

Staffordshire Pension Fund
Investment Benchmarking Results
For the 5 year period ending March 31, 2019



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This report will help you to satisfy your oversight responsibilities.

The CEM Benchmarking report focuses on what is strategically important in investment decision making. We bring the threads of funding, risk, returns and cost together to create a high-level narrative on how your decisions have affected outcomes and how and why you compare as you do across a range of indicators.

The report provides an independent means to validate your strategy or to support arguments for change. It provides accountability and can help you make better decisions. It supports requests for resources and can help in the negotiation of fees with external parties.

- Comparisons on investment performance, highlighting returns that come from:
 - The local Pension Committee's strategic asset allocation decisions, and
 - The implementation of the Committee's strategy (increasingly the responsibility of the pool).
- Comparisons on the level of risk inherent in your portfolio and relative to your liabilities and your funding position.
- Comparing your investment costs and explaining why your costs compare as they do.
- Information on how and why your costs have changed over time.
- Value-for-money analysis – 'did paying more get you more'?
- Detailed data to support decision making.

The report is based on standard data submitted to CEM by your fund, by other LGPS funds and a wider universe of funds from around the world. Care is taken to validate the data contained in the report. This includes automated validations on outlying or unusual data as it is submitted, and an additional manual data 'clean' where our analysts interact with fund personnel to ensure the data is fit for purpose. The information in this report is confidential and should not be disclosed to third parties without the express written consent of CEM. CEM will not disclose any of the information in the report without your express written consent.

We compare your returns to other LGPS funds and a wider global universe.

CEM's LGPS Universe

Pool / Group	# of Participant Funds	Total Assets (£bns)	% of CEM's LGPS Universe	Funds
Access	7	£24.7	12%	Cambridgeshire, East Sussex, Essex, Isle of Wight, Kent, Northamptonshire, Suffolk.
BCPP	12	£47.3	24%	Bedford, Cumbria, Durham, East Riding, Lincolnshire, NYPF, Northumberland, SYPF, Surrey, Teesside, Tyne and Wear, Warwickshire.
Central	4	£29.0	15%	Cheshire, Staffordshire, West Midlands, Worcestershire.
Northern	3	£45.7	23%	GMPF, Merseyside, West Yorkshire.
Scotland	4	£34.8	17%	Falkirk, Fife, Lothian, Strathclyde.
Wales	8	£17.6	9%	Swansea, Dyfed, Flintshire, Torfaen, Gwynedd, Powys, Rhondda Cynon TAF, Cardiff.
Total	38	£199.2	100%	

The main performance comparisons are with CEM's LGPS universe, which currently comprises 38 funds with total assets of £199 billion (average £5 billion, median £3 billion).

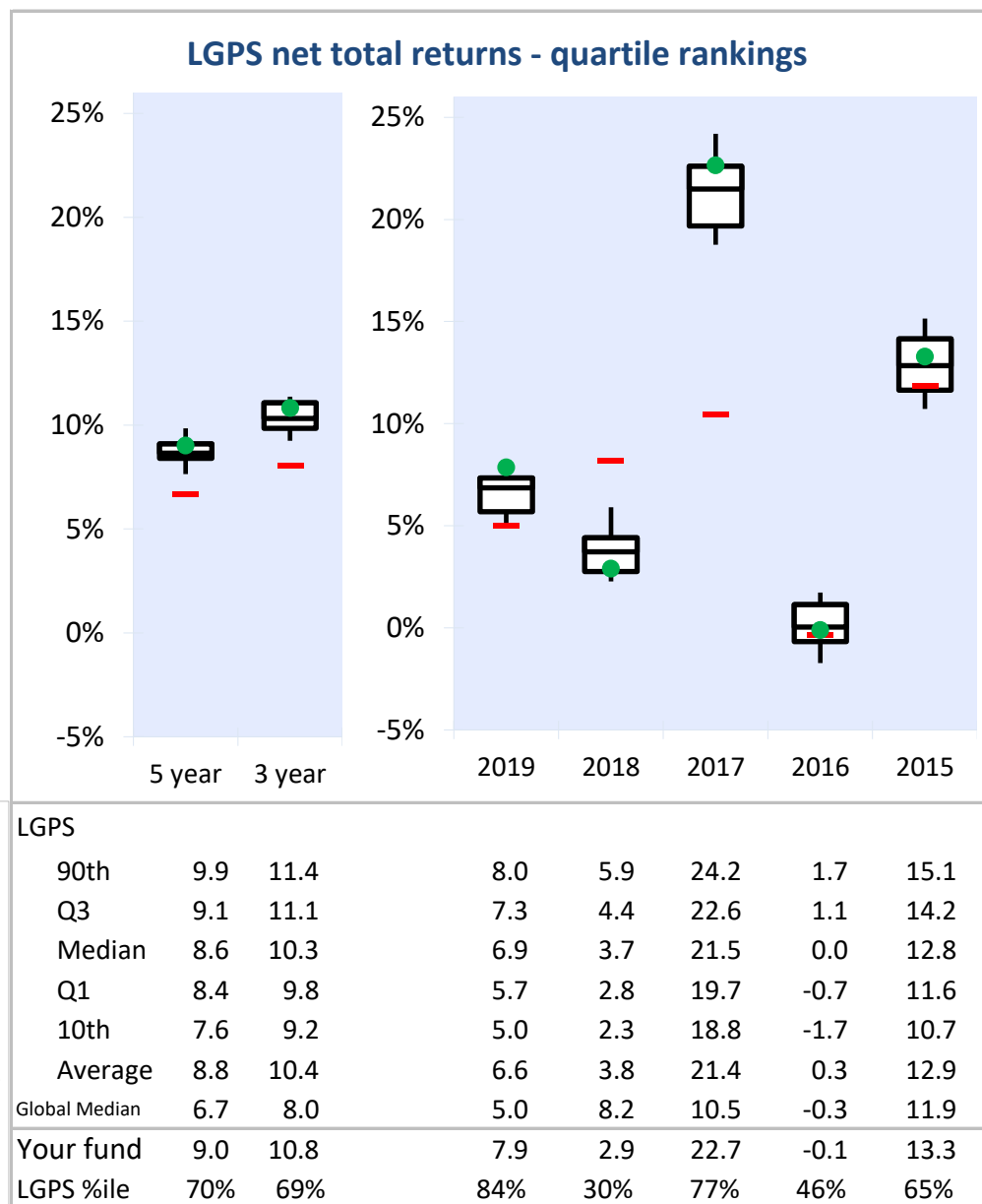
We also compare your returns (and LGPS returns generally) with a wider global universe comprising 332 funds with total assets of £7.2 trillion (average £22bn, median £5bn). The global universe includes half of the world's top 300 funds.

