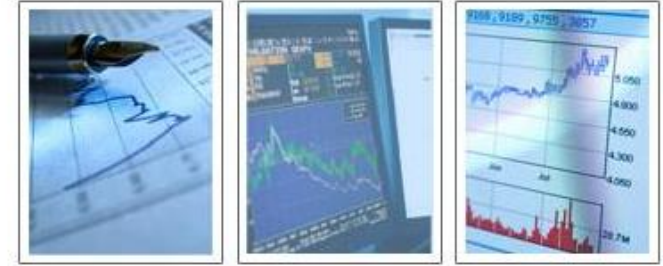


P O R T F O L I O
E V A L U A T I O N
L I M I T E D

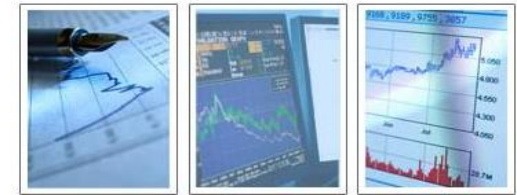


Specialists in Investment Risk and Return Evaluation

Quarterly Risk and Return Analysis
Total Fund

Worcestershire County Council Pension Fund

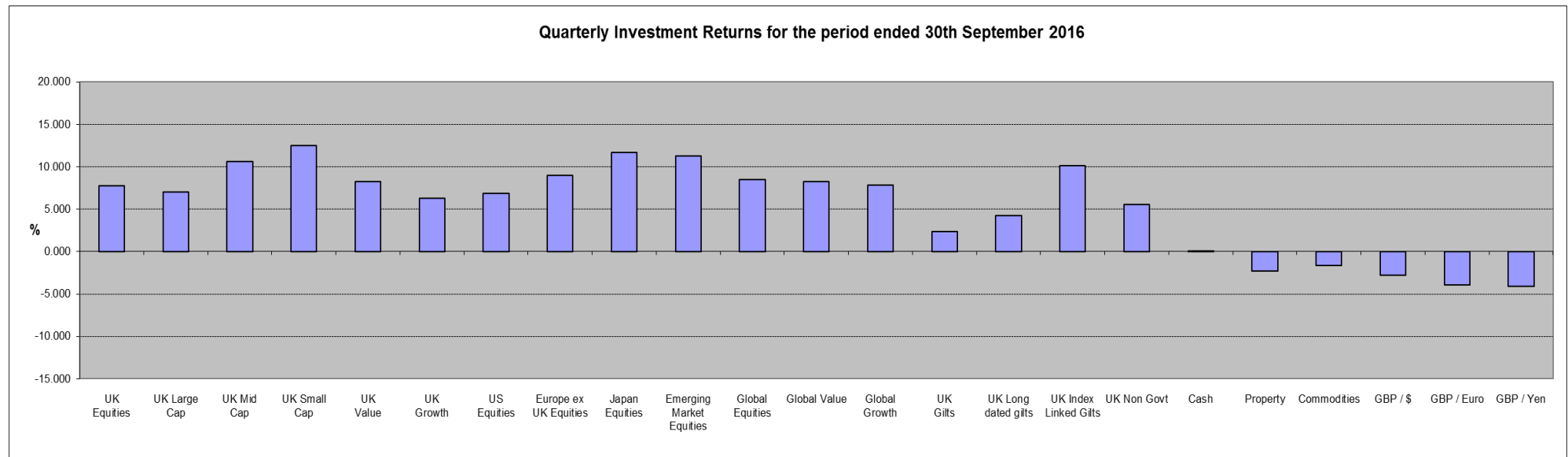
Period ending 30th September 2016

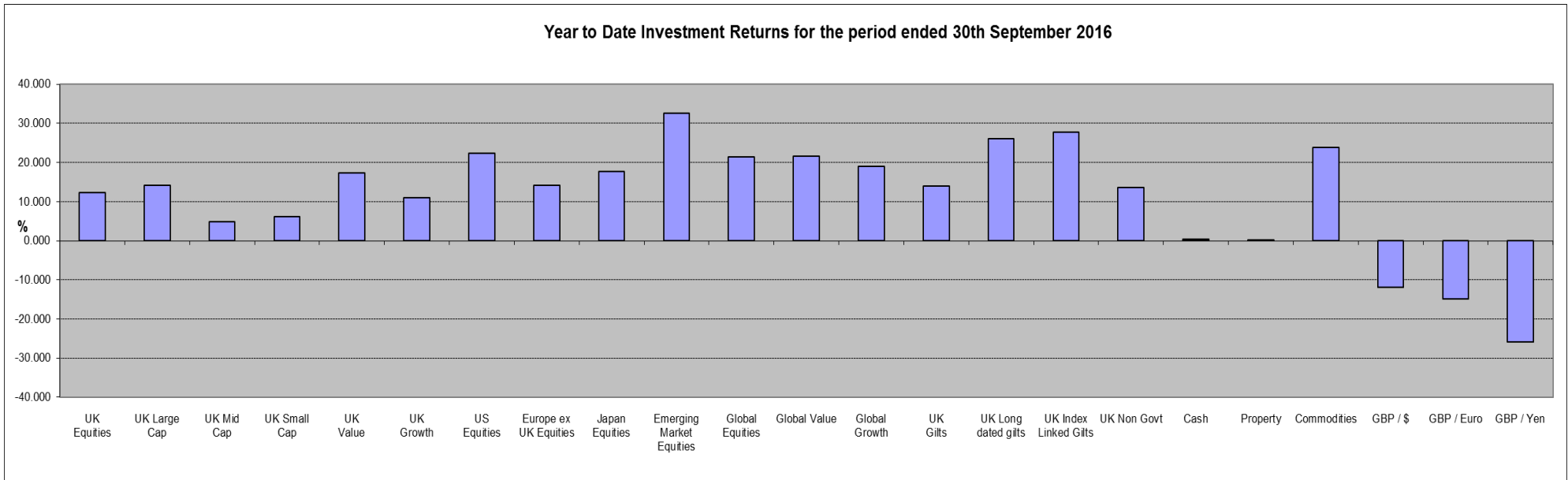


Portfolio Evaluation Ltd Market Commentary Q3 2016 (sterling)

The investment returns for the quarter ended September 2016 were driven by the realisation by investors that Brexit would take some time to have an impact and good news from housing markets and retailers. Additionally there was good news from the U.S. economy in terms of growth but not so good in terms of employment growth that led to an expectation that U.S. interest rate increases may be deferred until the end of the year. We also saw the price of Oil and other commodities increase which was seen as a positive indicator for global growth.

However it should be noted that continued positive equity returns (when many managers consider the markets fully valued), continued bond investors moving down the credit rating levels in a search for yield coupled with increased market volatility and increased consumer borrowing has not always been a good medium term mix for investors. It should also be noted that whilst Clinton is expected to win the US election (a favourable outcome for many) the race is quite close with Trump and with disaffected working classes we may see a Brexit type surprise, and whilst Trump will be initially be seen favourably by the markets the medium term is more uncertain as it would be the start of a new outlook resulting in increased market uncertainty.





The outlook for the UK (which is expected to be quite short term i.e. a couple of years) is generally one where commentators are still talking about a sustained period of low / negative economic growth as investors and companies wait to see the negotiating positions of the UK and EU.

Given our role for clients we are particularly interested in market risk. It is worth noting that market volatility has increased significantly through the year, with a significant additional spike due to Brexit, as investor risk aversion increases. This theme is expected to continue into 2017.

