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**Portfolio Evaluation Ltd**  
**Staffordshire Pension Fund**  
**Investment Performance Overview Periods to June 2021**

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September 2021

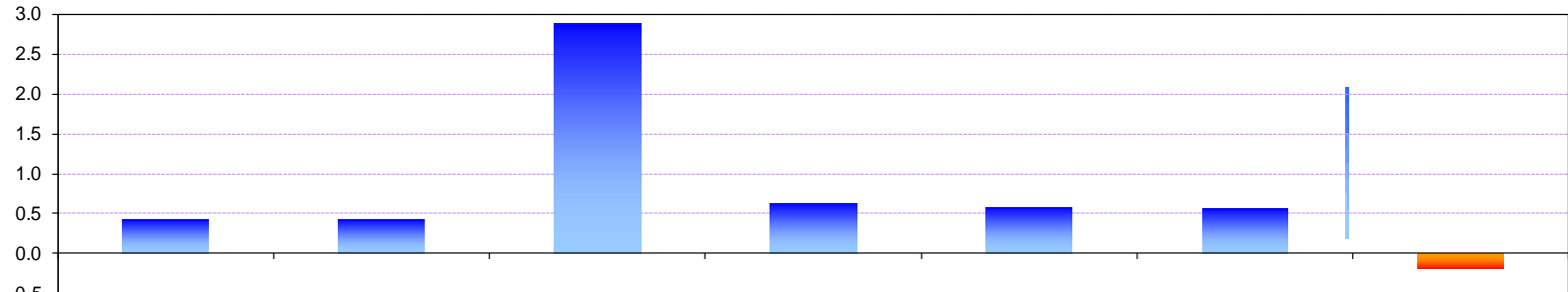
# Overview of Today

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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 2020/21 results
  - Results focus on periods ended 30<sup>th</sup> June 2021

# Total Fund Results – Ending June 2021

## Excess Return Analysis (%)

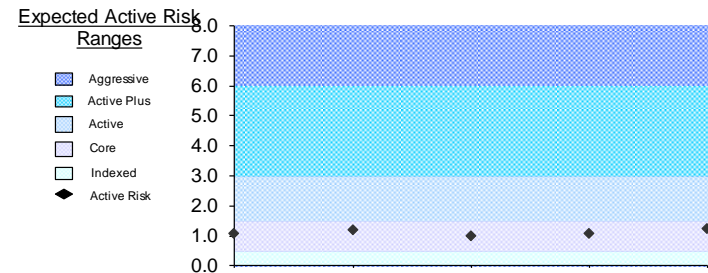


	QTR	Fin YTD	1 Yr	3 Yr	5 Yr	10Yr	Since Apr 95 (p.a.)
Excess Return	0.4	0.4	2.9	0.6	0.6	0.6	-0.2
Portfolio Return	6.0	6.0	19.7	9.2	10.4	9.6	8.2
Benchmark Return	5.6	5.6	16.8	8.6	9.8	9.1	8.4

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

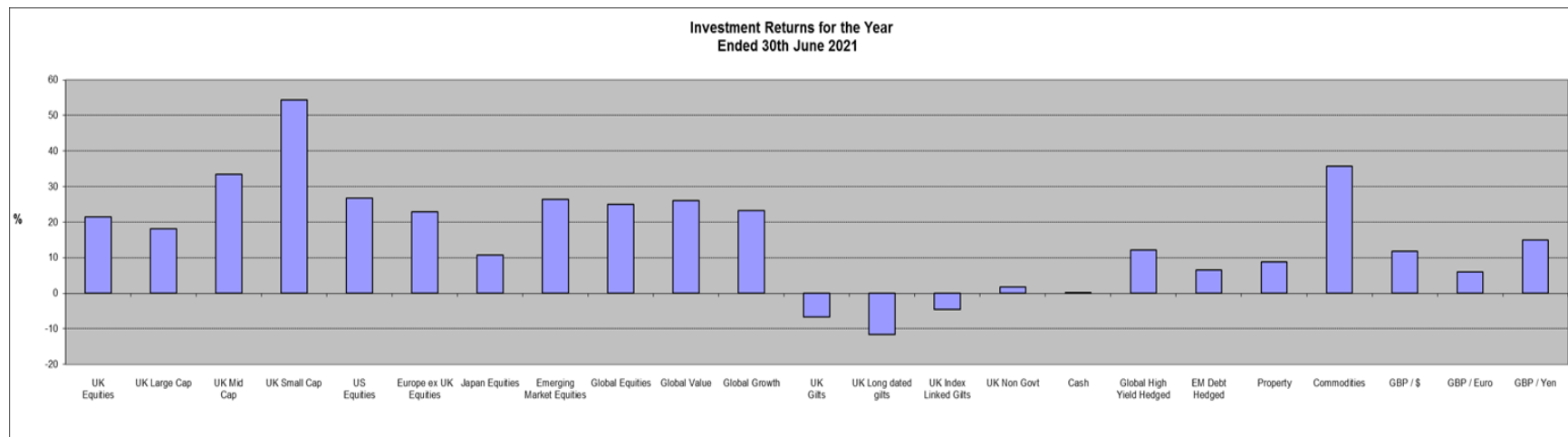
- The Fund outperformed the benchmark over the quarter and financial year.
- The Fund (and benchmark) had a positive return over the year.
- Medium and longer term returns in excess of cash, inflation and probably actuarial required return.
- Positive real returns generated by the Fund over all time periods
- Risk profile consistent with mixed asset class Fund.
- Active risk consistent with some active and passive management and asset allocation decisions.
- Volatility higher over 3 years than in previous presentations. Reflects market volatility due to market fall that occurred in 2020 due to COVID. Risk is reducing though.