Your 5-year net total return of 9.0% was above both the LGPS median of 8.6% and the Global median of 6.7%.

Total returns, by themselves, provide little insight into the reasons behind relative performance. In the pages that follow, we separate total return into its more meaningful

- **Benchmark return:** The return from strategic asset allocation decisions. These decisions are typically made by the local Pensions Committee.
- **Value added:** A function of active management decisions, including tactical asset allocation, manager selection, stock selection, etc. These 'implementation' decisions tend to be made by management (increasingly within pools in England and Wales).

Global return comparisons have been particularly influenced by the relative strength of the \$US over the period covered by this report and by the depreciation of the £ in 2016/17, i.e. there is currency 'noise' in the global comparison.

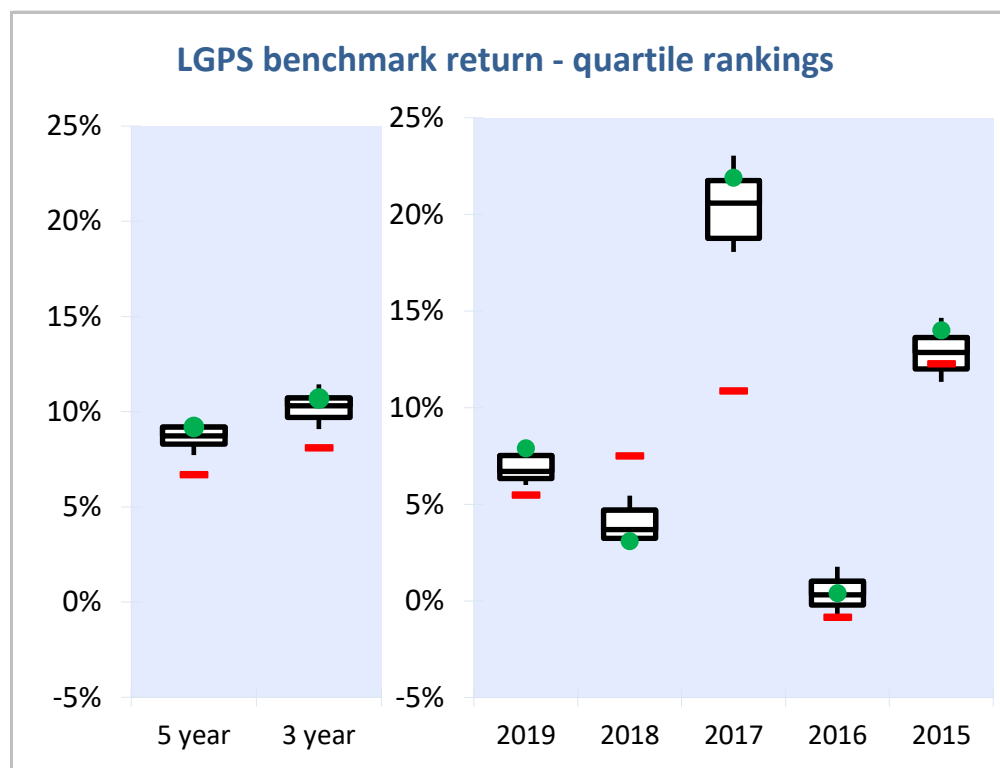


Your 5-year benchmark return of 9.2% was above both the LGPS median of 8.7% and the Global median of 6.7%.

Your benchmark return is the return you could have earned passively by indexing your investments according to your strategic asset mix. The benchmark return is typically the most significant driver of total returns.

Having a higher or lower relative benchmark return is not necessarily good or bad. Your benchmark return reflects your asset mix which in turn reflects your funding position, long-term capital market expectations, liabilities, employer covenant and appetite for risk.

Each of these factors is different across funds. Therefore, it is not surprising that benchmark returns often vary widely between funds. In the following page we explore how your asset mix impacts your benchmark return relative to peers.



Legend		LGPS							
	90th	9.6	11.4	8.3	5.4	23.0	1.8	14.6	
	75th	9.2	10.7	7.5	4.7	21.7	1.0	13.6	
	median	8.7	10.3	6.7	3.7	20.6	0.3	12.9	
	Q1	8.3	9.7	6.3	3.2	18.8	-0.2	12.0	
	25th	7.7	9.1	6.0	2.6	18.1	-0.9	11.3	
	10th	7.7	9.1	6.0	2.6	18.1	-0.9	11.3	
	your value	9.2	10.7	7.9	3.1	21.9	0.4	14.0	
	Global med	6.7	8.1	5.5	7.5	10.9	-0.8	12.3	
	Your fund	9.2	10.7	7.9	3.1	21.9	0.4	14.0	
	LGPS %ile	76%	71%	84%	21%	79%	51%	81%	

Differences in benchmark returns are caused by differences in asset mix and benchmarks at an asset class level.

