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

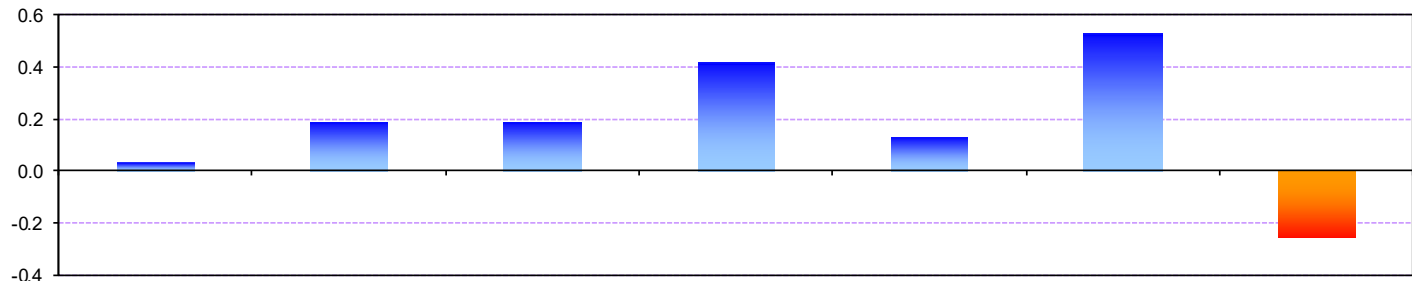
# Overview of Today

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- 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 (%)**

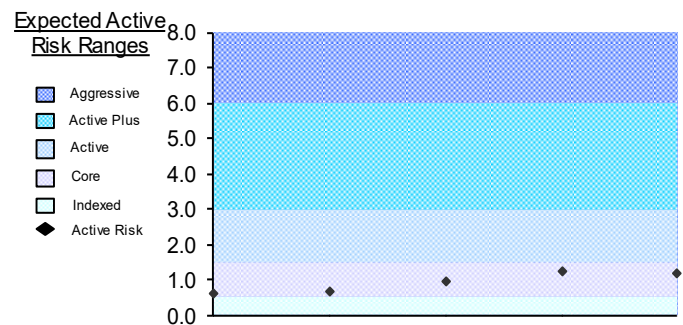


	QTR	YTD	1 Yr	3 Yr	5 Yr	10Yr	Since Apr 95 (p.a.)
Excess Return	0.0	0.2	0.2	0.4	0.1	0.5	-0.3
Portfolio Return	6.9	8.1	8.1	11.1	9.3	11.8	8.0
Benchmark Return	6.9	7.9	7.9	10.7	9.2	11.3	8.2

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

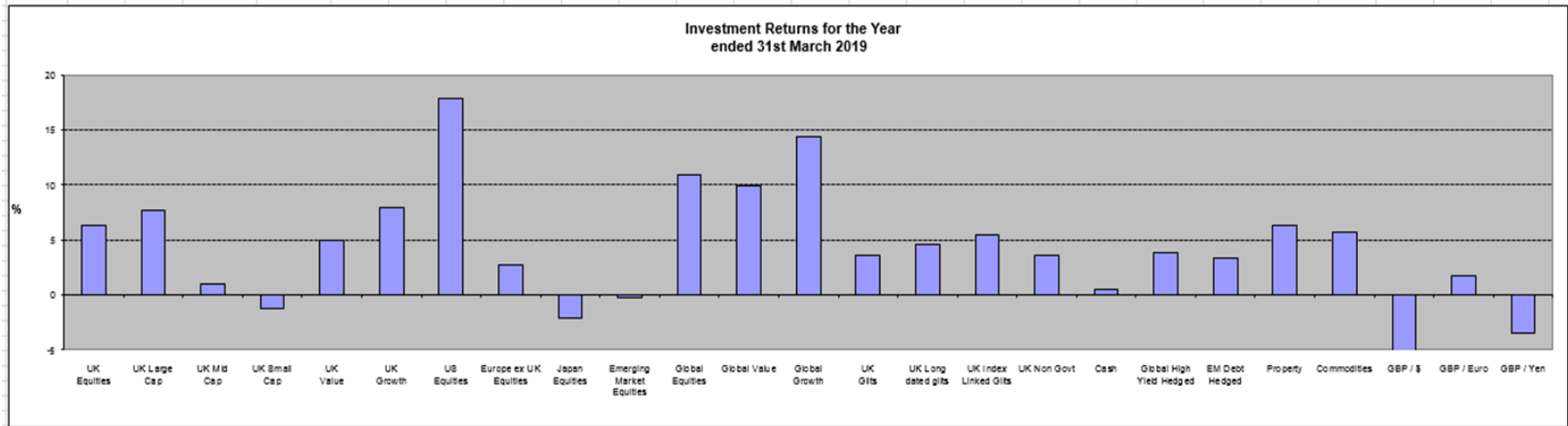
- Positive excess return over all key time periods for periods up to 10 years.
- Medium term returns in excess of cash, inflation and probably actuarial required return.
- Positive real returns generated by the Fund over all time periods.
- Risk profile consistent with mixed asset class Fund
- Active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