## Ex-Post Active Risk Analysis (%)



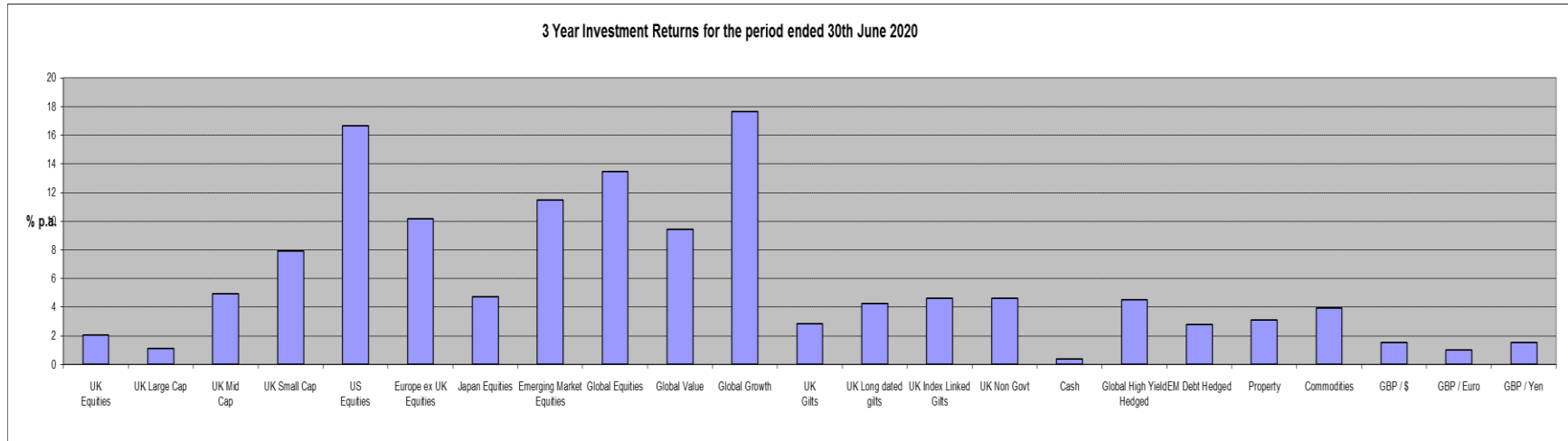
	1 Yr	3 Yr	5 Yr	10 Yr	Apr 95
Active Risk	1.1	1.2	1.0	1.1	1.2
Portfolio Risk	7.6	10.1	8.5	7.9	7.8
Benchmark Risk	7.5	9.5	8.1	7.8	7.5

# Market Results – Year Ended June 2021



- Excluding UK government gilts all asset classes have had positive returns.
- UK is a low performing market because of Brexit and structure of UK market.
- Growth stocks and value stocks performed in line with each other reversing trend seen in recent years. Interestingly over the last six months value stocks have caught up return ground on growth stocks, partly due to tech stocks stumbling.
- The recession caused by the Pandemic was short lived for a number of reasons;
  - large scale fiscal and central bank responses that have led many companies and individuals to have had limited impact on finances;
  - role of government and politicians has altered as they have become more led by interventionist demand management.
  - Continued 'cheap' money.
- Clouds on the horizon include;
  - Inflation
  - Paying back government debt (increased taxes)
  - The Pandemic aftermath and vaccinating the world