Your relative 5-year benchmark return was influenced by:

- The positive impact of your higher weight in one of the better performing asset classes of the past 5 years: Equities Global (your 51% 5-year average weight versus a LGPS average of 27%).
- The positive impact of your lower weight in one of the worse performing asset classes of the past 5 years: Bonds UK (your 0% 5-year average weight versus a LGPS average of 7%).
- The positive impact of your higher weight in one of the better performing asset classes of the past 5 years: Domestic Property (your 10% 5-year average weight versus a LGPS average of 6%).

1. 5-year weights are based only on plans with 5 years of continuous data.

2. Other equities includes Europe xUK and EAFE. Other real assets includes commodities, natural resources, infrastructure and REITS.

3. A value of 'n/a' is shown if asset class return are not available for the full 5-year period or if they are broad and incomparable.

	5-Year average strategic asset mix ¹			5-year bmk. return	
	Your Fund	LGPS Avg.	More/ Less	Your Fund	LGPS Avg.
Equities Asia-Pacific		3%	-3%		10.7%
Equities UK	14%	18%	-3%	6.0%	6.2%
Equities U.S.		4%	-4%		15.8%
Equities Emerging	2%	3%	-1%	4.6%	9.0%
Equities Global	51%	27%	23%	11.8%	11.6%
Equities Other ²		6%	-6%		n/a ³
Total Equities	67%	61%	7%	10.4%	9.9%
Bonds UK		7.0%	-7%		6.3%
Bonds Inflation Indexed	7%	3.6%	3%	9.4%	9.8%
Bonds Global	7%	6.4%	1%	0.5%	4.1%
Cash	1%	0.8%	0%	0.4%	0.5%
Bonds Other ²		2%	-2%		n/a ³
Total Bonds	15%	19.5%	-5%	4.4%	5.8%
Hedge Funds	2%	1%	1%	0.5%	3.1%
Multi-asset Strategies		1%	-1%		5.8%
Global Property		2%	-2%		8.7%
Domestic Property	10%	6%	4%	10.0%	9.2%
Other Real Assets ²		4%	-4%	n/a ³	n/a ³
Private Equity	4%	4%	-1%	0.0%	13.1%
Private Debt	2%	1%	1%	n/a ³	3.6%
Total	100%	100%	0%		

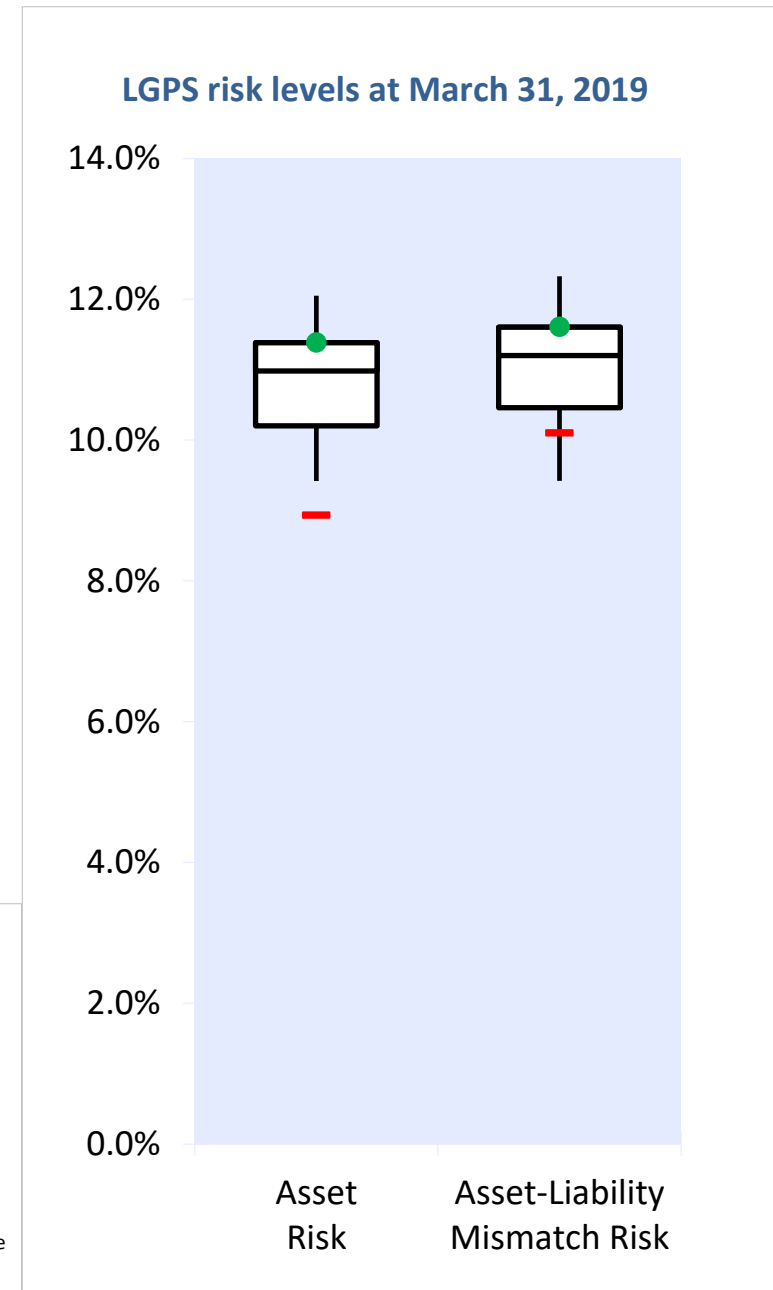
Your strategic asset allocation is largely a function of your appetite for risk.

