

County Buildings, Stafford
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Joint Meeting of the Pensions Committee and Pensions Board

Friday, 12 July 2019

10.00 am

Oak Room, County Buildings, Stafford

John Tradewell
Director of Corporate Services
4 July 2019

A G E N D A

PART ONE

1. **Apologies**
2. **Declarations of Interest**
3. **Staffordshire Pension Fund Investment Performance and Benchmarking** (Pages 1 - 38)

Report of the Director of Corporate Services

4. **Exclusion of the Public**

The Chairman to move:

'That the public be excluded from the meeting for the following items of business which involve the likely disclosure of exempt information as defined in the paragraph of Part 1 of schedule 12A of the Local Government Act 1972 indicated below'

PART TWO

Nil

Membership

Ben Adams	Peter Noskiw (Co-Optee)
Philip Atkins, OBE	Bob Spencer
Nigel Caine (Co-Optee)	Mike Sutherland
Mike Davies (Vice-Chairman)	Stephen Sweeney
Derek Davis, OBE	Martyn Tittley
Colin Greatorex (Chairman)	Kevin Upton (Co-Optee)
Phil, Jones	Michael Vaughan

Note for Members of the Press and Public

Filming of Meetings

The Open (public) section of this meeting may be filmed for live or later broadcasting or other use, and, if you are at the meeting, you may be filmed, and are deemed to have agreed to being filmed and to the use of the recording for broadcast and/or other purposes.

Recording by Press and Public

Recording (including by the use of social media) by the Press and Public is permitted from the public seating area provided it does not, in the opinion of the chairman, disrupt the meeting.

PENSIONS COMMITTEE – 12 JULY 2019

Report of the Director of Corporate Services

Staffordshire Pension Fund Investment Performance and Benchmarking

Recommendation of the Chair

1. That the Pensions Committee note the reports (Appendix 1 and 2) and presentation to be received from Portfolio Evaluation Limited and CEM Benchmarking.

Background

2. The Pension Fund employs Portfolio Evaluation Limited to provide investment performance measurement services with the results presented to the Pensions Panel each quarter. Attached at Appendix 1 is an investment performance overview for the period ending 31 March 2019.
3. The Pension Fund takes part in an annual benchmarking exercise with international company CEM Benchmarking. CEM benchmark over 400 global pension funds with plan sizes ranging from £35m to £600bn. Attached at Appendix 2 is the results of the 2017/18 CEM survey, where Staffordshire is shown against a peer group of 21 LGPS and international funds ranging in size from £3.2bn to £8.6bn (a median size of £5.5bn versus our £4.8bn value at 31 March 2018).

John Tradewell
Director of Corporate Services

Contact: Melanie Stokes / Tim Byford
Telephone No. (01785) 276330 / 278196

Equalities Implications: There are no direct equalities implications.

Legal Implications: The legal implications are covered in the body of the report.

Resources and Value for Money Implications: There are no Resources and Value for Money Implications.

Risk Implications: There is always a risk of admitting any new contractor to the Fund but this is mitigated through the existing Fund Employer acting as guarantor.

Climate Change Implications: There are no direct climate change implications arising from this report.

Health Impact Assessment screening – There are no health impact assessment implications arising from this report.

Portfolio Evaluation Ltd
Staffordshire Pension Fund
Investment Performance Overview 2018/19

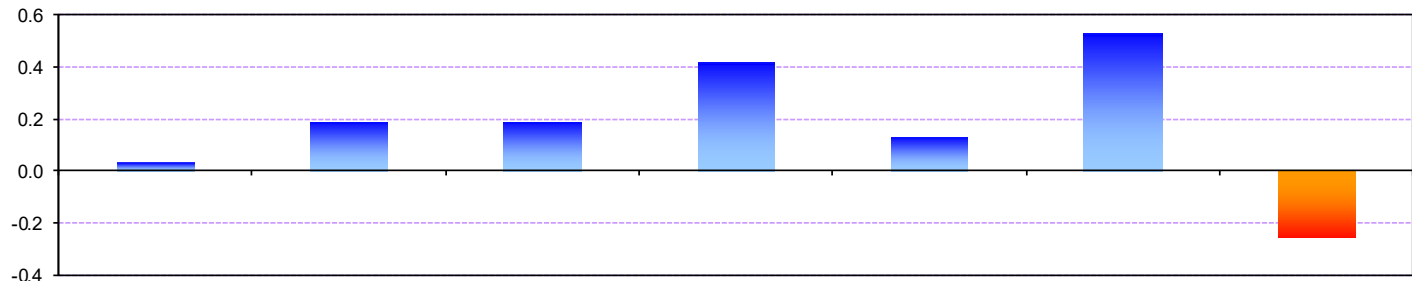
Overview of Today

- Market Review
 - Asset class results
 - Themes
 - Market trends and developments

- Evaluation of the Staffordshire Pension Fund results
 - Total Fund results (short and long term)
 - Attribution of 2018/19 results

Total Fund Results – Ending March 2019

Excess Return Analysis (%)



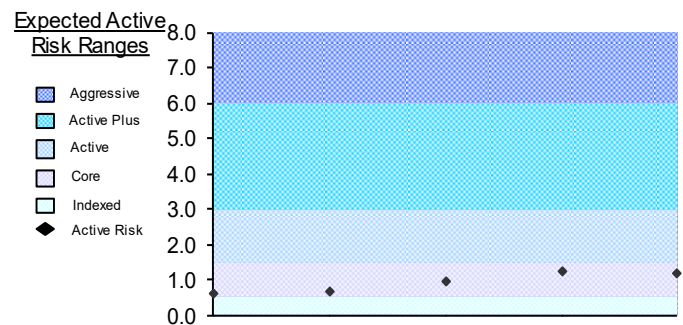
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	QTR	YTD	1 Yr	3 Yr	5 Yr	10Yr	Since Apr 95 (p.a.)
Excess Return	0.0	0.2	0.2	0.4	0.1	0.5	-0.3
Portfolio Return	6.9	8.1	8.1	11.1	9.3	11.8	8.0
Benchmark Return	6.9	7.9	7.9	10.7	9.2	11.3	8.2

All returns for periods in excess of 1 year are annualised. The portfolio return is gross.

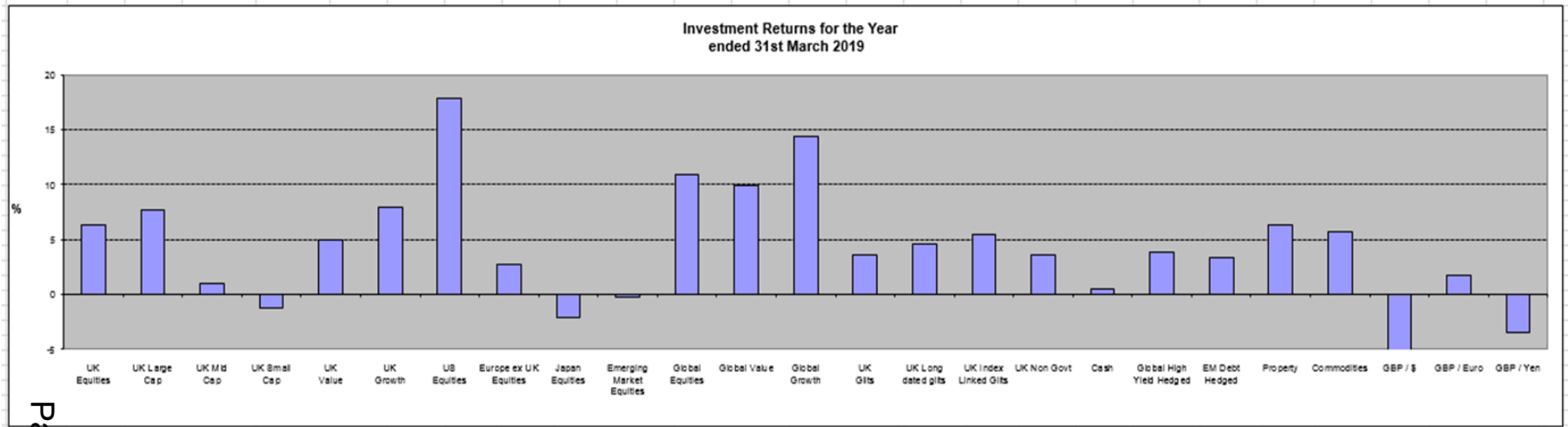
- Positive excess return over all key time periods for periods up to 10 years.
- Medium term returns in excess of cash, inflation and probably actuarial required return.
- Positive real returns generated by the Fund over all time periods.
- Risk profile consistent with mixed asset class Fund
- Active risk consistent with some active management and asset allocation decisions

Ex-Post Active Risk Analysis (%)



	1 Yr	3 Yr	5 Yr	10 Yr	Apr 95
Active Risk	0.6	0.7	1.0	1.3	1.2
Portfolio Risk	7.5	6.5	6.3	7.5	7.4
Benchmark Risk	7.6	6.6	6.5	7.4	7.3

