	-7,196	8,400	15,597	29,596
Total for asset management	103,005	47,822	46,263	-41,669	52,416	128,211	75,796	231,216
Overlays and unfunded strategies <sup>2</sup>	11,365	0		6,921	6,921	15,284	8,363	26,649
Oversight	12,307			9,144	9,144	18,201	9,056	30,508
Trustee & custodial	0			0	0	0	0	0
Consulting	6,980			-4,911	-4,911	225	5,136	7,205
Audit	596			617	617	1,056	439	1,652
Other	0			3,877	3,877	3,877	0	3,877
Total for fund oversight <sup>3</sup>	19,883			8,727	8,727	23,358	14,631	43,241
Total	134,253	47,822	46,263	-26,021	68,064	166,853	98,789	301,106

<sup>1.</sup> Cost differences for asset classes are attributed to the effects of:

a) Asset growth, asset mix, implementation style, and paying for similar services, when the asset class exists in both years.

b) Asset growth and asset mix, when the asset class exists only in one of the years.

<sup>2.</sup> Cost differences for overlays are attributed to the effects of:

a) Asset growth and paying more/less for similar services, when the fund has overlays in both years.

b) Asset growth and asset mix, when the fund has overlays only in one of the years.

<sup>3.</sup> 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 increased by 8.5 bps in 2025 vs. 2021. It was driven by the changes in the asset mix (6.0 bps), implementation style (5.8 bps), and paying more/less for similar services (-3.3 bps).

	Asset	Implement.	Paying	Total	Total <sup>1</sup>
	mix	style	more/-less	difference	ex asset gr.
Asset class	bps	bps	bps	bps	\$000s
	В	С	D	B+C+D	
Stock - Europe & Far East	-0.1	2.7	-3.2	-0.6	-4,898
Stock - Emerging	-0.1	0.0	-0.1	-0.3	-2,182
Stock - Global	0.8	0.6	-0.8	0.6	5,191
Fixed income - U.S.	-0.1	0.0	0.0	-0.1	-454
Fixed income - Global	0.4	0.0	0.1	0.5	3,987
Cash	-0.7	0.0	0.0	-0.7	-5,721
Real estate ex-REITs	4.6	0.2	-1.7	3.1	24,649
Infrastructure	-0.8	0.1	0.0	-0.7	-5,786
Natural resources	-0.2	1.7	0.8	2.3	18,757
Other real assets	0.8	0.0	0.0	0.8	6,412
Hedge funds	-0.7	0.0	1.8	1.1	8,852
Top layer perf. fees	-0.2	0.0	1.8	1.6	12,492
Private equity - Diversified	0.6	-0.4	-1.4	-1.2	-9,306
Underlying base fees	0.0	-0.1	0.0	0.0	-376
Venture capital	1.0	0.0	0.0	1.0	7,998
Private equity - Other	0.6	0.9	-2.4	-0.9	-7,196
Total for asset management	6.0	5.8	-5.2	6.6	52,416
Overlays and unfunded strategies	0.00		0.87	0.87	6,921
Oversight			1.1	1.1	9,144
Trustee & custodial			0.0	0.0	0
Consulting			-0.6	-0.6	-4,911
Audit			0.1	0.1	617
Other			0.5	0.5	3,877
Total for fund oversight			1.1	1.1	8,727
Total	6.0	5.8	-3.3	8.5	68,064
Total basis point costs in years 2025 and 2	2021	37.6	29.1	8.5	

<sup>1.</sup> Calculated by multiplying total difference in bps by plan total nav average holdings for year 2025, \$80 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 \$48 million or 6.0 bps.

	2024	2025	2024	2025	Chaman		
	2021	2025	2021	2025	Change	Asset mix	Asset mix
	Cost	Cost	asset1	asset1	in asset	changes <sup>2</sup>	changes³
Asset class	bps	bps	weight %	weight %	weight	bps	\$000s
	Α	В	С	D	E=D-C	A (or B) x E	
Stock - Europe & Far East	35.6	23.0	4%	4%	0%	-0.1	-887
Stock - Emerging	13.5	8.1	3%	2%	-1%	-0.1	-1,119
Stock - Global	7.1	6.8	36%	47%	11%	0.8	6,312
Fixed income - U.S.	101.8	n/a	0%	0%	0%	-0.1	-454
Fixed income - Global	6.5	7.3	8%	14%	6%	0.4	3,081
Cash	3.3	n/a	22%	0%	-22%	-0.7	-5,721
Real estate ex-REITs	104.3	74.8	1%	5%	4%	4.6	36,843
Infrastructure	50.3	60.4	2%	0%	-2%	-0.8	-6,134
Natural resources	19.9	65.3	6%	6%	-1%	-0.2	-1,321
Other real assets	n/a	88.6	0%	1%	1%	0.8	6,412
Hedge funds	78.3	112.7	6%	5%	-1%	-0.7	-5,218
Top layer perf. fees	25.6	60.2	6%	5%	-1%	-0.2	-1,704
Private equity - Diversified	266.5	120.3	1%	1%	0%	0.6	4,874
Underlying base fees	4.8	0.0	1%	1%	0%	0.0	87
Venture capital	n/a	146.2	0%	1%	1%	1.0	7,998
Private equity - Other	64.1	45.7	7%	8%	1%	0.6	4,773
Total for asset management						6.0	47,822

<sup>1.</sup> Weight % = asset's average (NAV for performance lines) holdings / plan total nav average holdings.

<sup>2.</sup> If asset is not available in one of the years, the entire weighted cost difference in bps is attributed to the asset mix.

<sup>3.</sup> Calculated by multiplying asset mix changes in bps by plan total nav average holdings for year 2025, \$80 billion.

## Impact of changes in implementation style

Changes in implementation style (passive vs. active, internal vs. external, etc.) in 2025 vs. 2021 cost you \$46 million.

	2025	Cost, 2021			Style 1 %			
	avg. assets			Style 1			More/	Cost/
Implementation choices	\$mils	Style 1	Style 2	-Savings	2025	2021	-Less	\$000s
	Α	В	С	D = B - C			Е	AxDxE
Passive vs active	Total assets	Passive	Active		Passive	e % of tota	l assets	
Stock - Europe & Far East	3,184	286 bp	32 bp	254 bp	29%	1%	27%	22,107
Stock - Global	37,356	7 bp	11 bp	-3 bp	69%	100%	-31%	3,988
Less passive, more active								26,095
	Passive	Internal	External		Internal passive % of			
Internal passive vs external passive	assets	passive	passive			passive		
Stock - Global	25,722	8 bp	7 bp	1 bp	37%	0%	37%	960
Fixed income - Global	11,267	5 bp	8 bp	-3 bp	53%	47%	6%	-217
More int. pass. % of total passive								743
	Active	Internal	External		Inte	rnal active	% of	
Internal active vs external active	assets	active	active			active		
Stock - Europe & Far East	2,272	19 bp	48 bp	-30 bp	63%	54%	9%	-595
Real estate ex-REITs	4,135	68 bp	113 bp	-44 bp	15%	19%	-4%	725
Infrastructure	346	11 bp	82 bp	-71 bp	0%	45%	-45%	1,103
Natural resources	4,426	6 bp	152 bp	-146 bp	58%	90%	-32%	20,661
Private equity - Other	6,481	34 bp	101 bp	-67 bp	35%	55%	-20%	8,688
Less int. active % of total active								30,582
	External	Ever-	LP/Co &		Evergreen fund % of			
Evergreen vs LP/Co & fund of funds	assets	green	FoF			external		
Real estate ex-REITs	3,501	46 bp	113 bp	-67 bp	9%	0%	9%	-2,202
Infrastructure	346	66 bp	96 bp	-30 bp	100%	47%	53%	-544
Natural resources	1,842	152 bp	74 bp	77 bp	53%	100%	-47%	-6,745
Mix of evergreen vs. LP/Co/FoF								-9,490
	LP/Co &		Fund of			LP/Co % c	f	
LP/Co-investment vs fund of funds	FoFs	LP/Co	funds		L	.P/Co + Fo	Fs	
Private equity - Diversified	970	251 bp	929 bp	-679 bp	100%	97%	3%	-1,949
More LP, less fund of funds								-1,949
Co-investment vs LP	LP/Co	Co-invest	LP		Co-in	vest % of	LP/Co	
Real estate ex-REITs	3,172	108 bp	134 bp	-26 bp	41%	80%	-40%	3,273
Private equity - Diversified	969	74 bp	251 bp	-177 bp	10%	0%	10%	-1,634
Private equity - Other	4,203	101 bp	82 bp	19 bp	83%	100%	-17%	-1,359
Less co-investment								281
Total								46,263

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 2025, you paid \$26 million less for similar asset management and oversight / support services vs. 2021.

		2025		Cost in bps		Cost/
Asset class styles where you had assets in both		avg. assets			More/	-Savings
2025 and 2021 <sup>1</sup>	Style	\$mils	2025	2021	-less	\$000s
External asset management	,	Α			В	AxB
Stock - Europe & Far East	active	841	44.2	48.2	-4.1	-342
Stock - Emerging	passive	1,972	8.1	13.5	-5.4	-1,064
Stock - Global	passive	16,283	3.4	7.1	-3.7	-6,070
Fixed income - Global	passive	5,283	7.7	8.0	-0.2	-127
Real estate ex-REITs	CO	1,290	46.0	107.8	-61.9	-7,982
Real estate ex-REITs	LP	1,881	105.5	133.8	-28.3	-5,318
Infrastructure	active	346	60.4	66.5	-6.1	-212
Natural resources	active	971	107.7	151.8	-44.1	-4,282
Hedge funds	active	4,097	112.7	78.3	34.3	14,070
Top layer perf. fees	active	4,097	60.2	25.6	34.7	14,196
Private equity - Diversified	LP	877	125.3	250.6	-125.3	-10,987
Private equity - Diversified	FoF	1	7.0	772.2	-765.3	-61
Underlying base fees	FoF	1	0.0	157.0	-157.0	-13
Private equity - Other	CO	3,490	45.3	101.1	-55.7	-19,458
Total for external management						-27,648
Internal asset management		А			В	AxB
Stock - Europe & Far East	passive	913	6.1	286.4	-280.3	-25,579
Stock - Europe & Far East	active	1,431	21.3	18.5	2.8	397
Fixed income - Global	passive	5,984	7.0	4.9	2.1	1,250
Real estate	active	634	57.5	68.4	-10.9	-692
Natural resources	active	2,585	46.3	5.9	40.4	10,444
Private equity - Other	active	2,278	34.8	34.1	0.7	159
Total for internal management						-14,021
Overlays and unfunded strategies		79,981	3.3	2.5	0.9	6,921
Oversight		79,981	3.8	2.7	1.1	9,144.4
Trustee & custodial		79,981	0.0	0.0	0.0	0
Consulting		79,981	0.9	1.5	-0.6	-4,911
Audit		79,981	0.2	0.1	0.1	617
Other		79,981	0.5	0.0	0.5	3,877
Total for fund oversight						8,727
Total						-26,021

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

# 5

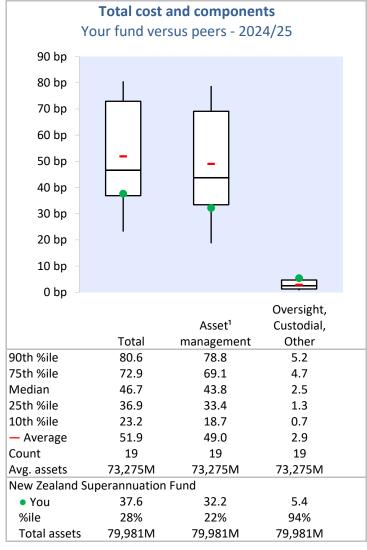
# **Cost comparisons**

Total fund cost	2
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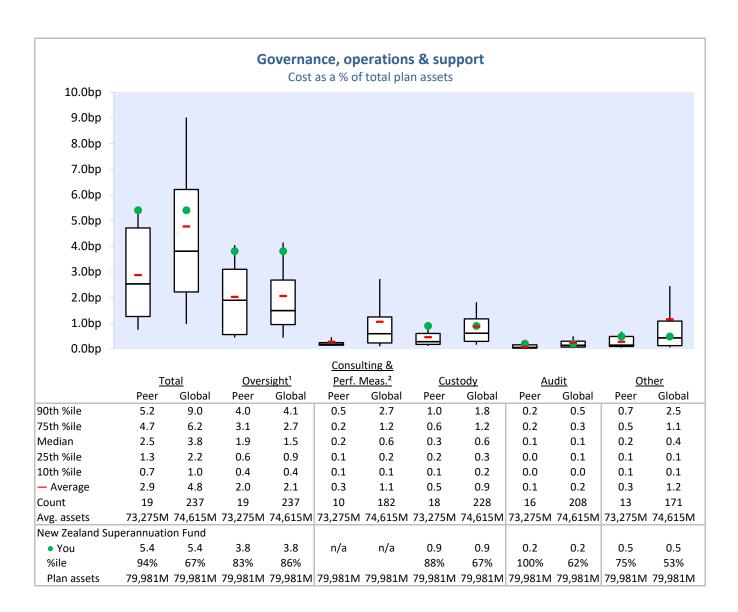
#### **Total fund cost**

Total costs are benchmarked in the previous section. In this section, your fund's costs are compared on a lineitem 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.

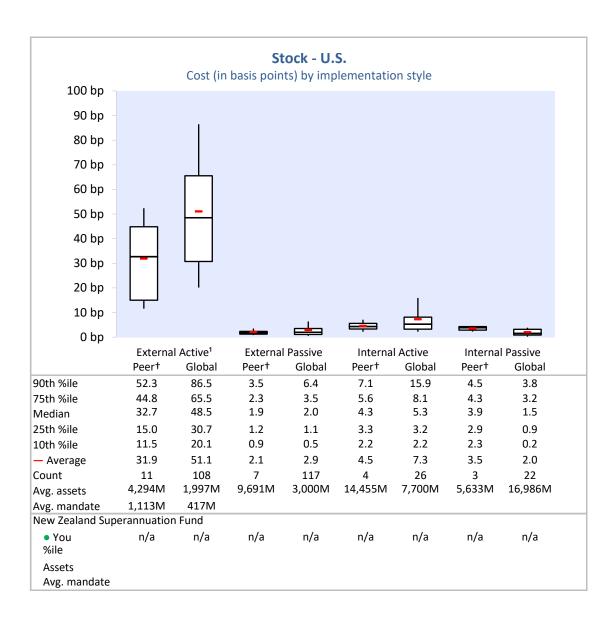


<sup>1.</sup> Excluding private asset performance fees.



<sup>1.</sup> 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.

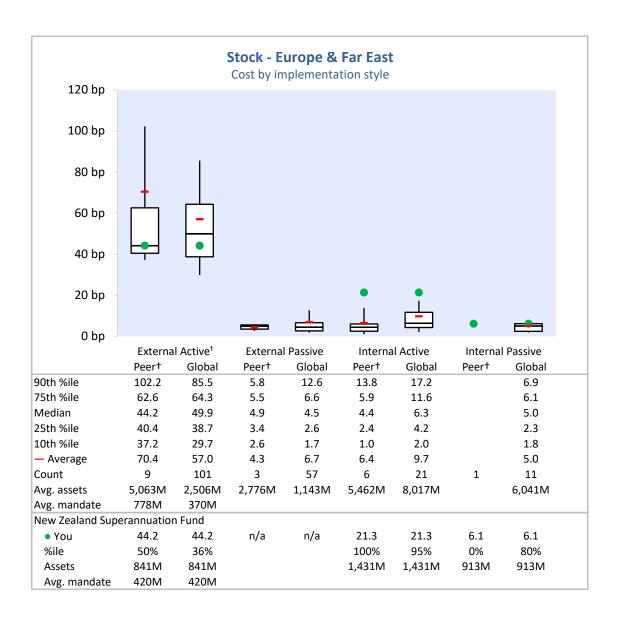
<sup>2.</sup> Consulting & performance measurement costs have been included in oversight costs. As part of the enhanced survey, consulting costs were included in costs for each governance, operations & support activity which were then allocated to oversight costs.



		Peer	Global
	You	Average	Average
Base fees	n/a	28.2	43.9
Performance fees*	n/a	1.8	6.5
Internal and other	<u>n/a</u>	<u>1.9</u>	<u>0.7</u>
Total	n/a	31.9	51.1

<sup>\*</sup> 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 (6 funds) and 18.8 bps for Global participants (37 funds).

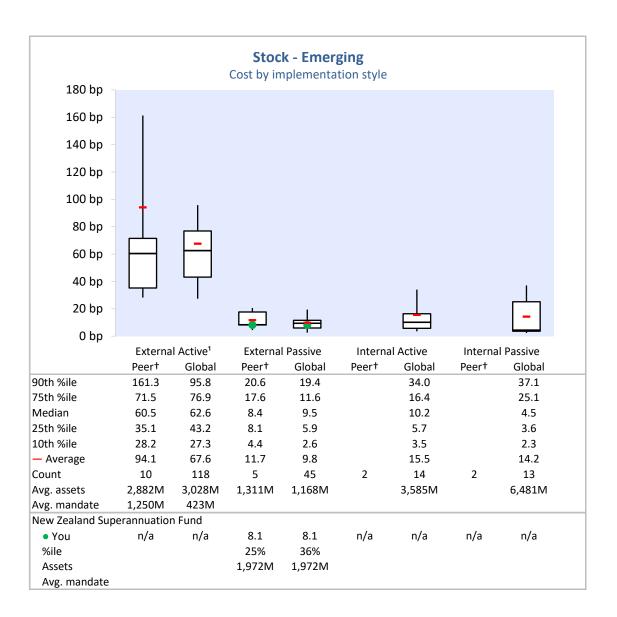
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	33.4	38.3	47.0
Performance fees*	9.6	29.0	8.5
Internal and other	<u>1.2</u>	<u>3.1</u>	<u>1.5</u>
Total	44.2	70.4	57.0

<sup>\*</sup> 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 52.1 bps for peers (5 funds) and 24.6 bps for Global participants (35 funds).

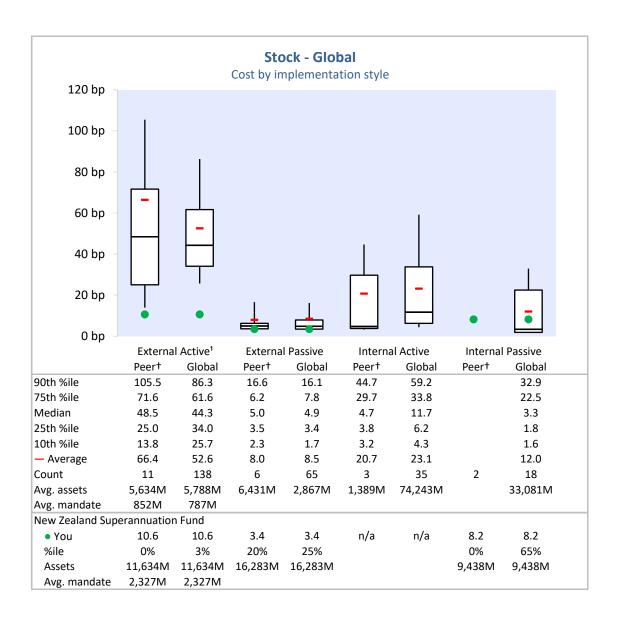
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	45.6	53.7
Performance fees*	n/a	45.4	12.3
Internal and other	<u>n/a</u>	<u>3.1</u>	<u>1.6</u>
Total	n/a	94.1	67.6

<sup>\*</sup> 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 75.6 bps for peers (6 funds) and 32.2 bps for Global participants (45 funds).