Two of the key risks for the Pension Committee to consider are:

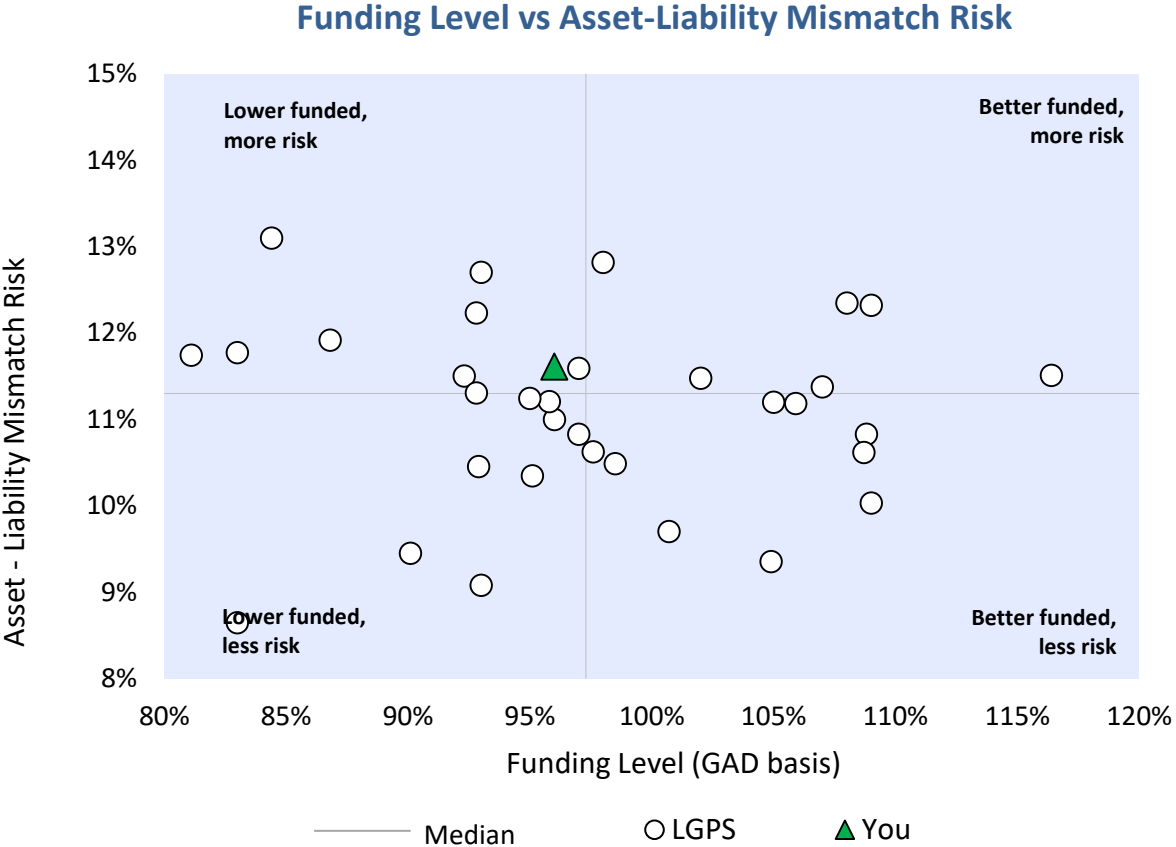
- **Asset Risk** - A higher asset risk is indicative of a higher weighting to more volatile assets (and vice-versa). Your asset risk of 11.4% was above the LGPS median of 11.0%.
- **Asset-liability mismatch risk** - A higher asset-liability mismatch risk is indicative a willingness to take more risk to improve the funding level. Lower asset risk is indicative of either better funding, concerns about employer covenants or a desire for stability in contributions. A lower asset-liability mismatch risk means you are closer to a 'fully-matched' position. Your asset-liability risk of 11.6% was above the LGPS median of 11.2%.

Trend:

	Asset Risk	Asset-Liability Mismatch Risk
2014/15	11.4%	11.5%
Change	0.0%	0.1%
2018/19	11.4%	11.6%



Your funding level of 96% on the standard GAD basis in 2016 was below the LGPS median of 97%. You had more asset liability mismatch risk.



The funding level is based on standardised actuarial assumptions developed by the Government Actuaries Department (GAD). Most of the key assumptions are consistent across funds but some assumptions, and in particular mortality assumptions, are fund specific. Your funding level as shown may not reflect the actuarial basis you use to determine your asset allocation or contribution policies, but it serves a useful purpose in providing context for comparisons of asset risk and asset-liability mismatch risk. At present the analysis is based on the position in 2016, when valuations were last completed consistently across funds. The analysis will be updated after the 2019 valuation.

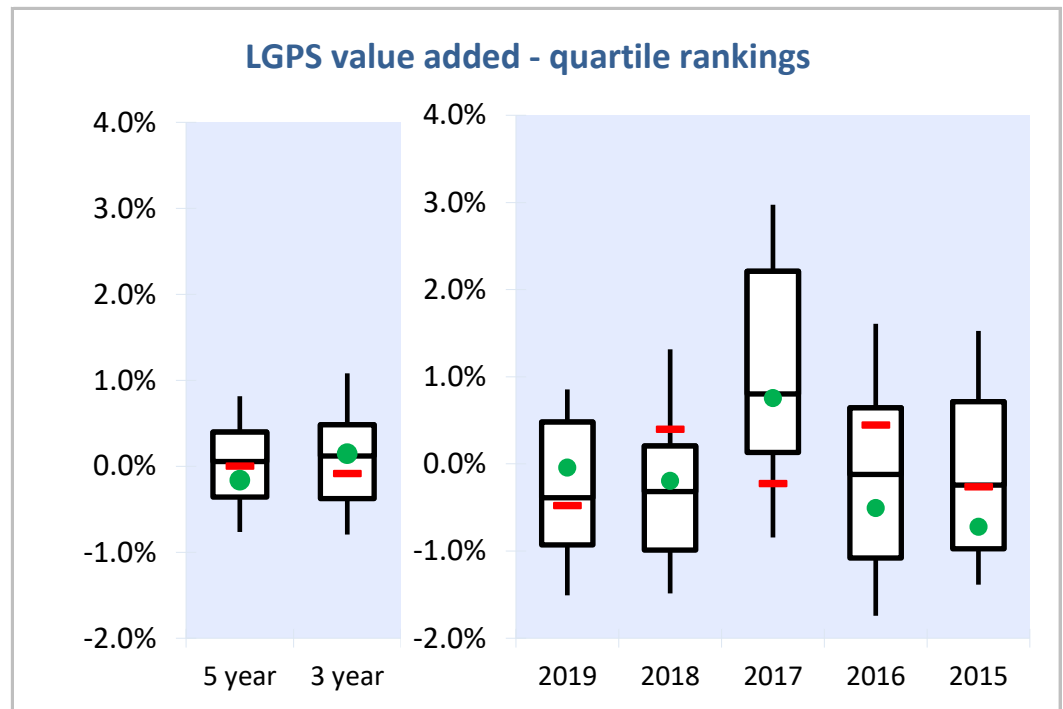
Net value added is the component of total return from active management. This is increasingly the responsibility of pools in England and Wales. Your 5-year net value added was -0.2%.

