

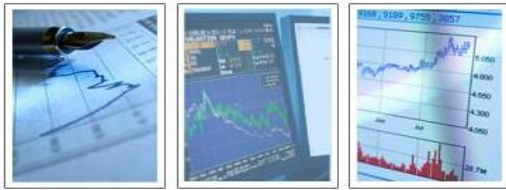
Quarterly Risk and Return Analysis  
Total Fund

Worcestershire County Council Pension Fund



Specialists in Investment Risk and Return Evaluation

Period ending 30<sup>th</sup> September 2019

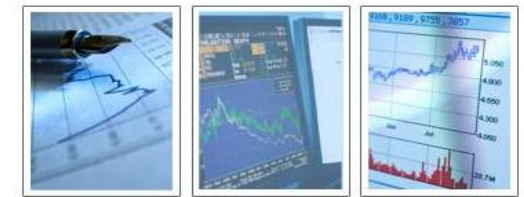


Specialists in Investment Risk and Return Evaluation

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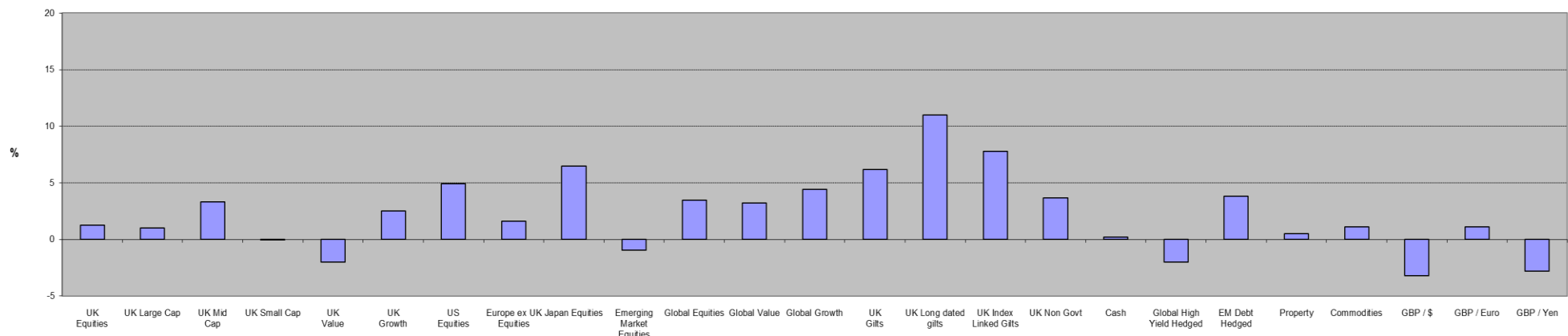


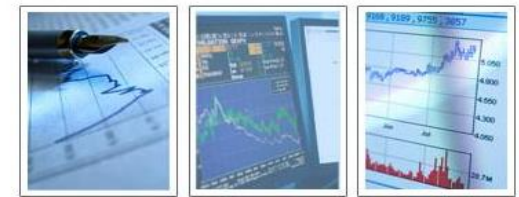
## Portfolio Evaluation Ltd Market Commentary Q3 2019 (Sterling)

After a positive first quarter and year most markets continued with positive returns, albeit at a more subdued level, in the quarter ended September 2019. The markets continue upwards, even after a small correction in August that was followed by a recovery in September despite lower economic growth and lower corporate earnings growth. Some of this could be due to continued global economic growth (albeit slower) supported by dovish central bank policy, continuing low inflation and positive consumer demand (it should be noted that there is in the developed world a lower supply of available workers); however the markets appear to be going from panic mode to complacency when reviewing risk. The positive global outlook this quarter saw growth stocks continue to outperform value but the difference between the two was less than in periods last year.