Market Results – Year Ended March 2019

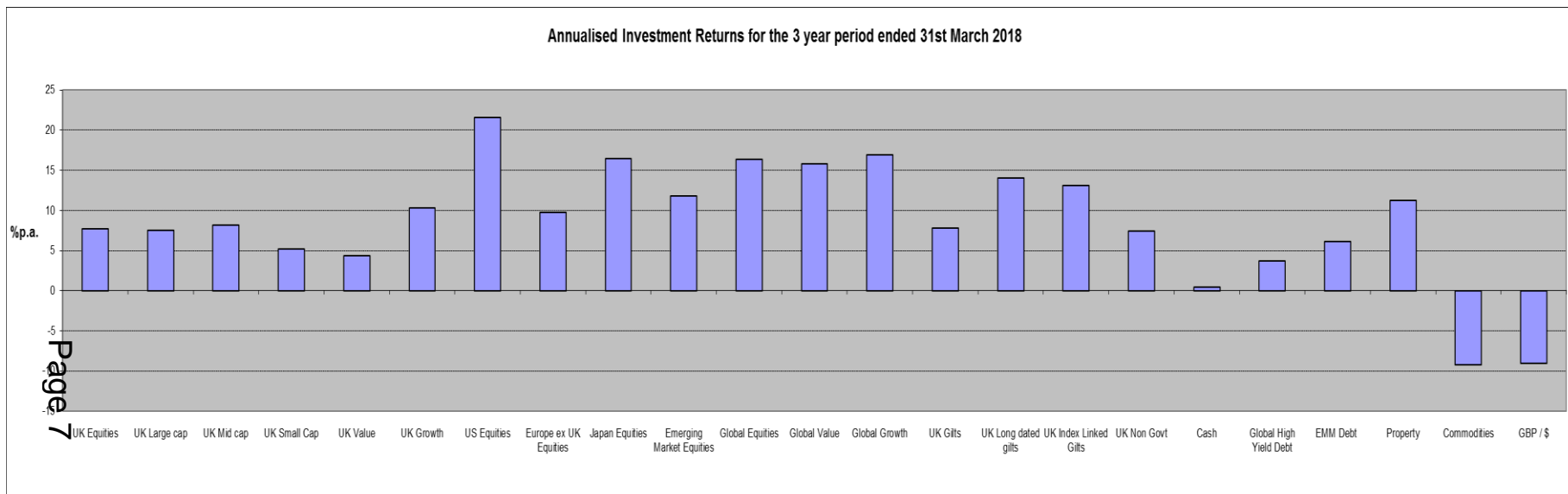


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A variable year with equity markets doing well until Q4 2018. Markets fell due to central bank policies and doubts over continued global economic growth. These concerns eased in Q1 2019

- UK equity market not as buoyant as other markets partly due to lack of overseas investors (and domestic to some degree) over concerns about UK growth and Brexit.
- Currency movements continue to influence sterling returns significantly
- Bond yields rose globally quite 'soft'.
- Investors believe that the global growth is slowing and that the developed world may become recessionary.
- Market risk increased in 2018

Market Results - Three Years Ended March 2019



- Global economic growth consistently positive
- Strong returns from markets
- Risk levels have been lows on an ex-post basis but now rising
- Sterling depreciation a significant return generator
- Impact of QE beneficial from a returns perspective (now being eased)

Client Trends and Market Developments

- Fund activity;
 - Growth in investments within 'Alternative Asset Classes' including Infrastructure and Private Debt.
 - Uptake of equity protection strategies
 - Significant restructuring due to Pooling
 - Investment strategies under review due to actuarial reviews
 - Risk off strategies being considered.

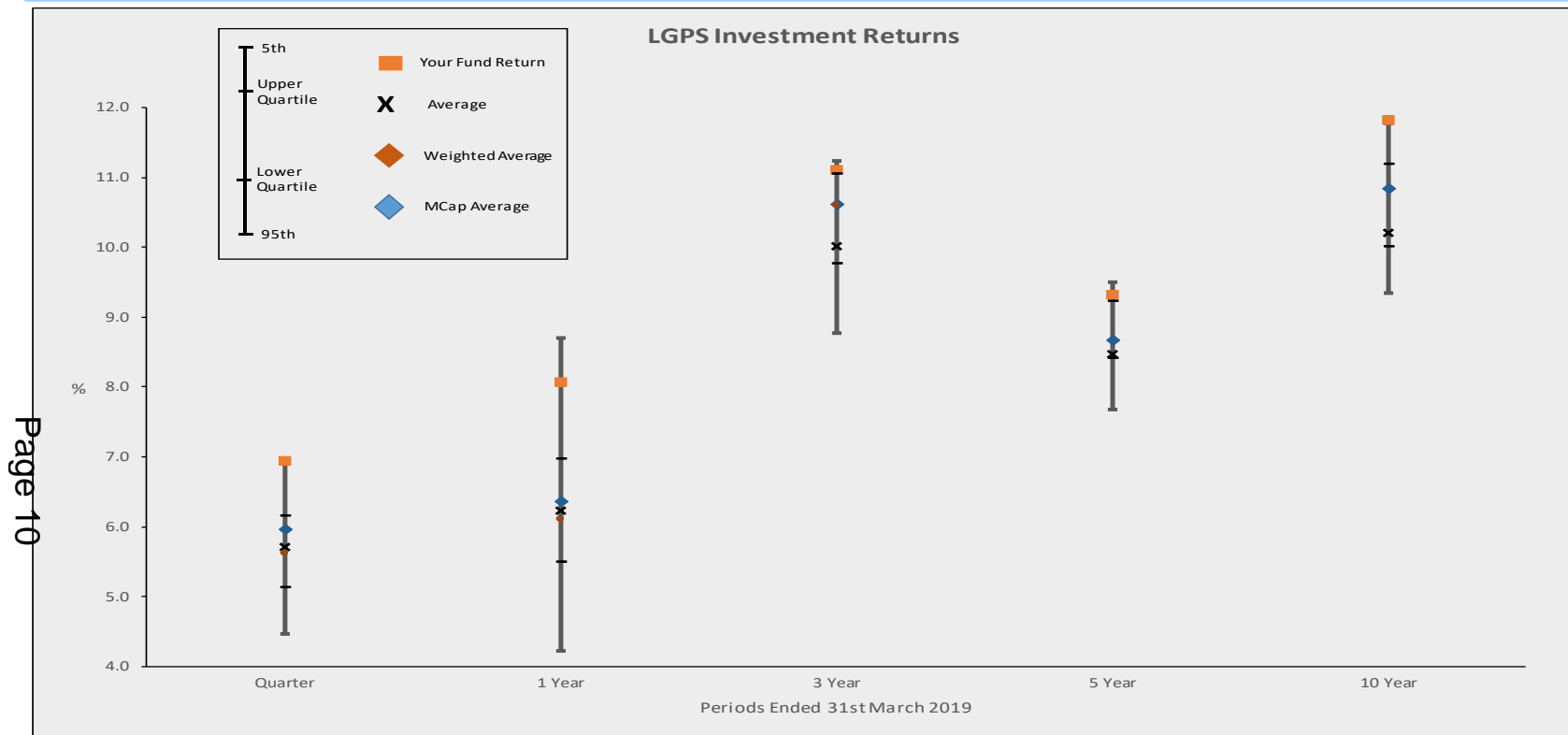
- Local Government Pension Scheme Pooling
 - Currently in early stages of transition
 - Transitions typically occurring in active equity strategies.
 - Bond products being proposed for this year.
 - Wide range of proposed solutions

- Investment monitoring developments
 - Increased focus on net and gross of fees reporting.
 - Restructuring of funds significant
 - Transparency

Investment Management Developments at the Fund

- Continuing to build investments in private debt.
- Pooling has started with an investment in the LGPSC Global Equity Fund. An investment was made of approx £500m funded from the LGIM global funds and representative of much of the money initially in the Aberdeen and Sarasin global equity portfolios.
- In April 2019 the Russell Emerging Markets portfolio was disinvested and the assets transferred to the LGIM All World policy.
- Change is expected to continue through 2019/ 2020.

Fund Performance Relative to other Local Authority Pension Funds



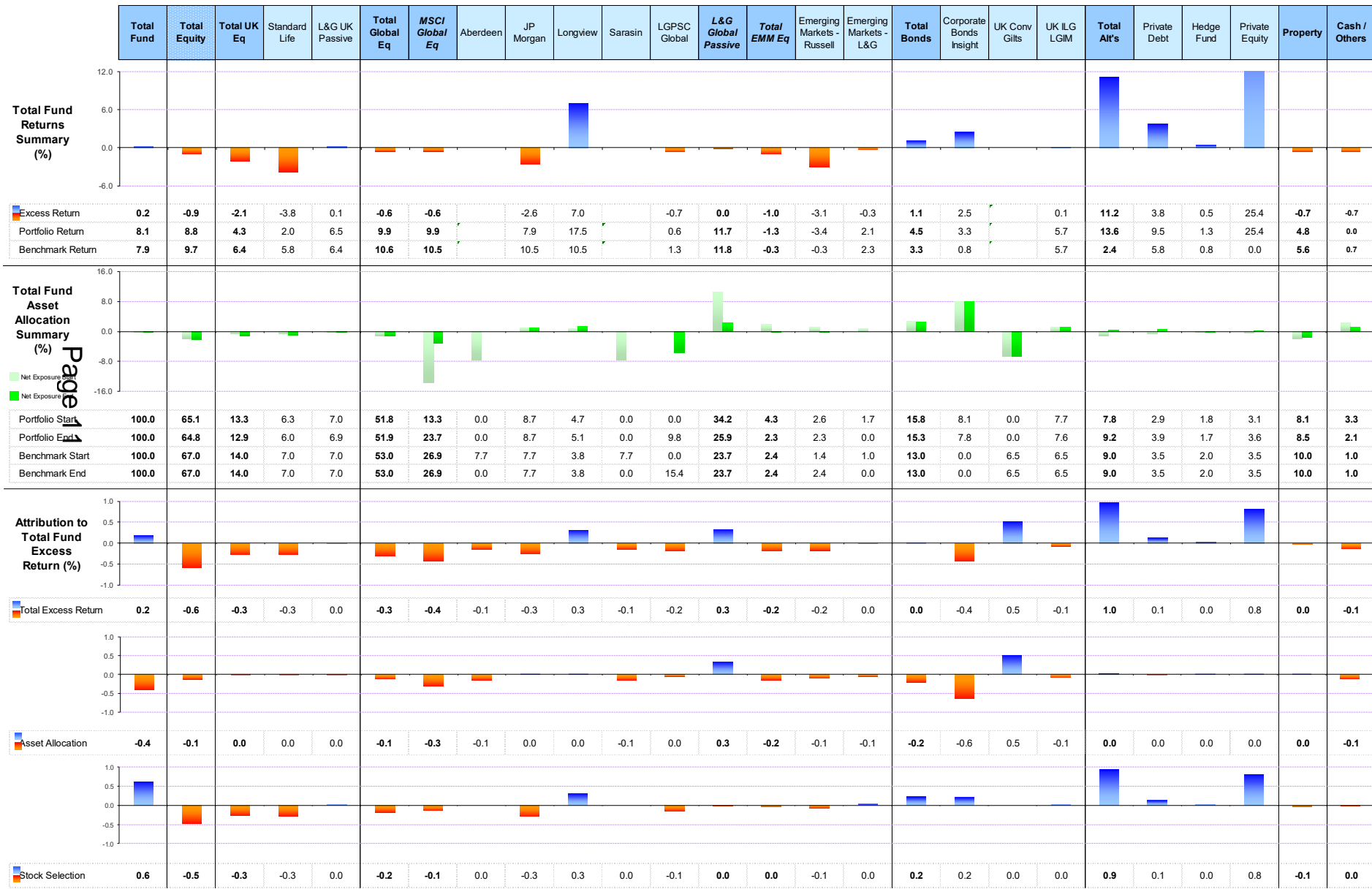
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	Your Fund	Average	Weighted	Your Fund	Average	Weighted	Your Fund	Average	Weighted	Your Fund	Average	Weighted	Your Fund	Average	Weighted
Return (%p.a.)	6.94	5.70	5.61	8.05	6.22	6.10	11.10	10.01	10.60	9.31	8.47		11.82	10.20	
	£0bn-2bn	£2bn-7bn	£7bn +	£0bn-2bn	£2bn-7bn	£7bn +	£0bn-2bn	£2bn-7bn	£7bn +	£0bn-2bn	£2bn-7bn	£7bn +	£0bn-2bn	£2bn-7bn	£7bn +
Return (%p.a.)	5.81	5.95	5.40	5.74	6.36	6.37	7.96	10.62	10.58	6.72	8.67	9.29	8.27	10.84	10.75

