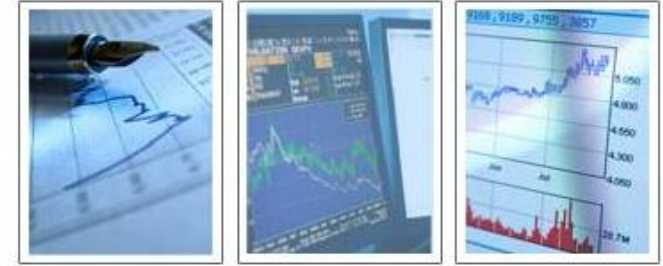


PORTFOLIO
EVALUATION
LIMITED



Specialists in Investment Risk and Return Evaluation

Quarterly Risk and Return Analysis
Total Fund

Worcestershire County Council Pension Fund

Period ending 30th June 2017

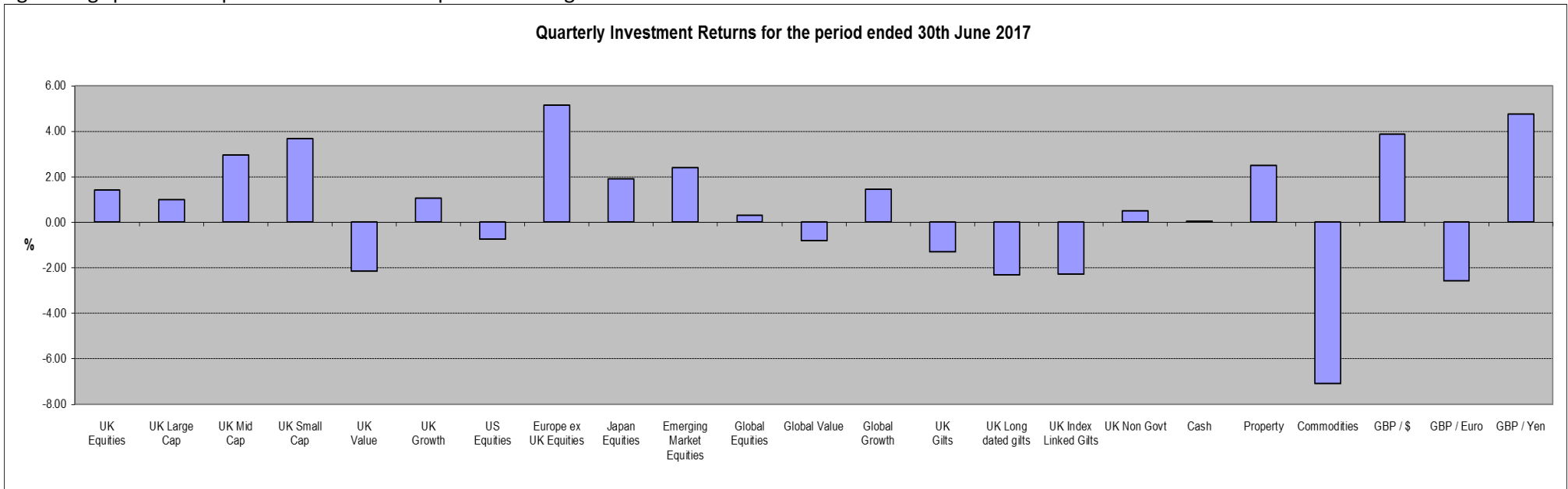


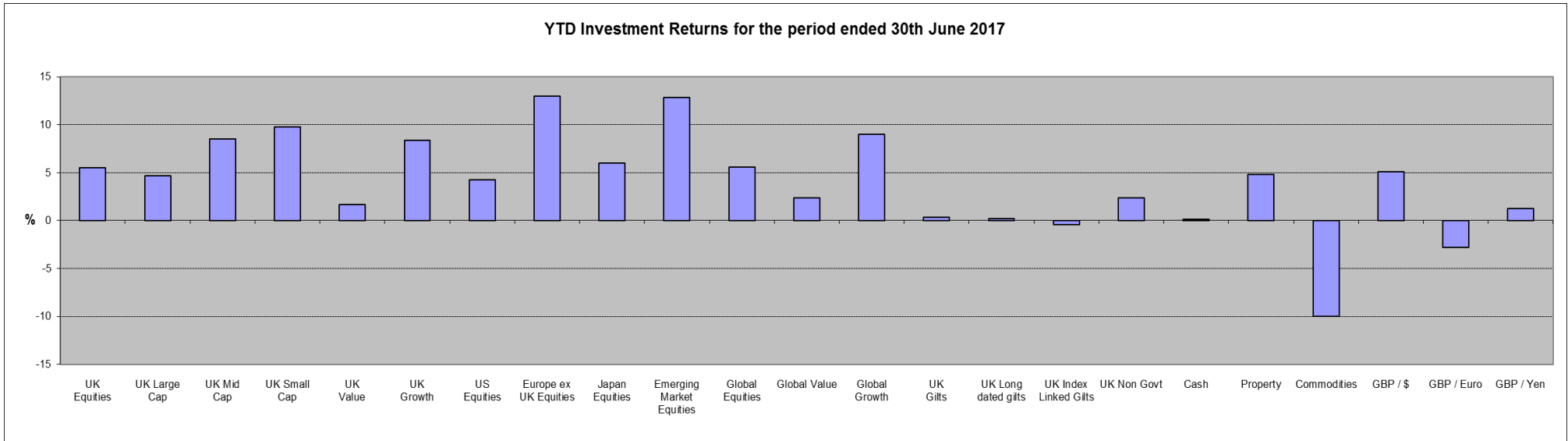
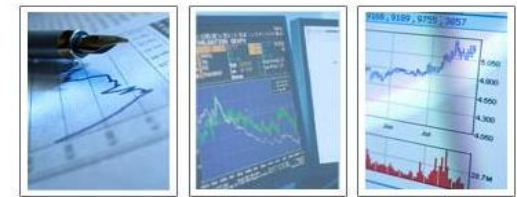
Portfolio Evaluation Ltd Market Commentary Q2 2017 (sterling)

UK and global equity markets continued to rise in the first and second quarters of 2017 and the world continues to benefit from, albeit lower than in previous growth cycles, sustained economic growth. Some of this growth is due to central bank intervention via quantitative easing (QE); this is now starting to be unwound in the US and UK and the ECB has announced plans to taper their purchasing of debt. The job appears completed for QE as economies seem set for continued low economic growth and still able to access historically cheap money. Corporate earnings appear resilient, wage growth limited and inflation low (except for the UK). The consensus of market commentators seem to agree that these points coupled with a positive earning yield outlook when compared to bonds and low market volatility to continued equity market advances, albeit low increases, and government bond yields increasing. Corporate bonds would also appear to be a beneficiary of this environment. However given that returns are expected to be low institutional investors may be looking at alternative asset classes as providers of returns.

In Q2 2017 equity markets have risen with Europe being the stand out performer. Growth and momentum styles have outperformed for both the quarter and year to date. Within UK sectors Health Care, Financials, Technology, Travel & Leisure and Industrials have had good returns whilst Utilities, Oil & Gas and Basic Materials have had poor returns. Government bond yields have risen resulting in negative returns for this asset class; however corporate bond returns have been positive reflecting tightening spreads and positive outlook for corporate earnings.

Quarterly Investment Returns for the period ended 30th June 2017





The outlook for the UK remains uncertain, especially with Brexit talks beginning and a post-election weakened government, but we can expect to see possibly higher inflation, higher interest rates, lower government tax receipts, increased sterling volatility and declining business confidence especially in the second half of the year; however in this environment some areas will continue to succeed for example exporters.

The risks to the positive economic outlook appear benign in the current environment however geo political risk continues. In Europe the political risks have reduced with the election of a pro-business and pro-EU president and it appears that Merkel will be re-elected. Within Europe there is economic risk from economies diverging and the tapering of QE being completed to soon. Globally the risks seem to be from China who appears to be tightening monetary policy and the new US government failing to deliver on its manifesto.