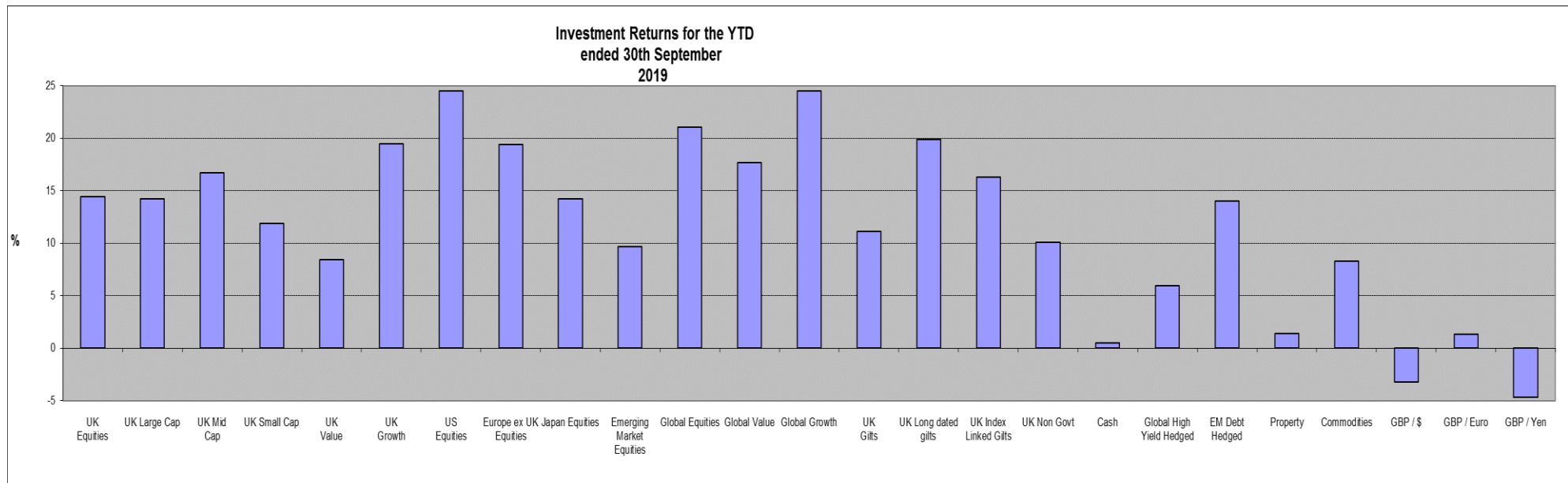
It would appear that markets are set to remain in a late market cycle phase for a while given the economic growth and it is not uncommon for markets to produce positive returns in this phase; however this can be more volatile. Looking forwards market commentators continue to expect lower global economic growth and corporate earnings growth with the Eurozone looking particularly vulnerable. Many investors seem to expect growth to continue into 2020 and potentially to 2021 as the outlook for a recession gets moved back due partly positive central bank actions and benign inflation. However many market commentators are discussing more defensive strategies going forwards, and many are also viewing emerging markets positively. Commentators are also investing more in bonds to secure income and as a defensive move. There are some risks in the returns that can be achieved, these include Trade Wars remain on going between the US, China and to some degree Europe, we are also in the position where central banks may not be able to continue lowering interest rates much more. We are also seeing increased political risk.

Quarterly Investment Returns for the period ended 30th September 2019





Within the UK the obsession and lack of resolution with Brexit has continued through yet another quarter. This continues to lower the economic growth outlook and reduce the willingness of both companies and investment managers to invest in the UK. The 'high street' sector continues to struggle with high costs and lower revenues whilst business is still reviewing how to proceed in the future. Despite posting significant equity market gains the concerns about the future outlook helps to explain the relatively lack lustre performance of UK stockmarkets when compared to many others.



Market volatility has continued to increase as a result of the outlook and in particular the risk levels between asset classes has also increased as diversification benefits reduce. Many commentators expect this to continue throughout the remainder of this year.

#### **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)1937 841434 (e-mail: [nick.kent@portfolioevaluation.net](mailto:nick.kent@portfolioevaluation.net)) or visit our website at [www.portfolioevaluation.net](http://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 30<sup>th</sup> September 2019

**QUARTERLY SUMMARY:**      **Worcestershire County Council Pension Fund Return: 2.3%**      **Benchmark Return: 2.3%**      **Excess Return: 0.0%**

- The Fund invested approximately 11% of its assets in the new LGPSC Equity Emerging Markets Fund at the beginning of this quarter. This was primarily funded by disinvesting from the Equity Emerging Markets Funds managed by JP Morgan and Schroders. The LGPSC Equity Emerging Markets Fund was transitioning assets from the beginning of July and went live on the 19<sup>th</sup> July. Please note that for reporting purposes the LGPSC Emerging Markets Fund has been measured from the 19<sup>th</sup> July whilst the period from 2<sup>nd</sup> July to the 19<sup>th</sup> July is shown as a transition portfolio.
- All primary asset classes achieved similar returns (between 1.8% and 2.3%) over the quarter. Within equities the Alternatives section was the highest performer. Over the quarter the Nomura portfolio (Far East Equities), EQT mid-market credit, Walton (property), Hermes II (infrastructure) and First State were the notable outperformers. The primary underperformer was the Equity Emerging Markets portfolio group; however it should be noted that this group was in transition in July. The other significant underperformers were the Invesco property funds, Green Bank (UK Infrastructure) and the bond portfolio underpinning the Equity Protection Overlay (EPO).
- Over the quarter the EPO portfolio had an overall return of 0.1% and improved the overall equity return by 0.2%.
- Over the quarter the Fund outperformed marginally (less than 5 bps) due to the EPO, excluding the EPO the Fund would have underperformed slightly; the same pattern is evident for the equity totals. The Fund had positive excess return from asset allocation due to being overweight equities (higher performing sub asset classes when compared to the Total Fund benchmark). In terms of stock selection attribution the overall contribution to excess return was neutral (i.e. 0) and the only significant positive contributor was the Nomura Far East equity portfolio.
- All index funds tracked their benchmarks as expected.
- The latest valuation data supplied by VENN, Walton Street I, Green, EQT, Invesco Real Estate UK Residential Fund and Stonepeak was for period ending June 2019.

**YEAR SUMMARY:**      **Worcestershire County Council Pension Fund      Return: 5.7%**      **Benchmark Return: 6.3%**      **Excess Return: -0.6%**

- Over the year the Fund has generated a return of 5.7% underperforming its benchmark by -0.6%; when excluding the equity options overlay, the Total Fund underperformed by -0.7% (i.e. the EPO strategy has added value). Over the year bonds have been the strongest performer followed by Infrastructure, Property and finally Equities.
- Stock selection was the dominant contributor of the underperformance over the year due primarily to the underperforming Emerging Equity Market portfolios this quarter (this group was in transition mode from mid-June to mid-July).
- Asset allocation was a negative contributor over the year via the overweight exposure to the low returning Active Equity portfolios;
- Overall whilst providing a positive boost to the Equity return of the Fund the EPO, because no benchmark has been assigned and the gilts used as collateral has been a drag on Fund performance, as it has a lower return than other asset groups. However it has provided excess return in the relevant markets and has lowered Fund volatility i.e. it is performing as expected.
- All index funds tracked their benchmarks as expected.