# Market Results – Medium Term Periods to June 2021



- The Pandemic and following short term recession a blip due global economic growth being consistently positive and low inflation.
- Impact of QE beneficial from a returns perspective (was being eased but now started again)
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- UK has had lower returns than many due to Brexit and the market structure.
- Growth has outperformed value

# Client Trends and Market Developments

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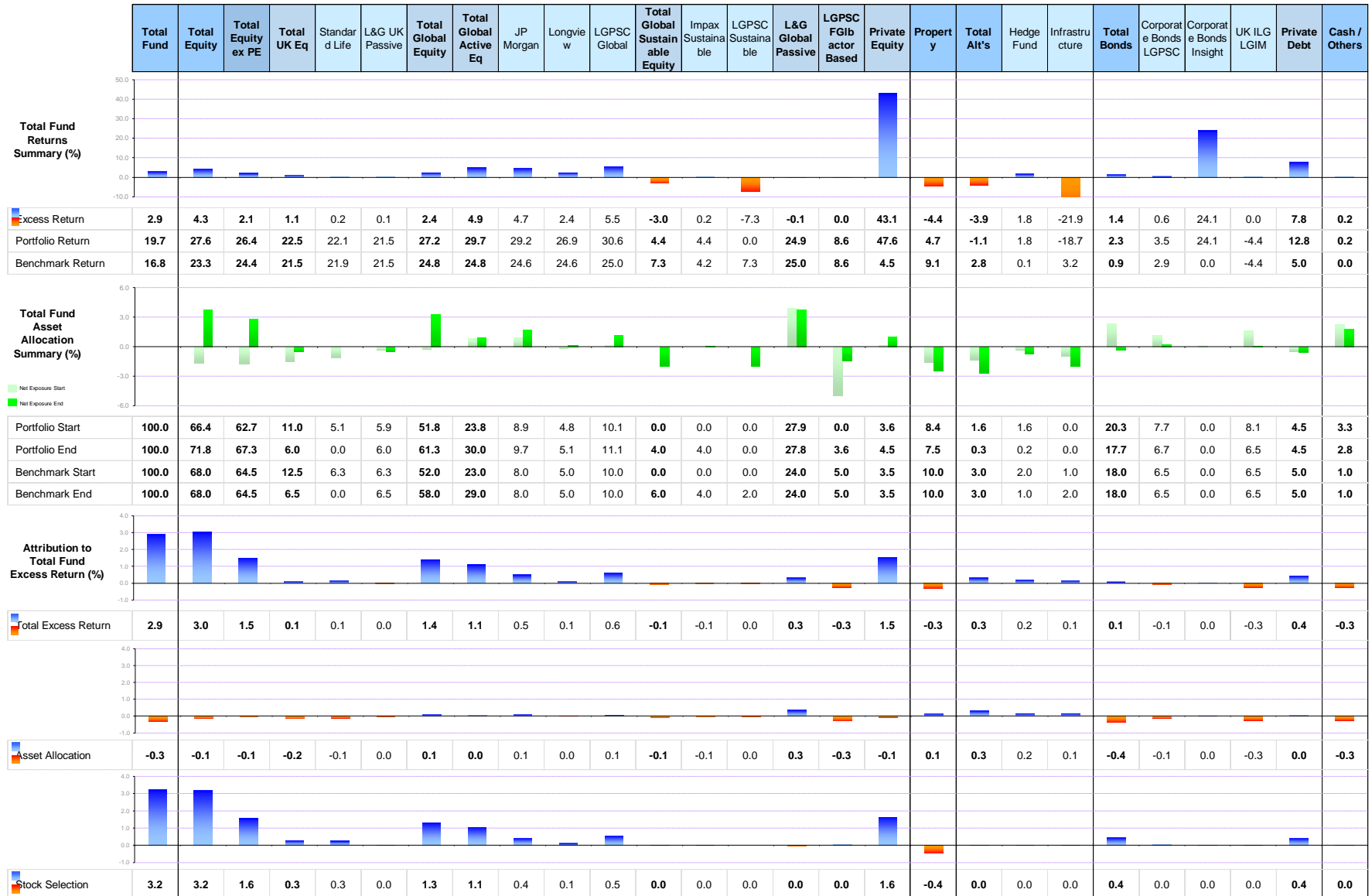
- Fund activity;
  - Growth in investments within 'Alternative Asset Classes' including Infrastructure and Private Debt.
  - Investment in ESG strategies
  - Significant restructuring due to Pooling
  - Investment strategies under review due to actuarial reviews
    - Risk off strategies being implemented
  - A significant number of Funds redefining their strategies towards Growth assets, Income / Capital protection etc.
    - Clearer recognition of purpose of assets
  