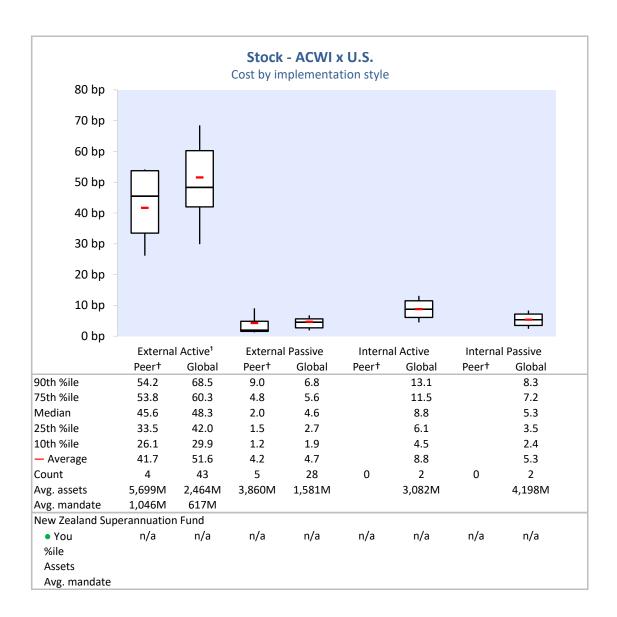
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	8.1	39.3	42.7
Performance fees*	n/a	24.0	8.0
Internal and other	<u>2.5</u>	<u>3.1</u>	<u>1.8</u>
Total	10.6	66.4	52.6

<sup>\*</sup> 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 66.0 bps for peers (4 funds) and 20.9 bps for Global participants (53 funds).

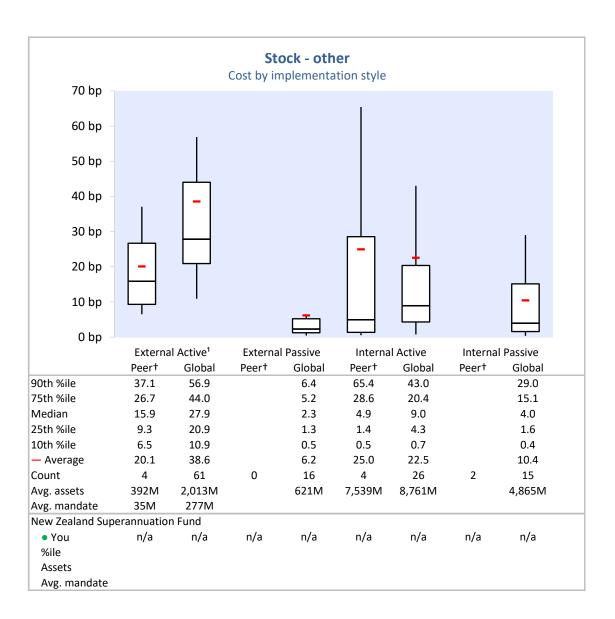
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	38.5	47.3
Performance fees*	n/a	3.0	3.5
Internal and other	<u>n/a</u>	<u>0.2</u>	<u>0.7</u>
Total	n/a	41.7	51.6

<sup>\*</sup> 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 peers (2 funds) and 15.2 bps for Global participants (10 funds).

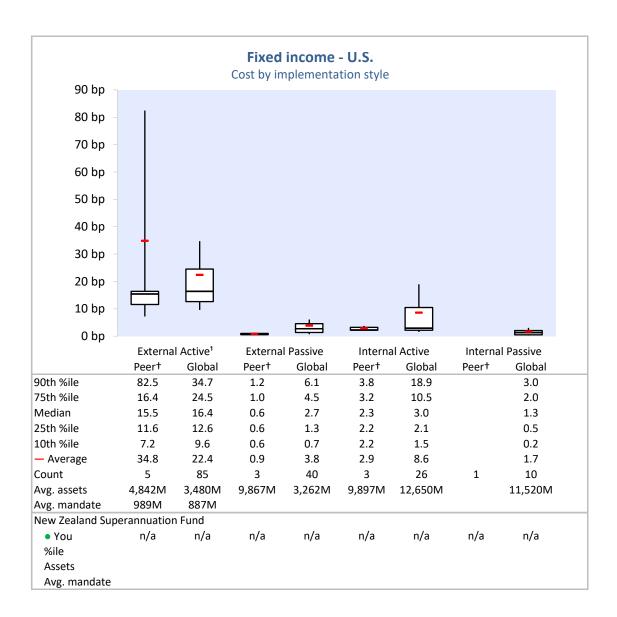
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	10.9	34.5
Performance fees*	n/a	0.0	2.2
Internal and other	<u>n/a</u>	<u>9.2</u>	<u>1.9</u>
Total	n/a	20.1	38.6

<sup>\*</sup> 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 8.8 bps for Global participants (15 funds).

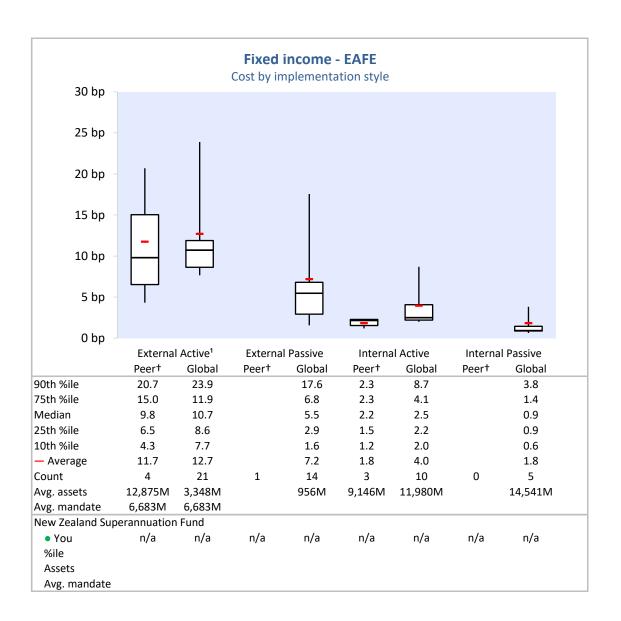
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	34.7	19.8
Performance fees*	n/a	0.0	2.0
Internal and other	<u>n/a</u>	0.2	<u>0.6</u>
Total	n/a	34.8	22.4

<sup>\*</sup> 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 (2 funds) and 6.3 bps for Global participants (27 funds).

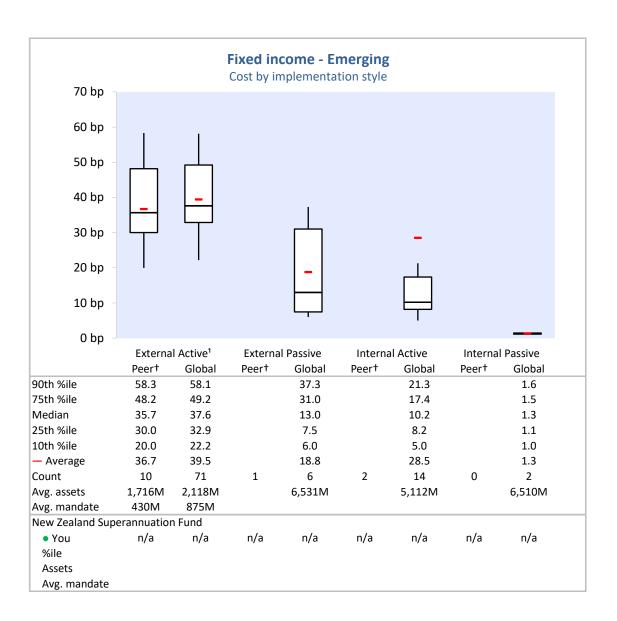
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	11.3	11.6
Performance fees*	n/a	n/a	0.0
Internal and other	<u>n/a</u>	0.4	<u>1.1</u>
Total	n/a	11.7	12.7

<sup>\*</sup> 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 (13 funds).

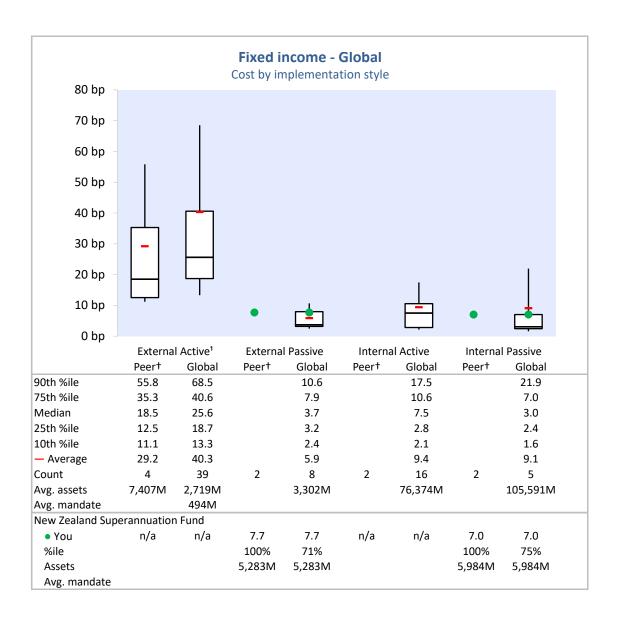
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	31.1	35.6
Performance fees*	n/a	1.2	0.7
Internal and other	<u>n/a</u>	<u>4.3</u>	<u>3.2</u>
Total	n/a	36.7	39.5

<sup>\*</sup> For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 1.8 bps for peers (7 funds) and 1.7 bps for Global participants (30 funds)

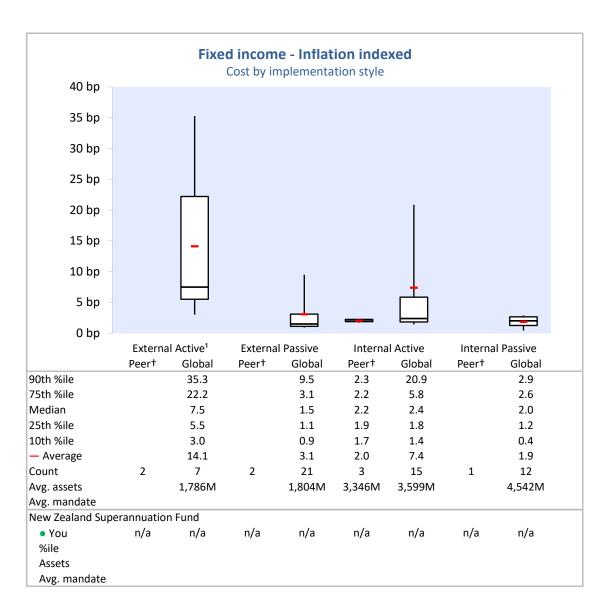
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	20.4	30.0
Performance fees*	n/a	0.0	5.2
Internal and other	<u>n/a</u>	<u>8.8</u>	<u>5.2</u>
Total	n/a	29.2	40.3

<sup>\*</sup> 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 (3 funds) and 12.6 bps for Global participants (16 funds).

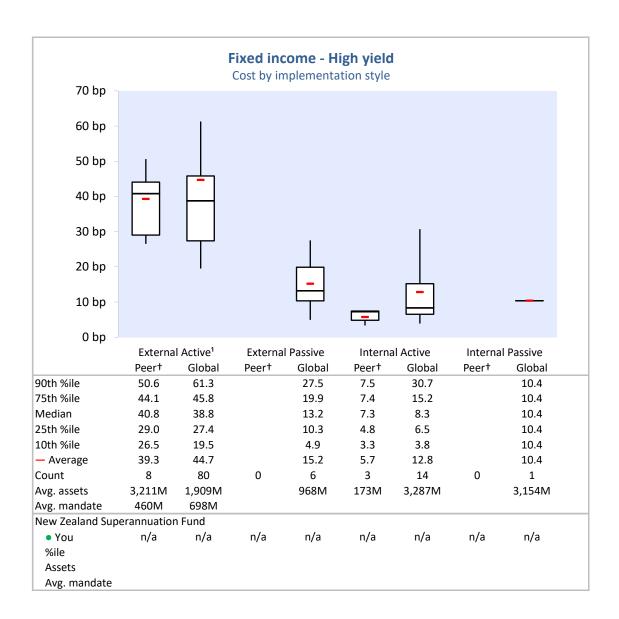
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	n/a	13.6
Performance fees*	n/a	n/a	0.2
Internal and other	<u>n/a</u>	<u>n/a</u>	0.3
Total	n/a	n/a	14.1

<sup>\*</sup> 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 0.6 bps for Global participants (2 funds)

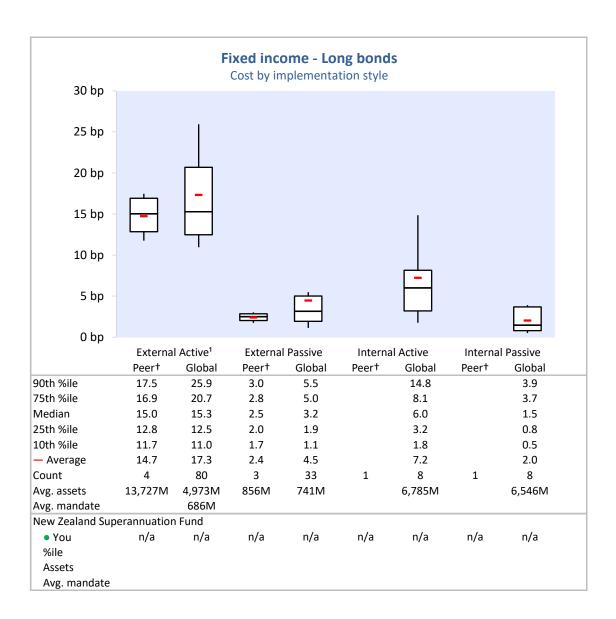
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	35.6	37.5
Performance fees*	n/a	1.7	4.5
Internal and other	<u>n/a</u>	<u>1.9</u>	<u>2.7</u>
Total	n/a	39.3	44.7

<sup>\*</sup> 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 3.5 bps for peers (4 funds) and 12.1 bps for Global participants (30 funds).

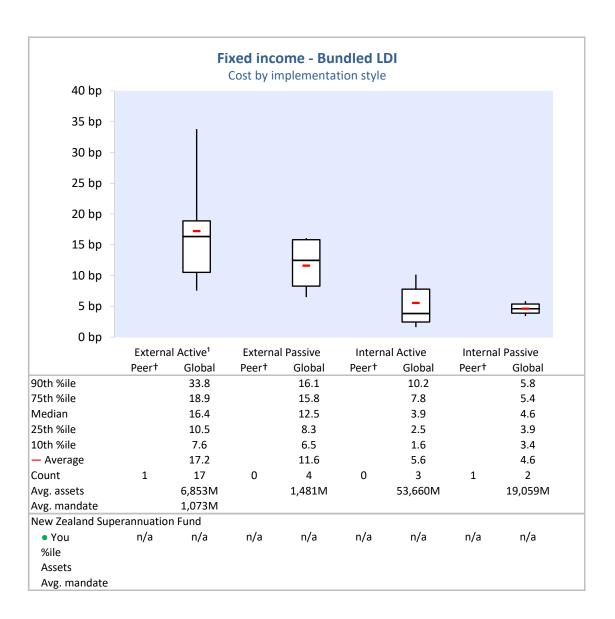
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	13.5	16.4
Performance fees*	n/a	0.6	0.5
Internal and other	<u>n/a</u>	<u>0.7</u>	0.4
Total	n/a	14.7	17.3

<sup>\*</sup> 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 1.2 bps for peers (2 funds) and 2.2 bps for Global participants (19 funds)

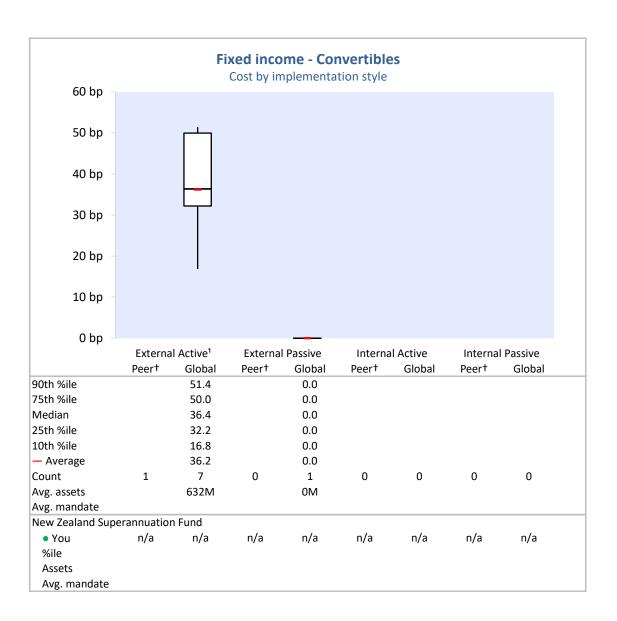
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	n/a	16.4
Performance fees*	n/a	n/a	0.4
Internal and other	<u>n/a</u>	<u>n/a</u>	0.4
Total	n/a	n/a	17.2

<sup>\*</sup> 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 7.2 bps for peers (1 fund) and 3.6 bps for Global participants (2 funds).

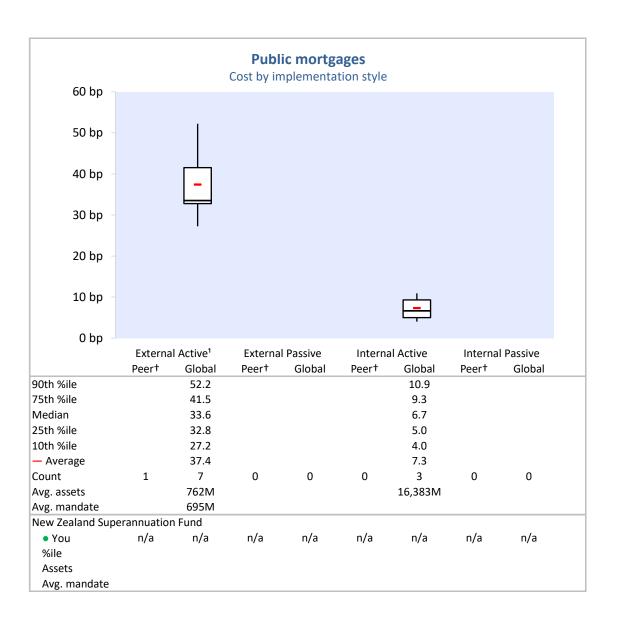
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	n/a	35.6
Performance fees*	n/a	n/a	0.0
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>0.6</u>
Total	n/a	n/a	36.2

<sup>\*</sup> 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 0.0 bps for Global participants (2 funds)

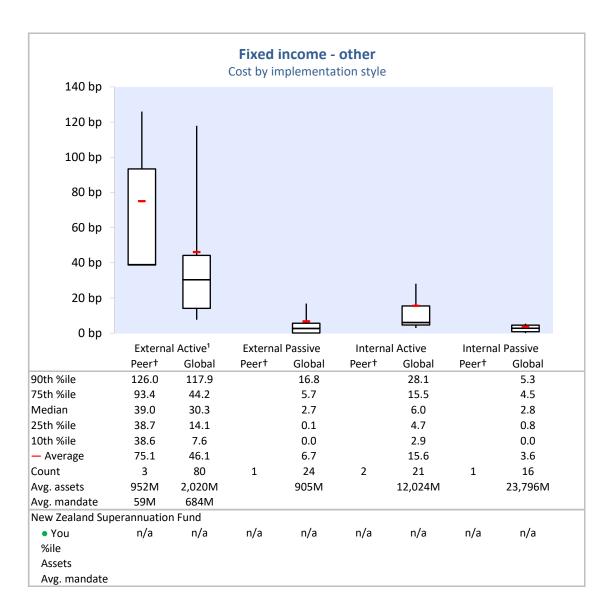
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	n/a	37.2
Performance fees*	n/a	n/a	0.0
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>0.2</u>
Total	n/a	n/a	37.4

<sup>\*</sup> 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 (1 fund).