Net value added equals total net return minus strategic benchmark return.

It is a function of active management decisions made in the implementation of your strategy which includes tactical asset allocation, manager selection, stock selection, choice of benchmarks, hedging, overlays, etc.

Your 5-year net value added of -0.2% compares to a median of 0.1% for the LGPS universe. The 5-year Global median net value added was 0.0%.

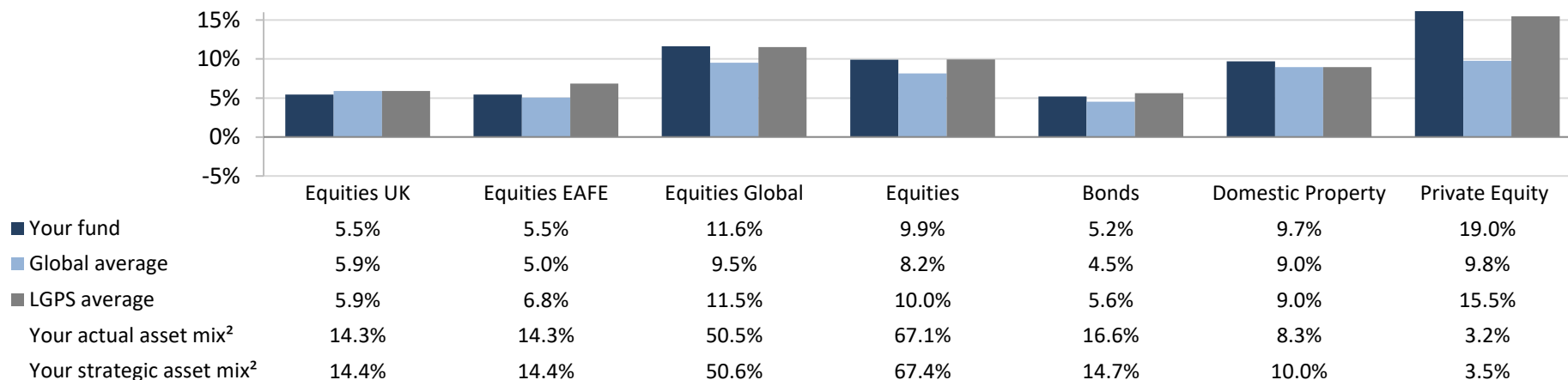
Your value added was impacted by your choice of benchmarks for several asset classes, including hedge funds and private credit and also by the absence of a benchmark for private equity. CEM suggests using lagged, investable benchmarks for private equity. If your fund used the private equity benchmark suggested by CEM, your 5-year total fund value added would have been 0.5% lower.



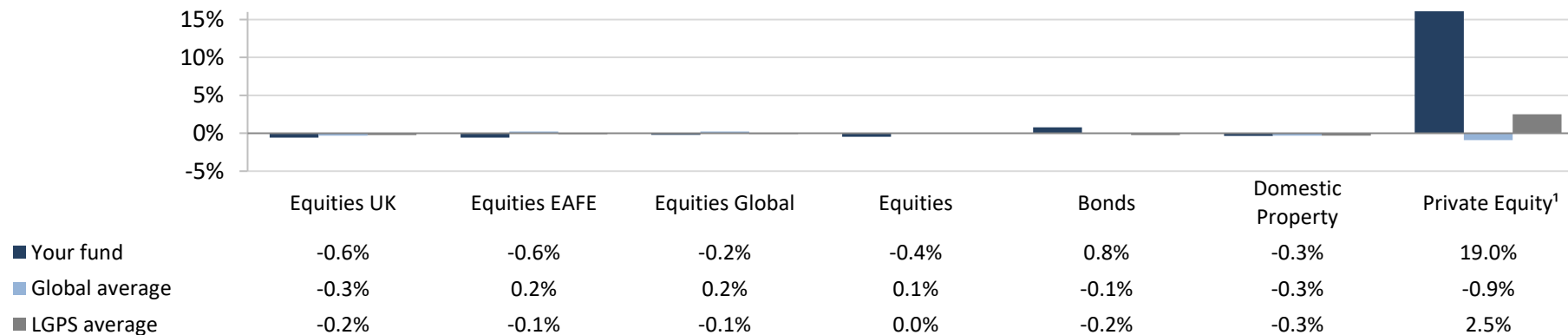
Legend		LGPS							
	90th	0.8	1.1	0.9	1.3	3.0	1.6	1.5	
	75th	0.4	0.5	0.5	0.2	2.2	0.6	0.7	
	Median	0.1	0.1	-0.4	-0.3	0.8	-0.1	-0.2	
	25th	-0.4	-0.4	-0.9	-1.0	0.1	-1.1	-1.0	
	10th	-0.8	-0.8	-1.5	-1.5	-0.8	-1.7	-1.4	
	Average	0.1	0.1	-0.3	-0.1	1.0	-0.1	-0.2	
	Global Median	0.0	-0.1	-0.5	0.4	-0.2	0.4	-0.3	
	Your fund	-0.2	0.1	0.0	-0.2	0.8	-0.5	-0.7	
	LGPS %ile	33%	51%	59%	53%	46%	41%	33%	

Here is how your net returns and net value added compare.