Given this backdrop our institutional clients seem to adopting more LDI based strategies, factor based equity investing and increasing exposure to alternative asset classes such as infrastructure and Private Debt.

For further information

If you would like further information about the topics contained in this newsletter or would like to discuss your investment performance requirements please contact Nick Kent or Deborah Barlow Tel: +44 (0)113 242 9381 (e-mail: nick.kent@portfolioevaluation.net) or visit our website at www.portfolioevaluation.net. Please note that all numbers, comments and ideas contained in this document are for information purposes only and as such are not investment advice in any form. Please remember that past performance is not a guide to future performance.

Worcestershire County Council Pension Fund - Commentary

Period ending 30th June 2017

QUARTERLY SUMMARY: Worcestershire County Council Pension Fund Return: 1.2% Benchmark Return: 1.3% Excess Return: -0.1%

- The Fund achieved a total return of 1.2%. Property assets were the highest returning asset class (returning 2.2%) along with Corporate Bonds at 1.9% return. Equities and Infrastructure were the lowest returning 1.1% and 0.4% respectively. As the Fund holds the majority of its assets within equities (over 86%), this was the primary contributor to the 1.2% total return generated over the quarter.
- The Fund marginally underperformed its benchmark this quarter by -0.1%. This was primarily due to asset allocation as the Fund is overweight the lower returning equities and underweight higher returning bond assets. Whilst European equities were the highest return generators (5% return), as the Fund is underweight this (relatively) high returning asset class this was the primary driver of the underperformance via asset allocation.
- Of the active managers, JPM and Schroders (both emerging market equities) successfully outperformed their respective benchmarks. The outperformance of Schroders was quite considerable and contributed positively to excess performance. The JPM Corporate Bond portfolio and Property, due to Invesco, also outperformed.
- All index funds tracked their benchmarks as expected.
- Please note that for Green Investment Bank and Walton Street returns are not available for the quarter as data is lagged by the manager.

YEAR SUMMARY AND LONGER: Worcestershire County Council Pension Fund Return: 20.1% Benchmark Return: 18.6% Excess Return: 1.5%

- Over the year the Fund has generated a return of 20.1% outperforming the benchmark by 1.5%. The total return was dominated by higher returning equity assets (22.5% return). Property and Infrastructure generated similar returns at 8.9% and 8.8% respectively, whilst Bonds were the lowest return generators at 3%.
- Stock selection was positive across nearly all asset classes with all active managers outperforming their respective benchmarks over the period.
- Asset allocation over the year was also positive and primarily due to being underweight the low returning bond asset class; although similarly to the quarter, European equities were a drag on asset allocation again due to the Fund being underweight in this highest returning asset class over the year.
- Over the one, three and five year periods the Fund has outperformed. The Fund over the past thirty six monthly return observations (3 year period) has performed better when markets are positive; outperforming for more observations than underperforming and also returning a higher average excess return when outperforming. This pattern is also repeated over the five year period.
- The Total Risk of the Fund is consistent with that of a typical multi asset class Fund. Active risk is also consistent with a typical multi asset class Fund that uses both passive and active strategies.

Client: Worcestershire County Council Pension Fund
 Manager: Multi-manager
 Mandate: Total Fund
 Asset Class: Combined Assets
 Benchmark: Worcestershire Total Fund Index
 Inception: 31-Mar-1987
 Mkt Val: £2.5bn