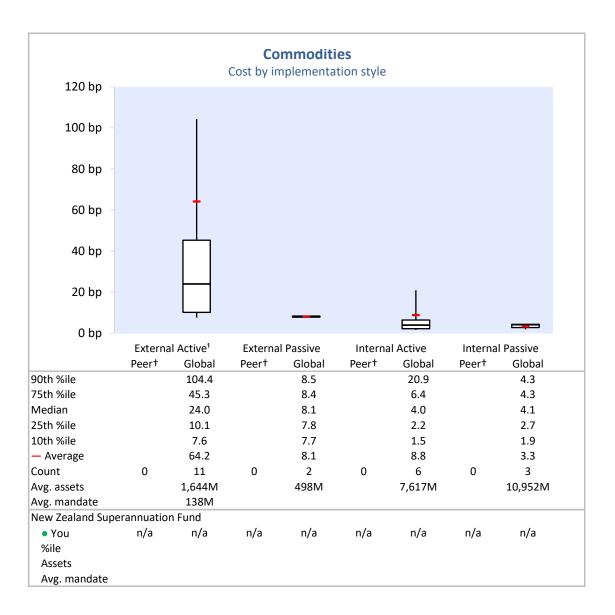
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	51.7	40.4
Performance fees*	n/a	23.3	5.0
Internal and other	<u>n/a</u>	<u>0.1</u>	<u>0.7</u>
Total	n/a	75.1	46.1

<sup>\*</sup> 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 69.8 bps for peers (1 fund) and 17.4 bps for Global participants (23 funds).

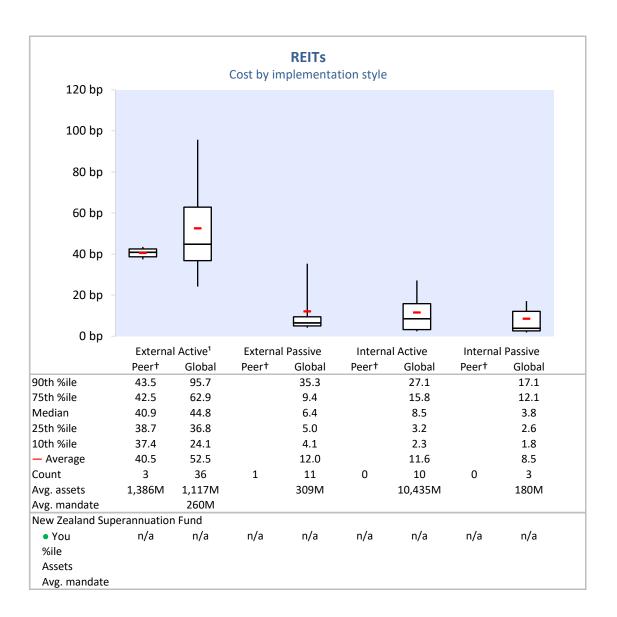
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	n/a	41.7
Performance fees*	n/a	n/a	21.5
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>1.0</u>
Total	n/a	n/a	64.2

<sup>\*</sup> 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 47.3 bps for Global participants (5 funds).

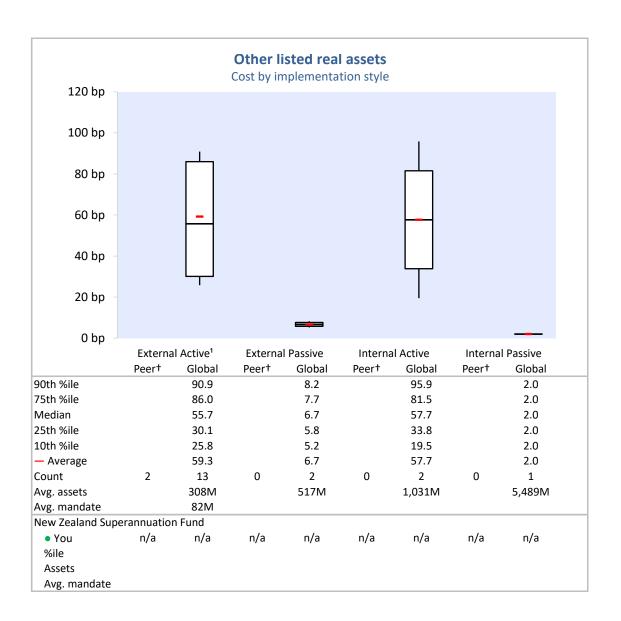
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	27.7	47.5
Performance fees*	n/a	11.3	4.0
Internal and other	<u>n/a</u>	<u>1.5</u>	<u>1.1</u>
Total	n/a	40.5	52.5

<sup>\*</sup> 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 peers (3 funds) and 9.0 bps for Global participants (16 funds).

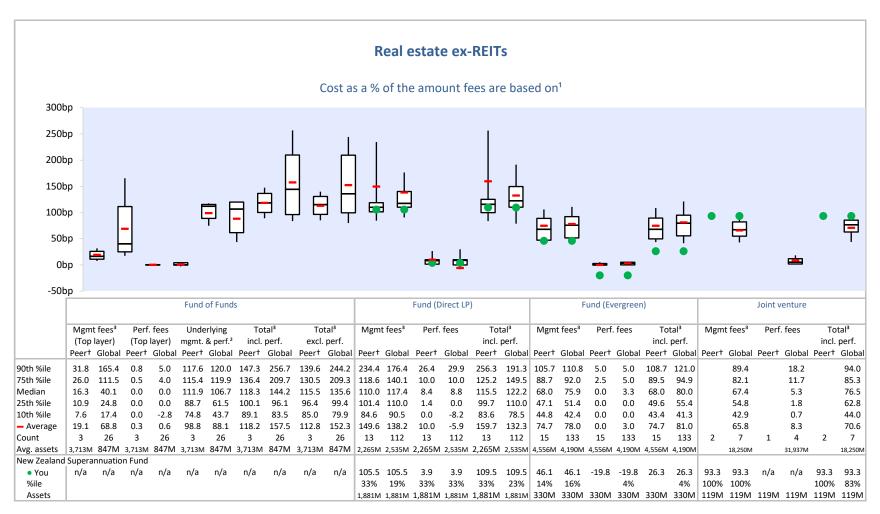
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



		Peer	Global
	You	Average	Average
Base fees	n/a	n/a	58.7
Performance fees*	n/a	n/a	0.0
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>0.6</u>
Total	n/a	n/a	59.3

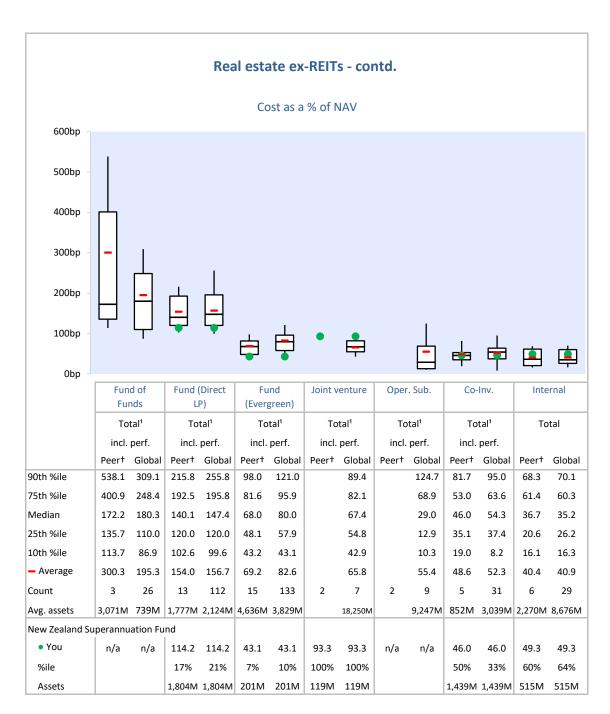
<sup>\*</sup> For funds that did not report a performance fee, a value of 'zero' was used. The average performance fee for those funds that reported a performance fee is 0.0 bps for peers (2 funds) and 0.0 bps for Global participants (5 funds)

<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



- 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 imputed costs of 110 bps (on amount fees are based on) for underlying management fees and 4 bps (on NAV) for underlying performance fees were used.
- 3. The management fees and total cost also include the internal cost of monitoring and selecting real estate investments. Your cost of monitoring and selecting was 12.6 bps for LPs and 5.7 bps for external (not LPs). The peer average cost of monitoring and selecting was 1.2 bps for fund of funds, 56.5 bps for LPs and 4.3 bps for external (not LPs).

<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

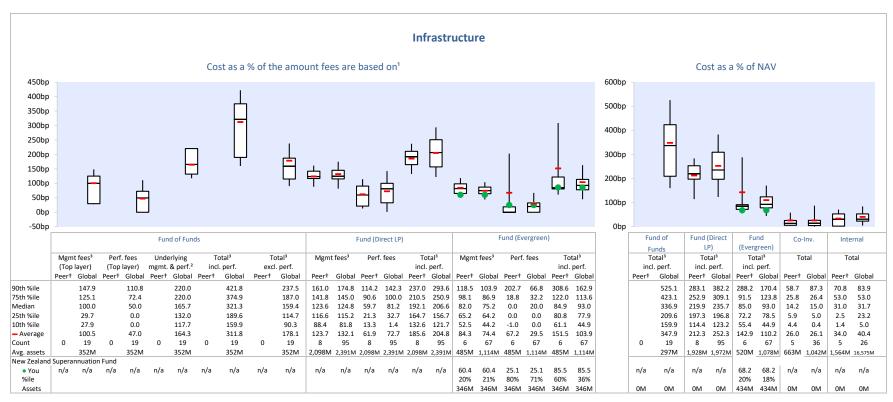


<sup>1.</sup> The total cost also includes the internal cost of monitoring and selecting real estate investments.

<sup>2.</sup> Co-investment is included with direct LPs because it can only be done alongside direct LPs. Co-investment is done by 5 of your peers and 25 of the Global funds.

<sup>3.</sup> The total cost also includes the internal cost of monitoring and selecting real estate investments. Internal and other - FoFs The peer average cost of monitoring and selecting was 1.2 bps for fund of funds, 56.5 bps for LPs and 4.3 bps for external (not LPs).

<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



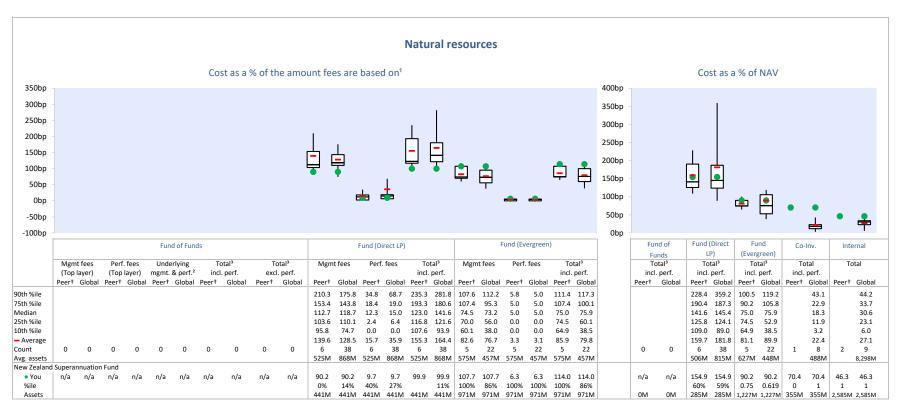
<sup>1.</sup> The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.

Some averages on the right chart may be off the chart where there is outlier data resulting from large base or performance fees divided by small NAV.

A CEM-imputed cost of 20 bps (on NAV) was applied to the core/evergreen performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis. †Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

<sup>2.</sup> 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 imputed costs 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.

<sup>3.</sup> The management fees and total cost also include the internal cost of monitoring and selecting infrastructure investments. Your cost of monitoring and selecting was 5.0 bps for external (not LPs). The peer average cost of monitoring and selecting was 5.6 bps for LPs and 3.5 bps for external (not LPs).

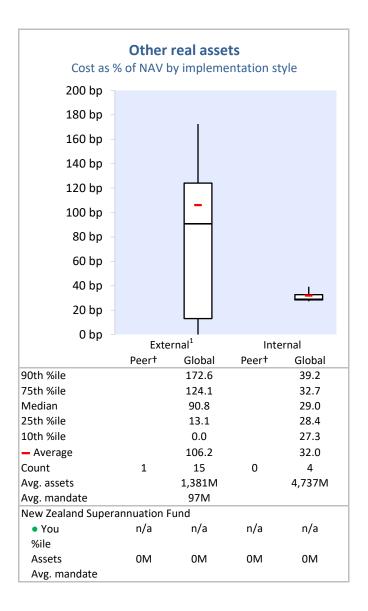


<sup>1.</sup> The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

<sup>2.</sup> 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 oimputed costs 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.

<sup>3.</sup> The management fees and total cost also include the internal cost of monitoring and selecting natural resource investments. Your cost of monitoring and selecting was 13.0 bps for LPs and 6.1 bps for external (not LPs). The peer average cost of monitoring and selecting was 8.4 bps for LPs and 3.1 bps for external (not LPs).

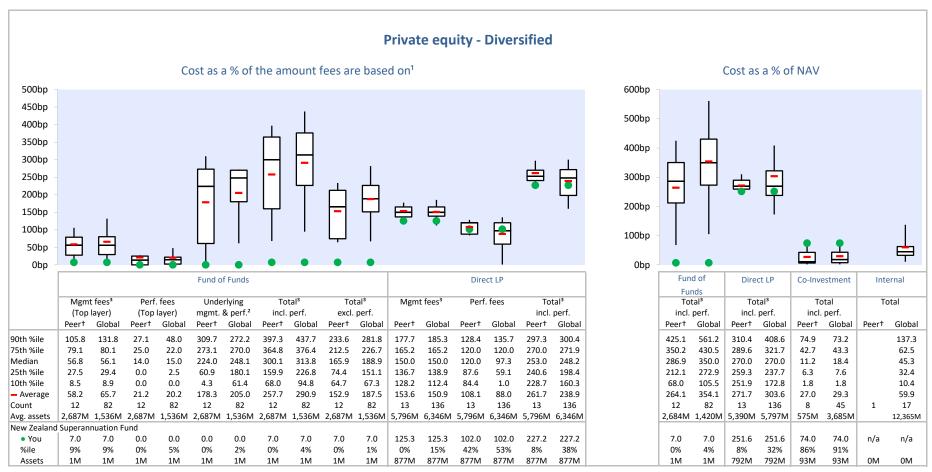


	Your	Peer	Global
	Plan	Average	Average
Base fees	n/a	n/a	94.0
Internal and other	<u>n/a</u>	0.0	<u>12.2</u>
Total*	n/a	n/a	106.2
Performance fees**	n/a	0.0	-32.2

<sup>\*</sup> Total cost excludes performance fees because most participants did not provide performance fees for other real assets.

<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

<sup>\*\*</sup> For funds that did not report a performance fee, an imputed cost of 5 bps was applied. The average performance fee for only those funds that reported a performance fee is 0.0 bps for peers (1 funds) and -57.1 bps for Global participants (9 funds).

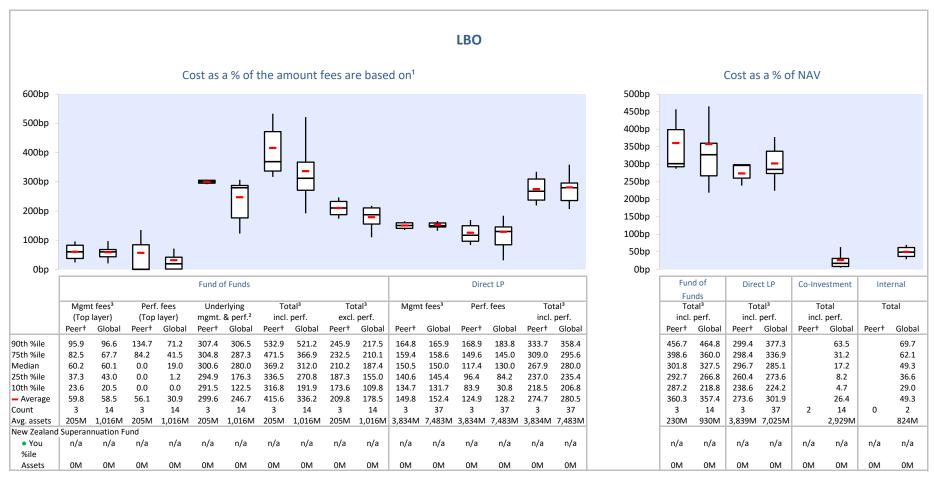


<sup>1.</sup> The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.

<sup>2.</sup> 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 imputed costs of 116 bps (on amount fees are based on) for underlying management fees and 120 bps (on NAV) for underlying performance fees were used.

<sup>3.</sup> The management fees and total cost also includes the internal cost of monitoring and selecting private equity investments. Your cost of monitoring and selecting was 7.0 bps for fund of funds and 8.3 bps for LPs. The peer average cost of monitoring and selecting was 6.7 bps for fund of funds, 8.2 bps for LPs and 6.0 bps for co-investments.

<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

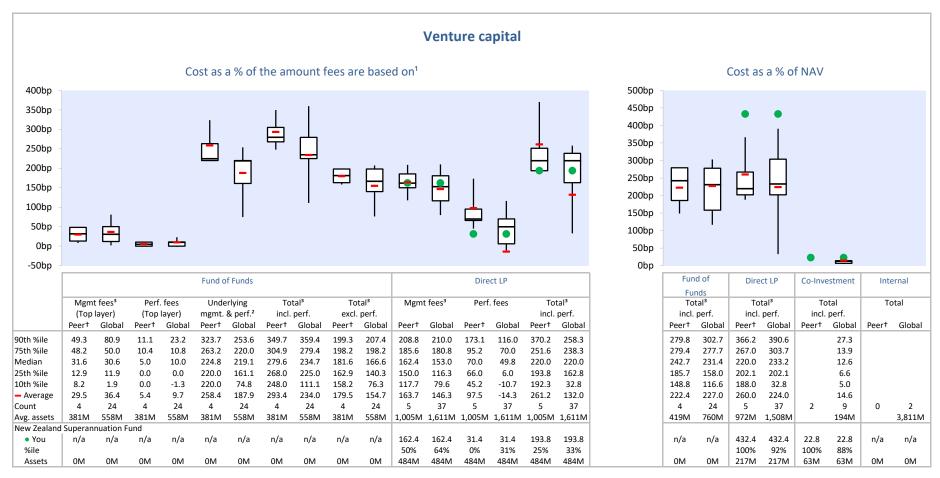


<sup>1.</sup> The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.