5-year average net return by major asset class



5-year average net value added by major asset class



1. To enable fairer comparisons, the private equity benchmarks of all participants, except your fund, were adjusted to reflect lagged, investable, public-market indices. If your fund used the private equity benchmark suggested by CEM, your fund's 5-year private equity net value added would have been 5.2%.

2. 5-year average.

We compare your costs to the following custom peer group:

- 20 Global sponsors from £3.3 billion to £8.8 billion
- Median size of £5.3 billion versus your £5.1 billion
- Peers are selected based on size (because size impacts costs) and to include both LGPS and non-LGPS funds (to help you understand how your costs compare with a broad cross-section of funds).
- We specifically exclude other LGPS funds from your pool because costs will increasingly be homogenous within the pool.

LGPS Funds

East Riding Pension Fund

Essex Pension Fund

Lothian Pension Fund

Merseyside Pension Fund

Rhondda Cynon TAF Pension Fund

South Yorkshire Pensions Fund

Staffordshire Pension Fund

Surrey Pension Fund

Teesside Pension Fund

Tyne and Wear Pension Fund

Non-LGPS Funds

Colleges of Applied Arts and Technology

District of Columbia Retirement Board

Houston Police Officers Pension System

Manitoba Civil Service Superannuation Fund

Missouri State Employees' Ret. Sys.

OSOOL Total Pension Fund

Saskatchewan Public Employees Pension Fund

Stichting BPF voor de Koopvaardij

BPF voor de Media PNO

SPF TNO

We are benchmarking investment costs of £32.1m or 64.9 basis points in 18/19.

Costs by asset class and style (£000s)	Internal Active	External Management			Total
		Passive fees	Active base fees	Perform. fees	
Equities UK		39	618		656
Equities Emerging			1,042		1,042
Equities Global		373	2,115	920	3,407
Bonds Global Credit			494		494
Bonds Inflation Indexed		40			40
Hedge Fund - FoFs					
Top Layer Fees ³			1,096	213	1,309
Underlying Fees ^{4 5}			1,147	738	1,885
Domestic Property ^{1 2}	2,702		122	18	2,842
Diversified Private Equity - FoFs					
Top Layer Fees ⁶			3,088	787	3,875
Underlying Fees ^{7 8}			5,487	2,973	8,460
Private Credit - LP ^{9 10}			4,371	1,262	5,633
Total					29,643 59.9bp
Total oversight, custody & other costs*					2,454 5.0bp
Total benchmarked costs					32,097 64.9bp

Defaults:

The numbers in italics represent the base fees calculated from the Limited Partnership details provided by you. Shaded numbers are defaults applied by CEM, either because data was missing, incomparable, difficult to obtain or outside acceptable ranges with no explanation. Defaults are either peer or universe medians, intended to show indicative costs.

1. £122k = (34 bps)
2. £18k = (5 bps)
3. £213k = (24 bps)
4. £1,147k = (129 bps)
5. £738k = (83 bps)
6. £787k = (49 bps)
7. £5,487k = (156 bps)
8. £2,973k = (185 bps)
9. £4,371k = (141 bps)
10. £1,262k = (74 bps)

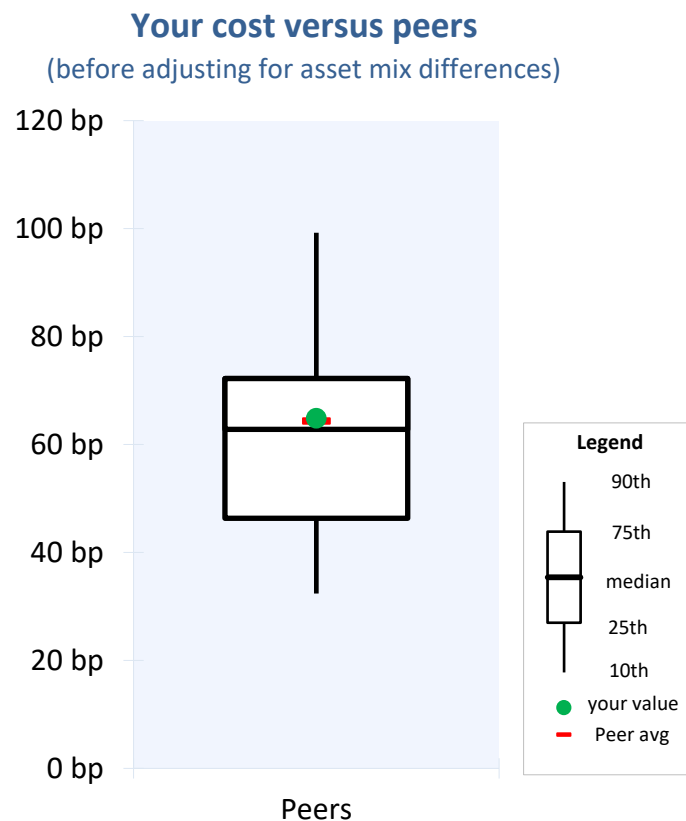
Benchmarked investment costs exclude transaction costs, pension administration costs and non-investment related governance and oversight costs. Your 2018/19 financial statements report investment costs of £15.68 million plus transaction costs of £0.832 million. The costs benchmarked in this report of £32.097 million are different than your reported £15.68 million because 1) CIPFA's standard definition of investment costs differs from CEM's standard definition and 2) CEM's use of defaults often adds "difficult to obtain" costs.