**THREE YEAR SUMMARY AND LONGER:**      **Worcestershire County Council Pension Fund      Return: 8.7%**      **Benchmark Return: 8.8%**      **Excess Return: -0.1%**

- Over the three year period, the Fund has generated a return of 8.7% and has underperformed the benchmark by -0.1%. It should be noted that there has been a significant number of new mandates established in that timeline especially in the property and infrastructure asset classes. Additionally an equity protection overlay program (EPO) has been started and recently the EMM equity portfolio has been restructured.
- The EPO has reduced overall performance because equity markets have continued to rise over the last few years; however Fund volatility has reduced. In effect the EPO is performing as expected given its mandate and structure.
- The Total Risk and Active risk are 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: £2.9bn

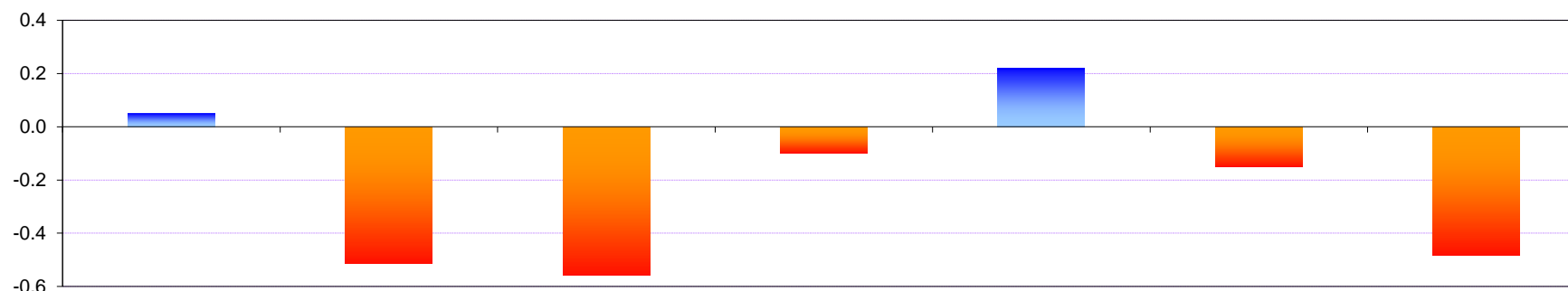
## Total Fund Overview

### Worcestershire CC Pension Fund

#### Report Period: Quarter Ending September 2019



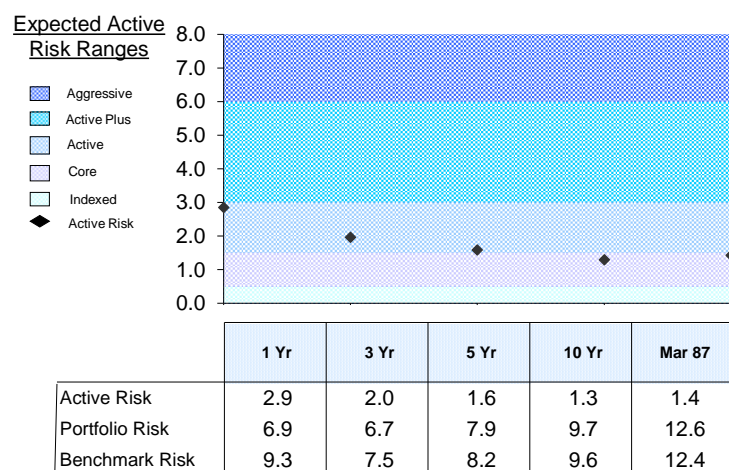
#### Excess Return Analysis (%)



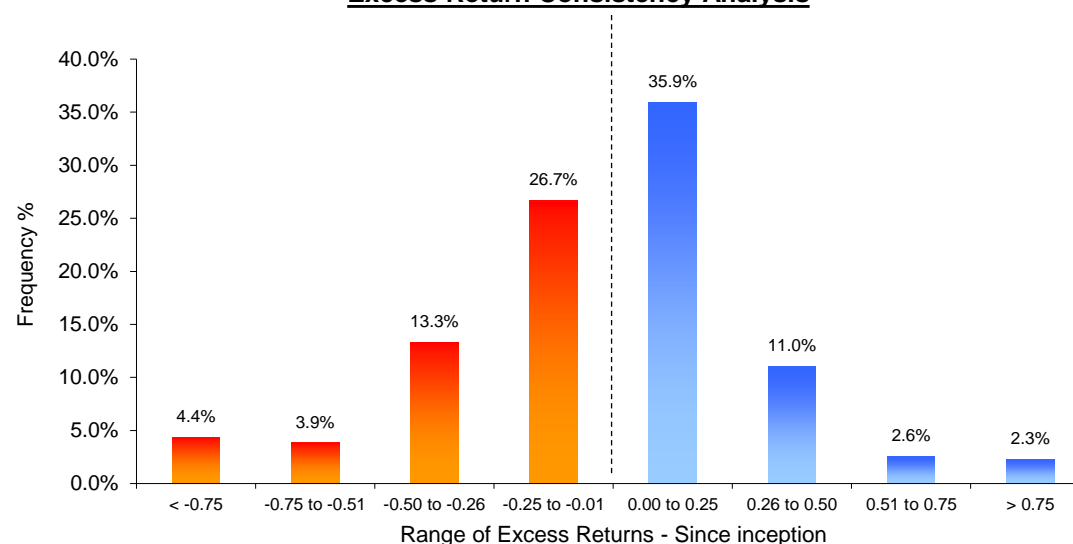
	QTR	YTD	1 Yr	3 Yr	5 Yr	10Yr	Since Mar 87 (p.a.)
Excess Return	0.0	-0.5	-0.6	-0.1	0.2	-0.1	-0.5
Portfolio Return	2.3	6.4	5.7	8.7	9.8	9.1	8.1
Benchmark Return	2.3	6.9	6.3	8.8	9.5	9.2	8.6