Note: Weighted refers to market capitalisation weighted average

- The PE LGPS Information Service had the following results as at March 2019.
- Our sample consists of 22 local authority pension funds

Attribution to Total Fund Excess Return Analysis - Year Ending March 2019



Attribution to Total Fund Excess Return Analysis – 3 Years Ending March 2019

	Total Fund	Total Equity	Total UK Eq	Standard Life	L&G UK Passive	Total Global Eq	MSCI Global Eq	Aberdeen	JP Morgan	Longwe w	Sarasin	LGPS Global	L&G Global Passive	Total EMM Eq	Emerging Markets - Russell	Emerging Markets - L&G	Total Bonds	Corporate Bonds Insight	UK Conv Gilt	UK ILG LGIM	Total Alt's	Schroder	Morgan Stanley	Private Debt	Hedge Fund	Private Equity	Property	Cash / Others	
Total Fund Returns Summary (%)																													
Excess Return	0.4	-0.5	-1.1	-1.8	0.2	-0.3	-0.4	-4.8	0.2	1.4	-1.9	-0.7	0.0	-1.1	-0.2	-0.2	0.9	2.2		0.0	9.6	1.9	3.1	-0.1	1.9	21.3	0.1	-0.3	
Portfolio Return	11.1	13.1	8.5	7.1	9.7	14.3	13.9	25.6	14.5	15.8	26.1	0.6	15.0	8.2	14.1	7.7	5.8	2.8		9.1	11.8	2.1	3.2	5.4	2.4	21.3	7.0	0.1	
Benchmark Return	10.7	13.6	9.5	8.9	9.5	14.6	14.4	30.4	14.4	14.4	27.9	1.3	14.9	9.4	14.4	7.8	4.9	0.5		9.1	2.1	0.1	0.1	5.5	0.5	0.0	6.9	0.5	
Total Fund Asset Allocation Summary (%)																													
Net Exposure Start																													
Net Exposure End																													
Portfolio Start	100.0	68.0	15.0	7.5	7.5	53.0	26.9	7.7	7.7	3.8	7.7	0.0	23.7	2.4	2.4	0.0	13.0	0.0	6.5	6.5	8.0	1.3	1.3	0.0	2.0	3.5	10.0	1.0	
Portfolio End	100.0	64.8	12.9	6.0	6.9	51.9	23.7	0.0	8.7	5.1	0.0	9.8	25.9	2.3	2.3	0.0	15.3	7.8	0.0	7.6	9.2	0.0	0.0	3.9	1.7	3.6	8.5	2.1	
Benchmark Start	100.0	67.0	14.0	7.0	7.0	53.0	26.9	7.7	7.7	3.8	7.7	0.0	23.7	2.4	1.4	1.0	13.0	0.0	6.5	6.5	9.0	0.0	0.0	3.5	2.0	3.5	10.0	1.0	
Benchmark End	100.0	67.0	14.0	7.0	7.0	53.0	26.9	0.0	7.7	3.8	0.0	15.4	23.7	2.4	2.4	0.0	13.0	0.0	6.5	6.5	9.0	0.0	0.0	3.5	2.0	3.5	10.0	1.0	
Attribution to Total Fund Excess Return (%)																													
Total Excess Return	0.4	-0.3	-0.2	-0.2	0.0	-0.1	-0.4	-0.2	0.0	0.1	-0.2	-0.1	0.2	0.0	0.0	0.0	0.0	-0.8	0.9	-0.1	1.1	0.0	0.0	0.2	0.0	0.9	0.1	-0.4	
Asset Allocation	-0.3	0.0	0.0	0.0	0.0	0.1	-0.1	-0.1	0.0	0.0	-0.1	0.0	0.2	0.0	0.0	0.0	-0.2	-1.0	0.9	-0.1	0.2	0.0	0.0	0.2	0.0	0.1	0.0	-0.3	
Stock Selection	0.7	-0.4	-0.2	-0.2	0.0	-0.2	-0.2	-0.1	0.0	0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.8	0.0	0.0	

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Fund and Portfolio Summary - Periods Ending March 2019

	Benchmark	Incep Date	Market Value (£m)	Market %	QTR			YTD			1 Year			3 Year			5 Year			10 Year			Since Incep		
					PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER
Standard Life UK Equity Fund	FTSE All Share 2% Cap Net	Jul-05	309.1	6.0	10.0	9.9	0.2	2.0	5.8	-3.8	2.0	5.8	-3.8	7.1	8.9	-1.8	4.7	6.1	-1.4	10.8	11.1	-0.3	6.7	6.8	-0.1
L&G UK Equity Fund	FTSE All Share Index	Dec-15	354.5	6.9	9.4	9.4	0.0	6.5	6.4	0.1	6.5	6.4	0.1	9.7	9.5	0.2							9.2	9.0	0.2
SCC MSCI Global Equity Group	MSCI AC World Index Net	Dec-14	1,215.3	23.7	6.7	9.6	-2.9	9.9	10.5	-0.6	9.9	10.5	-0.6	13.9	14.4	-0.4							10.6	11.5	-0.9
JP Morgan Global Equity Fund	MSCI AC World Index Net	Dec-09	448.6	8.7	8.6	9.6	-1.0	7.9	10.5	-2.6	7.9	10.5	-2.6	14.5	14.4	0.2	11.7	11.8	-0.1				11.5	10.8	0.7
Longview Global Equity Fund	MSCI AC World Index Net	Dec-09	261.6	5.1	7.6	9.6	-2.0	17.5	10.5	7.0	17.5	10.5	7.0	15.8	14.4	1.4	15.8	11.8	4.0				16.1	10.8	5.3
LGPSC Global Active Equity Fund	FTSE All World Index	Feb-19	505.1	9.8				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	0.6	1.3	-0.7
L&G Global Equity Fund	FTSE All World Index	Dec-15	1,331.0	25.9	9.8	9.8	0.0	11.7	11.8	0.0	11.7	11.8	0.0	15.0	14.9	0.0							14.8	14.8	0.0
International Russell Emerging Markets Fund	MSCI Emerging Markets Index Net	May-05	117.8	2.3	8.6	7.4	1.2	-3.4	-0.3	-3.1	-3.4	-0.3	-3.1	14.1	14.4	-0.2	8.7	8.9	-0.2	11.0	10.0	1.0	8.4	10.6	-2.2
L&G Emerging Markets Equity Fund	FTSE All World Emerging Market Index	Jan-17	Jan-00	0.0	8.4	8.4	0.0	2.1	2.3	-0.3	2.1	2.3	-0.3										7.7	7.8	-0.2
Light UK Bond Fund	LIBOR 3 Month	Jan-06	399.5	7.8	2.8	0.2	2.6	3.3	0.8	2.5	3.3	0.8	2.5	2.8	0.5	2.2	3.1	0.5	2.5	6.5	4.4	2.1	4.7	3.6	1.1
L&G UK Index Linked Gilt Fund	FTSE Over 5 Years Index Linked Gilt Index	Feb-10	388.0	7.6	6.3	6.3	0.1	5.7	5.7	0.1	5.7	5.7	0.1	9.1	9.1	0.0	9.9	9.9	0.0				9.5	9.5	0.0
Total Fund Net	Multi Asset Class Index	Apr-17	5,131.5	100.0	6.88	6.91	-0.03	7.83	7.87	-0.04	7.83	7.87	-0.04										5.43	5.46	-0.02
Total Fund	Multi Asset Class Index	Apr-95	5,131.5	100.0	6.94	6.91	0.02	8.05	7.87	0.18	8.05	7.87	0.18	11.10	10.68	0.41	9.31	9.18	0.13	11.82	11.30	0.52	7.95	8.21	-0.26

PF = Portfolio Return BM = Benchmark Return ER = Excess Return

Total Fund Benchmark	14% FTSE All Share Index	Notes: March 2019 - L&G Emerging Markets Equity Fund switched into L&G Global Equity Fund. March 2019 - L&G Global Equity Fund benchmark changed on 22/03/2019 from FTSE Developed World Index to FTSE All World Index. Therefore also changing Total Global Equity, Combined Equity and Total Fund benchmarks. February 2019 - £502m was in-specie transferred from L&G Global Equity Fund to the LGPSC Global Active Equity Fund.
	26.9% MSCI AC World Index Net	
	23.7% FTSE All World Index	
	2.4% MSCI Em Mkts Index Net	
	8.5% 3 Month Libor	
	6.5% FTSE Over 5 Years ILG	
	3.5% 3 Month Libor +5%	
	3.5% Private Equity	
	10% MSCI UK Monthly Property (GBP)	
	1% Cash	

Summary

- The Fund has outperformed its benchmark over the one, three, five year and ten year periods.
- The Fund has outperformed the PE LGPS Information Service average return over the one, three, five year and ten year periods.
- Markets have provided high returns over the medium term due to, in part, sterling depreciation, Brexit, global economic growth and QE. The outlook remains uncertain.
- The outperformance in 2018 / 2019 was due to primarily to the outperformance of Longview (global equities), bonds (Insight) and Alternative assets due to Private Equities and Private Debt. Asset allocation has been a drag on excess return.
- The outperformance over the three year period was primarily due to the outperformance of Private Equities.
- The Fund has begun transitioning assets to Central due to Pooling.
- Total risk remains low and active risk is at a level that is consistent with the structure of the Fund. Risk has remained stable over the year.