**Ex-Post Active Risk Analysis (%)**



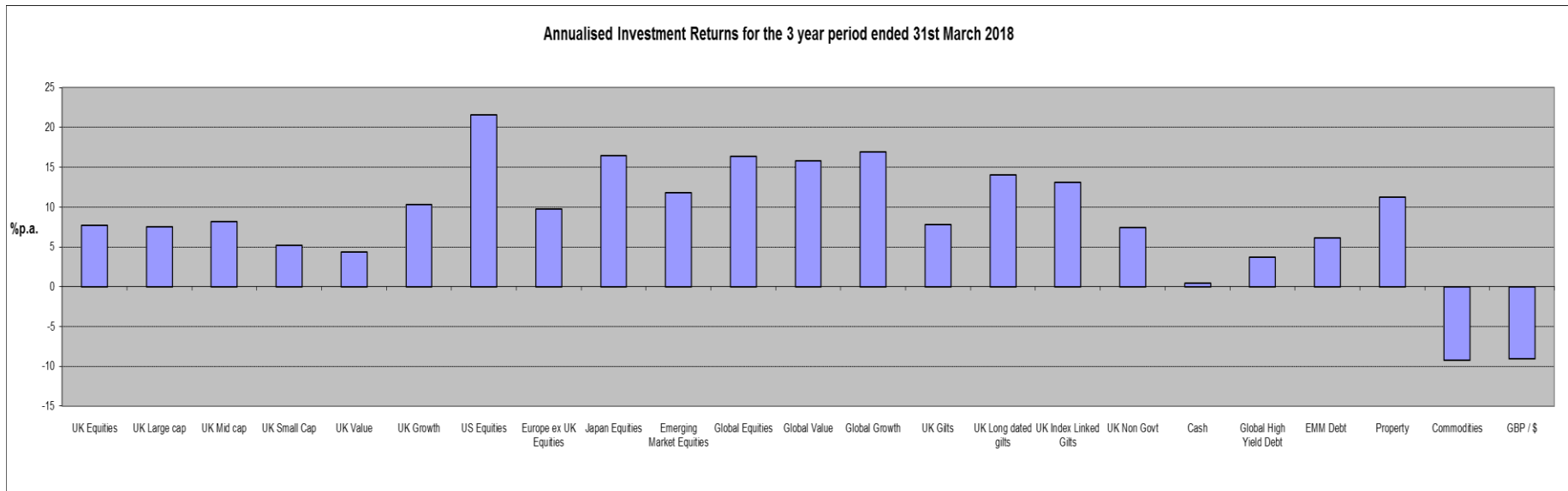
	1 Yr	3 Yr	5 Yr	10 Yr	Apr 95
Active Risk	0.6	0.7	1.0	1.3	1.2
Portfolio Risk	7.5	6.5	6.3	7.5	7.4
Benchmark Risk	7.6	6.6	6.5	7.4	7.3