- Local Government Pension Scheme Pooling
  - Significant number of assets have transitioned
  - Transitions typically occurring in active strategies including equities and bonds
  - Wide range of proposed solutions including alternative assets now occurring
  
- Investment monitoring developments
  - Restructuring of funds significant
  - Transparency of multi manager structures

# Investment Management Developments at the Fund

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- Fund holds an overweight position in L&G global passive portfolio.
- The LGPS Central Global Factor portfolio is launched and invested in
- Standard Life UK Equity mandate terminated
- An investment was made in a Impax Sustainable Equity product.
- There is expected to be an investment in the LGPSC Sustainable equity product.
- Continuing to build investments in Alternatives, for example Infrastructure investing has now started.
- The Fund has / is moving towards a structure of Return Seeking and Defensive asset groups.
- Change is expected to continue through 2021/ 2022

# Attribution to Total Fund Excess Return Analysis - Year Ending June 2021





## Attribution to Total Fund Excess Return - Year Ended June 2021

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- The Fund has outperformed its benchmark for the year ended June 2021.
  - Outperformance from the majority of managers and portfolios
  - Identifies the strong 'growth assets' bias of the Fund.
  - The positives impacting the Fund were primarily
    - Private Equity (very strong performer in 2020/21)
    - Private Debt
    - The active global equity mandates of
      - JPM – sector and stock selection
      - Longview – stock selection
      - LGPS Central – due to Harris due to their value style and stock selection
  - The negative contributors were
    - Property
    - Infrastructure (beginning investment and no material impact on the Fund)
    - Cash (the Fund remains overweight cash)
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## Attribution to Total Fund Excess Return – 3 Years Ended June 2021

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- The Fund has outperformed its benchmark for the 3 years ended June 2021 by 0.6% per annum.
  - Outperformance driven by Private Equities.
    - This asset class benefitted from having, until recently, a zero return benchmark. This also fed into the Total Fund benchmark.
    - The strong return was also seen across many LGPS.
  - Global Equities also contributed due to the positive excess return as despite some underperformance from the managers collectively they outperformed the Total Fund benchmark.
  - Private debt would have made a minor contribution to the excess return of the Total Fund as it outperformed its benchmark.
  - The primary negative contributor was property.
  - Due to all the structural (for example Private Equities changed primary asset group) and Fund changes long term attribution is not available as it would be confusing to review.
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# SCC Returns relative to PEL LGPS Universe Data

## Periods Ended March 2021

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- Please note that the Fund has a higher equity weighting than the average LGPS Fund.
- Above average fund returns consistently
- Returns averages are below;

Total Fund Investment Returns % p.a.	LGPS Universe	LGSC Central Pool	<b>SCC</b>
Year to March 31 2021	21.12	22.00	24.4
3 Years to March 31 2021	6.97	7.01	8.87
5 Years to March 31 2021	8.73	9.34	10.35
10 Years to March 31 2021	8.05	8.12	9.14
20 Years to March 31 2021	6.93	6.50	7.1