<sup>2.</sup> 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 imputed costs of 150 bps (on amount fees are based on) for underlying management fees and 130 bps (on NAV) for underlying performance fees were used.

<sup>3.</sup> The management fees and total cost also include 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 , 4.7 bps for LPs and 2.0

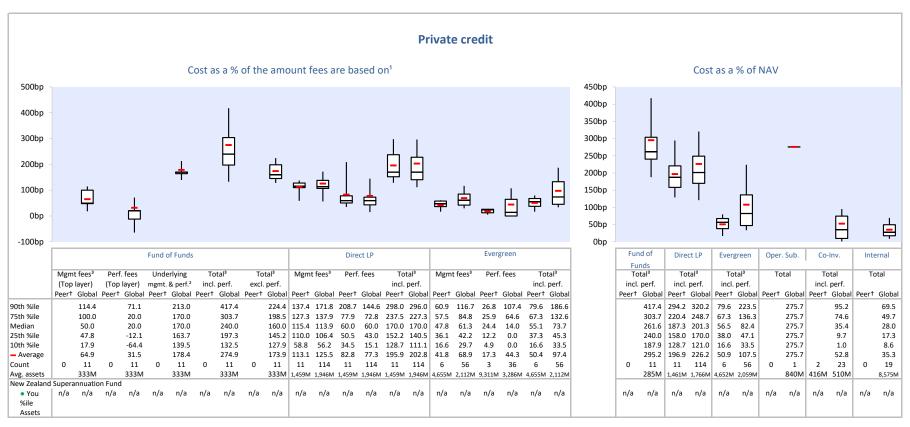
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



- 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 imputed costs of 150 bps (on amount fees are based on) for underlying management fees and 70 bps (on NAV) for underlying performance fees were used.
- 3. The management fees and total cost also include the internal cost of monitoring and selecting private equity investments. Your cost of monitoring and selecting was 15.3 bps for LPs. The peer average cost of monitoring and selecting was 7.7 bps for fund of funds, 8.6 bps for LPs and 2.0 bps for co-investments.

A CEM-imputed cost of 70 bps (on NAV) was applied to the lp/value add performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.

†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.

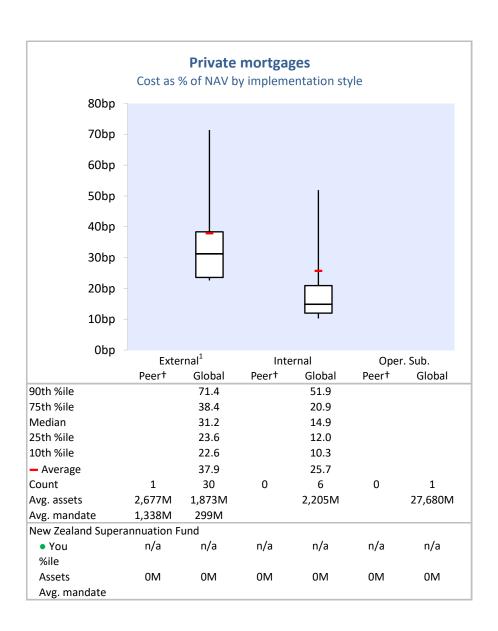


<sup>1.</sup> The base for fees is usually the committed amount during the commitment period, and unreturned invested capital afterwards.

<sup>2.</sup> 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 imputed values 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.

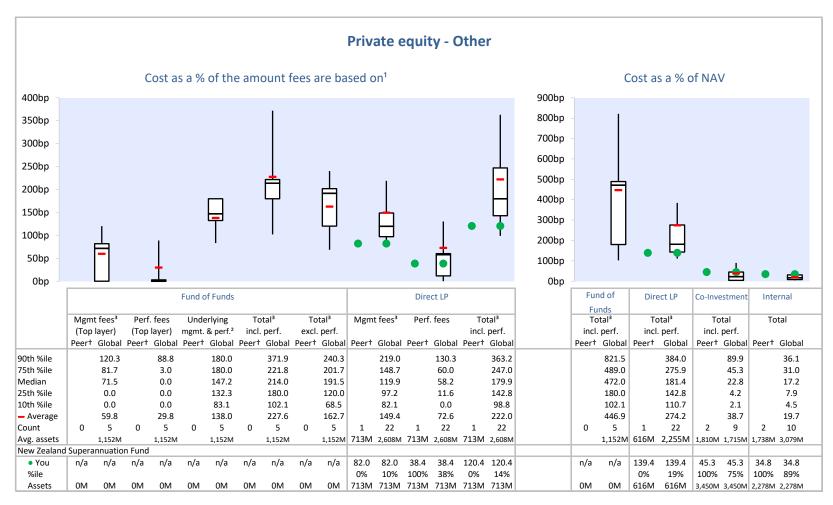
<sup>3.</sup> The management fees and total cost also include the internal cost of monitoring and selecting Private Credit investments. The peer average cost of monitoring and selecting was 10.5 bps for LPs and 1.8 bps for external (not LPs).

<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



	Your	Peer	Global
	Plan	Average	Average
Base fees	n/a	29.8	35.6
Internal and other	<u>n/a</u>	<u>n/a</u>	<u>2.3</u>
Total	n/a	n/a	37.9
Performance fees	n/a	0.0	0.1

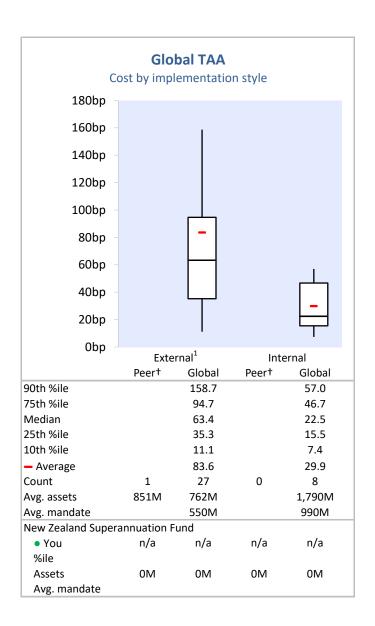
†Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



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

<sup>2.</sup> 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 imputed values 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.

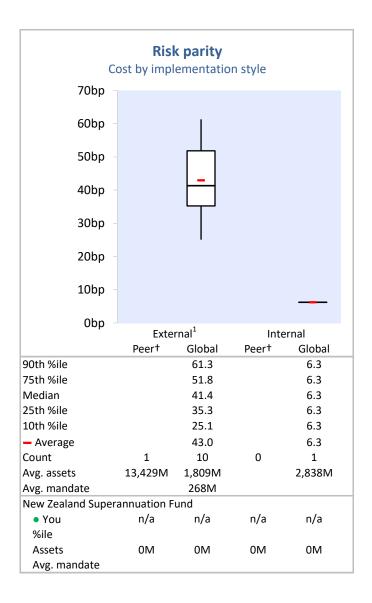
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



	Your	Peer	Global
	Plan	Average	Average
Base fees	n/a	16.1	63.6
Internal and other	n/a	n/a	8.3
Performance fees	<u>n/a</u>	<u>3.6</u>	<u>25.0</u>
Total*	n/a	n/a	83.6

<sup>\*</sup> 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 3.6 bps for peers (1 fund) and 25.0 bps for Global participants (18 funds).

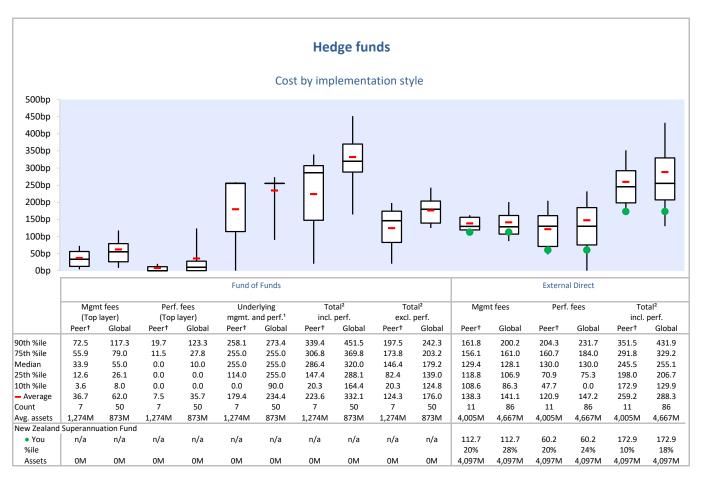
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



	Your	Peer	Global
	Plan	Average	Average
Base fees	n/a	26.6	40.4
Internal and other	n/a	0.3	2.1
Performance fees	<u>n/a</u>	0.0	<u>3.2</u>
Total*	n/a	n/a	43.0

<sup>\*</sup> 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 3.2 bps for Global participants (6 funds).

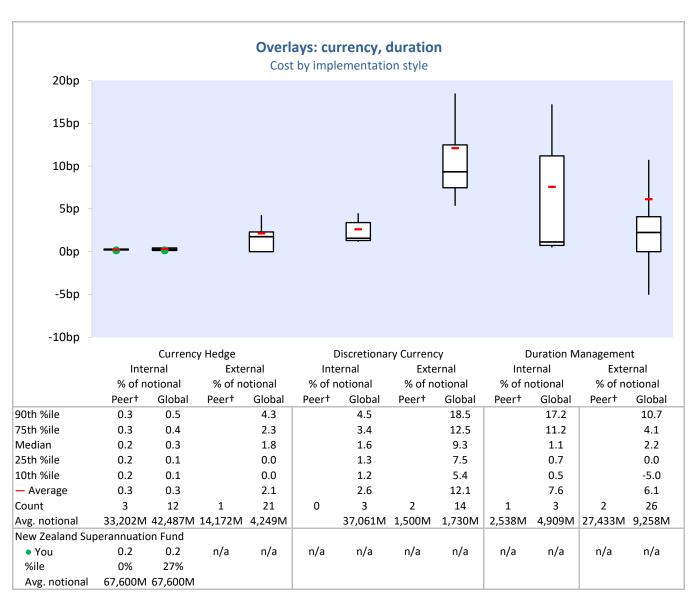
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



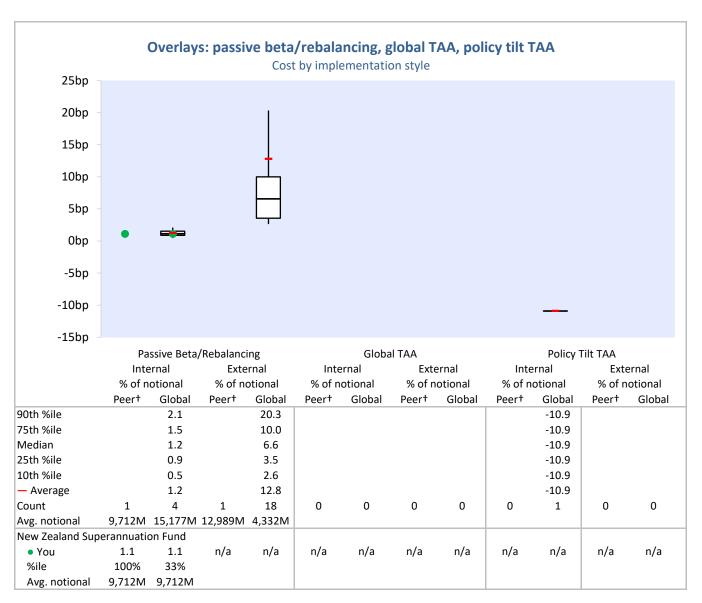
<sup>1.</sup> The fees of fund of funds include both the top layer fees paid to the fund of funds manager and the underlying fees paid to the 'underlying partnerships' held by the fund of funds. Most funds were unable to provide the underlying fees so imputed costs of 125 bps (on NAV) for underlying management fees and 130 bps (on NAV) for underlying performance fees were used.

<sup>2.</sup> The total cost also includes the internal cost of monitoring and selecting real estate investments. The peer average cost of monitoring and selecting was 4.1 bps for fund of funds and 7.3 bps for LPs.

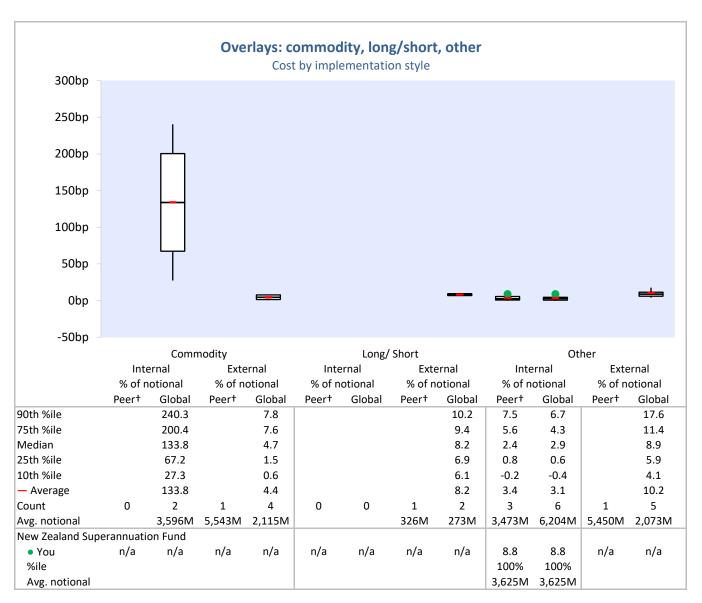
<sup>†</sup>Peer cost distributions, and in certain cases the Universe cost distributions, are not shown where count is less than 3 to protect anonymity.



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# 6 Risk

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<sup>\*</sup>Asset-liability risk is only calculated for DB or DB-like pension funds/pools and if the liability information was available on the CEM survey.

# Modeled risk as a measure of expected volatility

Risk can be measured in various ways. A common measure of risk is volatility, i.e., the standard deviation of realized returns.

Calculating the standard deviation of historic returns (i.e., realized risk) poses several challenges. Firstly, it requires a significant number of data points to have validity. Since CEM universe participants only provide annual performance data, a fairly long time period is required before a reasonable risk value can be calculated. Secondly, even when such a time series is available, it is possible that the strategy or approach being used by the fund may have changed over the time series which may not be captured in the estimated volatility.

In addition, private asset class returns, which tend to be smoothed and lagged relative to public markets, can lower observed volatility simply due to differences in valuation approaches relative to public markets.

CEM calculates a modeled (expected) volatility based on the asset allocation of each peer, using a common covariance table based on historical data.

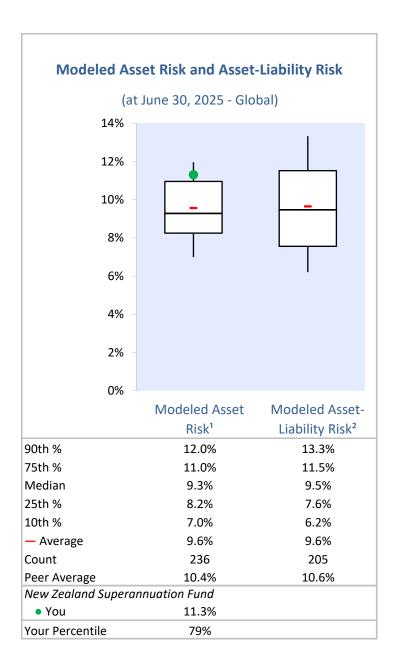
The covariance table is calculated based on a long term series of monthly return data. It does not require a large volume of data from peers to produce useful results. It is also able to calculate an expected volatility at a single point in time, and hence reasonably captures the expected impact of changes in allocation or strategy.

Proxies based on public markets, which share the risk factors of similar private market investments, are used to represent private assets without artificially smoothing expected volatility.

The following pages show how CEM calculates modeled risk, and comparisons of risk based on this standard risk measure.

CEM currently only models asset allocation risk (including currency and interest rate hedges), and does not specifically model active risk. The addition of an active risk model calculation is under consideration.

# Comparison of your modeled risk levels to the Global universe



<sup>1.</sup> Modeled asset risk is the expected volatility of your policy return. It is based on the historical variance of, and covariance between, the asset classes in your asset mix policy. It is expressed as an annual standard deviation.

<sup>2.</sup> Modeled asset-liability risk is the expected volatility of surplus returns. Surplus returns are the changes in a plan's marked-to-market funded status caused by market factors. Asset-liability risk is a function of the volatility of policy returns (asset risk), the volatility of surplus returns (surplus risk) and the correlation between policy returns and surplus returns.

# **Calculation of modeled asset risk**

Before considering the benefit of diversification, the weighted average risk of the asset classes in your asset mix policy was 13.1%.

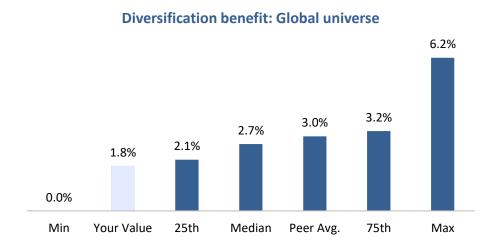
# Calculation of your weighted asset class risk

	Policy		Weighted
Asset Class	weight	Risk <sup>1</sup>	risk
	(A)	(B)	(A X B)
Stock: EAFE	5.0%	15%	0.8%
Stock: Emerging	6.5%	19%	1.2%
Stock: Global	68.5%	13%	9.1%
Bonds: Global	20.0%	10%	2.0%
Weighted Total			13.1%

<sup>1.</sup> Risk is the standard deviation of returns for the asset class based on standard benchmarks used by CEM.

### Reduction in modeled asset risk due to diversification

Your asset risk is less than your weighted asset risk because of the benefit of diversification. Diversification reduces risk because when one asset class has a negative return, it might be offset by another asset class with a positive return. The lower the correlation between your policy asset classes, the greater the diversification benefit. The correlation between your policy asset classes is shown on page 15 of this section.



The benefit of diversification equals weighted asset risk minus asset risk.

# Components of modeled asset risk

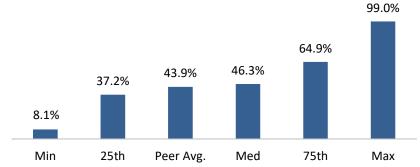
		Peer	Peer	Global	Global
	You	median*	average	median*	average
Weighted asset risk	13.1%	13.2%	13.4%	12.3%	12.3%
Benefit of diversification	1.8%	3.2%	3.0%	2.7%	2.7%
Asset risk	11.3%	10.8%	10.4%	9.3%	9.6%

<sup>\*</sup> Comparisons of components of asset risk should be interpreted with caution because it is not always possible to separate the diversification benefit from the weighted asset risk. For example, global stock as an asset class includes the diversification benefit of its geographic components within its asset risk.

# Modeled asset-liability risk

Your plan would not have any asset-liability risk if your assets perfectly matched your liabilities. If they matched, then the correlation between asset returns and liability returns would be 100%. If liabilities increased, assets would increase by a like amount (and vice versa). Thus higher correlation between your asset returns and liability returns reduces your asset-liability risk.