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

#### 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 September 2019**



Market Value: £2.9bn



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 September 2019**



Market Value: £2.9bn

	Total Fund	Total Fund ex Overlay	Total Equity	Total Equity ex Overlay	Total Active	Far East Dev - Nomura	EMM - LGPS C	EMM - JPM	EMM - Schroder	Transition	Total Passive	UK - L&G	North American - L&G	Europe ex UK - L&G	Total Alts	FTSE RAFI DEV - L&G	MSCI Wild Min Vol - L&G	MSCI Wild Qual - L&G	R&M EPO	R&M EPO ex Overlay	Corp Bond - JPM	EQT Mid-Mkt Credit II	Total Property	Total UK Property	UK Prop - Invesco	UK Prop - VENN	US Prop - Walton Street	US Prop - Walton Street II	Euro Prop - Invesco	Prop - AEW	Total Infra	UK Infra - Green	UK Infra Core - Hermes	UK Infra - Hermes II	Infra Core - Stonepeak	First State																								
Returns Summary (%)																																																												
	Excess Return	-0.6	-0.7	-0.3	-0.4	-1.4	0.4	-0.5	-3.3	-1.5	-1.8	0.7	0.0	0.0	-0.2	-0.6	0.0	0.0	-0.1	4.5	1.7	0.4	1.5	-2.5	-1.7	-11.7	0.0	5.4	0.6	-4.7	-0.7	-0.7	1.3	-2.5	-9.3	12.4	18.1																							
	Portfolio Return	5.7	5.5	5.5	5.4	3.0	2.1	-3.7	6.1	8.0	1.0	6.1	2.7	10.4	6.0	10.5	5.1	16.3	11.9	4.5	1.7	10.1	8.0	4.6	7.3	-2.7	9.1	11.9	2.3	1.8	8.1	8.1	8.9	5.9	-0.8	24.4	27.1																							
	Benchmark Return	6.3	6.3	5.8	5.8	4.4	1.6	-3.2	9.4	9.4	2.8	5.4	2.7	10.4	6.2	11.2	5.2	16.3	12.0	0.0	0.0	9.7	6.5	7.1	9.0	9.0	9.0	6.5	1.7	6.5	8.7	8.7	7.6	8.4	8.5	12.0	9.0																							
Asset Allocation Summary (%)																																																												
	Net Exposure Start	100.0	100.0	85.9	85.9	28.2	15.8	0.0	5.8	6.6	0.0	34.4	15.0	12.2	7.2	15.4	6.1	4.5	4.9	7.8	0.0	5.0	0.2	4.7	0.0	0.0	1.0	0.5	0.0	2.5	0.7	4.2	1.8	1.4	0.2	0.3	0.6																							
	Portfolio End	100.0	99.5	80.0	79.5	25.9	14.4	11.5	0.0	0.0	0.0	30.7	12.7	11.5	6.5	15.5	5.8	4.7	5.0	7.8	7.4	5.3	0.5	6.0	2.3	1.4	0.9	0.6	0.0	2.4	0.7	8.3	1.7	1.7	1.4	2.1	1.4																							
	Benchmark Start	100.0	100.0	81.0	81.0	24.0	12.0	0.0	6.0	6.0	0.0	47.0	26.5	11.0	9.5	10.0	3.3	3.3	3.3	0.0	0.0	9.6	0.4	4.7	0.0	0.0	1.0	0.5	0.0	2.5	0.7	4.2	1.8	1.4	0.2	0.3	0.6																							
Benchmark End	100.0	100.0	75.7	75.7	24.0	12.0	12.0	0.0	0.0	0.0	41.7	21.2	11.0	9.5	10.0	3.3	3.3	3.3	0.0	0.0	9.2	0.8	6.0	2.3	1.4	0.9	0.6	0.0	2.4	0.7	8.3	1.7	1.7	1.4	1.4	2.1																								
Attribution to Excess Return (%)																																																												
	Excess Return	-0.6	-0.7	-0.3	-0.5	-0.6	-0.1	0.0	-0.3	-0.2	0.0	0.3	0.4	0.0	0.0	0.1	0.0	0.1	0.1	-0.2	-0.4	-0.2	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.1	-0.1																							
	Asset Allocation	-0.5	-0.4	-0.3	-0.2	-0.1	-0.2	0.0	0.0	0.0	0.0	0.3	0.4	0.0	0.0	0.1	0.0	0.1	0.1	-0.7	-0.5	-0.2	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	0.1	-0.1																							
	Stock Selection	-0.1	-0.4	0.1	-0.3	-0.4	0.1	0.0	-0.3	-0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.2	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0																							