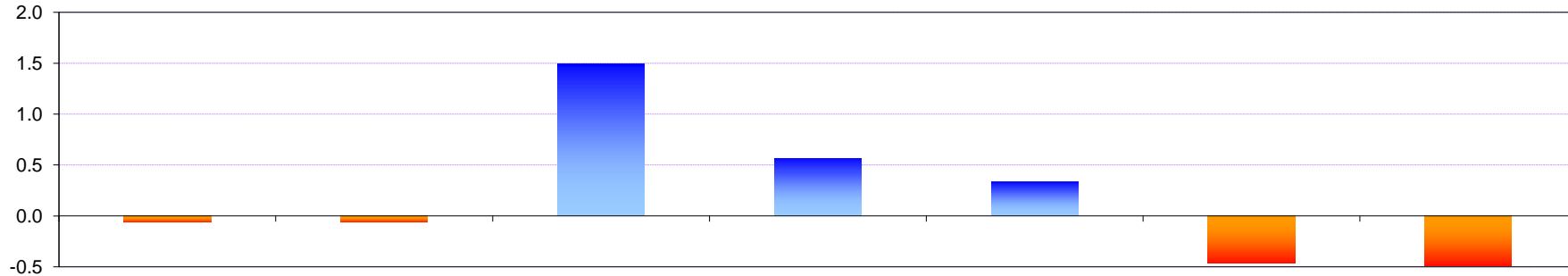
Total Fund Overview

Total Fund

Report Period: Quarter Ending June 2017



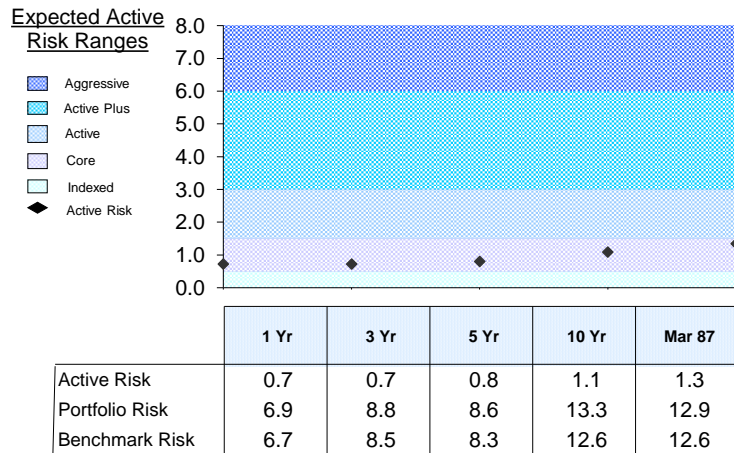
Excess Return Analysis (%)



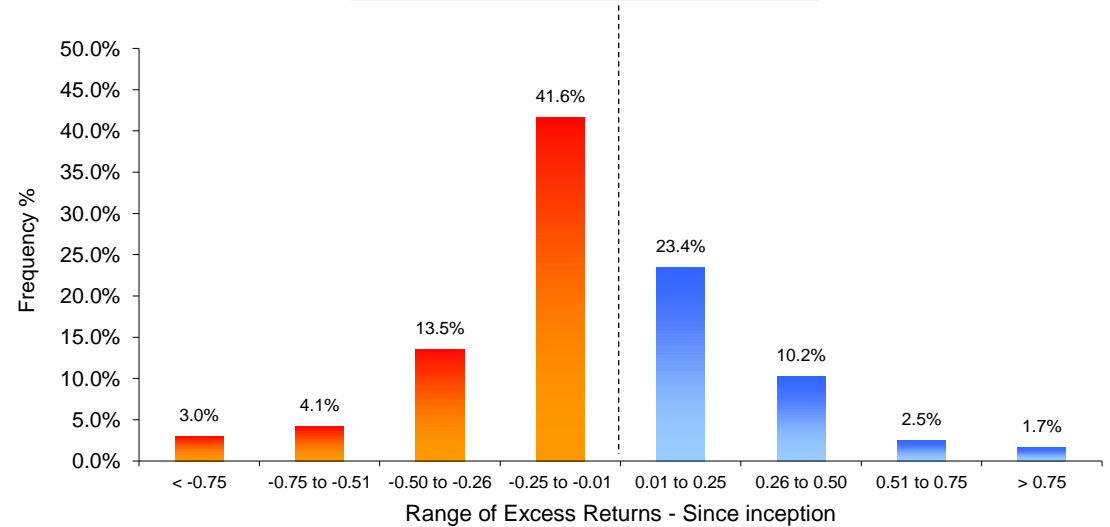
	QTR	YTD	1 Yr	3 Yr	5 Yr	10Yr	Since Mar 87 (p.a.)
Portfolio Return	1.2	1.2	20.1	11.6	12.2	6.4	8.2
Benchmark Return	1.3	1.3	18.6	11.1	11.9	6.9	8.7
Excess Return	-0.1	-0.1	1.5	0.6	0.3	-0.5	-0.5

All returns for periods in excess of 1 year are annualised.