In addition to the correlation between asset returns and liability returns, asset-liability risk is also a function of the volatility of asset returns (asset risk) and the volatility of liability returns (liability risk =  $\sqrt{R_A^2 + R_L^2 - 2\rho_{AL}R_AR_L}$ ).

# Components of modeled asset-liability risk

		Peer	Peer	Global	Global
	You	median	average	median	average
Asset risk (R <sub>A</sub> )	11.3%	10.8%	10.4%	9.3%	9.6%
Liability risk (R <sub>L</sub> )		9.9%	9.6%	9.5%	9.3%
Correlation between					
policy returns and liability					
returns (ρAL)		42.0%	43.9%	46.3%	49.6%
Asset-liability risk		11.7%	10.6%	9.5%	9.6%

<sup>1.</sup> Liability returns equal the changes in your marked-to-market liabilities caused by market factors. These are assumed to equal the return on your liability proxy portfolio (see next page).

# Liability proxy portfolio

Your liability proxy portfolio is the portfolio of nominal and inflation-indexed bonds that best matches the sensitivity of your liabilities to changes in real and nominal interest rates.

# Comparisons of liability proxy portfolio

	Your f	Your fund		erage	Global av	erage
		% of		% of		% of
	Duration	Assets	Duration	Assets	Duration	Assets
Inflation Indexed Bonds	n/a	n/a	11.6	57%	11.5	53%
Nominal Bonds	n/a	n/a	13.7	43%	14.4	47%
Total		n/a		100%		100%

Your liability proxy portfolio is a tool that:

- a) Helps you understand how the unsmoothed market value of your liabilities responds to changes in real and nominal interest rates.
- b) Helps you make better asset mix policy decisions by providing an understanding of which assets will decrease your asset-liability risk (i.e., assets that behave similarly to the neutral asset mix) and which assets will increase your risk.
- c) Helps you understand how your liabilities are different from your peers. Differences in liabilities mean that the same asset will have different risk / reward characteristics for different funds.
   For example, the risk of a nominal bond for a fund with 100% inflation sensitivity is much higher than it is for a fund with less than 100% inflation sensitivity.

Asset-liability risk could theoretically be eliminated if your actual asset mix matched the liability proxy portfolio. However, we recognize that this is neither an option nor a goal for most funds because:

- The supply of inflation-indexed assets is limited. These assets are required to match the obligations of pension liabilities.
- This low-risk strategy also has a lower expected return, implying either higher future funding costs or lower future benefits.

The methodology and formula used to determine your liability proxy portfolio are provided on pages 17-19 of this section.

# **Liability risk**

Differences in liability risk are due to differences in inflation sensitivity and member demographics.

A plan's inflation sensitivity depends on:

### a) The type of plan

Final and highest average plans have more inflation sensitivity than career average plans. Conversely, career average plans have more inflation sensitivity than flat benefit plans. Your plan type is n/a.

	# of	% of
Plan type	plans	Total
Flat Benefit	18	7%
Career Average	41	16%
Final/Highest/Best Avg	159	63%
Other	33	13%
Total	251	100%

### b) Contractual inflation protection for retired members

Your retired members get n/a contractual inflation protection. Your retiree inflation protection is subject to a cap of n/a.

Retiree inflation		# of plans					
protection	Corporate	Public	Other				
0%	90	28	19				
>0% and <50%	4	3	1				
50%	1	0	1				
>50% and <100%	4	10	1				
100%	12	36	7				
Total	111	77	29				

### c) Member demographics

Member demographics impacts both inflation sensitivity and the duration of plan liabilities. The survey asks for your plan's percentage of liabilities that relate to retired members from your actuarial reports. If you did not provide this number, then it is estimated (see page 18 of this section). Your percentage of liabilities that relate to retired members was estimated to be n/a.

		Peer	Global
	Your fund	Average	Average
Active Members	n/a	42%	43%
Retired Members	n/a	58%	57%
Total		100%	100%

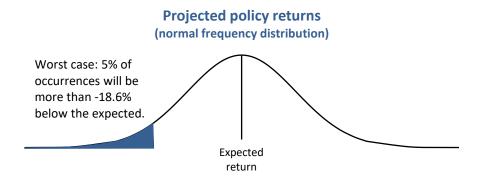
# **Projected worst case scenarios**

We can convert your asset risk and asset-liability risk into worst case outcomes for policy returns and funded status if we make the following simplifying assumptions:

- a) Returns are normally distributed.
- b) Historic return volatility and correlations will continue in the future.
- c) No change in your policy asset mix or liabilities.

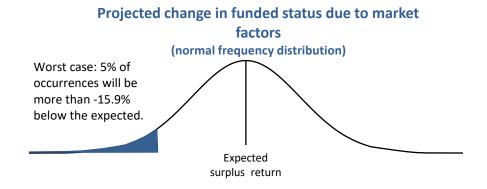
### a) Worst case policy returns

Every year there is a 5% probability that your policy return will be worse than your expected policy return by more than -18.6% (-18.6% equals -1.65 X your asset risk of 11.3%). -18.6% is the starting point of worst case outcomes. They could be much worse.



### b) Worst case impact on funded status

For the average Global fund, there is a 5% probability every year that changes in mark-to-market funded status caused by market factors ("Surplus Returns") will be worse than expected by more than -15.9%. (-15.9% equals -1.65 X the Global average asset-liability risk of 9.6%).



# Historic worst case scenarios during the past 5 years

# a) Historic worst case policy returns

During the past 5 years, your lowest policy return was -10.4% in 2022.

Historic policy returns - Global universe

	2025	2024	2023	2022	2021
90th %	12.1%	14.1%	10.7%	0.4%	23.6%
75th %	10.3%	12.6%	8.7%	-2.5%	19.7%
Median	7.7%	10.7%	5.3%	-6.2%	14.3%
25th %	5.4%	7.4%	1.2%	-10.8%	9.4%
10th %	3.1%	4.0%	-3.6%	-15.5%	4.7%
Average	7.6%	9.9%	4.1%	-6.8%	14.2%
Count	237	285	300	295	312
Peer Avg	5.8%	11.2%	2.8%	-4.9%	16.6%
Your Value	10.9%	15.1%	6.8%	-10.4%	26.6%

# b) Historic worst case changes in funded status

During the past 5 years, funds experienced the worst change in marked-to-market funded status caused by market factors ("Surplus Returns") in 2022, when the median fund experienced a -5.3% decline.

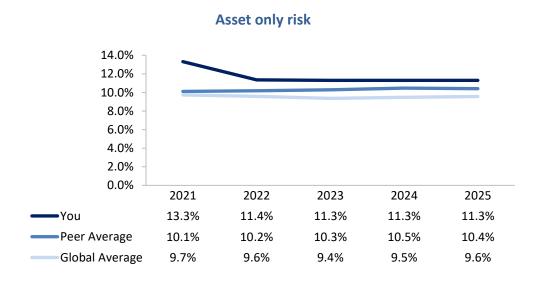
Historic changes in funded status caused by market factors - Global universe

	2025	2024	2023	2022	2021
90th %	14.1%	9.2%	40.7%	2.1%	12.7%
75th %	12.2%	7.7%	35.8%	-1.4%	9.5%
Median	9.2%	5.3%	30.8%	-5.3%	3.6%
25th %	6.6%	2.0%	25.0%	-11.1%	-3.1%
10th %	3.9%	-1.1%	18.9%	-14.7%	-8.3%
Average	9.2%	4.7%	30.4%	-5.8%	2.8%
Count	205	239	251	254	275
Peer Avg	8.2%	5.2%	31.4%	-5.2%	6.5%
Your Value	n/a	n/a	n/a	n/a	n/a

### Risk Trends - 2021 to 2025

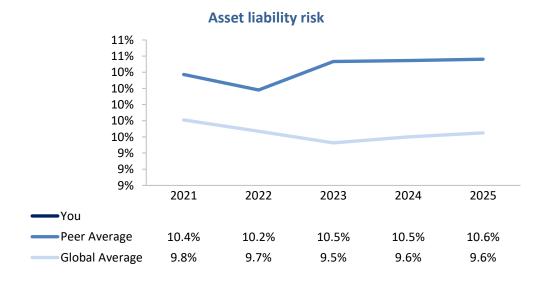
### a) Asset risk trends

Asset risk will only change if policy asset mix changes. Between 2021 and 2025 the asset risk for your fund decreased from 13.3% to 11.3%.

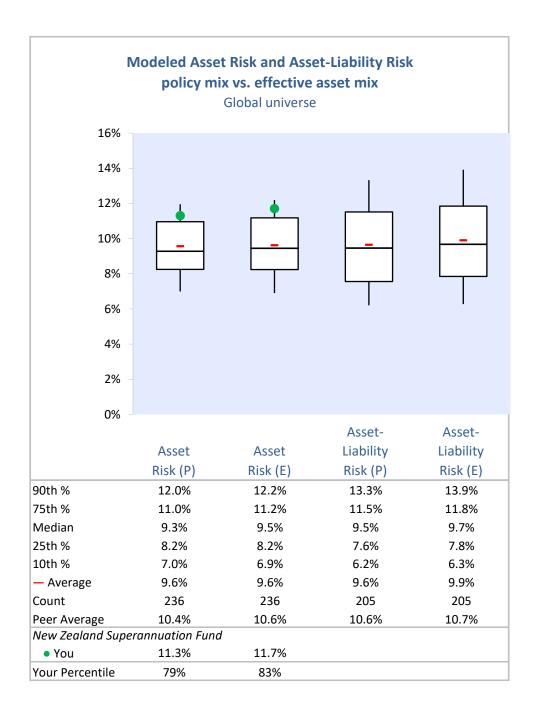


### b) Asset-liability risk trends

Asset-liability risk will change if policy asset mix changes, or if the nature of your liabilities changes. Between 2021 and 2025 the asset-liability risk for Global funds that have provided 5 consecutive years of data decreased from 9.8% to 9.6%.



# Risk levels based on the policy mix and the effective asset mix



P - calculated using your policy mix, same as the risk figures shown on page 3.

E - based on the effective asset mix (if a valid effective mix was provided, or the actual asset mix otherwise).

# Measures of risk-adjusted performance

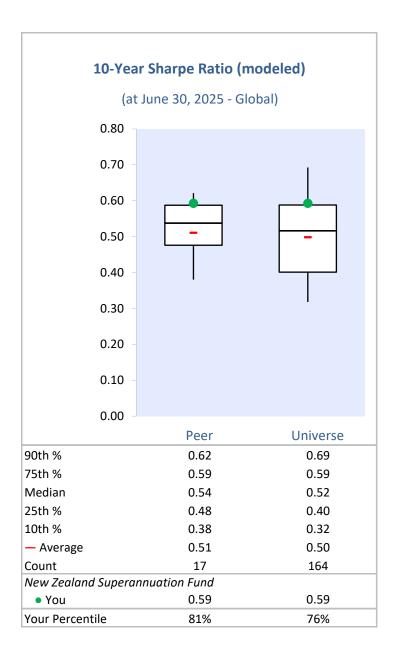
Risk-adjusted returns are used to assess performance relative to the amount of risk taken. Two of the popular industry measures of risk-adjusted returns are: (i) the Sharpe ratio (return less risk-free return per unit of risk), and (ii) the Information ratio (return less benchmark return per unit of risk).

The unit of risk used in both Sharpe ratios and Information ratios is volatility, i.e., the standard deviation of excess returns.

As discussed on page 2 of this section, calculating the volatility from the standard deviation of historic returns (i.e., realized risk) has challenges. Likewise, modeled (expected) risk also suffers from limitations around estimation of active risk and is not perfect.

Therefore, CEM suggests looking at comparisons of risk-adjusted returns with both modeled (expected) and realized (historic) returns.

# Comparison of your risk-return levels to the Global universe - modeled Sharpe ratio

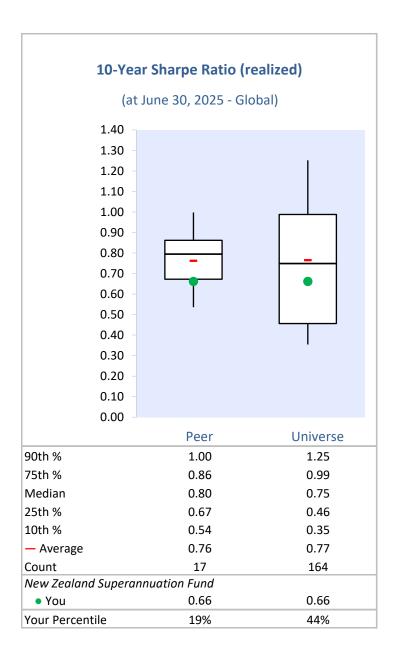


The Sharpe ratio is a measure of your portfolio's excess return compared to the expected volatility of your portfolio. It is calculated using your 10-year net return, less the 10-year risk-free rate of 1.74%, divided by your 10-year asset risk<sup>1</sup>.

Your Sharpe ratio for the past 10-year period of 0.59 is above the universe median of 0.52.

1. The volatility used to calculate the Sharpe ratio is the expected volatility of your policy return. It is based on the historical variance of, and covariance between, the asset classes in your asset mix policy. It is expressed as an annual standard deviation.

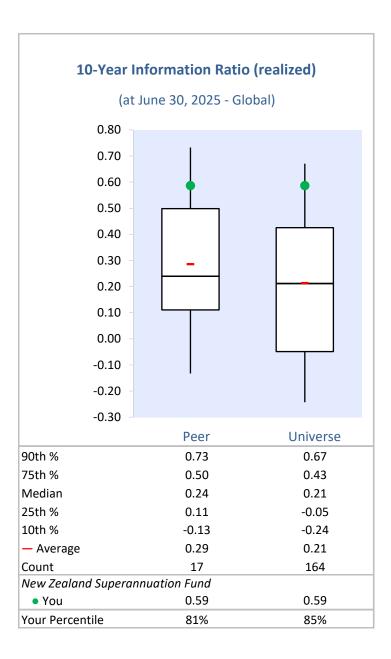
# Comparison of your risk-return levels to the Global universe - realized Sharpe ratio



The Sharpe ratio (realized) is a measure of your portfolio's excess return compared to its realized volatility. It is calculated using your 10-year excess return, which is the 10-year net return less the 10-year risk-free rate of 1.74%, divided by the 10-year standard deviation of excess return.

Your Sharpe ratio for the past 10-year period of 0.66 is below the universe median of 0.80.

# Comparison of your risk-return levels to the Global universe - realized Information ratio



The Information ratio is a measure of your active return<sup>1</sup> compared to its tracking error<sup>2</sup>.

Your information ratio for the past 10-year period of 0.59 is above the universe median of 0.21.

- 1. Active return is the difference between your net return and policy return, also known as your net value added.
- 2. Tracking error is the volatility or standard deviation of your net value added.

# Appendix A - Methodology and formula used to calculate liability return and liability proxy portfolio

### Risk calculation descriptions

CEM would like to recognize and thank Malcolm Hamilton, previously of Mercer, for providing the key formulas used to calculate liability returns. We would also like to thank Stijn Oude Brunink, previously of ORTEC Consultants in the Netherlands, who provided the proofs and made adjustments to Mr. Hamilton's formulas. These formulas and this section use several simplifying assumptions that could cause your fund's individual results to differ from actual. We encourage you to pursue more precise calculations of your liability returns.

### Step 1 - Inflation sensitivity

The first step in estimating your liability return is to determine your liabilities' inflation sensitivity. The degree of total inflation sensitivity determines the proportion of inflation-indexed bonds versus nominal bonds that belong in your liability proxy portfolio.

### **Total inflation sensitivity**

- = Inflation protection retirees X % liabilities relating to retirees
- + Inflation protection for active members X (1 % liabilities relating to retirees)

### Inflation protection for retirees

On the survey we asked for the amount of contractual inflation protection provided to retirees.

Ad hoc inflation protection is not considered because it is not a contractual liability. However, many funds are managed to maintain historic levels of ad hoc increases. If this is the case with your fund, then your inflation protection may have been understated. Please ask for CEM to make that adjustment for you.

### Inflation protection for active members

We inferred inflation protection for your active members to be 0% based on your plan type of n/a.

Final and highest average plans have less than 100% inflation protection because during the averaging period, inflation protection is only 50%, not 100%. This is a natural function of taking an average of more than one year's earnings. Thus the weighted average inflation protection for active members in a 5-year final average plan is around 86% and in a 3-year average plan, 93%. These weighted averages are lower than intuition might suggest because the active members associated with the largest liabilities (i.e., the highest weights) are the ones closest to retirement.

Flat Benefit and Career Average plans are assumed to have 77% inflation protection. Contractually, flat benefit plans have zero inflation protection but negotiated increases tend to closely track inflation. However, just as with Final Average plans, inflation protection between negotiated increases is less than full inflation.

### Step 2 - Proportion of liabilities relating to retirees

The second step is to determine how much of your liabilities relate to your retirees versus your active members. This number is used to weight the liability proxy portfolio's obligations to retirees and active members.

This ratio depends on several factors including the ratio of retired and active members, member demographics and the inflation sensitivity of the promise made to these two member groups. Deferred (also known as inactive) members are ignored because even if they are large in number they tend to represent only a very small fraction of the future liability.

# **Equivalency Table**

Retirees as a % of	% Liabilities Relating to
Active + Retirees	Retirees
0%	0%
10%	22%
20%	35%
30%	45%
40%	55%
50%	63%
60%	71%
70%	79%
80%	86%
90%	93%
100%	100%

Most funds have provided the actual ratio from their actuarial reports (as requested on the survey). If the ratio is not provided, it is estimated based on the "Equivalency" table above.

Your percentage of liabilities that relates to retirees was n/a. The percentage of liability that relates to retirees is higher than the retirees as a percentage of active and retired members because retirees have accrued a higher benefit.

### Step 3 - Determining your duration relative to real and nominal yields

Duration enables you to determine the change in value of a cash flow, such as your pension liabilities, caused by a change in interest rates. The relationship between duration and cost of your pension liability is as follows.

Percentage change in pension liability cost

- = (- Modified duration relative to change in real yields X change in real yields)
- + (- Modified duration relative to change in nominal yields X change in nominal yields)

The modified duration of your liabilities with respect to changes in real and nominal yields is determined by the following two formulas.

Modified duration relative to changes in real yields

- = 10 X [Inflation protection for active members X (1 % of liabilities relating to retirees)
- + Inflation protection for retirees X (1 % of liabilities relating to retirees/4)
- + (Inflation protection for retirees/10) X (1.5 0.5 X % liabilities relating to retirees)]

Modified duration relative to changes in nominal yields

- = 10 X [(2 5 X % Liabilities relating to retirees/4 inflation protection for actives X (1 % liabilities relating to retirees)
- (Inflation protection for retirees/10) X (8.5 2 X % liabilities relating to retirees)
- (Inflation protection for retirees/10) X (1.5 0.5 X % liabilities relating to retirees)]

### Step 4 - Determining the liability proxy portfolio

Knowing the sensitivity of your pension liabilities to real and nominal interest rates enables you to construct a liability proxy portfolio using a combination of nominal bonds and inflation-indexed bonds.