*£838.5K of the Total oversight, custody & other costs relate to the fees paid for the management of the pool.

Your cost of 64.9 bps was above your benchmark cost of 58.0 bps.

Comparison of costs before adjusting for asset mix:

Before adjusting for differences in asset mix, your costs of 64.9 bps were 2.1 bps above the peer median of 62.8 bps.



Comparison of costs after adjusting for asset mix:

To calculate a benchmark cost we apply peer median costs at an asset class level to your asset mix (i.e., we adjust for differences in asset mix).

Your cost versus benchmark
(after adjusting for asset mix differences)

	£000s	basis points
Your total investment cost	32,097	64.9 bp
Your benchmark cost	28,708	58.0 bp
Your excess cost	3,389	6.9 bp

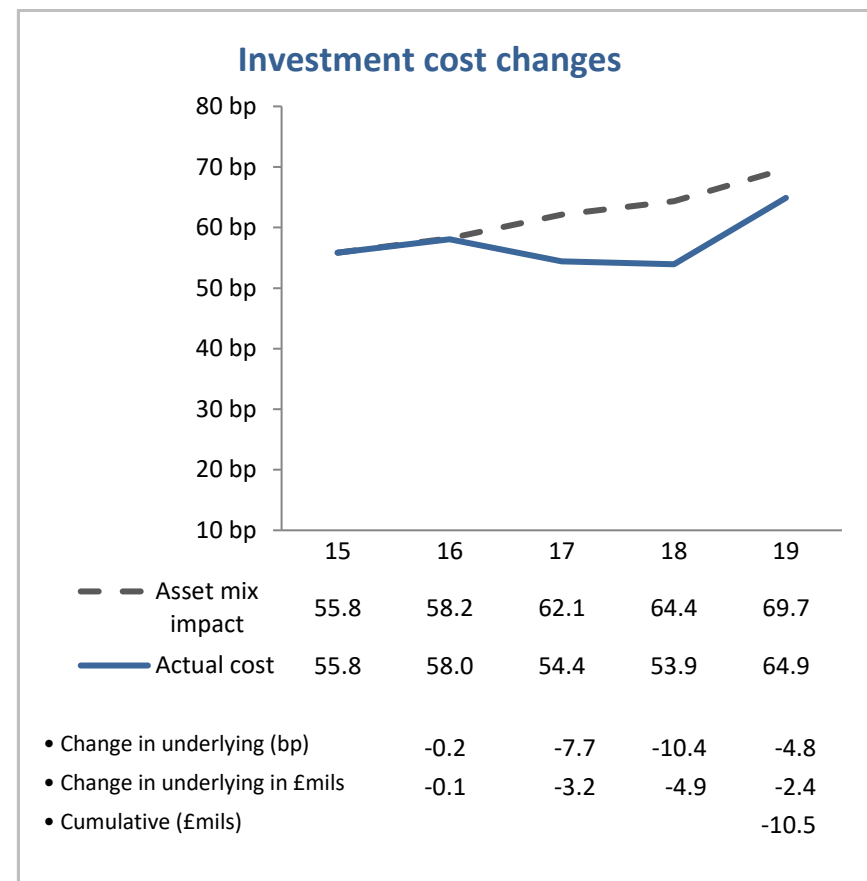
Your fund was high cost because you had a higher cost implementation style and you paid more than peers for some services.

Explanation of your cost status

			Excess Cost/ (Savings)	
			£000s	bps
1. Higher cost implementation style				
• More passive management (vs. higher cost active)			(2,805)	(5.7)
• More external management (vs. lower cost internal)			1,249	2.5
• More partnerships for private assets (vs. funds)			712	1.4
• More fund of funds			3,162	6.4
• Less overlays			(367)	(0.7)
			<u>1,951</u>	<u>3.9</u>
2. Paying more than peers for some services				
		<u>Peer</u>		
• External investment management costs	<u>You</u>	<u>Median</u>		
Equities Global - External Active	38.3 bp	42.4 bp	(325)	(0.7)
Equities Global - External Passive	2.4 bp	4.4 bp	(293)	(0.6)
Hedge Funds - Fof - Base Fees	123.3 bp	90.8 bp	289	0.6
Bonds Global Credit - Active	12.8 bp	19.5 bp	(262)	(0.5)
All other differences			(94)	(0.2)
• Internal investment management costs			1,876	3.8
• Oversight, custody and other costs			247	0.5
			<u>1,438</u>	<u>2.9</u>
Total excess cost			3,389	6.9

Your cost increased from 55.8 bps in 14/15 to 64.9 bps in 18/19.

	Bps	£000s
Investment cost reported in 2014/15	55.8 bp	£19,652
Impact of changes in assets and asset mix		
• Increase in assets ¹	n/a	£7,970
• Higher cost asset mix ²	16.5 bp	£8,185
• Reduced use of overlays	(2.7) bp	£-1,341
	69.7 bp	£34,466
Impact of changes within the same asset classes		
• More passive (less active) ³	(3.5) bp	
• More external management (vs. internal)	3.7 bp	
Higher/-lower fees for:		
• Equities and bonds ⁴	(3.2) bp	
• Private markets and hedge funds:		
Lower base fees	(1.2) bp	
Lower performance fees	(1.6) bp	
• Higher oversight and other changes	1.0 bp	
Total changes in underlying costs	(4.8) bp	£-2,369
Investment cost in 2018/19	<u>64.9 bp</u>	<u>£32,097</u>



1. Assumes all costs increase in line with the value of assets.
2. Between 2015 and 2019, your holdings in higher cost assets increased (Emerg. Stock: £88 mil to £117.8 mil; PE FoF (fee basis): £144 mil to £360.7 mil; Priv. Credit: £73 mil (2017) to £380 mil).
3. Between 2015 and 2019, your holdings in both External Passive Global Stock and External Passive Inflation Indexed bonds increased by £483 mil and £179 mil respectively.
4. Between 2015 and 2019, your base fees basis point in both equities and bonds decreased (equities: 19.3 bps to 13.6 bps; bonds: 7.8 bps to 6 bps).