**Attribution to Total Fund Excess Return Analysis - Unannualised**  
**Worcestershire County Council Pension Fund**  
**for 3 Year Ended 30th September 2019**

Market Value: £2.9bn

		Total Fund	Total Fund ex Overlay	Total Equity	Total Equity ex Overlay	Total Active	Far East Dev - Nomura	EMM - LGPS C	EMM - JPM	EMM - Schroder	Transition	Total Passive	UK - L&G	North American - L&G	Europe ex UK - L&G	Total Alts	FTSE RAFI DEV - L&G	MSCI Wld Min Vol - L&G	MSCI Wld Qual - L&G	R&M EPO	R&M EPO ex Overlay	Corp Bond JPM	EQT Mid-Mkt Credit II	Total Property	Total UK Property	UK Prop - Invesco	UK Prop - VENN	US Prop - Walton Street	US Prop - Walton Street II	Euro Prop - Invesco	Prop - AEW	Total Infra	UK Infra - Green	UK Infra - Core - Hermes	UK Infra - Hermes II	Infra Core - Stonepeak	First State				
Returns Summary (%)																																									
	Excess Return	-0.3	-0.1	-1.5	-1.1	1.2	2.0	-0.5	-2.6	5.2	-1.8	1.7	0.7	0.2	-0.7	-1.8	-0.3	0.1	-0.6	-0.3	-6.5	1.7	6.2	-0.7	-4.0	-14.1	11.0	5.9	0.6	-5.0	-1.7	-2.4	-0.1	-7.4	-15.5	-18.4	20.2				
	Portfolio Return	28.3	28.5	30.1	30.5	28.5	28.9	-3.7	27.5	35.2	1.0	32.9	22.4	52.7	32.7	41.4	36.3	39.2	53.1	-0.3	-6.5	11.1	14.9	22.1	7.3	-2.7	40.6	26.7	2.3	15.8	11.7	24.6	24.5	20.0	-4.0	3.6	32.4				
	Benchmark Return	28.6	28.6	31.6	31.6	27.3	26.9	-3.2	30.0	30.0	2.8	31.2	21.7	52.5	33.4	43.2	36.6	39.1	53.7	0.0	0.0	9.4	8.7	22.8	11.4	11.4	29.5	20.8	1.7	20.8	13.4	26.9	24.6	27.4	11.5	21.9	12.2				
Asset Allocation Summary (%)																																									
	Net Exposure Start																																								
	Net Exposure End																																								
	Portfolio Start	100.0	100.0	85.9	85.9	28.8	16.0	0.0	6.1	6.6	0.0	44.7	27.6	11.3	5.8	12.4	3.7	4.5	4.3	0.0	0.0	6.2	0.0	4.5	0.0	0.0	1.2	0.3	0.0	3.0	0.0	3.3	1.6	1.7	0.0	0.0	0.0				
Portfolio End	100.0	99.5	80.0	79.5	25.9	14.4	11.5	0.0	0.0	0.0	30.7	12.7	11.5	6.5	15.5	5.8	4.7	5.0	7.8	7.4	5.3	0.5	6.0	2.3	1.4	0.9	0.6	0.0	2.4	0.7	8.3	1.7	1.7	1.4	2.1	1.4					
Benchmark Start	100.0	100.0	82.2	82.2	24.0	12.0	0.0	6.0	6.0	0.0	48.2	27.7	11.0	9.5	10.0	3.3	3.3	3.3	0.0	0.0	10.0	0.0	4.5	0.0	0.0	1.2	0.3	0.0	3.0	0.0	3.3	1.6	1.7	0.0	0.0	0.0					
Benchmark End	100.0	100.0	75.7	75.7	24.0	12.0	12.0	0.0	0.0	0.0	41.7	21.2	11.0	9.5	10.0	3.3	3.3	3.3	0.0	0.0	9.2	0.8	6.0	2.3	1.4	0.9	0.6	0.0	2.4	0.7	8.3	1.7	1.7	1.4	1.4	2.1					
Attribution to Excess Return (%)																																									
	Excess Return	-0.3	-0.1	-1.1	-0.9	0.1	0.2	0.0	-0.3	0.2	0.0	0.1	0.4	0.0	-0.3	0.4	0.1	0.1	0.2	-1.8	-1.5	0.9	0.0	0.0	0.1	0.0	0.1	0.0	0.0	-0.1	0.0	-0.1	0.0	0.1	-0.1						
	Asset Allocation	-0.4	0.2	-1.2	-0.6	-0.2	-0.1	0.0	-0.1	0.0	0.0	-0.1	0.2	0.0	-0.3	0.5	0.1	0.1	0.3	-1.4	-0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	-0.1					
	Stock Selection	0.1	-0.3	0.1	-0.3	0.3	0.3	0.0	-0.2	0.2	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	-0.4	-0.7	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	-0.1	0.0	-0.1	0.0	0.0	0.0	0.0					