Duration of inflation-indexed bonds in your liability proxy portfolio =

Modified Duration Relative to Change in Real yields ÷ Proportion of inflation-indexed bonds in your liability proxy portfolio (this is the total inflation sensitivity)

Duration of nominal bonds in your liability proxy portfolio =

Modified Duration Relative to Change in Nominal Yields ÷ Proportion of nominal bonds in your liability proxy portfolio (this is 1 minus the total inflation sensitivity)

Proportion of inflation-indexed bonds in your liability proxy portfolio = total inflation sensitivity

Proportion of nominal bonds in your liability proxy portfolio = 1 - total inflation sensitivity

### Step 5 - Liability returns

The return earned on your liability proxy portfolio is the liability return and matches the change in your plan's liabilities in response to changes in market factors. It uses a true market valuation rather than a smoothed actuarial valuation. See page 20 for benchmark details.

### **Liability Return**

- = Proportion indexed bonds in liability proxy portfolio X (CPI + average real yield)
- + Proportion nominal bonds in liability proxy portfolio X average long bond yield
- Modified duration relative to change in real yields X change in real yields
- Modified duration relative to change in nominal yields X change long yields

	Long Nominal Bonds		Inflation Bor	СРІ	
	Year end yield	Change in yield	Year end yield	Change in yield	
2025	4.57	0.71	2.47	0.48	2.95
2024	3.87	0.03	1.99	0.22	4.12
2023	3.83	2.33	1.76	2.25	8.00
2022	1.50	0.59	-0.49	-0.05	4.70
2021	0.91	-1.00	-0.44	-1.01	1.23

# Appendix B - Methodology used to calculate asset and asset-liability risk

### Asset mix

Your asset only mix is a function of your policy asset mix, your currency hedging policy and the presence of any duration overlays.

CEM does not use your specific policy benchmarks. Standard asset class proxies (shown on the next page) are used for each given asset class. Monthly historical data is used to construct an asset class variance/covariance table. Your specific policy weights are then used to calculate an expected monthly volatility for your policy mix using the following formula, which takes current asset class variances and covariances as expected future variances and covariances.

Expected monthly variance of policy mix =  $\sum wXwYCov(X, Y)$ =  $\sum w_x w_y \sigma_x \sigma_y \rho_{x,y}$ 

where

 $w_X$  = policy weight of asset class X  $\sigma_X$  = standard deviation of monthly returns for asset class X  $w_Y$  = policy weight of asset class Y  $\sigma_Y$  = standard deviation of monthly returns for asset class Y  $\sigma_Y$  = standard deviation of monthly returns for asset class Y  $\sigma_Y$  = Pearson's correlation of the returns for X and Y

Each sum is over all asset classes. Assuming normal distribution of returns, we then solve for expected annual standard deviation as:

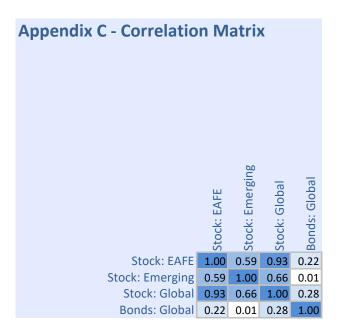
Expected annual standard deviation of policy mix =  $(Expected monthly variance of policy mix)^{1/2} X (12)^{1/2}$ 

Hedged and unhedged asset classes are treated as separate asset classes in the model. Funds with hedging policies between 0% and 100% have their policy weight allocated between the hedged and unhedged asset classes according to the proportion hedged.

Duration overlays are also treated as a separate asset class. Their weight is taken as notional value divided by total plan assets. For funds with duration overlays, the sum of weights will be greater than 100%. Rather than calculating a return for every possible duration, CEM's total variance/covariance matrix includes bonds with a continual duration of each whole number. A given fund's duration overlay is then represented by the two constant duration bonds closest to the duration of the overlay, with the total weight divided proportionately between them.

### Asset-liability risk

Asset-liability risk is calculated in exactly the same way as asset risk with the addition of a short position in the liability proxy portfolio. This portfolio will typically be represented by up to four bonds with continual duration whose summed weights will equal -100%, and whose real and nominal duration match the liability proxy portfolio.



# 7

# **Appendices**

Appendix A - Data Summary

Appendix A2 - Enhanced survey data & mapping to regular survey

Appendix B - Currency conversion

Appendix C - Data Integrity

Appendix D - Methodology Changes

Appendix E - Glossary of terms

# **Appendix A - Data Summary**

New Zealand Superannuation Fund

Plan Info	2024/25	2023/24	2022/23	2021/22	2020/21
Survey Preparer	Christi	Christi	Christi	Ben Nott	Ben Nott
	Naude	Naude	Naude		
Additional Contact	Gareth	Gareth	Gareth	Gareth	Seyoung
	Ballantyne	Ballantyne	Ballantyne	Ballantyne	Chung
Type of fund (corporate, public, other)	Other	Other	Other	Other	Other
Total fund size (\$mils) as at December 31	85,847.0	74,210.0	58,257.3	61,304.0	52,675.2
Asset-class level holdings provided on survey are: year end or average?	Average	Average	Average	Average	Average
Total return for year ended	11.80% Net of all	14.90% Net of all	15.66% Net of all	-8.47% Net of all	23.67% Net of all
	investment	investment	investment	investment	investment
Is the return net or gross?	costs	costs	costs	costs	costs
Total fund policy or benchmark return	10.90%	15.10%	-18.10%	14.40%	12.59%

Ancillary Data	2024/25	2023/24	2022/23	2021/22	2020/21
What is your hedging policy for:					
Foreign non-U.S. Holdings?					100%
What were your actuarial fees in 000s?	0		0	0	
·	U		U	0	
How many plan members/beneficiaries do you have:					
Active?					
Active (no-accrual)?					
Retired?					
Other?					
What % of the plan's liabilities pertain to retired members?					
Actuarial valuation assumptions for funding purposes:					
Liability discount rate					
Salary progression rate					
What was your actuarial assumption for expected rate of					
return?					

# Appendix A - Data Summary: Policy Weights and Benchmarks New Zealand Superannuation Fund

Asset Class		Policy	Benchmark	
	Year	Weight	Description	Return
Stock - EAFE	2024/25	5.0	NZX 50 Custom	7.5
	2023/24	5.0	NZX 50 Custom	-1.5
	2022/23	5.0	NZX 50 Custom	-12.1
	2021/22	5.0	NZX 50 Custom	-0.2
	2020/21	5.0	NZX 50	13.7
Stock - Emerging	2024/25	6.5	MSCI Emerging Markets Climate Paris Aligned Index	12.8
	2023/24	6.0	MSCI All Countries World Index Custom/MSCI Emerging Markets Climate Paris Aligned Index	11.5
	2022/23	7.3	MSCI All Countries World Index Custom/MSCI Emerging Markets Climate Paris Aligned Index	-19.0
	2021/22		MSCI All Countries World Index Custom	20.3
	2020/21	10.0	MSCI Emerging Markets	17.9
Stock - Global	2024/25	68.5	MSCI World Climate Paris Aligned Index	12.8
	2023/24	69.0	MSCI All Countries World Index Custom/MSCI World Climate Paris Aligned Index	20.6
	2022/23	67.8	MSCI All Countries World Index Custom/MSCI World Climate Paris Aligned Index	-20.3
	2021/22	75.0	MSCI All Countries World Index Custom	20.3
	2020/21	65.0	MSCI Developed Markets	13.7
Fixed income - U.S.	2024/25			
	2021/22		Barclays Global Aggregate	-1.2
	2020/21		Barclays Global Aggregate	5.4
Fixed income - Global	2024/25	20.0	Barclays Global Aggregate	5.5
	2023/24	20.0	Barclays Global Aggregate	3.8
	2022/23	20.0	Barclays Global Aggregate	-11.8
	2021/22	20.0	Barclays Global Aggregate	-1.2
	2020/21	20.0	Barclays Global Aggregate	5.4
Cash	2024/25	20.0	Cash Benchmark	4.6
Casii	2023/24		Cash BM	5.7
	2022/23		Cash BM	1.9
	2021/22		NZD Cash Benchmark	1.9
	2020/21		NZD Cash Benchmark	0.7
Real estate ex-REITs	2024/25		Real Estate BM	11.9
Redi estate ex-REITS	2024/23		Real Estate BM	16.6
	2023/24		Real Estate BM	-16.8
	2022/23			12.7
	2021/22		Property BM	14.8
In fact a transfer of the second			NZ Property Benchmark	9.9
Infrastructure	2024/25		Infrastructure BM	
	2023/24		Infrastructure BM	12.8
	2022/23		Infrastructure BM	-15.9
	2021/22		Infrastructure BM	12.0
	2020/21		Infrastructure BM	12.8
Natural resources	2024/25		Natural Resources BM	7.5
	2023/24		Natural Resources BM	10.4
	2022/23		Natural Resources BM	-10.9
	2021/22		Natural Resources Benchmark	4.8
	2020/21		Timber Benchmark	9.0
Other real assets	2024/25		Other Non-Listed Assets BM	11.3
Hedge funds	2024/25		Hedge Fund BM	6.0
	2023/24		Hedge Fund BM	7.8
	2022/23		Hedge Fund BM	-6.9
	2021/22		Hedge Fund BM	1.8
	2020/21		Custom	6.1
Private equity - Diversified	2024/25		Diversified or All BM	14.1
	2023/24		Diversified or All BM	22.1
	2022/23		Diversified or All BM	-19.9
	2021/22		Private Equity BM	21.0
	2020/21		Private Equity Benchmark	16.9
Venture capital	2024/25		Venture Capital BM	14.0
	2023/24		Venture Capital BM	22.2
	2022/23		Venture Capital BM	-20.5
	2021/22		Private Equity BM	21.0
Private equity - Other	2024/25		Other Non-Listed Assets BM	10.1
	2023/24		Other Non-Listed Assets BM	15.0
	2022/23		Other Non-Listed Assets BM	-16.5
	2021/22		Other Private Equity BM	15.7
	2020/21		Private Equity Benchmark	13.2

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

New Zealand Superannuation Fund

Imputed cost for missing fees
Forward fill from last year's fees
Override for offsets netted from LP fees

					Cost (\$	5000)			Cost (	bps)	
		Asset	Net	Internal	Base	Perf	Total	Internal	Base	Perf	Total
Asset Class/Style	Year	(\$millions)	Return %	& Other	Fees	Fees		& Other	Fees	Fees	
Stock - EAFE											
Internal passive	2024/25	912.5	4.30	556.6			556.6	6.1			6.1
	2023/24	584.9	-0.40	380.7			380.7	6.5			6.5
	2022/23	364.7	-9.40	1,281.0			1,281.0	35.1			35.1
	2021/22	388.1	-2.60	967.0			967.0	24.9			24.9
	2020/21	26.8	10.70	767.6			767.6	286.4			286.4
Internal active	2024/25	1,430.8	5.30	3,046.7			3,046.7	21.3			21.3
	2023/24	1,213.9	-5.30	5,826.7			5,826.7	48.0			48.0
	2022/23	1,141.0	-14.00	3,908.0			3,908.0	34.3			34.3
	2021/22	1,170.0	-0.50	2,649.0			2,649.0	22.6			22.6
	2020/21	1,057.0	17.00	1,957.3			1,957.3	18.5			18.5
External active	2024/25	840.8	7.60	99.6	2,805.8	807.2	3,712.6	1.2	33.4	9.6	44.2
	2023/24	904.5	-0.30	156.1	3,577.3	152.3	3,885.7	1.7	39.5	1.7	43.0
	2022/23	877.9	-11.10	854.4	2,842.8		3,697.2	9.7	32.4		42.1
	2021/22	956.6	0.20	707.0	4,006.0		4,713.0	7.4	41.9		49.3
	2020/21	894.1	16.40	547.8	3,763.6		4,311.4	6.1	42.1		48.2
Stock - Emerging											
External passive	2024/25	1,971.6	12.70	415.2	1,188.4		1,603.6	2.1	6.0		8.1
·	2023/24	1,622.6	11.40	559.9	994.1		1,554.0	3.5	6.1		9.6
	2022/23	1,470.6	-17.60	880.2	905.9		1,786.1	6.0	6.2		12.1
	2021/22	1,565.3	-3.20	707.0	958.0		1,665.0	4.5	6.1		10.6
	2020/21	1,612.3	22.40	905.5	1,275.6		2,181.1	5.6	7.9		13.5
Stock - Global											
Internal passive	2024/25	9,438.2	12.70	7,701.4			7,701.4	8.2			8.2
·	2023/24	417.1		519.7			519.7	12.5			12.5
External passive	2024/25	16,283.4	12.80	3,214.6	2,345.6		5,560.2	2.0	1.4		3.4
·	2023/24	18,734.6	21.00	5,746.2	3,038.4		8,784.6	3.1	1.6		4.7
	2022/23	18,641.9	-19.50	3,417.2	3,187.1		6,604.3	1.8	1.7		3.5
	2021/22	25,755.6	24.70	4,418.0	9,335.0		13,753.0	1.7	3.6		5.3
	2020/21	16,429.2	12.10	3,721.4	8,012.6		11,734.0	2.3	4.9		7.1
External active	2024/25	11,634.0	14.10	2,909.2	9,388.4		12,297.6	2.5	8.1		10.6
	2023/24	9,469.8	24.40	3,630.7	8,070.5		11,701.2	3.8	8.5		12.4
	2022/23	8,512.0	-11.80	2,101.4	8,100.3		10,201.7	2.5	9.5		12.0
Fixed income - U.S.											
Internal passive	2024/25										
	2023/24										
	2022/23										
	2021/22		6.00	314.0			314.0	134.2			134.2
	2020/21	25.7	11.20	261.7			261.7	101.8			101.8
Fixed income - Global											
Internal passive	2024/25	5,983.5	5.40	4,205.0			4,205.0	7.0			7.0
	2023/24		2.40	4,427.2			4,427.2	7.6			7.6
	2022/23		-11.90	1,554.0			1,554.0	5.5			5.5
	2021/22		-1.20	808.0			808.0	3.0			3.0
	2020/21		5.30	871.7			871.7	4.9			4.9
External passive			6.07	1,807.9	2,267.0		4,074.9	3.4	4.3		7.7
	2023/24		4.60	2,643.5	2,217.7		4,861.2	5.2	4.3		9.5
	2022/23		-12.20	825.0	1,537.1		2,362.1	2.5	4.6		7.0
	2021/22		-0.90	515.0	1,275.0		1,790.0	1.9	4.7		6.6
	/	_,,, _0.2	0.50	313.0	_,_, 5.0		_,, 50.0	1.5	1,		0.0

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

New Zealand Superannuation Fund

Imputed cost for missing fees	Fee estimate from LP details
Forward fill from last year's fees	Override for offsets netted from LP fees

					Cost (\$	5000)			Cost (	bps)	
		Asset	Net	Internal	Base	Perf	Total	Internal	Base	Perf	Total
Asset Class/Style	Year	(\$millions)	Return %	& Other	Fees	Fees		& Other	Fees	Fees	
External passive (cont'd)	2020/21	2,013.5	5.20	674.6	926.8		1,601.4	3.4	4.6		8.0
Cash											
Internal active	2024/25										
	2023/24										
	2022/23	5,789.6	5.50	4,850.8			4,850.8	8.4			8.4
	2021/22	9,390.8	1.90	3,454.0			3,454.0	3.7			3.7
	2020/21	9,957.4	2.50	3,295.9			3,295.9	3.3			3.3

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

New Zealand Superannuation Fund

Imputed cost for missing fees	Fee estimate from LP details
Forward fill from last year's fees	Override for offsets netted from LP fee

See page 8 for more details.

								Cost (\$000)			
		Asset	Fee basis	Net	Internal	Base	Perf	Underly	ing fees	Tot	tal
Asset Class/Style	Year	(\$millions)	(\$millions)	Return %	& Other	Fees	Fees	Base	Perf	excl. perf	incl. perf
Hedge funds											
External active	2024/25	4,097.0		4.20	2,749.9	43,413.8	24,677.3			46,163.7	70,841.0
	2023/24	4,504.3		10.40	4,144.7	45,329.6	54,469.2			49,474.3	103,943.5
	2022/23			-0.30	5,017.5	25,797.3	97,735.2			30,814.8	128,550.0
	2021/22	3,217.4		6.70	3,130.0	20,099.0	23,895.0			23,229.0	47,124.0
	2020/21	2,744.0		-2.10	2,678.6	18,816.4	7,019.7			21,495.0	28,514.7
Real estate ex-REITs											
Internal active	2024/25	515.1		-3.10	2,537.0					2,537.0	2,537.0
	2023/24	203.5		34.80	2,022.0					2,022.0	2,022.0
	2022/23	153.4		8.50	1,123.9					1,123.9	1,123.9
	2021/22	114.1		32.60	1,023.0					1,023.0	1,023.0
	2020/21	67.1		-3.67	459.2					459.2	459.2
Joint venture	2024/25	119.2		32.70	141.3	970.4				1,111.7	1,111.7
External active	2024/25	200.7	329.5	-2.00	186.5	1,332.3	(653.6)			1,518.8	865.2
Co-investment	2024/25	1,438.8	1,290.3	9.00	1,443.4	4,487.6				5,931.0	5,931.0
	2023/24	1,026.8	1,026.8	49.30	1,476.3	4,016.3				5,492.6	5,492.6
	2022/23	460.0	468.3	12.50	2,127.0	2,229.6				4,356.6	4,356.6
	2021/22	306.0	329.0	25.40	1,977.0	1,579.0				3,556.0	3,556.0
	2020/21	225.9	225.9	-7.20	1,731.5	704.3				2,435.8	2,435.8
LP/Value add	2024/25	1,803.5	1,881.2	4.40	2,376.8	17,476.0	739.7			19,852.8	20,592.5
	2023/24	1,828.0	1,828.0	1.70	2,978.7	19,394.1	1,780.5			22,372.8	24,153.3
	2022/23	947.4	1,704.2	19.40	3,477.4	4,633.1	31,282.2			8,110.5	39,392.7
	2021/22	107.2	126.0	53.20	2,960.0	1,101.0	6,209.0			4,061.0	10,270.0
	2020/21	36.5	55.0	2.60	543.5	192.4	678.0			735.9	1,413.9
Infrastructure											
Internal active	2024/25										
	2023/24	309.5			3,557.6					3,557.6	3,557.6
	2022/23	432.7		7.60	879.1					879.1	879.1
	2021/22	408.8		13.70	683.0					683.0	683.0
	2020/21	404.6		-1.60	454.3					454.3	454.3
External active	2024/25	434.0	346.1	5.60	173.1	1,916.7	868.0			2,089.8	2,957.8
	2023/24	307.9	307.9	11.10	212.5	1,482.6	(61,065.5)			1,695.1	(59,370.4)
	2022/23	294.6	291.9	-14.50	403.9	1,764.3	-			2,168.2	2,168.2
	2021/22	276.7	276.7	22.90	328.0	1,564.0	1,660.0			1,892.0	3,552.0
	2020/21	235.2	235.2	-12.80	318.4	1,245.5	1,905.1			1,563.9	3,469.0
LP/Value add	2024/25										
	2023/24	135.4	135.4	1.00	142.7	942.8	1,218.5			1,085.5	2,304.1
	2022/23	348.5	356.4	-3.00	1,925.5	4,859.7	5,227.5			6,785.2	12,012.7
	2021/22	217.3	217.3	3.30	662.0	1,869.0	256.0			2,531.0	2,787.0
	2020/21	261.5	261.5	7.00	506.6	2,012.6	2,536.6			2,519.2	5,055.8
Natural resources											
Internal active	2024/25	2,584.6		-1.00	11,964.2					11,964.2	11,964.2
	2023/24	3,270.1		11.70	34,833.9					34,833.9	34,833.9
	2022/23	2,977.6		11.30	1,904.2					1,904.2	1,904.2
	2021/22	2,735.6		6.70	1,608.0					1,608.0	1,608.0
	2020/21	2,649.6		2.70	1,558.6					1,558.6	1,558.6
External active	2024/25	1,226.8	970.5	2.40	593.0	9,859.8	613.4			10,452.8	11,066.2
	2023/24	714.7	714.7	5.60	993.1	7,685.6	-			8,678.7	8,678.7

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

New Zealand Superannuation Fund

Imputed cost for missing fees	Fee estimate from LP details
Forward fill from last year's fees	Override for offsets netted from LP fees

See page 8 for more details.