Ex-Post Active Risk Analysis (%)



Excess Return Consistency Analysis



Ex-Post Active Risk measures the volatility of the actual excess returns achieved by the Portfolio/Fund.

Excess Return Consistency Analysis measures the frequency of the Portfolio/Fund's outperformance (Blue) and underperformance (Red) versus its benchmark, calculated using monthly (or quarterly if indicated) returns since inception.

Attribution to Total Fund Excess Return Analysis
Worcestershire County Council Pension Fund
for Quarter Ended 30th June 2017

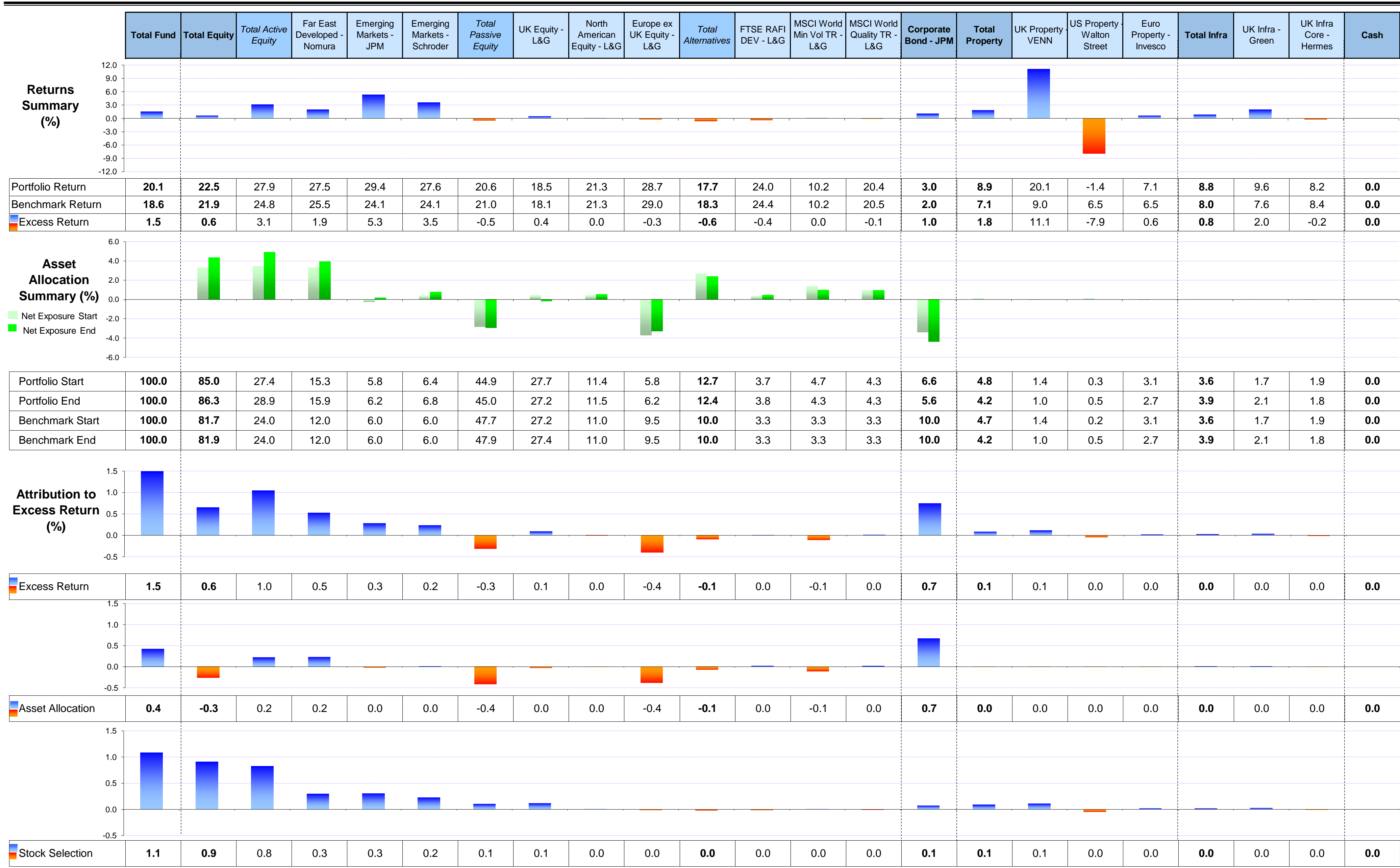
Market Value: £2.5bn



The Returns Summary details the Portfolio, Benchmark and Excess Returns. The Excess Returns are plotted. The Asset Allocation Summary details the weights held by the portfolio and benchmark in each asset class/manager. The green plots are the over/underweight exposures of the Fund (v Fund benchmark) at the beginning and end of the period. The Attribution to Excess Return, identifies how each asset class/manager has contributed to the overall excess return of the Total Fund. It is broken down into Asset Allocation (how successful the decision to over/underweight each asset class was) and then into Stock Selection (how well each manager/s decisions have performed). The Asset Allocation plus the Stock Selection excess returns are all additive and equal the Total Excess Return of the Fund.

Attribution to Total Fund Excess Return Analysis
Worcestershire County Council Pension Fund
for Year Ended 30th June 2017

Market Value: £2.5bn



The Returns Summary details the Portfolio, Benchmark and Excess Returns. The Excess Returns are plotted. The Asset Allocation Summary details the weights held by the portfolio and benchmark in each asset class/manager. The green plots are the over/underweight exposures of the Fund (v Fund benchmark) at the beginning and end of the period. The Attribution to Excess Return, identifies how each asset class/manager has contributed to the overall excess return of the Total Fund. It is broken down into Asset Allocation (how successful the decision to over/underweight each asset class was) and then into Stock Selection (how well each manager/s decisions have performed). The Asset Allocation plus the Stock Selection excess returns are all additive and equal the Total Excess Return of the Fund.