# Market Results – Year Ended March 2019



- 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

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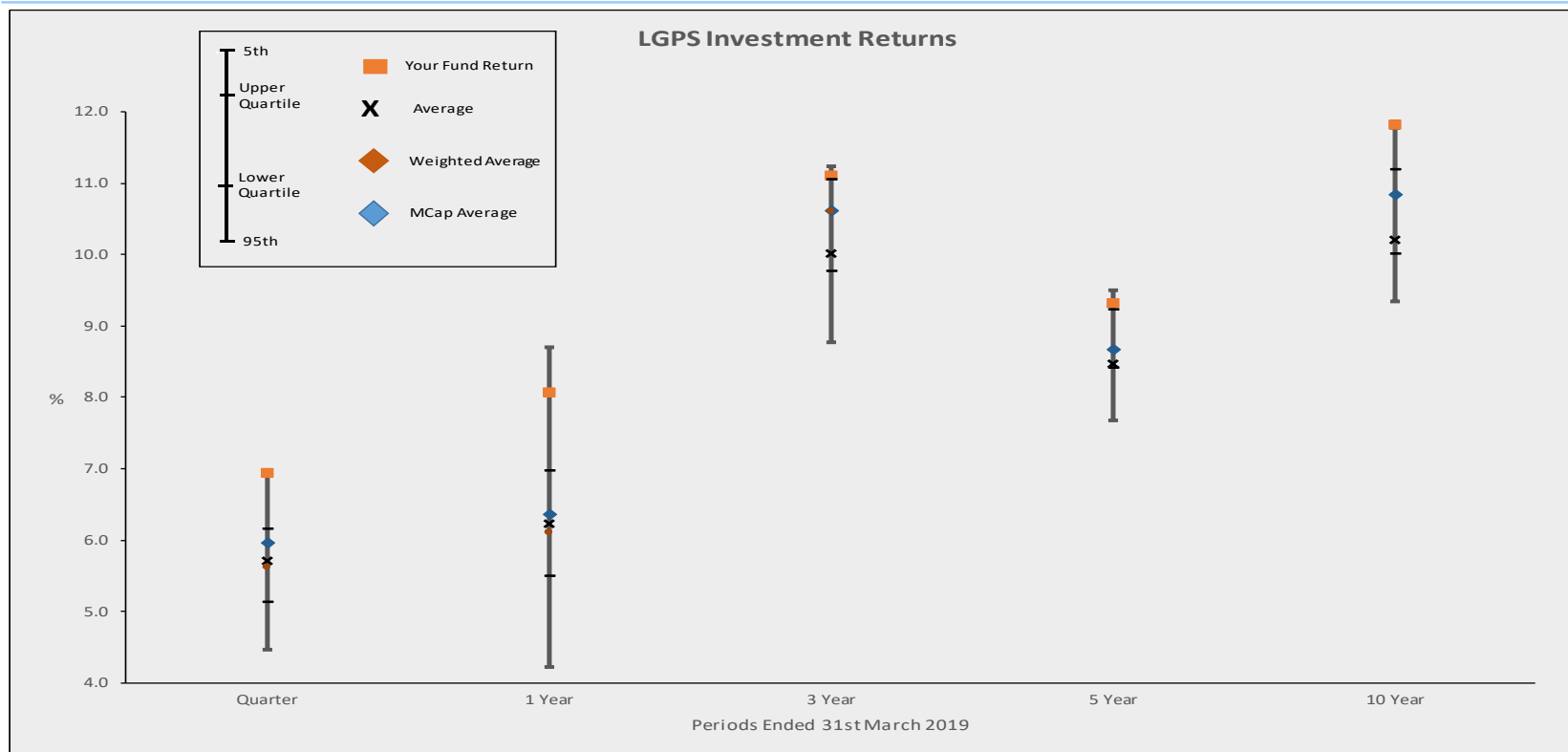
- Fund activity;
  - Growth in investments within 'Alternative Asset Classes' including Infrastructure and Private Debt.
  - Uptake of equity protection strategies
  - Significant restructuring due to Pooling
  - Investment strategies under review due to actuarial reviews
    - Risk off strategies being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

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- 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