								Cost (\$000)			
		Asset	Fee basis	Net	Internal	Base	Perf	Underlyi	ng fees	To	tal
Asset Class/Style	Year	(\$millions)	(\$millions)	Return %	& Other	Fees	Fees	Base	Perf	excl. perf	incl. perf
External active (cont'd)	2022/23	442.7	458.3	30.50	3,326.3	3,218.2	3,098.9			6,544.5	9,643.4
	2021/22	297.1	263.0	26.40	1,824.0	2,441.0	2,079.7			4,265.0	6,344.7
	2020/21	282.2	282.2	8.80	1,759.7	2,525.0	1,975.4			4,284.7	6,260.1
Co-investment	2024/25	355.4	429.8	21.20	533.2	1,967.4				2,500.6	2,500.6
LP/Value add	2024/25	284.7	441.4	8.80	572.1	3,410.1	427.1			3,982.2	4,409.3
Other real assets											
Co-investment			482.2	-22.90	609.2	2,954.9				3,564.1	3,564.1
LP/Value add	2024/25	36.0	241.7	-10.20	181.3	2,666.9	151.2			2,848.2	2,999.4
Private equity - Diversified											
Co-investment	2024/25	92.5	92.5	-8.70	161.9	522.5	-			684.4	684.4
	2023/24		193.8	-6.00	483.0	247.8	1,012.3			730.8	1,743.1
	2022/23		270.3	-4.30	753.1	-	284.4			753.1	1,037.5
	2021/22		13.9		620.0					620.0	620.0
LP/Value add			876.8	11.10	727.0	10,257.9	8,939.1			10,984.9	19,924.0
	2023/24		427.8	-2.30	500.3	8,414.3	(49.3)			8,914.6	8,865.3
	2022/23		516.5	1.00	6,644.5	6,517.7	143.5			13,162.2	13,305.7
	2021/22		449.0	14.60	4,999.0	7,762.0	3,913.0			12,761.0	16,674.0
	2020/21		439.7	26.20	4,614.5	6,404.0	1,302.8			11,018.5	12,321.3
Fund of funds			0.8	-4.50	0.6	-	-	-	-	0.6	0.6
	2023/24		2.7	-62.00	2.7	4.0	0.4	-	-	6.7	7.1
	2022/23	6.3	3.9	-16.60	802.9	16.4	106.5	-	-	819.3	925.8
	2021/22	11.0	11.0	34.10	881.0	107.0	107.9	169.4	275.3	1,157.4	1,540.5
	2020/21	13.8	13.8	21.10	840.7	225.0	91.1	216.7	265.0	1,282.4	1,638.4
Venture capital											
Co-investment			63.4	-8.20	144.4					144.4	144.4
	2023/24		48.1	-5.20	335.8					335.8	335.8
	2022/23		53.6	22.90	389.6					389.6	389.6
	2021/22		2.9	-0.10	317.0					317.0	317.0
LP/Value add			483.6	-7.50	738.3	7,115.0	1,516.9			7,853.3	9,370.2
	2023/24		192.0	-31.60	897.2	6,618.3	1,343.9			7,515.5	8,859.4
	2022/23		98.2	0.80	1,109.6	2,155.6	(163.7)			3,265.2	3,101.5
	2021/22	0.6	0.6		304.0	10.6	16.0			314.6	330.6
Private equity - Other											
Internal active				23.30	7,928.7					7,928.7	7,928.7
	2023/24			-11.60	13,152.8					13,152.8	13,152.8
	2022/23			-12.90	4,579.9					4,579.9	4,579.9
	2021/22			14.70	5,022.0					5,022.0	5,022.0
	2020/21			-4.30	6,218.9					6,218.9	6,218.9
Co-investment			3,490.2	1.90	1,745.5	14,072.7	(6,770.5)			15,818.2	9,047.7
	2023/24	,	4,057.7	6.70	2,878.1	20,418.4	62,343.1			23,296.5	85,639.6
	2022/23		2,816.1	43.20	5,539.7	21,669.7	162,561.5			27,209.4	189,770.9
	2021/22		1,782.5	13.20	3,631.0	15,013.0				18,644.0	18,644.0
	2020/21		1,481.8	2.40	3,435.1	11,541.6				14,976.7	14,976.7
LP/Value add	2024/25	616.2	713.1	1.00	713.3	5,135.6	2,740.0			5,848.9	8,588.9

<sup>1.</sup> External Active' style is alternatively named 'Fund (Evergreen, Core)' on the survey. This category typically includes core funds having perpetual or undefined lifetimes and operated by an external manager who invests in opportunities where a large part of expected return is income or yield. They are often described as core or core+ investments. Include funds-of-one and separately managed accounts (SMAs) if they are operated by an external manager.

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

New Zealand Superannuation Fund

Imputed cost for missing fees	Fee estimate from LP details
Forward fill from last year's fees	Override for offsets netted from LP fee

See page 8 for more details.

					Cost (\$000)						
		Asset	Fee basis	Net	Internal	Base	Perf	Underlying fees Total			tal
Asset Class/Style	Year	(\$millions)	(\$millions)	Return %	& Other	Fees	Fees	Base	Perf	excl. perf	incl. perf

<sup>2.</sup> LP' style is alternatively named 'Fund (LP, Value Add)' on the survey. This category typically includes value-add or opportunistic funds having a pre-defined term and a GP/LP structure. Typically, the investment period is less than 12 years. They are operated by an external manager who invests in opportunities where a large part of the expected return is capital gains due to repositioning or redevelopment.

# Appendix A Data Summary - Costs in bps: Hedge Funds and Private Market

New Zealand Superannuation Fund

Imputed cost for missing fees
Forward fill from last year's fees
Override for offsets netted from LP fees

(See page 8 for more details)

					Cos	t on NAV (b	ps)					Cost o	n fee ba	sis (bps)		
			Internal	Base	Perf	Underlying	g fees	То	tal	Internal	Base	Perf	Underly	ing fees	То	tal
Asset Class/S	ityle	Year	& Other	Fees	Fees	, ,	Perf		incl. perf		Fees	Fees	Base	Perf		incl. perf
Hedge funds	,															
_	rnal active	2024/25	6.7	106.0	60.2			112.7	172.9	6.7	106.0	60.2			112.7	172.9
		2023/24	9.2	100.6	120.9			109.8	230.8	9.2	100.6	120.9			109.8	230.8
		2022/23	12.3	63.2	239.3			75.4	314.7	12.3	63.2	239.3			75.4	314.7
		2021/22	9.7	62.5	74.3			72.2	146.5	9.7	62.5	74.3			72.2	146.5
		2020/21	9.8	68.6	25.6			78.3	103.9	9.8	68.6	25.6			78.3	103.9
Real estate ex-REITs	s															
Inter	rnal active	2024/25	49.3					49.3	49.3	49.3					49.3	49.3
		2023/24	99.4					99.4	99.4	99.4					99.4	99.4
		2022/23	73.3					73.3	73.3	73.3					73.3	73.3
		2021/22	89.7					89.7	89.7	89.7					89.7	89.7
		2020/21	68.4					68.4	68.4	68.4					68.4	68.4
Joir	nt venture		11.9	81.4				93.3	93.3	11.9	81.4				93.3	93.3
	rnal active		9.3	66.4	(32.6)			75.7	43.1	5.7	40.4	(19.8)			46.1	26.3
	nvestment		10.0	31.2	(-=-3)			41.2	41.2	11.2	34.8	,/			46.0	46.0
		2023/24	14.4	39.1				53.5	53.5	14.4	39.1				53.5	53.5
		2022/23	46.2	48.5				94.7	94.7	45.4	47.6				93.0	93.0
		2021/22	64.6	51.6				116.2	116.2	60.1	48.0				108.1	108.1
		2020/21	76.6	31.2				107.8	107.8	76.6	31.2				107.8	107.8
IP/	Value add		13.2	96.9	4.1			110.1	114.2	12.6	92.9	3.9			105.5	109.5
,	raide dad	2023/24	16.3	106.1	9.7			122.4	132.1	16.3	106.1	9.7			122.4	132.1
		2022/23	36.7	48.9	330.2			85.6	415.8	20.4	27.2	183.6			47.6	231.2
		2021/22		102.7	579.2			378.8	958.0	234.9	87.4	492.8			322.3	815.1
		2020/21		52.7	185.8			201.6	387.4	98.8	35.0	123.3			133.8	257.1
Infrastructure		2020,21	1 10.5	32.7	103.0			201.0	307.1	30.0	33.0	123.3			133.0	237.1
	rnal active	2024/25														
		2023/24	114.9					114.9	114.9	114.9					114.9	114.9
		2022/23	20.3					20.3	20.3	20.3					20.3	20.3
		2021/22	16.7					16.7	16.7	16.7					16.7	16.7
		2020/21	11.2					11.2	11.2	11.2					11.2	11.2
Fxter	rnal active		4.0	44.2	20.0			48.2	68.2	5.0	55.4	25.1			60.4	85.5
LACE	mar active	2023/24	6.9	48.1	(1,983.0)			55.0	(1,928.0)	6.9	48.1	(1,983.0)			55.0	(1,928.0)
		2022/23	13.7	59.9	-			73.6	73.6	13.8	60.4	-			74.3	74.3
		2021/22	11.9	56.5	60.0			68.4	128.4	11.9	56.5	60.0			68.4	128.4
		2020/21	13.5	53.0	81.0			66.5	147.5	13.5	53.0	81.0			66.5	147.5
10/	'Value add	'	15.5	55.0	01.0			50.5	177.5	13.5	55.0	01.0			30.3	177.5
		2023/24	10.5	69.6	90.0			80.2	170.2	10.5	69.6	90.0			80.2	170.2
		2022/23	55.3	139.4	150.0			194.7	344.7	54.0	136.4	146.7			190.4	337.1
		2022/23	30.5	86.0	11.8			116.5	128.2	30.5	86.0	11.8			116.5	128.2
		2021/22	19.4	77.0	97.0			96.3	193.3	19.4	77.0	97.0			96.3	193.3
Natural resources		2020/21	13.4	, , .0	57.0			20.3	100.0	13.4	, , .0	57.0			50.5	133.3
	rnal active	2024/25	46.3					46.3	46.3	46.3					46.3	46.3
""(פו		2024/23						106.5	106.5	106.5					106.5	106.5
		2023/24	6.4					6.4	6.4	6.4					6.4	6.4
		2022/23	5.9					5.9	5.9	5.9					5.9	5.9
		2021/22	5.9					5.9	5.9	5.9					5.9	5.9
Evtor	rnal active		4.8	80.4	5.0			85.2	90.2	6.1	101.6	6.3			107.7	114.0
LXter	mai active	2024/23		107.5	-			121.4	121.4	13.9	107.5	-			121.4	121.4
		2023/24	13.3	107.5				121.4	121.4	13.5	107.5				121.4	121.4

# Appendix A Data Summary - Costs in bps: Hedge Funds and Private Market

New Zealand Superannuation Fund

Imputed cost for missing fees
Forward fill from last year's fees
Override for offsets netted from LP fees

(See page 8 for more details)

			Cost on NAV (bps)						Cost on fee basis (bps)						
		Internal	Base	Perf	Underly	ing fees	To	tal	Internal	Base	Perf	Underly	ing fees	To	tal
Asset Class/Style	Year	& Other	Fees	Fees	Base	Perf	excl. perf	incl. perf	& Other	Fees	Fees	Base	Perf	excl. perf	incl. perf
External active (cont'd)	2022/23	75.1	72.7	70.0			147.8	217.8	72.6	70.2	67.6			142.8	210.4
	2021/22	61.4	82.2	70.0			143.6	213.6	69.4	92.8	79.1			162.2	241.2
	2020/21	62.4	89.5	70.0			151.8	221.8	62.4	89.5	70.0			151.8	221.8
Co-investment	2024/25	15.0	55.4				70.4	70.4	12.4	45.8				58.2	58.2
LP/Value add	2024/25	20.1	119.8	15.0			139.9	154.9	13.0	77.3	9.7			90.2	99.9
Other real assets															
Co-investment	2024/25	12.6	61.3				73.9	73.9	12.6	61.3				73.9	73.9
LP/Value add	2024/25	50.4	740.8	42.0			791.2	833.2	7.5	110.3	6.3			117.8	124.1
Private equity - Diversified															
Co-investment	2024/25	17.5	56.5	-			74.0	74.0	17.5	56.5	-			74.0	74.0
	2023/24	24.9	12.8	52.2			37.7	89.9	24.9	12.8	52.2			37.7	89.9
	2022/23		-	21.4			56.5	77.9	27.9	-	10.5			27.9	38.4
	2021/22	446.0					446.0	446.0	446.0					446.0	446.0
LP/Value add	2024/25	9.2	129.5	112.9			138.7	251.6	8.3	117.0	102.0			125.3	227.2
	2023/24	11.7	196.7	(1.2)			208.4	207.2	11.7	196.7	(1.2)			208.4	207.2
	2022/23	176.6	173.2	3.8			349.8	353.6	128.6	126.2	2.8			254.8	257.6
	2021/22	149.7	232.4	117.2			382.1	499.2	111.3	172.9	87.1			284.2	371.4
	2020/21	151.4	210.1	42.7			361.5	404.2	104.9	145.6	29.6			250.6	280.2
Fund of funds	2024/25	7.0	-	-	-	-	7.0	7.0	7.0	-	-	-	-	7.0	7.0
	2023/24	10.0	14.6	1.5	-	-	24.6	26.0	10.0	14.6	1.5	-	-	24.6	26.0
	2022/23	1,274.4	26.0	169.0	-	-	1,300.5	1,469.5	2,058.7	42.1	273.1	-	-	2,100.8	2,373.8
	2021/22	800.2	97.2	98.0	153.9	250.0	1,051.2	1,399.2	800.9	97.3	98.1	154.0	250.2	1,052.2	1,400.5
	2020/21	609.2	163.0	66.0	157.0	192.0	929.2	1,187.2	609.2	163.0	66.0	157.0	192.0	929.2	1,187.2
Venture capital															
Co-investment		22.8					22.8	22.8	22.8					22.8	22.8
	2023/24						69.9	69.9	69.9					69.9	69.9
	2022/23						72.7	72.7	72.7					72.7	72.7
	2021/22						1,112.3	1,112.3	1,112.3					1,112.3	1,112.3
LP/Value add			328.3	70.0			362.4	432.4	15.3	147.1	31.4			162.4	193.8
	2023/24		344.7	70.0			391.5	461.5	46.7	344.7	70.0			391.5	461.5
	2022/23		219.5	(16.7)			332.5	315.8	113.0	219.5	(16.7)			332.5	315.8
	2021/22	4,750.0	165.0	250.0			4,915.0	5,165.0	4,750.0	165.0	250.0			4,915.0	5,165.0
Private equity - Other	 														
Internal active	,	34.8					34.8	34.8	34.8					34.8	34.8
	2023/24						77.1	77.1	77.1					77.1	77.1
	2022/23						23.9	23.9	23.9					23.9	23.9
	2021/22						28.1	28.1	28.1					28.1	28.1
	2020/21			:			34.1	34.1	34.1		44.5			34.1	34.1
Co-investment			40.8	(19.6)			45.8	26.2	5.0	40.3	(19.4)			45.3	25.9
	2023/24		50.3	153.6			57.4	211.1	7.1	50.3	153.6			57.4	211.1
	2022/23		80.5	603.9			101.1	704.9	19.7	76.9	577.3			96.6	673.9
	2021/22	21.1	87.4				108.5	108.5	20.4	84.2				104.6	104.6
	2020/21	23.2	77.9	4			101.1	101.1	23.2	77.9	25 :			101.1	101.1
LP/Value add	2024/25	11.6	83.3	44.5			94.9	139.4	10.0	72.0	38.4			82.0	120.4

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

New Zealand Superannuation Fund

Oversight, Cust	odial and Ot	her Costs	
		000s	bps
Oversight of the fund assets <sup>1</sup>	2024/25	30,508.1	3.8bp
	2023/24	26,428.9	3.8bp
	2022/23	22,493.6	3.9bp
	2021/22	14,014.0	2.4bp
	2020/21	12,307.4	2.7bp
Custodial total	2024/25	7,204.9	0.9bp
	2023/24	6,521.1	0.9bp
	2022/23	6,274.9	1.1bp
	2021/22	5,510.0	1.0bp
	2020/21	6,979.8	1.5bp
Audit	2024/25	1,651.5	0.2bp
	2023/24	1,327.0	0.2bp
	2022/23	704.0	0.1bp
	2021/22	612.0	0.1bp
	2020/21	596.0	0.1bp
Other (legal etc)	2024/25	3,876.7	0.5bp
	2023/24	3,395.7	0.5bp
	2022/23		
Total	2024/25	43,241.2	5.4bp
	2023/24	37,672.7	5.4bp
	2022/23	29,472.5	5.1bp
	2021/22	20,136.0	3.5bp
	2020/21	19,883.2	4.3bp

Summary of All Asse	et Manage	ment Costs	
		000s	bps
Investment Management Costs	2024/25	257,864.7	32.2bp
	2023/24	305,417.0	44.0bp
	2022/23	262,981.0	45.5bp
	2021/22	148,361.0	25.6bp
	2020/21	114,369.8	24.8bp
Oversight, Custodial & Other Costs	2024/25	43,241.2	5.4bp
	2023/24	37,672.7	5.4bp
	2022/23	29,472.5	5.1bp
	2021/22	20,136.0	3.5bp
	2020/21	19,883.2	4.3bp
Total	2024/25	301,105.9	37.6bp
	2023/24	343,089.7	49.5bp
	2022/23	292,453.5	50.6bp
	2021/22	168,497.0	29.1bp
	2020/21	134,252.9	29.1bp

<sup>1.</sup> 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

### New Zealand Superannuation Fund

Overlays		Internal						External								
		Notional	Market	Profit/		% of		Notional	Market	Profit/	Base	Perf.	Over-		% of	
		amount	value	Loss	Cost	Notion	Duration	amount	value	Loss	fees	fees	sight	Total	Notion.	Duration
		(mils)	(mils)	(000s)	(000s)	(bps)	(years)	(mils)	(mils)	(000s)	(000s)	(000s)	(000s)	(000s)	(bps)	(years)
Currency Hedge	2024/25	67,600.2	-1,156.8		1,060.5	0.2										
	2023/24	55,769.3	94.6		981.0	0.2										
Rebalancing/	2024/25	9,712.1	1,585.3		1,060.5	1.1										
Passive Beta	2023/24	9,290.7	1,018.1		981.0	1.1										
Policy tilt TAA	2024/25		917.3	867,834.8	10,740.7											
	2023/24		699.1	-147,151.7	11,126.4											
Long/Short	2024/25		209.1	4,911.9	10,605.3											
	2023/24		148.6	16,804.1	9,810.2											
Other Overlay	2024/25	3,624.6	3,560.9	781,204.1	3,181.6	8.8										
	2023/24	7,785.5	4,600.4	1,027,731.0	2,943.1	3.8										

# Appendix A - Data Summary: Comments and data enrichments

As discussed with you during the data confirmation process, the following enrichments and footnotes are applicable to your data:

- 2024/25 Infrastructure Core/Evergreen: A CEM-imputed cost of 20 bps (on NAV) was applied to the core/evergreen performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2024/25 Natural resources Core/Evergreen: A CEM-imputed cost of 5 bps (on NAV) was applied to the core/evergreen performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2024/25 Natural resources LP/Value add: A CEM-imputed cost of 15 bps (on NAV) was applied to the lp/value add performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2024/25 Other real assets LP/Value add: A CEM-imputed cost of 42 bps (on NAV) was applied to the lp/value add performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2024/25 Venture capital LP/Value add: A CEM-imputed cost of 70 bps (on NAV) was applied to the lp/value add performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2023/24 Infrastructure LP/Value add: A CEM-imputed cost of 90 bps (on NAV) was applied to the lp/value add performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2023/24 Venture capital LP/Value add: A CEM-imputed cost of 70 bps (on NAV) was applied to the lp/value add performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2022/23 Infrastructure LP/Value add: A CEM-imputed cost of 150 bps (on NAV) was applied to the Ip/value add performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2022/23 Natural resources Core/Evergreen: A CEM-imputed cost of 70 bps (on NAV) was applied to the core/evergreen performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2021/22 Infrastructure Core/Evergreen: A CEM-imputed cost of 60 bps (on NAV) was applied to the core/evergreen performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2021/22 Natural resources Core/Evergreen: A CEM-imputed cost of 70 bps (on NAV) was applied to the core/evergreen performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2021/22 Private equity Diversified FoFs: A CEM-imputed cost of 98 bps (on NAV) was applied to the fund of funds performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2021/22 Private equity Diversified FoFs: A CEM-imputed cost of 154 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2021/22 Private equity Diversified FoFs: A CEM-imputed cost of 250 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2021/22 Venture capital LP/Value add: A CEM-imputed cost of 165 bps was applied to the lp/value add base fee because it was not provided.
- 2021/22 Venture capital LP/Value add: A CEM-imputed cost of 250 bps (on NAV) was applied to the lp/value add performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.