**Manager Return Analysis
Worcestershire County Council Pension Fund
for Quarter Ended 30th June 2017**

Market Value: £2.5bn

	Benchmark	Incep Date	Market Value (£m)	Weight	QTR			Year To Date			1 Year			3 Year			5 Year			10 Year			Since Inception		
					PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER	PF	BM	ER
Total Equity Fund	Client Specific Weighted Index	Mar-16	2,148.6	86.3	1.1	1.2	0.0	1.1	1.2	0.0	22.5	21.9	0.6										24.8	24.0	0.8
<i>Total Active Equity Fund</i>	Client Specific Weighted Index	Mar-16	720.0	28.9	1.3	0.6	0.7	1.3	0.6	0.7	27.9	24.8	3.1										30.7	28.0	2.7
Far East Developed Fund - Nomura	FTSE Developed Asia Pacific Index	Feb-03	397.1	15.9	0.8	1.0	-0.2	0.8	1.0	-0.2	27.5	25.5	1.9	16.1	14.8	1.3	13.1	12.5	0.6	7.5	7.6	-0.1	11.2	11.1	0.0
Emerging Markets Fund - JPM	FTSE All World Emerging Market Index	Dec-11	154.4	6.2	0.6	0.2	0.4	0.6	0.2	0.4	29.4	24.1	5.3	11.9	11.1	0.7	8.9	8.3	0.6				8.5	7.9	0.6
Emerging Markets Fund- Schroder	FTSE All World Emerging Market Index	Oct-11	168.5	6.8	3.1	0.2	2.9	3.1	0.2	2.9	27.6	24.1	3.5	13.0	11.1	1.9	9.9	8.3	1.6				9.2	7.0	2.2
<i>Total Passive Equity Fund</i>	Client Specific Weighted Index	Mar-16	1,119.9	45.0	1.3	1.6	-0.3	1.3	1.6	-0.3	20.6	21.0	-0.5										22.3	22.1	0.3
UK Equity Fund - L&G	FTSE All Share Index	Dec-15	678.5	27.2	1.4	1.4	0.0	1.4	1.4	0.0	18.5	18.1	0.4										17.4	17.1	0.3
North American Equity Fund- L&G	FTSE All World North American Index	Dec-15	287.0	11.5	-0.9	-0.9	0.0	-0.9	-0.9	0.0	21.3	21.3	0.0										25.7	25.8	-0.1
Europe ex UK Equity Fund- L&G	FTSE Developed Europe Ex. UK Index	Dec-15	154.4	6.2	4.8	5.0	-0.1	4.8	5.0	-0.1	28.7	29.0	-0.3										23.6	24.0	-0.3
<i>Total Alternatives Fund</i>	<i>Client Specific Weighted Index</i>	<i>Mar-16</i>	<i>308.7</i>	<i>12.4</i>	<i>0.2</i>	<i>0.3</i>	<i>0.0</i>	<i>0.2</i>	<i>0.3</i>	<i>0.0</i>	<i>17.7</i>	<i>18.3</i>	<i>-0.6</i>										<i>22.7</i>	<i>23.1</i>	<i>-0.4</i>