# Fund and Portfolio Summary - Period Ending June 2021

	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	
Total Return Seeking inc Prv Debt	Multi Asset Class Index	Mar-19	5,438.6	84.0	6.5	6.0	0.5	6.5	6.0	0.5	24.8	19.8	5.0										13.0	11.3	1.7	
Combined Equity Inc Private Equity	Multi Equity Asset Class Index	Mar-19	4,646.4	71.8	7.2	6.9	0.3	7.2	6.9	0.3	27.6	23.3	4.3										14.2	13.2	1.0	
Combined Equity Ex Private Equity	Multi Equity Asset Class Index	Apr-08	4,356.4	67.3	6.9	7.0	-0.1	6.9	7.0	-0.1	26.4	24.4	2.1	10.7	10.9	-0.3	12.5	12.7	-0.2	10.7	10.8	-0.1	9.4	9.8	-0.4	
Total UK Equity	FTSE All Share Index	Apr-15	387.4	6.0	4.4	5.6	-1.2	4.4	5.6	-1.2	22.5	21.5	1.1	2.0	2.0	-0.1	6.8	6.5	0.4				5.0	5.2	-0.2	
Standard Life UK Equity Fund	FTSE All Share 2% Cap Net	Jul-05	N.A.	N/A	1.8	2.0	-0.2	1.8	2.0	-0.2	22.1	21.9	0.2	1.5	3.8	-2.3	7.1	7.8	-0.7	6.3	6.9	-0.6	6.5	6.8	-0.3	
L&G UK Equity Fund	FTSE All Share Index	Dec-15	387.4	6.0	5.6	5.6	0.0	5.6	5.6	0.0	21.5	21.5	0.1	2.1	2.0	0.1	6.6	6.5	0.1				7.1	6.9	0.1	
Total Global Equity	SCC Global Equity	Dec-14	3,969.0	61.3	7.3	7.2	0.1	7.3	7.2	0.1	27.2	24.8	2.4	12.8	13.1	-0.3	13.9	14.2	-0.3				12.9	13.3	-0.4	
Total Global Active Equity	SCC Global Active Equity	Mar-19	1,939.6	30.0	7.0	7.3	-0.3	7.0	7.3	-0.3	29.7	24.8	4.9										15.5	16.0	-0.5	
JP Morgan Global Equity Fund	MSCI AC World Index Net	Dec-09	627.8	9.7	6.8	7.3	-0.5	6.8	7.3	-0.5	29.2	24.6	4.7	12.1	12.8	-0.8	14.4	13.9	0.6	11.7	11.6	0.1	12.3	11.7	0.6	
Longview Global Equity Fund	MSCI AC World Index Net	Dec-09	330.6	5.1	6.1	7.3	-1.1	6.1	7.3	-1.1	26.9	24.6	2.4	10.9	12.8	-2.0	12.9	13.9	-1.0	14.9	11.6	3.4	15.1	11.7	3.3	
LGPSC Global Active Equity Fund	FTSE All World Index	Feb-19	721.8	11.1	6.9	7.3	-0.4	6.9	7.3	-0.4	30.6	25.0	5.5										16.5	16.0	0.6	
Total Global Sustainable Equity	SCC Global Sustainable Equity	Apr-21	259.5	4.0	4.4	7.3	-3.0																4.4	7.3	-3.0	
Impax Global Sustainable Equity Fund	MSCI All Country World Index	Apr-21	259.5	4.0	4.4	4.2	0.2																4.4	4.2	0.2	
LGPSC Sustainable Equity Fund	FTSE All World Index	Apr-21	N.A.	N/A		7.3			7.3															7.3		
L&G Global Equity Fund	FTSE All World Index	Dec-15	1,796.8	27.8	7.2	7.3	-0.1	7.2	7.3	-0.1	24.9	25.0	-0.1	13.2	13.3	-0.1	14.4	14.4	0.0				15.4	15.4	0.0	