Appendix 1

Introduction to Performance Measurement

Performance Evaluation – Purpose

- Performance measurement and evaluation should enhance:
 - Reporting and governance procedures
 - Monitoring and decision making function of Funds
 - Dialogue between clients, investment managers and consultants
 - Comply with the CFA Institute guidelines for Effective Investment Reporting

- Key question 1 - Has the Fund and the portfolios met their objectives?
 - What is the expected and realised investment return?
 - How much risk is there?
 - Have I been rewarded for the risk that has been taken?
 - How efficient is the manager?
 - Have I had value for money

- Key question 2 - Is the Fund and its portfolios being managed as expected?
 - What are the sources of my risk and return?
 - Are they consistent with the managers style and process?
 - Is there anything else influencing the portfolio (incidental bets)?
 - What is the cost?

- Key question 3 - Is the mix of managers in the Fund working efficiently ?

The Pension Fund Management & the Role of Investment Performance Analysis

Pension Fund Investment Review Process		
Process Step	Description	Performance Evaluation role
Actuarial input / requirements	Liability based requirements including required return, risk profile, funding levels etc	Monitor risk and return relative to required return to meet liabilities
Investment objectives	Based on liability inputs and Trustee requirements (risk aversion etc), return, investment restrictions. This determines a long term return / risk profile for the Fund	Ensure the Fund and portfolios meet the required risk and return profile and any constraints / restrictions are met.
Investment strategy	Identifies the asset allocation across asset classes required to meet the investment objectives. This will define a broad market based investment benchmark that will track the investment strategy	Ensure the asset allocation tracks the investment strategy. Measures the risk return profile of the benchmark.
Investment structure	Identifies the type (e.g. pooled / segregated) of mandate, type of management (style / active / passive). Also identifies the amount of assets to be allocated. The sum of this should equal the investment strategy.	Ensures that the investment structure is being tracked and that the portfolios and Fund are being managed as expected.
Investment manager	The selected investment manager and their products required to meet the structure. Each portfolio has a role within the structure	Detailed analysis of portfolios ensures that objectives and constraints are being met and that the portfolios are doing as expected

Investment Performance Analysis – Key Concepts 1

Investment Performance Analysis – Key Concepts		
Concept	Description	How measured
Benchmark	Provides a framework for both the structure and risk of portfolios and the expected return of Funds and portfolios. Are key as they articulate the investment strategy of the Fund	Typically benchmarks are market indices of a group of securities; these reflect the universe of securities available to a manager. Alternatively they can be based on a broad index such as RPI that reflects the risk return characteristics of an asset class.
Objective	The objective defines the performance, risk and management style of a portfolio / fund	This is measured by evaluating the portfolio and its characteristics relative to those of the benchmark
Return measurement	Primary measurement that identifies the growth in market value. Used to measure the growth in a portfolio or benchmark	We use the time weighted rate of return for portfolio measurement (as opposed to the money weighted return – also known as Internal Rate of Return) as this compensates for the impact of cashflow allowing for comparison with benchmarks. Typically the higher the return the better
Risk measurement (Total Risk)	Evaluates the volatility in the market value (cash adjusted) of a portfolio.	This can be calculated on an ex-post basis (uses the observed return series of a portfolio) or an ex-ante basis (which uses the current holdings of a portfolio is calculated using the historic returns and characteristics of securities) and is therefore considered a modelled risk number. These are expressed as an annualised 1 standard deviation number e.g. a portfolio risk of 10% indicates that the portfolio would have a return within 10% of that of cash two thirds of the time over a one year period.

Investment Performance Analysis – Key Concepts 2

Investment Performance Analysis – Key Concepts		
Concept	Description	How measured
Excess return	The return that is the difference between the portfolio and that of the benchmark. This can be positive or negative.	Is the return of a portfolio over a period of time minus the return of the benchmark (arithmetic basis) is the most common methodology. It can also be calculated geometrically (i.e. the portfolio return is divided by the benchmark return).
Active risk	This identifies the magnitude of the difference between the composition of a portfolio / fund and that of the benchmark / investment strategy. Typically the larger the active risk the greater the difference in the structure of the portfolio relative to the benchmark e.g. an index fund should have a low active risk.	Can be calculated ex post by measuring the volatility of the excess returns or calculated models. The results are expressed as an annualised standard deviation; for example an active risk of 2% results in our expecting the return of the portfolio to be within 2% of the return of the benchmark two thirds of the time.
Risk adjusted returns	A measure of efficiency as it identifies the return per unit of risk. Two are typically used, namely the Sharpe Ratio and Information Ratio. Typically the higher the ratio the more efficient the management.	The Information Ratio is calculated by dividing the excess return by the active risk and as such measures the efficiency of active management. The Sharpe Ratio is calculated by dividing the portfolio return minus the risk free rate (cash) by the volatility of the portfolio return.
% per annum	Investment returns in excess of one year are typically expressed as % per annum. This permits easier comprehension and comparison.	

Investment Performance Analysis – Key Concepts 3

Investment Performance Analysis – Key Concepts		
Concept	Description	How measured
Attribution	Permits us to evaluate the sources of a portfolio or fund return. Common sources evaluated are asset allocation (are the right markets / sectors/ styles being selected) and stock selection (does the manager chooses good performing stocks). Used to identify if a portfolio is generating returns from expected sources.	This can be quite complicated but is based on comparing weights allocated and returns from an asset class and comparing them to those of the benchmark.
Diversification	Measures the impact of investing in a range of securities, managers and / or asset classes. This is particularly relevant for analysing the efficiency from a risk perspective of the investment strategy of a Fund or portfolio. Also identifies if a portfolio has too many securities (over diversified).	Typically calculated via risk models
Investment style	Identifies the type of style e.g. index fund, active manager, small or large capitalisation stock bias, value or growth stock bias. Used to identify if a portfolio is generating returns from expected sources.	Calculated from numerous sources.

Staffordshire Pension Fund

Investment Benchmarking Results

For the 5 year period ending March 31, 2018



1 Change Alley
London, EC3V 3ND
+44 203 887 9289

www.cembenchmarking.com

This report will help you to satisfy your oversight responsibilities by:

- Comparing your investment performance with other funds.
- Highlighting returns that come from:
 - The local Pension Committee's strategic asset allocation decisions, and
 - The implementation of the Committee's strategy (typically the responsibility of management).
- Comparing 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.
- Considering how and why your costs have changed over time.
- Looking at value-for-money – 'did paying more get you more'?

The report is based on standardised 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 Pool	7	£24.2	12%	Cambridgeshire, East Sussex, Essex, Isle of Wight, Kent, Northamptonshire, Suffolk.
BCPP	12	£44.2	21%	Bedford, Cumbria, Durham, East Riding, Lincolnshire, NYPF, Northumberland, SYPF, Surrey, Teesside, Tyne and Wear, Warwickshire.
Brunel Pool	1	£4.8	2%	Avon.
Central Pool	4	£27.9	14%	Cheshire, Staffordshire, West Midlands, Worcestershire.
LPP Pool	2	£13.5	7%	Lancashire, LPFA.
Northern	3	£44.3	22%	GMPP, Merseyside, West Yorkshire.
Scotland	4	£30.2	15%	Falkirk, Lothian, Shetland Islands, Strathclyde.
Welsh Pool	8	£16.5	8%	Swansea, Dyfed, Flintshire, Torfaen, Gwynedd, Powys, Rhondda Cynon TAF, Cardiff.
Total	41	£205.6	100%	