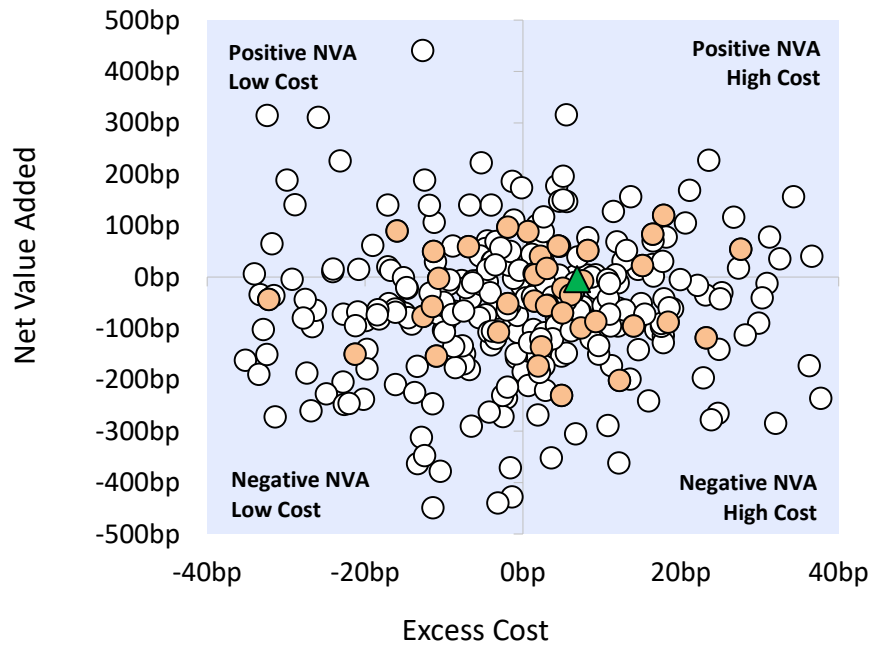
Cost Effectiveness

Your 2018/19 performance placed in the negative value added, high cost quadrant of the cost effectiveness chart.

Your 5-year performance placed in the negative value added, low cost quadrant of the cost effectiveness chart.

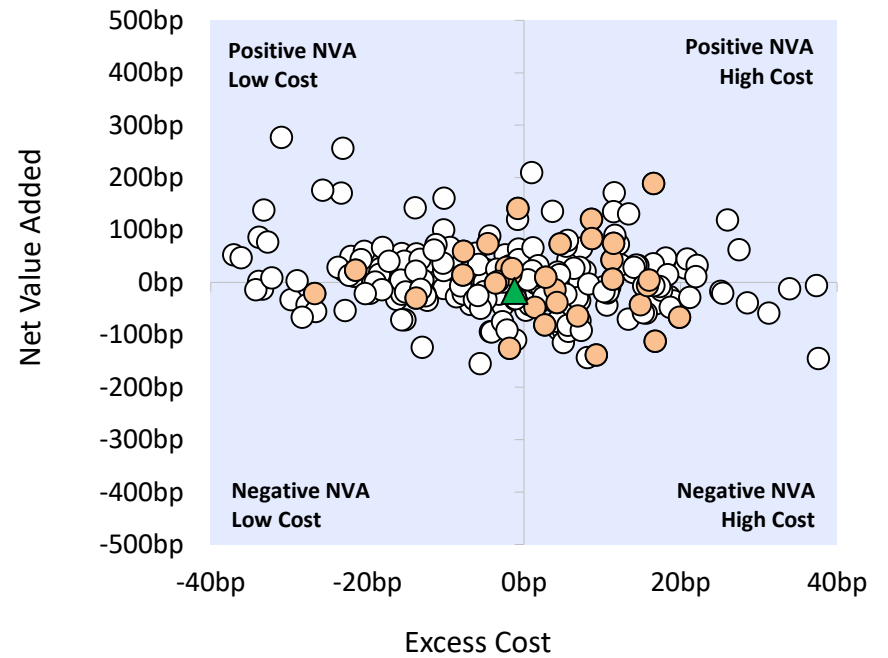
2018/19 net value added versus excess cost

(Your 2018/19: net value added -4 bps, excess cost 7 bps ¹⁾)



5-Year net value added versus excess cost

(Your 5-year: net value added -16 bps, cost savings 1 bps ¹⁾)



1. Your 5-year cost savings relative to peers of 1 basis points is the average for the past 5 years. Cost savings before 2016/17 are calculated using regression analysis.

Key takeaways

Returns

- Your 5-year net total return was 9.0%. This was above the LGPS median of 8.6% and above the global median of 6.7%.
- Your 5-year-year benchmark return was 9.2%. This was above the LGPS median of 8.7% and above the global median of 6.7%.

Risk

- Your asset risk of 11.4% was above the LGPS median of 11.0%. Your asset-liability risk of 11.6% was above the LGPS median of 11.2%.
- Your funding level of 96% on the standard GAD basis in 2016 was below the LGPS median of 97%.

Value added

- Your 5-year net value added was -0.2%. This was slightly below the LGPS median of 0.1% and close to the global median of 0.0%.

Cost

- Your investment cost of 64.9 bps was above your benchmark cost of 58.0 bps. This suggests that your fund was high cost compared to your peers.
- Your fund was high cost because you had a higher cost implementation style and you paid more than peers for some services.
- Your cost increased from 55.8 bps in 14/15 to 64.9 bps in 18/19.