FTSE RAFI DEV Fund - L&G	FTSE RAFI Developed 1000 QSR Net Index	Dec-15	94.6	3.8	-0.6	-0.4	-0.2	-0.6	-0.4	-0.2	24.0	24.4	-0.4										25.6	25.8	-0.2
MSCI World Min Vol TR Fund - L&G	MSCI World Minimum Volatility Net Index	Dec-15	107.4	4.3	0.8	0.8	0.0	0.8	0.8	0.0	10.2	10.2	0.0										24.3	24.3	0.0
MSCI World Quality TR Fund - L&G	MSCI World Quality Total Return Net Index	Dec-15	106.8	4.3	0.4	0.5	0.0	0.4	0.5	0.0	20.4	20.5	-0.1										23.0	23.1	0.0
Corporate Bond Fund- JPM	Barclays Capital Global Aggregate - Ex Treasury, Ex Government Related 100% Hedged to GBP	Mar-03	140.4	5.6	1.9	1.6	0.3	1.9	1.6	0.3	3.0	2.0	1.0	4.0	3.7	0.3	4.4	4.1	0.3	6.5	6.8	-0.4	5.4	5.6	-0.2
Total Property Fund	Client Specific Weighted Index	Mar-16	104.1	4.2	2.2	1.7	0.4	2.2	1.7	0.4	8.9	7.1	1.8										10.5	7.1	3.4
UK Property Fund - VENN	Absolute Return +9%	Jul-15	23.8	1.0	1.9	2.2	-0.2	1.9	2.2	-0.2	20.1	9.0	11.1										13.3	9.4	3.9
US Property Fund- Walton Street	Absolute Return + 6.5%	Jan-16	11.8	0.5	0.0	1.6	-1.6	0.0	1.6	-1.6	-1.4	6.5	-7.9										2.0	5.7	-3.8
Euro Property Fund- Invesco	Absolute Return + 6.5%	Feb-16	68.4	2.7	2.6	1.6	1.0	2.6	1.6	1.0	7.1	6.5	0.6										10.9	6.0	5.0
Total Infrastructure Fund	Client Specific Weighted Index	Mar-16	97.1	3.9	0.4	1.9	-1.5	0.4	1.9	-1.5	8.8	8.0	0.8										8.3	8.0	0.3
UK Infrastructure Fund - Green	Absolute Return +7.6%	Apr-15	51.7	2.1	0.0	1.8	-1.8	0.0	1.8	-1.8	9.6	7.6	2.0										5.0	7.6	-2.6
UK Infrastructure Core Fund - Hermes	Absolute Return +8.4%	May-15	45.4	1.8	1.0	2.0	-1.1	1.0	2.0	-1.1	8.2	8.4	-0.2										8.2	8.4	-0.2
Worcestershire CC Total Fund		Mar-87	2,490.2	100.0	1.2	1.3	-0.1	1.2	1.3	-0.1	20.1	18.6	1.5	11.6	11.1	0.6	12.2	11.9	0.3	6.4	6.9	-0.5	8.2	8.7	-0.5