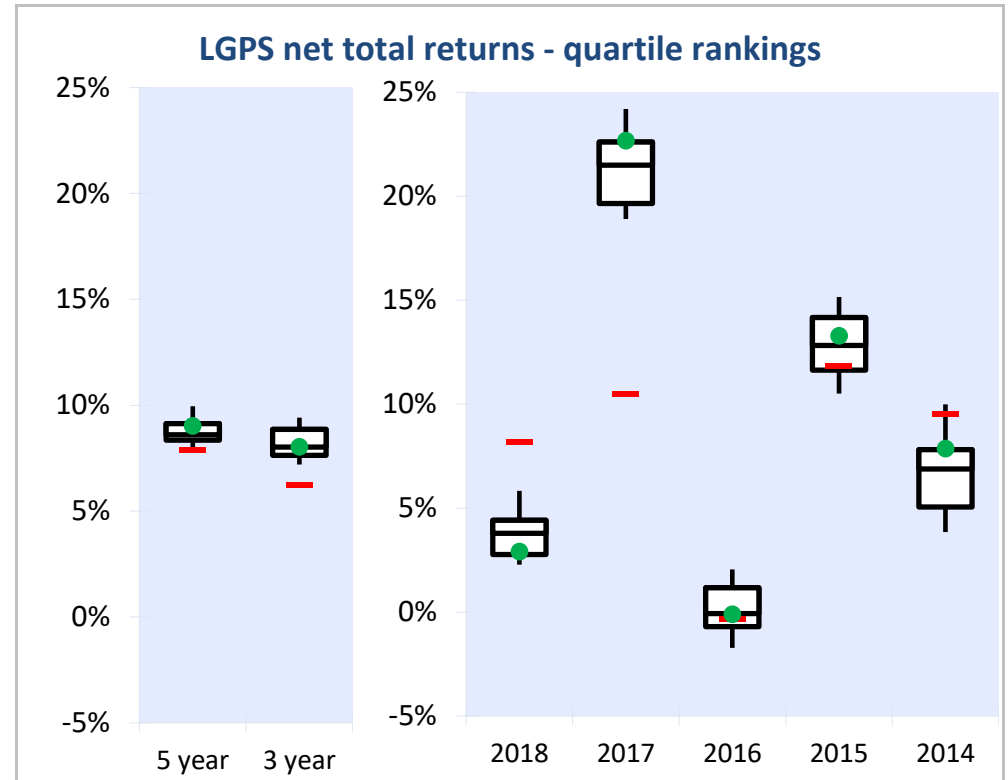
The main performance comparisons are with the LGPS universe comprising 41 funds with total assets of £206 billion (average £5 billion, median £3 billion).

We also compare your returns (and LGPS returns generally) with a wider global universe comprising 346 funds with total assets of £7.3 trillion (average £21bn, 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 7.9%.

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

- Strategic asset mix 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).



Legend		LGPS							
90th		90th	10.0	9.4	5.8	24.2	2.0	15.2	10.0
75th		Q3	9.1	8.9	4.4	22.6	1.2	14.2	7.8
median		Median	8.6	8.0	3.8	21.5	-0.1	12.8	6.9
25th		Q1	8.4	7.6	2.8	19.6	-0.7	11.6	5.1
10th		10th	7.9	7.2	2.3	18.9	-1.7	10.5	3.9
		Average	8.8	8.2	3.8	21.4	0.3	12.6	6.8
● your value		Global Median	7.9	6.2	8.2	10.5	-0.3	11.8	9.6
- Global med		Your fund	9.0	8.0	2.9	22.7	-0.1	13.3	7.9
		LGPS %ile	68%	53%	30%	77%	49%	62%	76%

These are discussed on the pages that follow.

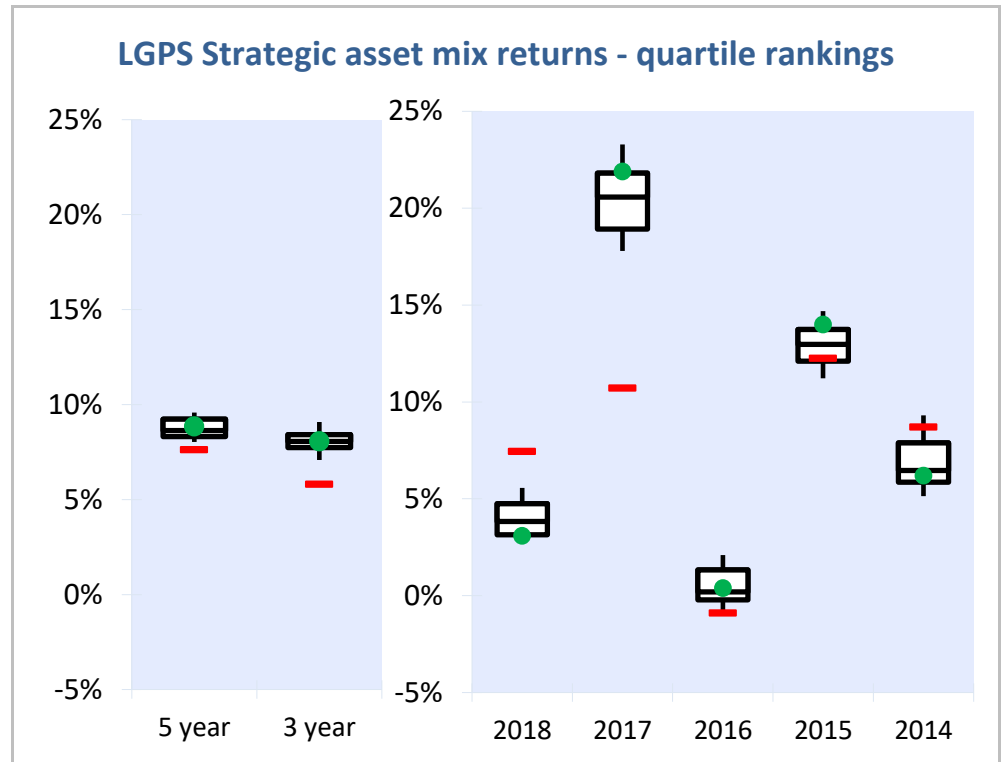
Global return comparisons have been particularly influenced by the relative strength of the \$US over the period covered by this report and by the depreciation of the £ in 2016/17, i.e. there is some currency 'noise' in the global comparison.

Your 5-year strategic asset mix return of 8.8% was above both the LGPS median of 8.6% and the Global median of 7.6%.

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

Having a higher or lower relative strategic asset mix return is not necessarily good or bad. Your strategic asset mix 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 strategic asset mix returns often vary widely between funds. In the following page we explore how your asset mix impacts your strategic asset mix returns relative to peers.



Legend		LGPS							
90th	90th	9.6	9.1	5.6	23.3	2.1	14.7	9.3	
75th	Q3	9.2	8.4	4.7	21.8	1.3	13.7	7.9	
median	Median	8.6	8.1	3.8	20.6	0.2	13.0	6.5	
25th	Q1	8.3	7.7	3.1	18.9	-0.2	12.1	5.9	
10th	10th	8.0	7.1	2.7	17.8	-0.9	11.2	5.1	
	Average	8.8	8.1	4.0	20.5	0.5	12.8	6.9	
● your value	Global Median	7.6	5.8	7.5	10.7	-0.9	12.3	8.7	
— Global med	Your fund	8.8	8.1	3.1	21.9	0.4	14.0	6.2	
	LGPS %ile	62%	50%	23%	77%	54%	81%	40%	

Differences in strategic asset mix return are caused by differences in benchmarks and asset mix.

Your 5-year strategic asset mix return was slightly above the LGPS median primarily because of:

- The positive impact of your higher weight in one of the better performing asset classes of the past 5 years: Total Stock (your 68% 5-year average weight versus a LGPS average of 60%).
- 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 5%).

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This was largely offset by the negative impact of:

- Your lack of a benchmark for private equity.
- The negative impact of you 3-month LIBOR benchmark for Global Bonds. Most peers had benchmarks based on longer duration broad index bonds which outperformed cash.

1. Weights are based only on plans with 5 years of continuous data.

2. Other stock includes Asia-Pacific, Europe exUK stock. Other fixed income includes Private Debt and U.S. bonds. 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 years or if they are broad and incomparable.

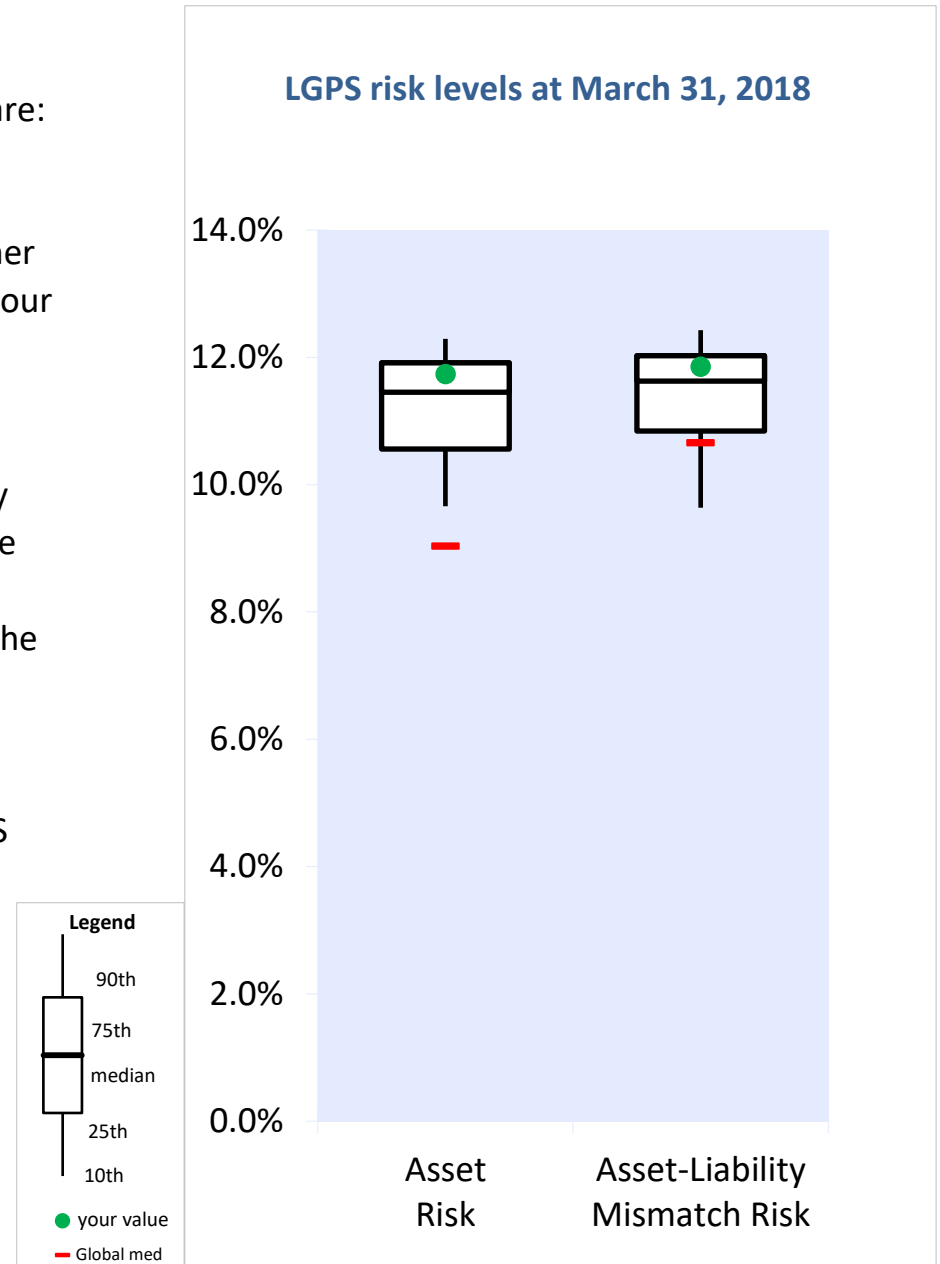
	5-Year average strategic asset mix ¹			5-year bmk. return	
	Your Fund	LGPS Avg.	More/ Less	Your Fund	LGPS Avg.
U.K. Stock	16%	17%	-2%	6.5%	6.8%
U.S. Stock		4%	-4%		14.4%
Emerging Market Stock	2%	3%	-1%	2.5%	6.6%
Global Stock	50%	26%	24%	11.0%	11.1%
Other Stock ²		9%	-9%		n/a ³
Total Stock	68%	60%	8%	9.8%	9.6%
Fixed Income - UK		7%	-7%		5.3%
Inflation Indexed Bonds	6%	3%	3%	7.2%	7.9%
Global Bonds	7%	6%	2%	0.5%	3.0%
Cash	1%	1%	0%	0.4%	0.4%
Other Fixed Income ²		2%	-2%		n/a ³
Total Fixed Income	15%	19%	-5%	3.5%	4.8%
Hedge Funds	3%	2%	1%	0.4%	2.6%
Balanced Funds		2%	-2%		7.1%
Real Estate ex-REITs		4%	-4%		9.4%
Domestic Property	10%	5%	5%	11.7%	10.2%
Other Real Assets ²		3%	-3%		n/a ³
Private Equity	5%	5%	0%	1.0%	16.5%
Total	100%	100%	0%		