- 2020/21 Infrastructure Core/Evergreen: A CEM-imputed cost of 81 bps (on NAV) was applied to the core/evergreen performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2020/21 Infrastructure LP/Value add: A CEM-imputed cost of 97 bps (on NAV) was applied to the lp/value add performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2020/21 Natural resources Core/Evergreen: A CEM-imputed cost of 70 bps (on NAV) was applied to the core/evergreen performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2020/21 Private equity Diversified FoFs: A CEM-imputed cost of 66 bps (on NAV) was applied to the fund of funds performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.
- 2020/21 Private equity Diversified FoFs: A CEM-imputed cost of 157 bps (on amount fees are based on) was applied to the fund of funds underlying base fee to enable comparisons of the total cost of different implementation styles.
- 2020/21 Private equity Diversified FoFs: A CEM-imputed cost of 192 bps (on NAV) was applied to the fund of funds underlying performance fee to enable comparisons of the total cost of different implementation styles. This cost is not included in your total fund cost or in benchmark analysis.

# Appendix A - Data Summary - Enhanced Survey Data and Mapping to Regular Survey - Mapped Data

Data after the mapping process from enhanced survey to regular is shown below. The below data is used through the rest of this report.

		Inve	estment (	Costs by	Asset Class and S	tyle (\$000s)			
	Inter	nal	External	<u>Passive</u>		External Active		<u>Total</u>	
			N	lonitoring	Base	Perform.	Monitoring		% of
	Passive	Active	Fees	& Other	Fees	Fees	& Other	000s	Total
Stock - EAFE	557	3,047			2,80	6 807	100	7,316	2%
Stock - Emerging			1,188	415				1,604	1%
Stock - Global	7,701		2,346	3,215	9,38	8	2,909	25,559	8%
Fixed income - Global	4,205		2,267	1,808				8,280	3%
Infrastructure					1,91	7 868	173	2,090	1%
Real estate ex-REITs		2,537			1,33	2 -654	186	4,056	1%
Real estate ex-REITs - Co-invest.					4,48	8	1,443	5,931	2%
Real estate ex-REITs - Joint ventur	е				97	0	141	1,112	0%
Real estate ex-REITs - LP/Value ad	d				17,47	6 740	2,377	19,853	7%
Natural resources		11,964			9,86	0 613	593	22,417	7%
Natural resources - Co-invest.					1,96	7	533	2,501	1%
Natural resources - LP/Value add					3,41	0 427	572	3,982	1%
Other real assets - Co-invest.					2,95	5	609	3,564	1%
Other real assets - LP/Value add					2,66	7 151	181	2,848	1%
Hedge funds					43,41	4 24,677	2,750	70,841	24%
Private equity - Diversified					10,25	8 8,939	727	10,985	4%
Private equity - Diversified - Co-in					52	3 0	162	684	0%
Private equity - Diversified - FoFs						0 0	1	1	0%
Venture capital					7,11	5 1,517	738	7,853	3%
Venture capital - Co-invest.							144	144	0%
Private equity - Other		7,929			5,13	6 2,740	713	13,778	5%
Private equity - Other - Co-invest.					14,07	3 -6,771	1,746	15,818	5%
Overlay Programs	2,121	24,528						26,649	9%
Total investment management cos	sts - Interi	nal & Mo	nitoring					86,825	29%
Total investment management cos	sts (exclud	ling perf	ormance i	in private	assets)			171,039	57%
Total investment management cos	sts (includ	ing perfo	ormance i	n hedge f	unds)		32.2bp	257,865	86%
		Overs	sight, Cust	todial & C	ther Asset Related	l Costs (\$000s)			
Oversight of the Fund			, ,					30,508	10%

Oversight, Custodial & Other Asset Relate	ed Costs (\$000s)		
Oversight of the Fund		30,508	10%
Trustee & Custodial		7,205	2%
Consulting / performance measurement			
Audit		1,652	1%
Other		3,877	1%
Total oversight, custodial & other costs	5.4bp	43,241	14%
Total cost for New Zealand Superannuation Fund	37.6bp	301,106	100%

 $<sup>\</sup>mbox{\ensuremath{^{\ast}}}$  Enrichments applied. Refer to Appendix A.

Costs in blue come from the following page.

Costs in purple are from a two-step process shown over the next two pages.

# **Appendix A - Data Summary - Enhanced Survey Mapping to Regular Survey**

1				
Activitiy			Step 1:	
	Cost per		Attribution	
	Enhanced	# of	of Oper.	Cost with
	Survey	FTE	& Support	Attribution
Front Office				
Direct Investments	7,884	20.0	19,432	27,316
External Investment Partnership	7,695	21.0	20,404	28,099
Portfolio completion	7,067	14.0	13,603	20,669
Strategic tilting	2,968	8.0	7,773	10,741
Total front office	25,614	63.0	61,211	86,825
Governance, Operations and Support				
Board, CEO & assistants re: investments (A)	2,102	2.0	1,943	4,045
CIO, Investment strategy, asset allocation (B)	8,003	19.0	18,461	26,463
Oversight of the fund per regular CEM survey (A + B)				30,508
Custodial fees	7,205		n/a	7,205
Internal audit	1,652	4.0	n/a	1,652
Legal services	3,877	14.0	n/a	3,877
Risk management	2,448	12.0	-2,448	0
Performance reporting and data management	14,459	5.0	-14,459	0
Investment operations, exc. private markets	3,871	15.0	-3,871	0
Compliance	1,748	5.0	-1,748	0
Information technology	33,520	60.0	-33,520	0
Public relations & internal communication	2,272	5.0	-2,272	0
Finance, external reporting & tax	4,809	14.0	-4,809	0
Responsible investing, corporate governance	2,914	9.0	-2,914	0
Human resources	5,987	13.0	-5,987	0
Building, utilities & office services	1,200	4.0	-1,200	0
Other investment and support	8,388		-8,388	0
Total cost excluding external manager fees	130,067	244.0	0	130,067
	•			,

# How CEM mapped the above costs to the regular survey

CEM attributed both front office and back office costs to the CEM asset classes by style using the following methodology:

Step 1 - CEM attributed operations and support costs to front office & oversight pro rata based on FTE.

Step 2 - CEM attributes the fully loaded cost (shown in green) to all of the CEM asset classes that the team manages (see next page). The attribution preserves the relative cost ratios versus the CEM universe for each of the asset classes that the team manages.

# **Appendix A - Data Summary - Enhanced Survey Mapping of Internal Teams**

Front Office	Cost with		Step 2
	Attribution		<b>Attribution to</b>
	from Step 1	Responsibilities by CEM asset class	<b>Asset Classes</b>
Direct Investments	27,316	Stock - EAFE	3,047
		Real estate ex-REITs	2,537
		Real estate ex-REITs	141
		Natural resources	11,964
		Monitoring Natural resources	593
		Natural resources	533
		Monitoring LP Natural resources	572
		Private equity - Other	7,929
External Investment Partnership	28,099	Monitoring Stock - EAFE	100
		Monitoring Passive Stock - Emerging	415
		Passive Stock - Global	7,701
		Monitoring Passive Stock - Global	3,215
		Monitoring Stock - Global	2,909
		Monitoring Passive Fixed income - Global	1,808
		Monitoring Real estate ex-REITs	186
		Real estate ex-REITs	1,443
		Monitoring LP Real estate ex-REITs	2,377
		Monitoring Infrastructure	173
		Other real assets	609
		Monitoring LP Other real assets	181
		Monitoring Hedge funds	2,750
		Private equity - Diversified	162
		Monitoring LP Private equity - Diversified	727
		Private equity - Diversified	1
		Venture capital	144
		Monitoring LP Venture capital	738
		Private equity - Other	1,746
		Monitoring LP Private equity - Other	713
Portfolio completion	20,669	Passive Stock - EAFE	557
		Passive Fixed income - Global	4,205
		Passive Derivatives/Overlays - Currency	1,061
		Passive Derivatives/Overlays - Rebalancing / Passive bet	<b>1,061</b>
		Derivatives/Overlays - Long/Short	10,605
		Derivatives/Overlays - Other overlay	3,182
Strategic tilting	10,741	Derivatives/Overlays - Policy tilt TAA	10,741
Total Front Office	86,825		86,825

Front Office team costs, including allocated operations and support costs (see prior page), are attributed to the asset classes managed or overseen by the team. These attributions, shown in purple, are then inserted back into the regular survey.

# **Appendix A - Data Summary - Enhanced Survey Defintions**

Costs - Attribute 100% of costs excluding manager fees and transaction costs including:

- (i) Salaries and benefits of FTE
- (ii) General & administrative: travel, supplies, staff education, publications and reference materials, etc.
- (iii) Consulting and other third party fees

**FTE** - Includes full time permanent salaried employees, include the FTE of long and short term contract individuals dedicated to your organization that are working onsite or working full-time for your fund on a project or in a role supervised by your staff. Do not include FTE at external consultants or service providers if they are not being supervised by your staff, even if they are dedicated to serving your organization.

### **Activity Definitions**

1. Front Office consists of investment-decision making staff, including traders, analysts, portfolio managers and staff selecting and monitoring external managers, their immediate assistants and their management below the CIO level. Include third party fees for advice at the asset-class or security level such as manager search consultants, private equity consultants, and investment specific legal and due diligence fees that are not treated as transaction costs.

#### Does NOT include:

- (i) External manager fees. These are collected separately on the holdings tabs.
- (ii) Costs that relate to activities defined as Governance, Operations and Support in the table such as: board consultants, CIO, asset allocation and risk policy consultants, or other services (such as building, utilities and office services, information technology and human resources).
- **a. Board, CEO & assistants re: investments:** Include only the proportion of the costs (fees paid to Board directors, travel, director insurance, CEO and CEO's direct assistancts) equal to their proportion of time spent on investments and investment governance support. Exclude time spent on non-investment activities such as benefit administration, sales, marketing, new product development.
- **b. CIO, Investment strategy, asset allocation:** Include 100% of CIO FTE and costs including his/her direct assistants, total fund asset allocation strategy, tactical deviations from the mix, economic political or other research, etc.
- **c. Strategic consulting:** Include all investment consulting that pertain to the total fund (i.e., asset mix consulting). Consulting costs that can be attributed to a single asset category (i.e., private equity consultant) should be included with the appropriate front office team.
- **d. Risk management:** Developing and implementing risk controls for operational and investment risk including surplus risk, factor exposures, credit, counterparty, etc. Excludes the cost of IT/IS risk systems. These belong in IT/IS.
- **e. Internal Audit:** Independent review of business processes. Excludes external auditor fees. These belong in Finance, external reporting & tax.
- **f. Responsible investing, corporate governance:** Policy setting and coordination across asset classes for sustainable, socially and/or environmentally responsible investing, and for corporate governance.
- **g. Client account management:** Client service & reporting related to investing client assets, including client Board meetings, strategic client advice (ALM, risk, client portfolio construction).
- **h. Custodial fees:** should be reported gross before any reductions relating to securities lending or other revenues credited against fees.
- **i. Data, valuation & performance analytics:** Valuation and performance measurement of securities, funds, portfolios, risk, compliance, client reporting and other analysis and reporting. Include costs of data, dealing with data vendors and cleaning data.

# Appendix A - Data Summary - Enhanced Survey Defintions (cont'd)

- **i. Investment operations:** Listed security operations including trade settlement, custodial bank monitoring and reconciliation, cash management and corporate actions, private asset class, derivatives and swap administration, COO. If the COO or CFO is responsible for multiple activities (i.e., Valuations and performance analytics, investment operation and finance) then split their FTE between the activities based on time spent.
- **j. Compliance:** Monitoring, training on and dealing with regulatory infractions. Includes securities and pension regulation. Excludes compliance related to benefit administration.
- **k. IT/IS systems:** IT management and strategy, architecture, data center, database and application management and maintenance, development, user services, network, telecommunications, etc. Also include the costs of purchasing and maintaining the following systems/software applications: portfolio management, risk management, trade processing/order execution management, compliance monitoring, performance analytics, fund accounting system. Exclude the pro rata portion that relates to non-investment activities such as benefit administration, sales, marketing, new product development.
- **I. Public relations and internal communication:** External communication with entities such as regulators and media. Internal communication to staff. Excludes member and employer communication, marketing and sales.
- **m. Finance, external reporting & tax:** Financial statements, external auditor fees, general accounting, budgeting, tax reporting, procurement and accounts payable. CFO. If the CFO or COO is responsible for multiple activities (i.e., finance and IT) then split their FTE between the activities based on time spent.
- **n. Legal services:** General counsel, corporate secretary, legal counsel of any kind, even those specializing in real estate or private equity, paralegals, legal assistants and all FTE involved in legal analysis and advice. Investment related legal fees and costs, such as the legal fees to close private equity transactions, should be included under 'Front Office' if not treated as a transaction cost. Exclude amounts that pertain to non-investment activities such as benefit administration.
- **o. Human resources:** Human resources staff and consulting, including recruitment, training, career development, induction, disciplinary action, developing HR policies and procedures, etc.
- Exclude: Amounts that relate to non investment activities such as benefit administration and both severance and recruitment fees and activity specific training (these should be included in the Front Office Cost Centers table).
- **p. Building, utilities and office services:** Building occupancy costs including rent, lease, amortization of leaseholds and depreciation of buildings, office services such as reception, mailroom, cleaning and maintenance, building insurance, utilities. Include satellite offices. Exclude the pro rata portion that relates to non-investment activities such as benefit administration, sales, marketing, new product development.

# **Appendix B - Currency conversion**

New Zealand Superannuation Fund

All currency amounts have been converted to New Zealand dollar using Purchasing Power Parity figures per the OECD<sup>1</sup>. The table below shows the foreign exchange rates for the past 5 years.

Currency conversion table											
	2024	2023	2022	2021	2020						
United States Dollars - USD*	1.465	1.486	1.485	1.430	1.459						
Canada Dollars - CAD	1.240	1.260	1.180	1.147	1.218						
Euro - EUR*	2.200	2.248	2.171	2.072	2.052						
Sweden Kronor - SEK	0.171	0.166	0.172	0.164	0.164						
United Kingdom Pounds - GBP	2.193	2.132	2.150	2.104	2.037						
Australia Dollars - AUD	1.045	1.047	1.026	0.956	0.998						
New Zealand Dollars - NZD	1.000	1.000	1.000	1.000	1.000						

<sup>1.</sup> Source OECD website.

<sup>\*</sup> USD - Some participating Asia-Pacific funds report holdings and performance in

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

# **Appendix C - Data Integrity**

The value of the information contained in these reports is only as good as the quality of the data received. As a data and insights company, our reputation is built on high standards of data quality. CEM upholds the following **Data Principles** for quality:

- Completeness
- Comparability
- Accuracy
- Confidentiality
- Providence
- Timeliness
- Transparency
- Security

CEM's **Data Governance Committee**, with input from our clients, sets the data principles and ensures the compliance of the principles.

To ensure the completeness and comparability of the cost data, we:

- Forward fill costs for mandates from last year's reporting where missing for this year, or
- Estimate costs from your contractual deal terms (e.g., LP details) where missing, or
- Impute costs based on the experiences of the peers where an estimation or forward fill is not possible.

**Return conversion:** For comparability of performance data, the reports where either the peer group or universe include funds from multiple countries, we typically convert 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 convert U.S. returns to Euro based on the currency return for the year using December 31 spot rates.

Data cleaning for accuracy: CEM's procedures for checking the accuracy of data include the following:

- Data with material errors or omissions cannot be submitted to CEM.
- Once a survey is submitted, our rules engine identifies potential areas of discrepancies.
- Our internal experts then review the discrepancies and engage the survey respondent to iron out issues. In specific circumstances, our team is permitted to enrich the data for completeness and comparability using the approaches described above.
- Where we do not have clarity and confidence in the data, it is rejected.
- Finally, our Relationship Managers perform a final check before the material is shipped.

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.

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

# **Appendix D - Methodology Changes**

# 2024/25

• Imputation for performance fees based on all reported performance fees, including negative fees (accruals) Some funds are unable to report performance fees for all of their investments. CEM continues to impute the performance fees for these funds based on the complete performance fee data provided by other funds participating in the CEM universe. From reporting year 2024/25 onwards, the estimation for the imputed values will include fees below 0, as accrued performance fees can be negative. In prior years, negative performance fees were excluded when estimating the performance fee imputations.

# Appendix E - 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. Policy mix

#### **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 R squared (coefficient of determination) 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.

 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.

- 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.