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 September 2016

QUARTERLY SUMMARY: **Worcestershire County Council Pension Fund** **Return: 8.3%** **Benchmark Return: 7.5%** **Excess Return: 0.8%**

- The Fund achieved a total return of 8.3%. This was driven by equity markets and continued sterling depreciation and to a minor degree falling bond yields generating positive bond returns (despite bond yields beginning to increase in September).
- The Fund outperformed its benchmark this quarter by 0.8%. This was partly due to asset allocation as the Fund was overweight equities and underweight bonds and European equities both of which underperformed the Total Fund benchmark. Additionally stock selection (portfolio performance relative to the portfolio benchmark) was also a positive contributor to excess performance due to the active equity portfolios and the corporate bond portfolio.
- Property assets outperformed partly due to sterling depreciation versus the U.S. dollar and euro.
- Of the active managers Nomura (Pacific Basin equities), Schroders (Emerging Market equities) and JPMorgan (Emerging Market equities) outperformed. All index funds tracked their benchmarks.
- Please note that for Green Investment Bank returns are not available for the quarter as data is lagged by the manager.

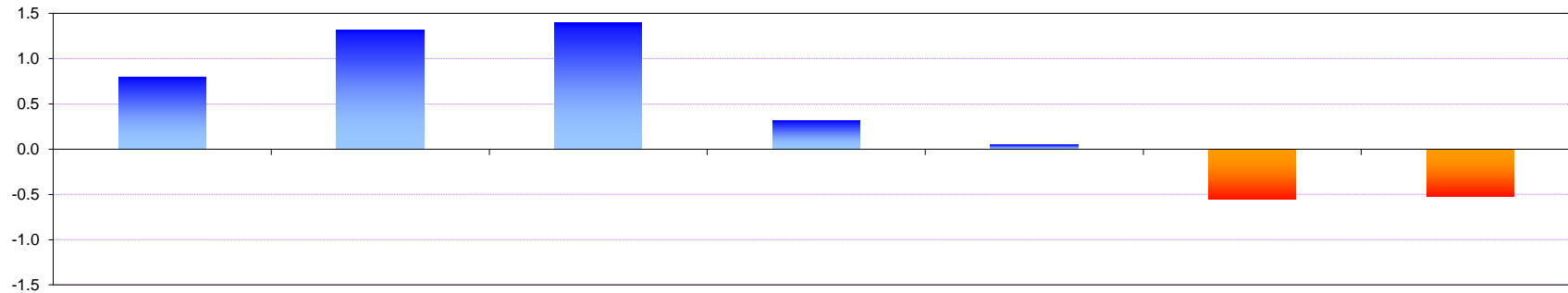
YEAR SUMMARY AND LONGER: **Worcestershire County Council Pension Fund** **Return: 24.9%** **Benchmark Return: 23.5%** **Excess Return: 1.4%**

- We have only monitored the Fund for a little more than a quarter and therefore our long term observations are limited for now especially given the restructuring of equity portfolios and increase in exposure to Infrastructure and Property assets.
- Over the financial YTD (since we have been measuring the portfolio) the Fund has generated a return of 15.8% outperforming the benchmark by 1.3%. The portfolio has outperformed both from asset allocation and stock selection as per the comments in the quarterly summary.
- Over both the one and three year period the Fund has outperformed and the performance is flat (versus benchmark) over the five year period. However over the longer term the Fund has underperformed.
- Over the one year period Nomura (Pacific Basin equities) and JPM (Emerging Markets equities) and JPM corporate bonds have outperformed whilst Schroders Emerging Market equities underperformed.
- Over the three year period Nomura (Pacific Basin equities), Schroders (Emerging Markets equities) and JPM corporate bonds have outperformed whilst JPM Emerging Market equities has underperformed.
- The Total Risk of the Fund is consistent with that of a typical multi asset class Fund with the recent increase reflective of a general increase in market risk. Active risk is also consistent with a typical multi asset class Fund that uses both passive and active strategies. The recent increase is probably due to the short term variance between Property and Infrastructure assets and absolute return benchmarks.