**Manager Return Analysis**  
**Worcestershire County Council Pension Fund**  
**for Period Ended 30th September 2019**

Market Value: £2.9bn

					QTR			Year To Date			1 Year			3 Year			5 Year			10 Year			Since Inception		
	Benchmark	Incep Date	Market Value (£m)	Weight	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	2,345.6	80.0	2.4	2.3	0.0	6.7	7.5	-0.8	5.5	5.8	-0.3	9.2	9.6	-0.4	0.0	0.0	0.0	0.0	0.0	0.0	13.0	13.1	-0.1
Total Equity Fund ex Overlay	Client Specific Weighted Index	Mar-16	2,331.3	79.5	2.2	2.3	-0.1	7.2	7.5	-0.3	5.4	5.8	-0.4	9.3	9.6	-0.3	0.0	0.0	0.0	0.0	0.0	0.0	13.0	13.1	0.0
Total Active Equity Fund	Client Specific Weighted Index	Mar-16	759.3	25.9	1.3	1.3	-0.1	5.9	5.3	0.6	3.0	4.4	-1.4	8.7	8.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	14.2	13.4	0.8
Far East Developed Fund - Nomura	FTSE Developed Asia Pacific Index	Feb-03	423.1	14.4	4.9	3.1	1.8	9.4	7.4	2.0	2.1	1.6	0.4	8.8	8.3	0.6	11.8	11.1	0.8	9.0	8.5	0.5	10.5	10.4	0.1
Emerging Markets Fund - LGPSC	FTSE All World Emerging Market Index	Jul-19	336.2	11.5	-3.7	-3.2	-0.5															-3.7	-3.2	-0.5	
Emerging Markets Fund - JPM	FTSE All World Emerging Market Index	Dec-11	0.0	0.0	0.0	1.6	-1.6	4.4	5.5	-1.0	6.1	9.4	-3.3	8.9	9.7	-0.8	9.5	9.5	0.0				7.7	7.8	-0.1
Emerging Markets Fund- Schroder	FTSE All World Emerging Market Index	Oct-11	0.0	0.0	0.0	1.6	-1.6	5.5	5.5	0.0	8.0	9.4	-1.5	11.2	9.7	1.5	11.2	9.5	1.7				9.1	7.2	1.9
Transition Fund	FTSE All World Emerging Market Index	Jul-19	0.0	0.0	1.0	2.8	-1.8															1.0	2.8	-1.8	
Total Passive Equity Fund	Client Specific Weighted Index	Mar-16	900.5	30.7	2.7	2.3	0.4	8.5	7.7	0.8	6.1	5.4	0.7	9.9	9.5	0.5							12.9	12.3	0.6
UK Equity Fund - L&G	FTSE All Share Index	Dec-15	373.4	12.7	1.3	1.3	0.0	4.6	4.6	0.0	2.7	2.7	0.0	7.0	6.8	0.2							9.8	9.6	0.2
North American Equity Fund- L&G	FTSE All World North American Index	Dec-15	337.2	11.5	4.9	4.9	0.0	12.1	12.1	0.0	10.4	10.4	0.0	15.2	15.1	0.1							18.7	18.7	0.0
Europe ex UK Equity Fund- L&G	FTSE Developed Europe Ex. UK Index	Dec-15	189.9	6.5	1.5	1.5	0.0	10.3	10.5	-0.2	6.0	6.2	-0.2	9.9	10.1	-0.2							12.4	12.7	-0.2
Total Alternatives Fund	Client Specific Weighted Index	Mar-16	455.7	15.5	4.9	5.0	-0.1	11.5	11.8	-0.2	10.5	11.2	-0.6	12.2	12.7	-0.5							15.3	15.7	-0.4
FTSE RAFI DEV Fund - L&G	FTSE RAFI Developed 1000 QSR Net Index	Dec-15	170.7	5.8	3.5	3.5	0.0	9.4	9.4	0.0	5.1	5.2	0.0	10.9	11.0	-0.1							14.9	15.0	-0.1
MSCI World Min Vol TR Fund - L&G	MSCI World Minimum Volatility Net Index	Dec-15	138.6	4.7	6.6	6.5	0.1	14.0	13.9	0.0	16.3	16.3	0.0	11.7	11.6	0.0							16.9	16.9	0.0
MSCI World Quality TR Fund - L&G	MSCI World Quality Total Return Net Index	Dec-15	146.3	5.0	5.0	5.0	0.0	11.8	11.9	0.0	11.9	12.0	-0.1	15.3	15.4	-0.1							18.3	18.4	-0.1
Equity Protection - River & Mercantile		Jan-18	230.2	7.8	0.1	0.0	0.1	-5.1	0.0	-5.1	4.5	0.0	4.5										-0.1	0.0	-0.1
Equity Protection - River & Mercantile ex Overlay		Jan-18	215.8	7.4	-1.2	0.0	-1.2	-1.0	0.0	-1.0	1.7	0.0	1.7										-3.8	0.0	-3.8
Corporate Bond Fund- JPM	Barclays Capital Global Aggregate - Ex Treasury, Ex Government Related 100% Hedged to GBP	Mar-03	154.8	5.3	2.4	2.3	0.1	6.2	5.7	0.4	10.1	9.7	0.4	3.6	3.0	0.5	4.3	3.9	0.5	5.7	5.2	0.5	5.3	5.4	-0.1
EQT Mid-Market Credit II	Absolute Return + 6.5%	May-18	13.8	0.5	6.6	1.6	5.0	5.9	3.2	2.7	8.0	6.5	1.5										10.7	6.8	4.0
Total Property Fund	Client Specific Weighted Index	Mar-16	176.5	6.0	1.1	1.8	-0.7	3.6	3.6	0.0	4.6	7.1	-2.5	6.9	7.1	-0.2							8.2	7.1	1.1
Total UK Property Fund	Absolute Return +9%	Jul-18	68.2	2.3	1.6	2.2	-0.6	2.6	4.4	-1.8	7.3	9.0	-1.7										7.3	9.0	-1.7
UK Property Fund - Invesco	Absolute Return +9%	Oct-18	40.7	1.4	0.9	2.2	-1.3	-2.7	4.4	-7.1	-2.7	9.0	-11.7										-2.7	9.0	-11.7
UK Property Fund - VENN	Absolute Return +9%	Jul-15	27.5	0.9	2.5	2.2	0.4	3.9	4.4	-0.5	9.1	9.0	0.0	12.0	9.0	3.0							10.5	9.2	1.4
US Property Fund- Walton Street GBP	Absolute Return + 6.5%	Feb-16	16.2	0.6	4.1	1.6	2.5	3.7	3.2	0.5	11.9	6.5	5.4	8.2	6.5	1.7							12.6	6.2	6.4
US Property Fund- Walton Street USD	N/A	Feb-16	N/A	N/A	1.8	0.0	1.8	3.8	0.0	3.8	8.1	0.0	8.1	7.6	0.0	7.6							8.6	0.0	8.6
US Property Fund- Walton Street II GBP	Absolute Return + 7.0%	Jun-19	1.6	0.1	2.3	1.7	0.6																2.3	1.7	0.6
Euro Property Fund- Invesco	Absolute Return + 6.5%	Feb-16	70.5	2.4	-0.1	1.6	-1.7	3.7	3.2	0.5	1.8	6.5	-4.7	5.0	6.5	-1.5							7.6	6.3	1.3
Property Fund- AEW	Absolute Return + 6.5%	Oct-17	19.9	0.7	1.4	1.6	-0.2	3.7	3.2	0.5	5.2	6.5	-1.3										5.7	6.5	-0.8
Total Infrastructure Fund	Client Specific Weighted Index	Mar-16	242.1	8.3	2.8	2.1	0.8	5.1	4.3	0.8	8.1	8.7	-0.7	7.6	8.3	-0.7							7.3	8.2	-1.0
UK Infrastructure Fund - Green	Absolute Return +7.6%	Apr-15	49.1	1.7	-0.5	1.8	-2.3	3.3	3.7	-0.5	8.9	7.6	1.3	7.6	7.6	0.0							6.0	7.6	-1.6
UK Infrastructure Core Fund - Hermes	Absolute Return +8.4%	May-15	48.9	1.7	2.3	2.0	0.2	3.7	4.1	-0.4	5.9	8.4	-2.5	6.3	8.4	-2.1							6.9	8.4	-1.5
UK Infrastructure Fund - Hermes II	Absolute Return +8.5%	Jun-18	41.4	1.4	5.3	2.1	3.3	5.5	4.2	1.3	-0.8	8.5	-9.3										-3.1	8.8	-11.8
Infrastructure Core Fund - Stonepeak	Absolute Return +12%	Jan-18	60.7	2.1	1.5	2.9	-1.4	1.9	5.8	-3.9	24.4	12.0	12.4										2.0	12.0	-10.0
First State Fund	Absolute Return +9%	Jun-18	42.1	1.4	22.4	2.2	20.3	25.0	4.4	20.6	27.1	9.0	18.1										24.1	9.3	14.9
Worcestershire CC Total Fund ex Overlay		Mar-87	2,918.4	100.0	2.2	2.3	-0.1	6.8	6.9	-0.1	5.5	6.3	-0.7	8.7	8.8	0.0	9.8	9.5	0.3	9.1	9.2	-0.1	8.1	8.6	-0.5
Worcestershire CC Total Fund		Mar-87	2,932.8	100.0	2.3	2.3	0.0	6.4	6.9	-0.5	5.7	6.3	-0.6	8.7	8.8	-0.1	9.8	9.5	0.2	9.1	9.2	-0.1	8.1	8.6	-0.5