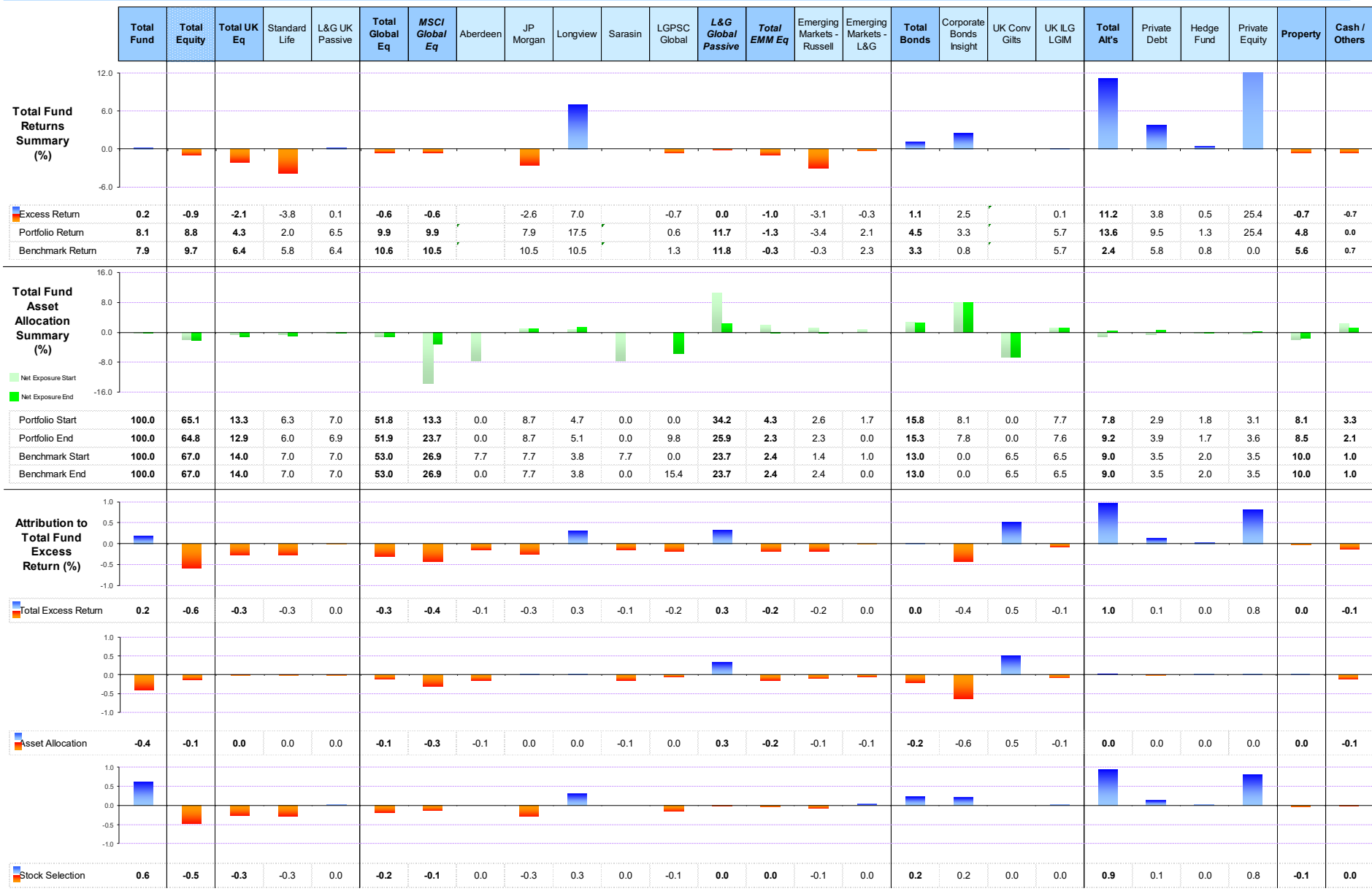
	Your Fund	Average	Weighted	Your Fund	Average	Weighted	Your Fund	Average	Weighted	Your Fund	Average	Weighted	Your Fund	Average	Weighted
Return (%p.a.)	6.94	5.70	5.61	8.05	6.22	6.10	11.10	10.01	10.60	9.31	8.47		11.82	10.20	
	£0bn-2bn	£2bn-7bn	£7bn +	£0bn-2bn	£2bn-7bn	£7bn +	£0bn-2bn	£2bn-7bn	£7bn +	£0bn-2bn	£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	
<b>Total Fund Returns Summary (%)</b>																													
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	
<b>Total Fund Asset Allocation Summary (%)</b>																													
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	
<b>Attribution to Total Fund Excess Return (%)</b>																													
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	

# 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
Internal 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
Insight 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
<b>Total Fund Net</b>	<b>Multi Asset Class Index</b>	<b>Apr-17</b>	<b>5,131.5</b>	<b>100.0</b>	<b>6.88</b>	<b>6.91</b>	<b>-0.03</b>	<b>7.83</b>	<b>7.87</b>	<b>-0.04</b>	<b>7.83</b>	<b>7.87</b>	<b>-0.04</b>										<b>5.43</b>	<b>5.46</b>	<b>-0.02</b>
<b>Total Fund</b>	<b>Multi Asset Class Index</b>	<b>Apr-95</b>	<b>5,131.5</b>	<b>100.0</b>	<b>6.94</b>	<b>6.91</b>	<b>0.02</b>	<b>8.05</b>	<b>7.87</b>	<b>0.18</b>	<b>8.05</b>	<b>7.87</b>	<b>0.18</b>	<b>11.10</b>	<b>10.68</b>	<b>0.41</b>	<b>9.31</b>	<b>9.18</b>	<b>0.13</b>	<b>11.82</b>	<b>11.30</b>	<b>0.52</b>	<b>7.95</b>	<b>8.21</b>	<b>-0.26</b>

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

<b>Total Fund Benchmark</b>	14% FTSE All Share Index	<b>Notes:</b> 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

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- 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.
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# **Appendix 1**

## **Introduction to Performance Measurement**

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# 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

<b>Pension Fund Investment Review Process</b>		
<b>Process Step</b>	<b>Description</b>	<b>Performance Evaluation role</b>
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

<b>Investment Performance Analysis – Key Concepts</b>		
<b>Concept</b>	<b>Description</b>	<b>How measured</b>
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

<b>Investment Performance Analysis – Key Concepts</b>		
<b>Concept</b>	<b>Description</b>	<b>How measured</b>
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

<b>Investment Performance Analysis – Key Concepts</b>		
<b>Concept</b>	<b>Description</b>	<b>How measured</b>
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.