Total Fund Overview Worcestershire County Council Pension Fund for Quarter Ended 30th September 2016

Market Value: £2.24bn

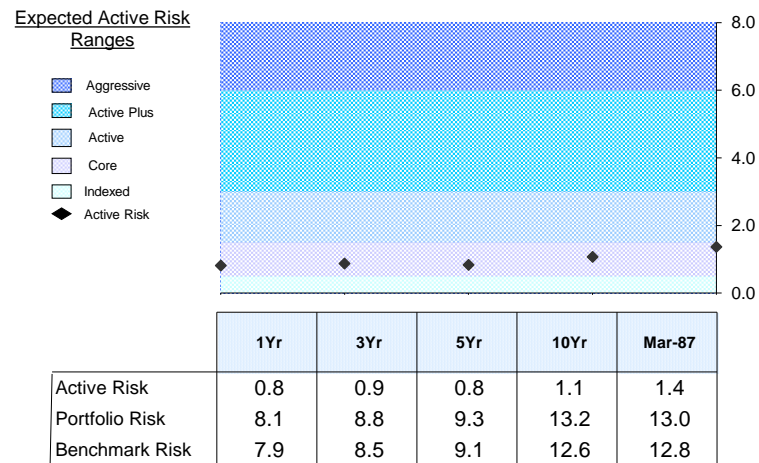
Excess Return Analysis (%)



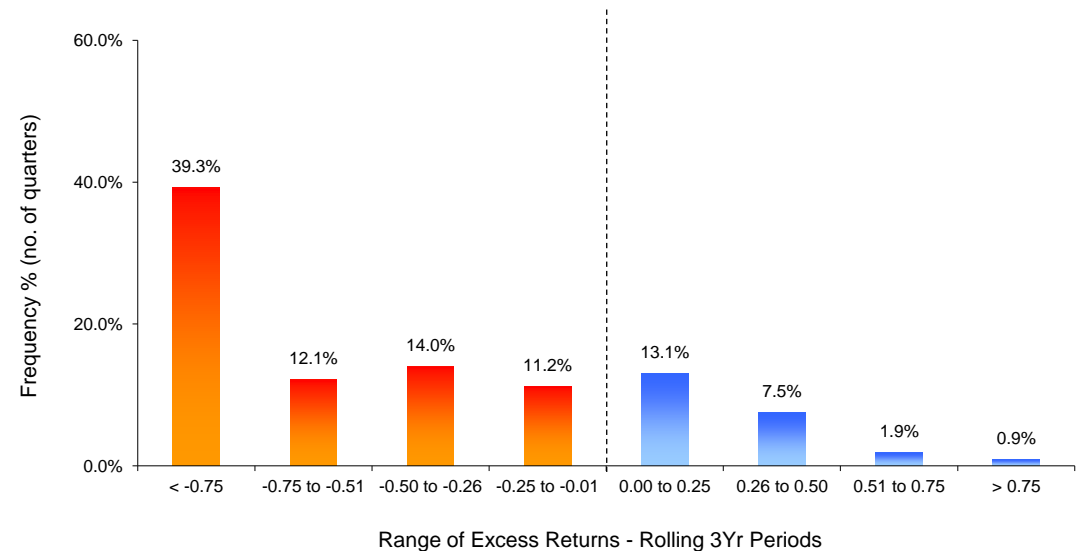
	QTR	YTD	1 Yr	3 Yr	5 Yr	10Yr	Mar-87
Portfolio Return	8.3	15.8	24.9	10.1	12.0	6.5	8.0
Benchmark Return	7.5	14.4	23.5	9.8	11.9	7.0	8.6
Excess Return	0.8	1.3	1.4	0.3	0.0	-0.6	-0.5

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 (Monthly) excess returns achieved by the Portfolio

Excess Return Consistency Analysis measures the frequency of the Fund's outperformance (Blue) and underperformance (Red) versus its benchmark over rolling periods; calculated using quarterly returns since inception.

**Attribution to Total Fund Excess Return Analysis
Worcestershire County Council Pension Fund
for Quarter Ended 30th September 2016**

Market Value: £2.24bn



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 to Date Ended 30th September 2016**

Market Value: £2.24bn



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.