LGPSC Glb Multi Factor Based Equity	SciBeta GL 6 Fact Equal Weight	Jan-21	232.5	3.6	6.1	6.1	0.0	6.1	6.1	0.0													8.6	8.6	0.0	
Private Equity Fund	MSCI World Index +2.0% (lagged by 1 quarter)	Oct-14	290.0	4.5	11.8	4.5	7.4	11.8	4.5	7.4	47.6	4.5	43.1	24.7	1.5	23.2	21.3	0.9	20.4				20.5	0.7	19.9	
Colliers UK Property Fund	MSCI UK Monthly Property Index (GBP)	Oct-94	485.7	7.5	2.2	3.9	-1.7	2.2	3.9	-1.7	4.7	9.1	-4.4	3.0	3.4	-0.3	5.1	5.2	-0.1	8.1	7.7	0.4	7.8	7.8	0.1	
Combined Alternative Assets	SCC Total Alternatives Index	Jul-11	17.8	0.3	-0.8	1.7	-2.5	-0.8	1.7	-2.5	-1.1	2.8	-3.9	2.9	2.4	0.6	5.5	2.3	3.2	6.0	1.2	4.9	6.0	1.2	4.9	
Hedge Fund	LIBOR 3 Month	Dec-14	15.8	0.2	2.1	0.0	2.1	2.1	0.0	2.1	1.8	0.1	1.8	0.6	0.5	0.1	1.9	0.5	1.4				1.0	0.5	0.5	
Infrastructure Fund	UK CPI +3.5%	Feb-21	2.0	0.0	-18.7	2.6	-21.3	-18.7	2.6	-21.3													-18.7	3.2	-21.9	
Total Defensive exc Priv Debt	SCC Def Index ex Priv Debt	Mar-19	1,035.0	16.0	3.1	2.9	0.2	3.1	2.9	0.2	-0.3	-0.7	0.4										4.0	4.5	-0.5	
Total Bonds inc Private Debt	SCC Total Bonds	Mar-19	1,144.8	17.7	3.0	2.6	0.4	3.0	2.6	0.4	2.3	0.9	1.4										5.0	5.0	0.0	
Total Bonds Ex Private Debt	SCC Total Bonds ex PD	Dec-14	856.1	13.2	3.1	3.1	0.0	3.1	3.1	0.0	-0.6	-0.7	0.2	4.5	4.9	-0.4	4.0	4.0	0.0				4.5	4.4	0.1	
LGPS Central Corporate Bond Fund	LGPSC Client Specific	Mar-20	432.6	6.7	2.2	2.3	0.0	2.2	2.3	0.0	3.5	2.9	0.6										14.2	12.6	1.6	
L&G UK Index Linked Gilt Fund	FTSE Over 5 Years Index Linked Gilt Index	Feb-10	423.6	6.5	3.9	3.9	0.0	3.9	3.9	0.0	-4.4	-4.4	0.0	5.3	5.3	0.0	5.0	5.0	0.0	8.0	8.0	0.0	8.4	8.4	0.0	
Private Debt Fund	LIBOR 1 Month + 5%	Jun-16	288.7	4.5	3.5	1.2	2.2	3.5	1.2	2.2	12.8	5.0	7.8	8.8	5.5	3.4	7.8	5.4	2.4				7.7	5.4	2.3	
Central Cash Fund	UK Cash	Dec-14	178.9	2.8	0.1	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.2	0.2	0.4	-0.2	0.2	0.4	-0.2				0.3	0.4	-0.2	
Total Fund Net	Multi Asset Class Index	Apr-17	6,473.6	100.0	5.95	5.60	0.34	5.95	5.60	0.34	18.96	16.78	2.18	9.05	8.63	0.42							8.26	8.04	0.22	
Total Fund	Multi Asset Class Index	Apr-95	6,473.6	100.0	6.02	5.60	0.42	6.02	5.60	0.42	19.67	16.78	2.89	9.25	8.63	0.62	10.38	9.80	0.58	9.62	9.05	0.57	8.21	8.39	-0.18	