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

The two key risks for the Pension Committee to consider are:

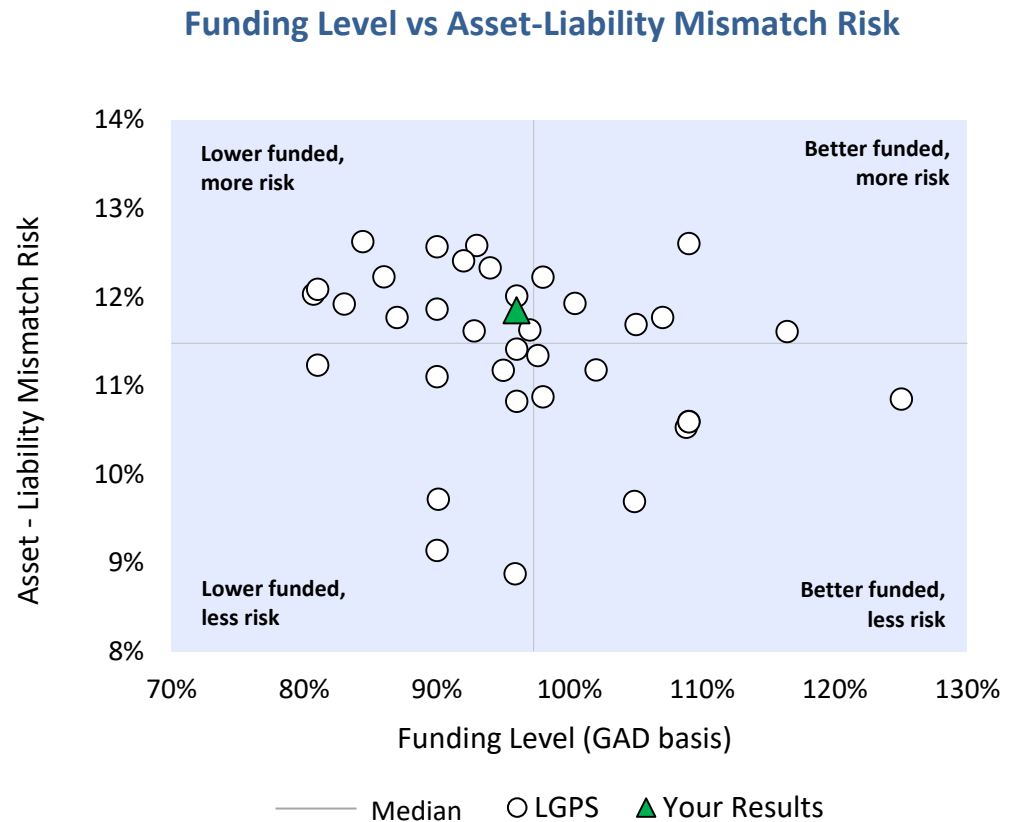
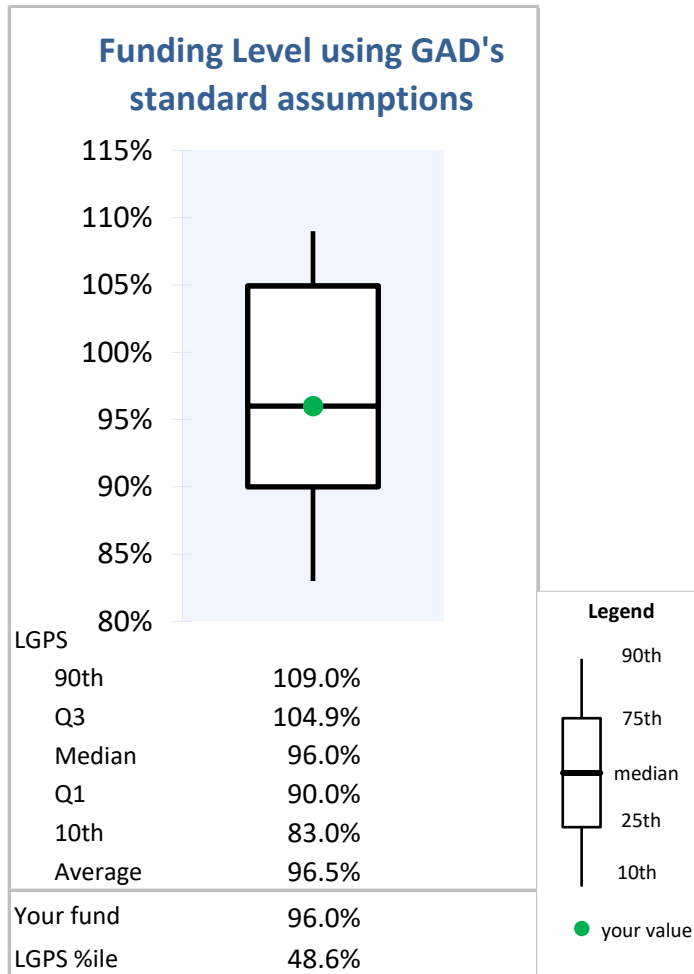
- Asset Risk - A higher asset risk is indicative of a higher weighting to more volatile assets (and vice-versa). Your asset risk of 11.7% was above the LGPS median of 11.5%.
- Asset-liability mismatch risk - A higher asset-liability mismatch risk is indicative a willingness to take more risk to improve the funding level. Lower asset risk is indicative of either better funding, concerns about the employer covenant 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 11.9% was above the LGPS median of 11.6%.

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Your funding level of 96% was equal to the LGPS median of 96%. You had more asset liability mismatch risk.

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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.

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

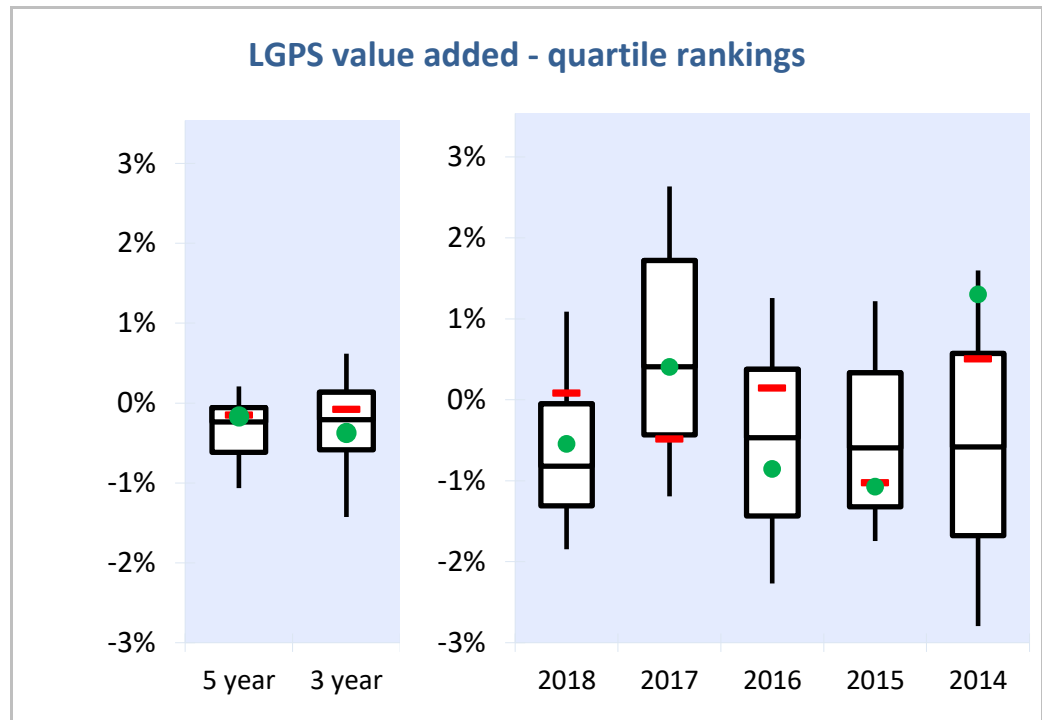
Net value added equals total net return minus strategic asset mix return.