* **Partial Return**

**Manager Return Analysis
Worcestershire County Council Pension Fund
for Quarter Ended 30th September 2016**

Market Value: £2.24bn

	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	1923	86.0	9.3	8.8	0.5	17.7	16.8	0.9													17.7	16.8	0.9
<i>Total Active Equity Fund</i>	Client Specific Weighted Index	Mar-16	643.5	28.8	13.4	11.7	1.7	23.8	21.8	2.0													23.8	21.8	2.0
Far East Developed Fund - Nomura	FTSE Developed Asia Pacific Index	Feb-03	358.9	16.0	13.5	12.2	1.3	23.9	21.6	2.3	36.5	35.1	1.4	12.3	10.6	1.7	11.4	11.1	0.3	7.5	7.7	-0.3	10.9	10.9	0.0
Emerging Markets Fund - JPM	FTSE All World Emerging Market Index	Dec-11	135.8	6.1	13.8	11.2	2.5	23.3	21.8	1.5	37.5	36.6	0.9	8.1	8.4	-0.3							7.0	6.8	0.2
Emerging Markets Fund- Schroder	FTSE All World Emerging Market Index	Oct-11	148.8	6.6	12.7	11.2	1.5	24.0	21.8	2.1	35.1	36.6	-1.5	9.5	8.4	1.1							7.9	5.7	2.2
<i>Total Passive Equity Fund</i>	Client Specific Weighted Index	Mar-16	1001.2	44.8	7.8	7.9	-0.1	14.9	14.3	0.6													14.9	14.3	0.6
UK Equity Fund - L&G	FTSE All Share Index	Dec-15	617.1	27.6	7.8	7.8	0.0	12.9	12.8	0.1													16.5	16.4	0.1
North American Equity Fund- L&G	FTSE All World North American Index	Dec-15	253.3	11.3	7.1	7.1	0.0	18.0	18.1	-0.1													25.7	25.8	-0.1
Europe ex UK Equity Fund- L&G	FTSE Developed Europe Ex. UK Index	Dec-15	130.9	5.9	9.1	9.1	0.0	13.8	13.9	-0.2													17.6	17.8	-0.3
<i>Total Alternatives Fund</i>	<i>Client Specific Weighted Index</i>	<i>Mar-16</i>	<i>278.4</i>	<i>12.4</i>	<i>6.1</i>	<i>6.3</i>	<i>-0.2</i>	<i>16.4</i>	<i>16.5</i>	<i>-0.1</i>													<i>16.4</i>	<i>16.5</i>	<i>-0.1</i>
FTSE RAFI DEV Fund - L&G	FTSE RAFI Developed 1000 QSR Net Index	Dec-15	82.7	3.7	8.5	8.5	-0.1	17.4	17.4	0.0													24.2	24.3	0.0
MSCI World Min Vol TR Fund - L&G	MSCI World Minimum Volatility Net Index	Dec-15	99.9	4.5	2.5	2.5	0.0	16.1	16.0	0.1													30.1	30.1	0.1
MSCI World Quality TR Fund - L&G	MSCI World Quality Total Return Net Index	Dec-15	95.8	4.3	8.0	8.0	-0.1	15.8	15.8	0.0													23.5	23.5	0.0
Corporate Bond Fund- JPM	Barclays Capital Global Aggregate - Ex Treasury, Ex Government Related 100% Hedged to GBP	Mar-03	139.3	6.2	2.1	1.7	0.4	5.2	4.9	0.3	9.3	8.4	0.8	6.2	5.8	0.4	5.8	5.5	0.3	6.0	6.4	-0.5	5.6	5.9	-0.3
Total Property Fund	Client Specific Weighted Index	Mar-16	100.4	4.5	3.7	1.8	2.0	7.8	3.5	4.3													7.8	3.5	4.3
UK Property Fund - VENN	Absolute Return +9%	Jul-15	26.4	1.2	2.1	2.2	-0.1	4.3	4.4	-0.1	8.1	9.0	-0.9										6.9	9.6	-2.7
US Property Fund- Walton Street	Absolute Return + 6.5%	Jan-16	7.3	0.3	2.9	1.6	1.3	5.4	3.2	2.2													7.2	3.2	4.0
Euro Property Fund- Invesco	Absolute Return + 6.5%	Feb-16	66.8	3.0	4.5	1.6	2.9	9.5	3.2	6.3													12.3	3.2	9.1
Total Infrastructure Fund	Client Specific Weighted Index	Mar-16	74.4	3.3	1.2	1.9	-0.8	2.7	3.9	-1.2													2.7	3.9	-1.2
UK Infrastructure Fund - Green	Absolute Return +7.6%	Apr-15	35.4	1.6	0.0	1.8	-1.8	0.9	3.7	-2.9	-0.1	7.6	-7.7										1.0	7.6	-6.5
UK Infrastructure Core Fund - Hermes	Absolute Return +8.4%	May-15	39.0	1.7	2.2	2.0	0.2	4.4	4.1	0.3	8.9	8.4	0.6										8.3	8.4	0.0
Worcestershire CC Total Fund		Mar-87	2237.2	100.0	8.3	7.5	0.8	15.8	14.4	1.3	24.9	23.5	1.4	10.1	9.8	0.3	12.0	11.9	0.0	6.5	7.0	-0.6	8.0	8.6	-0.5