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

# Fund and Portfolio Summary - Period Ending March 2021

Client: Staffordshire Pension Fund  
Manager: Multi-manager  
Mandate: Combined Assets Total Fund

## Fund and Portfolio Return Summary Total Fund March 2021

	Benchmark	Incep Date	Market Value £m	Market %	QTR			Fin YTD			1 Year			3 Year			5 Year			10 Year			Since Inc	
					PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM
Total Return Seeking inc Private Debt	SCC Return Seeking Index	Mar-19	5,225.7	85.3	5.3	3.4	1.9	32.7	27.7	5.1	32.7	27.7	5.1										11.1	9.5
Total Return Seeking ex Prv Debt	Return Seeking ex Priv Debt Index	Mar-19	4,934.2	80.5	4.9	3.5	1.4	33.7	29.2	4.5	33.7	29.2	4.5										11.0	9.7
Combined Equity inc Private Equity	Multi Equity Asset Class Index inc PE	Mar-19	4,441.7	72.5	5.5	3.8	1.6	38.8	34.8	4.0	38.8	34.8	4.0										12.1	11.2
Combined Equity ex Private Equity	Multi Equity Asset Class Index ex PE	Apr-08	4,177.6	68.2	5.1	4.1	1.0	39.6	36.9	2.7	39.6	36.9	2.7	10.8	11.1	-0.3	12.6	12.9	-0.3	10.1	10.1	0.0	9.0	9.4
Total UK Equity	FTSE All Share Index	Apr-15	701.1	11.4	6.3	5.2	1.1	30.5	26.7	3.8	30.5	26.7	3.8	3.3	3.2	0.1	6.1	6.3	-0.1				4.5	4.5
Standard Life UK Equity Fund	FTSE All Share 2% Cap Net	Jul-05	334.3	5.5	7.5	5.7	1.9	34.7	35.3	-0.5	34.7	35.3	-0.5	3.3	5.7	-2.4	5.9	7.6	-1.7	6.2	6.8	-0.6	6.4	6.6
L&G UK Passive Equity Fund	FTSE All Share Index	Dec-15	366.8	6	5.2	5.2	0.0	26.8	26.7	0.1	26.8	26.7	0.1	3.3	3.2	0.1	6.4	6.3	0.2				6.3	6.2
Total Global Equity	SCC Global Equity	Dec-14	3,476.5	56.7	5.0	3.8	1.2	41.9	39.4	2.5	41.9	39.4	2.5	12.6	13.0	-0.4	14.2	14.5	-0.3				12.1	12.6
Total Global Active Equity Fund	SCC Global Active Equity	Mar-19	1,575.8	25.7	6.5	3.7	2.8	45.0	39.2	5.8	45.0	39.2	5.8										13.7	14.1
JP Morgan Global Equity Fund	MSCI AC World Index Net	Dec-09	588.9	9.6	7.3	3.6	3.7	46.3	38.9	7.4	46.3	38.9	7.4	12.1	12.7	-0.6	14.4	14.1	0.3	11.0	10.8	0.2	12.0	11.3
Longview Global Equity Fund	MSCI AC World Index Net	Dec-09	311.5	5.1	6.5	3.6	2.9	36.4	38.9	-2.5	36.4	38.9	-2.5	11.8	12.7	-0.8	13.1	14.1	-1.1	14.6	10.8	3.8	14.8	11.3
LGPSC Global Active Eq Fund	FTSE All World Index	Feb-19	675.4	11	5.7	3.8	1.9	47.9	39.6	8.3	47.9	39.6	8.3										15.0	14.2
L&G Global Passive Equity Fund	FTSE All World Index	Dec-15	1,772.6	28.9	3.8	3.8	0.0	39.5	39.6	-0.1	39.5	39.6	-0.1	13.5	13.5	-0.1	14.7	14.7	0.0				14.6	14.6
LGPSC Gbl Multi Factor Equity Index	SciBeta GL 6 Fact Equal Weight	Jan-21	128.1	2.1	2.4	2.4	0.0																2.4	2.4
Private Equity Fund	None	Oct-14	264.1	4.3	11.5	0.0	11.5	27.9	0.0	27.9	27.9	0.0	27.9	20.2	0.0	20.2	19.8	0.0	19.8				19.3	0.0
LGPSC Private Equity Fund	None	Aug-19	3.3	0.1	16.1	0.0	16.1	19.6	0.0	19.6	19.6	0.0	19.6										0.3	0.0
Lazard Private Equity Fund	None	Mar-17	1.0	0	20.6	0.0	20.6	23.2	0.0	23.2	23.2	0.0	23.2	8.9	0.0	8.9							4.6	0.0
Knightbridge Private Equity Fund	None	Mar-17	31.6	0.5	21.1	0.0	21.1	53.6	0.0	53.6	53.6	0.0	53.6	31.4	0.0	31.4							22.2	0.0
Partners Group Private Equity Fund	None	Mar-17	33.1	0.5	5.4	0.0	5.4	22.4	0.0	22.4	22.4	0.0	22.4	18.0	0.0	18.0							14.6	0.0
Capital Private Equity Fund	None	Mar-17	16.7	0.3	4.6	0.0	4.6	-1.8	0.0	-1.8	-1.8	0.0	-1.8	7.9	0.0	7.9							9.5	0.0