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

<b>Total Fund Benchmark</b>	<b>CLIENT SPECIFIC BM AS AT JUNE 2017:</b>	<b>Notes:</b>
	25.5% FTSE All Share	Q3 2019:
	9.5% FTSE Developed Europe Ex UK	- Disinvested from Schroders Emerging Market Equity Fund as at 1st July 2019
	12% FTSE All World Emerging Markets	- Disinvested from JP Morgan Emerging Market Equity Fund as at 1st July 2019
		- Invested into the LGPSC Emerging Market Fund as at 19th July 2019
		- Assets from JP Morgan and Schroders moved to transition Fund COB 1st July, assets then moved to LGPS Central COB 18th July
		Therefore the returns for the above are partial period returns
	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	Q2 2019: Invested into the Walton Street US Property Fund II on 28/06/2019 and the inclusion of Equity Protection - River & Mercantile ex Overlay which follows in the Total Equity and Total Fund
	11% FTSE All World North America	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 .
	12% FTSE Developed Asia Pacific	Fees/fund charges have been taken into account for the Total Fund return. Fees were found within the data for Hermes in July and L&G for August. The fees applied may not be final or all of the fees for Worcestershire CC Total Fund Portfolio.
Corp Bonds: 10% Barclays Global Agg Corporate Bond HEDGED into GBP		Total Infrastructure and Total Property are measured against a weighted index of the funds underlying benchmarks.
Infrastructure: Weighted Client Specific Index		Historic data up to and including 31.03.2016 has been provided by the WM Co and L&G.
Property: Weighted Client Specific Index		