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

Total Fund Benchmark	CLIENT SPECIFIC BM AS AT JUNE 2016:	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 .
	27.2% 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: 4.7% Client Specific Index Infrastructure: 3.6% 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 September 2016

Market Value: £2.24bn

	30th June 2016		Net Investment (£000s)	Total Income (£000s)	Total Gain/Loss (£000s)	30th Sept 2016	
	Market Val (£000s)	Exposure (%)				Market Val (£000s)	Exposure (%)
Total Equity Fund	1,758,842	85.0	0	0	164,255	1,923,097	86.0
<i>Total Active Equity Fund</i>	567,550	27.4	0	0	75,936	643,486	28.8
Far East Developed Fund - Nomura	316,225	15.3	0	0	42,720	358,945	16.0
Emerging Markets Fund - JPM	119,325	5.8	0	0	16,457	135,782	6.1
Emerging Markets Fund- Schroder	131,999	6.4	0	0	16,759	148,758	6.6
<i>Total Passive Equity Fund</i>	928,887	44.9	0	0	72,342	1,001,228	44.8
UK Equity Fund - L&G	572,371	27.7	0	0	44,692	617,063	27.6
North American Equity Fund- L&G	236,545	11.4	0	0	16,731	253,276	11.3
Europe ex UK Equity Fund- L&G	119,971	5.8	0	0	10,918	130,889	5.9
<i>Total Alternatives Fund</i>	262,406	12.7	0	0	15,978	278,384	12.4
FTSE RAFI DEV Fund - L&G	76,244	3.7	0	0	6,453	82,697	3.7
MSCI World Min Vol TR Fund - L&G	97,468	4.7	0	0	2,441	99,908	4.5
MSCI World Quality TR Fund - L&G	88,694	4.3	0	0	7,084	95,778	4.3
Corporate Bond Fund- JPM	136,355	6.6	0	0	2,930	139,285	6.2
Total Property Fund	99,133	4.8	-2,409	0	3,673	100,397	4.5
UK Property Fund - VENN	28,198	1.4	-2,409	0	590	26,378	1.2
US Property Fund- Walton Street	7,057	0.3	0	0	205	7,262	0.3
Euro Property Fund- Invesco	63,878	3.1	0	0	2,879	66,757	3.0
Total Infrastructure Fund	73,990	3.6	-439	0	856	74,407	3.3
UK Infrastructure Fund - Green	35,439	1.7	0	0	0	35,439	1.6
UK Infrastructure Core Fund - Hermes	38,550	1.9	-439	0	856	38,967	1.7
Cash Fund	0	0.0	-2,849	0	0	0	0.0
Worcestershire CC Total Fund	2,068,320	100.0	-2,849	0	171,716	2,237,187	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