It is a function of active management decisions 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 and 0.2% globally.

Your value added was impacted by your choice of benchmarks 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 0.6% lower.

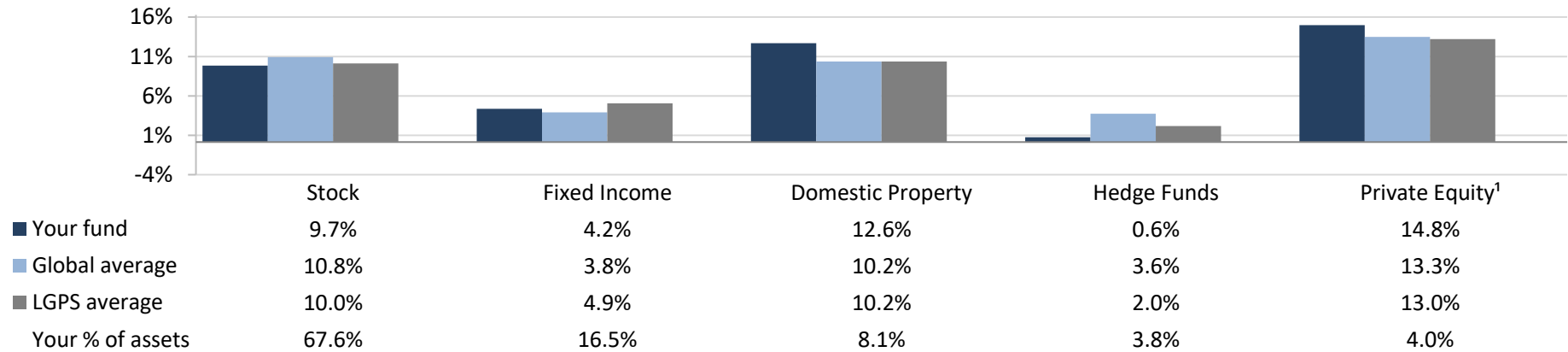
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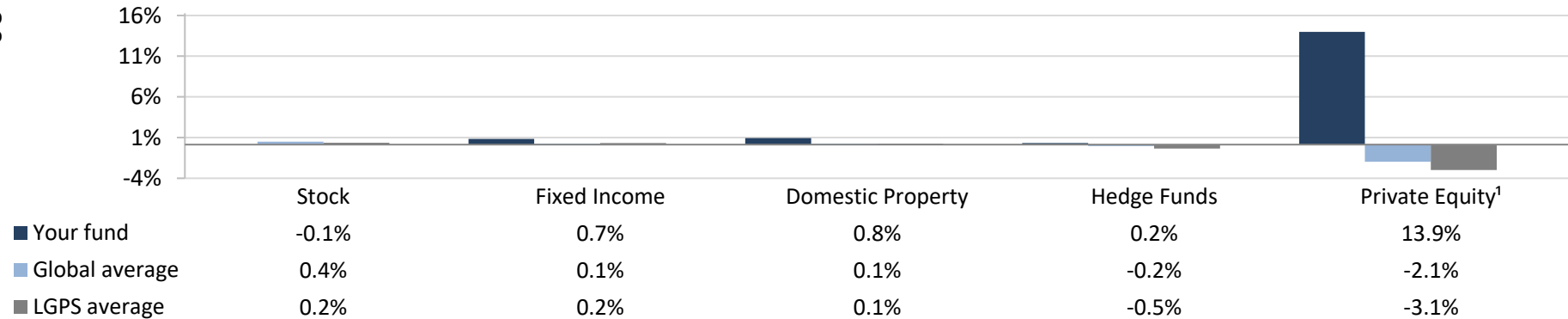
Legend		LGPS							
	90th	90th	0.6	1.0	1.4	3.0	1.6	1.6	1.9
	75th	Q3	0.3	0.5	0.3	2.1	0.7	0.7	0.9
	median	Median	0.1	0.1	-0.5	0.8	-0.1	-0.2	-0.2
	25th	Q1	-0.3	-0.2	-1.0	-0.1	-1.1	-1.0	-1.3
	10th	10th	-0.7	-1.1	-1.5	-0.8	-1.9	-1.4	-2.4
	your value	Average	0.0	0.1	-0.2	0.9	-0.2	-0.2	-0.1
	Global med	Global Median	0.2	0.3	0.4	-0.1	0.5	-0.7	0.9
		Your fund	0.2	0.0	-0.2	0.8	-0.5	-0.7	1.7
		LGPS %ile	59%	38%	63%	49%	41%	31%	86%

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 -2.3%.

We compare your costs to the following custom peer group:

- 21 Global sponsors from £3.2 billion to £8.6 billion
- Median size of £5.5 billion versus your £4.8 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

Bath & North East Somerset Council - Avon Pension Fund
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

The names of the above fund sponsors in your peer group are confidential and may not be disclosed to third parties.

We are benchmarking investment costs of £25.2 million or 53.9 basis points in 2017/18.

Asset management costs by asset class and style (£000s)	Internal Active	External Management			Total
		Passive fees	Active base fees	Perform. fees ⁶	
Stock - UK		38	620		658
Stock - Emerging			1,081		1,081
Stock - Global		382	2,016	370	2,767
Fixed Income - Global Credit			488		488
Fixed Income - Inflation Indexed		32			32
Hedge Fund - FoFs ^{4 5}			2,256	629	2,885
Domestic Property ^{1 3}	1,608		127	16	1,751
Diversified Private Equity - FoFs ^{3 4 5}			7,757	3,216	10,973
Private Credit - LPs ^{2 3}			1,988	1,172	3,160
Total					23,795 51.0bp
Oversight, custodial and other costs ⁷					
Oversight of the fund					302
Trustee & custodial					136
Consulting and performance measurement					402
Audit					29
Other					521
Total oversight, custodial & other costs					1,389 3.0bp
Total investment costs (excl. transaction costs)					25,183 53.9bp

Footnotes

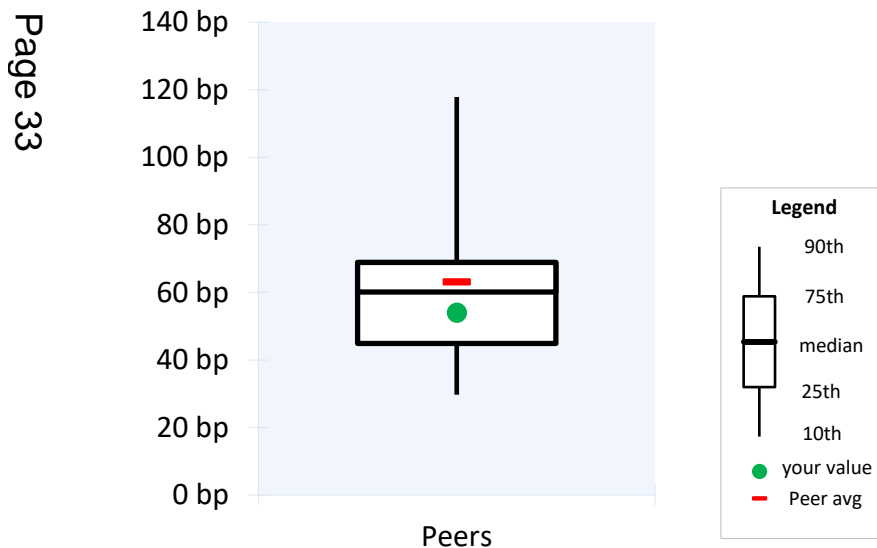
1. Default base fees were added: Domestic Property - External Not Fund of Fund 40 bp.
 2. CEM used a default cost because detailed costs by partnership were not provided for private equity. Without the details, we were unable to show your actual costs on the same (gross) basis as peers. The unusually low costs have now been defaulted to: Private Credit - LPs 127 bp.
 3. Default performance fees were added: Private Credit - LPs 113 bps, Diversified Private Equity - FoFs 42 bps, Domestic Property - External Not Fund of Fund 5 bp.
 4. Default underlying costs were added: Diversified Private Equity - FoFs 157 bps, Hedge Fund - FoFs 141 bp.
 5. Default underlying performance fees were added: Hedge Fund - FoFs 72 bp.
- Refer to Appendix A for full details regarding defaults.
6. Total cost includes carry/performance fees for all asset classes.
 7. Excludes pension administration costs.

Your cost of 53.9 bps was below your benchmark cost of 57.2 bps.

Comparison of costs before adjusting for asset mix:

Before adjusting for differences in asset mix, your costs of 53.9 bps were -6.2 bps below the peer median of 60.1 bps.