Harbourvest Private Equity Fund	None	Mar-17	178.3	2.9	11.6	0.0	11.6	27.8	0.0	27.8	27.8	0.0	27.8	19.8	0.0	19.8							17.6	0.0
Colliers UK Property Fund	MSCI UK Monthly Property Index (GBP)	Oct-94	469.2	7.7	-0.1	2.3	-2.4	1.7	2.7	-1.0	1.7	2.7	-1.0	3.2	2.8	0.4	5.1	4.6	0.4	8.1	7.5	0.6	7.8	7.7
Combined Alternative Assets	SCC Total Alternatives Index	Jul-11	23.3	0.4	-0.1	0.3	-0.4	6.0	1.4	4.6	6.0	1.4	4.6	3.5	2.0	1.5	6.2	2.0	4.2				6.3	1.0
Hedge Fund	LIBOR 3 Month	Dec-14	23.3	0.4	-0.1	0.0	-0.2	6.0	0.1	5.8	6.0	0.1	5.8	0.3	0.6	-0.3	1.4	0.5	0.8				0.7	0.5
Infrastructure Fund	UK CPI +3.5%	Feb-21	N.A.	0	0.0	0.6	-0.6																0.0	0.6
BlackRock Global Renewable Power Fund III	UK CPI +3.5%	Feb-21	N.A.	0	0.0	0.6	-0.6																0.0	0.6
Total Defensive ex Prv Debt	Defensive ex Priv Debt Index	Mar-19	903.1	14.7	-5.0	-5.1	0.1	5.8	5.5	0.3	5.8	5.5	0.3										2.9	3.6
Total Defensive inc Private Debt	Defensive inc Priv Debt Index	Mar-19	1,194.6	19.5	-4.0	-3.5	-0.6	5.7	5.5	0.2	5.7	5.5	0.2										3.9	4.1
Total Bonds inc Private Debt	SCC Total Bonds inc PD	Mar-19	1,122.2	18.3	-3.9	-3.6	-0.3	7.0	5.8	1.2	7.0	5.8	1.2										4.1	4.3
Total Bonds ex Private Debt	SCC Total Bonds ex PD	Dec-14	830.8	13.6	-5.5	-5.5	0.0	6.8	5.9	0.9	6.8	5.9	0.9	3.3	3.7	-0.3	4.6	4.5	0.1				4.2	4.1
LGPSC Corporate Bond Fund	LGPSC Corp Index	Mar-20	423.1	6.9	-4.0	-4.0	0.0	11.2	9.2	2.0	11.2	9.2	2.0										15.4	13.3
L&G UK Index Linked Gilt Fund	FTSE Over 5 Years Index Linked Gilt Index	Feb-10	407.7	6.7	-7.0	-7.0	0.0	2.6	2.6	0.0	2.6	2.6	0.0	3.6	3.5	0.0	6.4	6.4	0.0	8.1	8.1	0.0	8.2	8.2
Private Debt Fund	LIBOR 1 Month + 5%	Jun-16	291.5	4.8	1.5	1.2	0.3	7.6	5.1	2.5	7.6	5.1	2.5	8.0	5.5	2.5							7.3	5.4
Hayfin Private Debt Fund	LIBOR 1 Month + 5%	Dec-16	117.0	1.9	1.3	1.2	0.1	8.6	5.1	3.5	8.6	5.1	3.5	9.0	5.5	3.5							10.2	5.5
Highbridge Private Debt Fund	LIBOR 1 Month + 5%	Dec-16	84.8	1.4	0.4	1.2	-0.9	2.1	5.1	-3.0	2.1	5.1	-3.0	7.9	5.5	2.4							9.4	5.5
Alcentra Private Debt Fund	LIBOR 1 Month + 5%	Dec-16	89.8	1.5	2.7	1.2	1.4	10.4	5.1	5.3	10.4	5.1	5.3	7.2	5.5	1.7							6.6	5.5
Central Cash Fund	UK Cash	Dec-14	72.3	1.2	0.0	0.0	0.0	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.5	-0.3	0.2	0.4	-0.2				0.3	0.4
Total Fund (Net)		Apr-17	6,128.8	100	2.7	2.2	0.5	26.7	24.4	2.3	26.7	24.4	2.3	8.7	8.5	0.2							7.2	7.1
Total Fund		Apr-95	6,128.8	100	3.2	2.2	1.0	27.0	24.4	2.6	27.0	24.4	2.6	8.9	8.5	0.4	10.4	9.9	0.4	9.1	8.6	0.6	8.1	8.3

Market % is a percentage of the total assets. PF = Portfolio Return BM = Benchmark Return ER = Excess Return.

# Summary

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- The Fund, for periods ended June 2021, outperformed its benchmark over most periods.
  - The Fund has outperformed the PE LGPS Information Service average return over the one, three, five year, ten and twenty year periods.
  - The outperformance in 2020 / 2021 was due to primarily to the performance of the equity assets, most notably Private Equity and active Global Equities.
  - The Fund continues to transition assets to LGPSC 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 increased over the year due to the impact of the pandemic.
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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

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.