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

Total Fund Benchmark	CLIENT SPECIFIC BM AS AT JUNE 2017:	Notes: For the Total Fund benchmark the weightings for the Infrastructure and Property will match the actual drawdowns/market values of the funds, then the remainder will be put into UK Passive Equities .
	27.4% FTSE All Share 9.5% FTSE Developed Europe Ex UK 12% FTSE All World Emerging Markets 10% 1/3 FTSE RAFI DEV 1000 QSR Total Return NET & 1/3 MSCI World Minimum Vol Total Return NET & 1/3 MSCI World Quality Total Return NET Corp Bonds: 10% Barclays Global Agg Corporate Bond HEDGED into GBP Property: 4.2% Client Specific Index Infrastructure: 3.9% Client Specific Index	11% FTSE All World North America 12% FTSE Developed Asia Pacific Total Infrastructure and Total Property are measured against a weighted index of the funds underlying benchmarks. Historic data up to and including 31.03.2016 has been provided by the WM Co and L&G.

Total Fund Reconciliation Analysis
Worcestershire County Council Pension Fund
for Quarter Ended 30th June 2017

Market Value: £2.5bn

	31st March 2017		Net Investment (£000s)	Total Income (£000s)	Total Gain/Loss (£000s)	30th June 2017	
	Market Val (£000s)	Exposure (%)				Market Val (£000s)	Exposure (%)
Total Equity Fund	2,124,316	86.6	0	0	24,255	2,148,571	86.3
<i>Total Active Equity Fund</i>	710,733	29.0	0	0	9,243	719,976	28.9
Far East Developed Fund - Nomura	393,876	16.1	0	0	3,215	397,092	15.9
Emerging Markets Fund - JPM	153,448	6.3	0	0	977	154,425	6.2
Emerging Markets Fund- Schroder	163,408	6.7	0	0	5,051	168,459	6.8
<i>Total Passive Equity Fund</i>	1,105,610	45.1	0	0	14,245	1,119,855	45.0
UK Equity Fund - L&G	668,878	27.3	0	0	9,633	678,512	27.2
North American Equity Fund- L&G	289,430	11.8	0	0	-2,471	286,959	11.5
Europe ex UK Equity Fund- L&G	147,302	6.0	0	0	7,083	154,385	6.2
<i>Total Alternatives Fund</i>	307,973	12.6	0	0	767	308,740	12.4
FTSE RAFI DEV Fund - L&G	95,101	3.9	0	0	-535	94,566	3.8
MSCI World Min Vol TR Fund - L&G	106,535	4.3	0	0	847	107,383	4.3
MSCI World Quality TR Fund - L&G	106,337	4.3	0	0	454	106,791	4.3
Corporate Bond Fund- JPM	137,785	5.6	0	0	2,639	140,424	5.6
Total Property Fund	102,168	4.2	0	0	1,887	104,055	4.2
UK Property Fund - VENN	23,368	1.0	0	0	453	23,820	1.0
US Property Fund- Walton Street	12,130	0.5	0	0	0	11,822	0.5
Euro Property Fund- Invesco	66,671	2.7	0	0	1,742	68,413	2.7
Total Infrastructure Fund	88,338	3.6	-4,447	0	13,214	97,105	3.9
UK Infrastructure Fund - Green	38,907	1.6	0	0	0	51,688	2.1
UK Infrastructure Core Fund - Hermes	49,431	2.0	-4,447	0	433	45,416	1.8
Cash Fund	0	0.0	0	0	0	0	0.0
Worcestershire CC Total Fund	2,452,607	100.0	-4,447	0	41,995	2,490,155	100.0

Note: Cashflow into cash reflects sum of portfolio contributions minus net investments. It is assumed that Cash for the Fund is held outside of the invested assets and is therefore withdrawn from the Total Fund