Your cost versus peers
(before adjusting for asset mix differences)



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	25,183	53.9 bp
Your benchmark cost	26,690	57.2 bp
Your excess cost	-1,507	(3.2) bp

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

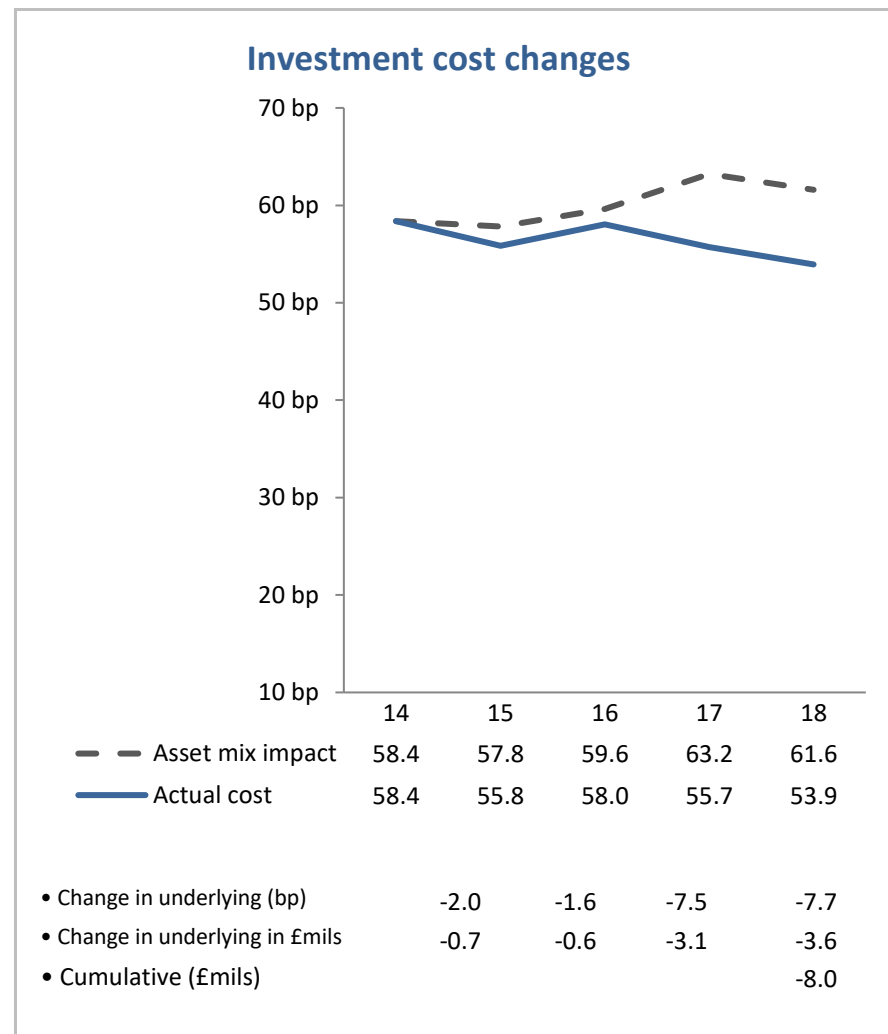
Reasons for your low cost status

		Excess Cost/ (Savings)	
		£000s	bps
1. Lower cost implementation style			
• More passive management (vs. higher cost active)		-3,941	(8.4)
• More internal management (vs. higher cost external)		87	0.2
• More fund of funds		2,810	6.0
• Less overlays		-311	(0.7)
		<u>-1,355</u>	<u>(2.9)</u>
2. Paying less than peers for similar services			
	<u>You</u>	<u>Peer Median</u>	
• External investment management costs			
Fixed Income - Global Credit - Active	13.7 bp	33.0 bp	-687 (1.5)
Diversified Private Equity - Fof	72.2 bp	89.0 bp	-569 (1.2)
Stock - UK - Active	20.6 bp	39.1 bp	-553 (1.2)
Hedge Funds - Fof	117.3 bp	64.7 bp	459 1.0
All other differences			118 0.3
• Internal investment management costs			612 1.3
• Oversight, custodial and other costs			469 1.0
			<u>-152 (0.3)</u>
Total savings			-1,507 (3.2)

Your cost fell from 58.4 bps in 2013/14 to 53.9 bps in 2017/18.

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	Bps	£000s
Investment cost reported in 2013/14	53.4 bp	£16,825
Impact of methodology changes ¹		
• Inclusion of hedge fund performance fees	5.0 bp	£2,312
• Inclusion of private market performance fees	0.0 bp	£0
Restated costs for 2013/14 ¹	58.4 bp	£19,137
Impact of changes in assets and asset mix		
• Increase in assets ²	n/a	£8,121
• Higher cost asset mix	7.1 bp	£3,328
• Reduced use of overlays	(3.9) bp	£-1,822
	61.6 bp	£28,764
Impact of changes within the same asset classes		
• More passive (less active)	(6.2) bp	
• More external management (vs. internal)	3.0 bp	
Higher/-lower fees for:		
• Stock and fixed Income	(4.1) bp	
• Private markets and hedge funds:		
Lower base fees	(1.0) bp	
Higher performance fees	1.0 bp	
• Lower oversight and other changes	(0.4) bp	
Total changes in underlying costs	(7.7) bp	£-3,581
Investment cost in 2017/18	<u>53.9 bp</u>	<u>£25,183</u>



1. To enable a meaningful comparison, we have adjusted your reported 2013/14 cost to allow for the fact that we started to collect more costs at a later date. The reported cost is increased as if you were paying the same amount in bps in 2013/14 for each asset class. For example, we started to collect hedge fund performance fees in 2014. If your hedge fund performance fees were 50 bps at that time, then we assume you were paying 50 bps in 2013/14 and that your 'implementation style' was unchanged.
2. Assumes all costs increase in line with the value of assets.

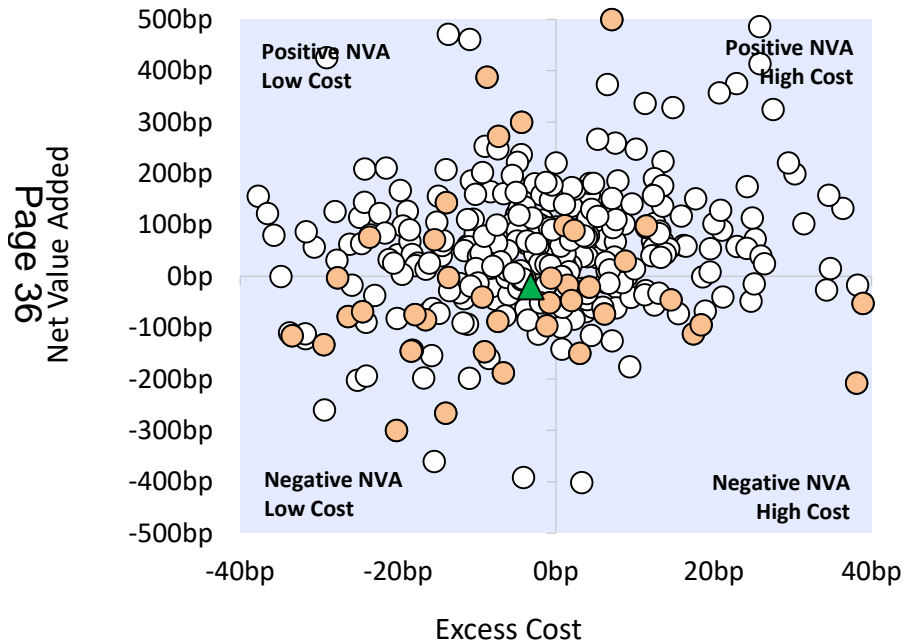
Cost Effectiveness

Your 2017/18 performance placed in the negative value added, low cost quadrant of the cost effectiveness chart.

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

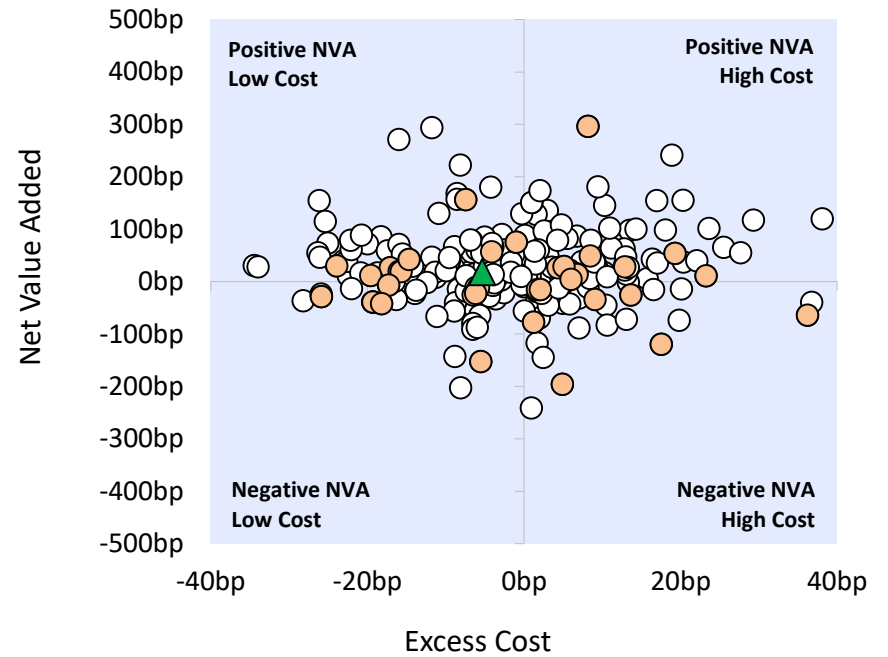
2017/18 net value added versus excess cost

(Your 2017/18: net value added -19 bps, cost savings 3 bps ¹)



5-Year net value added versus excess cost

(Your 5-year: net value added 18 bps, cost savings 5 bps ¹)



1. Your 5-year cost savings relative to peers of 5 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 7.9%.
- Your 5-year strategic asset mix return was 8.8%. This was above the LGPS median of 8.6% and above the global median of 7.6%.

Risk

- Your asset risk of 11.7% was above the LGPS median of 11.5%. Your asset-liability risk of 11.9% was above the LGPS median of 11.6%.
- Your funding level on the standard GAD basis of 96% was equal to the LGPS median of 96%.

Value added

- Your 5-year net value added was 0.2%. This was above the LGPS median of 0.1% and equal to the global median of 0.2%.

Cost

- Your investment cost of 53.9 bps was below your benchmark cost of 57.2 bps. This suggests that your fund was slightly low cost compared to your peers.
- Your fund was slightly low cost because you had a lower cost implementation style and you paid less than peers for similar services.
- Your cost fell from 58.4 bps in 2013/14 to 53.9 bps in 2017/18.