**Total Fund Reconciliation Analysis**  
**Worcestershire County Council Pension Fund**  
**for Quarter Ended 30th September 2019**



Market Value: £2.9bn

	30th Jun 2019		Net Investment (£000s)	Total Income (£000s)	Total Gain/Loss (£000s)	30th Sept 2019	
	Market Val (£000s)	Exposure (%)				Market Val (£000s)	Exposure (%)
<b>Total Equity Fund</b>	<b>2,328,901</b>	<b>81.2</b>	<b>-38,333</b>	<b>4,940,021</b>	<b>55,074</b>	<b>2,345,642</b>	<b>80.0</b>
<b>Total Equity Fund ex Overlay</b>	<b>2,330,555</b>	<b>81.2</b>	<b>-38,333</b>	<b>4,940,021</b>	<b>39,080</b>	<b>2,331,302</b>	<b>79.5</b>
<i>Total Active Equity Fund</i>	777,324	27.1	-28,333	0	10,286	759,277	25.9
Far East Developed Fund - Nomura	403,065	14.1	0	0	20,042	423,106	14.4
Emerging Markets Fund - LGPSC	0	0.0	349,212	0	-13,041	336,171	11.5
Emerging Markets Fund - JPM	173,103	6.0	-173,103	0	0	0	0.0
Emerging Markets Fund- Schroder	201,156	7.0	-201,156	0	0	0	0.0
Transition	0	0.0	-3,286	0	3,286	0	0.0
<i>Total Passive Equity Fund</i>	887,184	30.9	-10,000	0	23,340	900,523	30.7
UK Equity Fund - L&G	378,827	13.2	-10,000	0	4,557	373,384	12.7
North American Equity Fund- L&G	321,338	11.2	0	0	15,895	337,233	11.5
Europe ex UK Equity Fund- L&G	187,019	6.5	0	0	2,888	189,907	6.5
<i>Total Alternatives Fund</i>	434,448	15.1	0	0	21,222	455,670	15.5
FTSE RAFI DEV Fund - L&G	165,005	5.8	0	0	5,716	170,721	5.8
MSCI World Min Vol TR Fund - L&G	130,062	4.5	0	0	8,568	138,630	4.7
MSCI World Quality TR Fund - L&G	139,381	4.9	0	0	6,938	146,319	5.0
<i>Equity Protection - River &amp; Mercantile</i>	229,945	8.0	0	4,940	226	230,172	<b>7.8</b>
<i>Equity Protection - River &amp; Mercantile ex Overlay</i>	231,599	8.1	0	4,940	-15,768	215,831	<b>7.4</b>
<b>Corporate Bond Fund- JPM</b>	<b>151,119</b>	<b>5.3</b>	<b>0</b>	<b>0</b>	<b>3,664</b>	<b>154,783</b>	<b>5.3</b>
<b>EQT Mid-Market Credit II</b>	<b>12,928</b>	<b>0.5</b>	<b>0</b>	<b>0</b>	<b>849</b>	<b>13,777</b>	<b>0.5</b>
<b>Total Property Fund</b>	<b>177,217</b>	<b>6.2</b>	<b>-1,861</b>	<b>923</b>	<b>1,100</b>	<b>176,456</b>	<b>6.0</b>
<i>Total UK Property Fund</i>	67,250	2.3	-78	0	1,056	68,228	2.3
UK Property Fund - Invesco	40,134	1.4	220	0	368	40,722	1.4
UK Property Fund - VENN	27,116	0.9	-298	0	688	27,506	0.9
US Property Fund- Walton Street	17,307	0.6	-1,783	0	713	16,238	0.6
US Property Fund- Walton Street II	1,571	0.1	0	0	37	1,608	0.1
Euro Property Fund- Invesco	71,261	2.5	0	667	-731	70,530	2.4
Property Fund- AEW	19,827	0.7	0	255	25	19,853	0.7
<b>Total Infrastructure Fund</b>	<b>198,619</b>	<b>6.9</b>	<b>37,847</b>	<b>0</b>	<b>5,650</b>	<b>242,116</b>	<b>8.3</b>
UK Infrastructure Fund - Green	50,198	1.7	-856	0	-244	49,098	1.7
UK Infrastructure Core Fund - Hermes	47,908	1.7	-64	0	1,085	48,929	1.7
UK Infrastructure Fund - Hermes II	27,538	1.0	12,363	0	1,465	41,366	1.4
Infrastructure Core Fund - Stonepeak	10,860	0.4	-2,358	0	52,162	60,664	2.1
First State Fund	62,116	2.2	28,763	0	-48,818	42,060	1.4
<b>Cash Fund</b>	<b>0</b>	<b>0.0</b>	<b>2,347</b>	<b>0</b>	<b>-2,347</b>	<b>0</b>	<b>0.0</b>
<b>Worcestershire CC Total Fund ex Overlay</b>	<b>2,870,438</b>	<b>100.1</b>	<b>0</b>	<b>5,863</b>	<b>47,996</b>	<b>2,918,434</b>	<b>99.5</b>
<b>Worcestershire CC Total Fund</b>	<b>2,868,784</b>	<b>100.0</b>	<b>0</b>	<b>5,863</b>	<b>63,990</b>	<b>2,932,774</b>	<b>100.0</b>

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