



# London Borough of Hillingdon

---

## Investment Risk & Analytical Services

September 30, 2018

# Table of Contents

---

<b>Section 1. London Borough of Hillingdon</b>	3
1.1. <u>Client Commentary</u>	3
1.2. <u>Client Commentary (cntd)</u>	4
1.3. <u>Executive Summary</u>	5
1.4. <u>Investment Hierarchy</u>	6
1.5. <u>Investment Hierarchy(2)</u>	7
1.6. <u>Market Value Summary - Three Months</u>	8
1.7. <u>Historical Performance</u>	9
1.8. <u>Benchmark Composition</u>	13
<b>Section 2. Appendix</b>	14
2.1. <u>Disclaimer(s)</u>	14

## Client Commentary

### Total Scheme Commentary

September ended a relatively quiet quarter by recent standards, possibly heralding the storm to come with a period of relative calm. Other than the ongoing US vs China trade war in which the US has emplaced tariffs on \$250bn of goods vs Chinese tariffs on \$110bn of imports and escalating situations in Emerging Markets, some extreme weather across the globe was the main talking point.

The divergence between US Equity markets and those of Europe and the Emerging Countries is significant and increasing.

The UK economy remained on a steady upward trajectory during the July-September period, albeit tempered by mounting concerns over the potential impact of a no-deal Brexit. The IHS Markit/CIPS Manufacturing PMI saw a mild improvement in September, rising to 53.8 from an upwardly revised 53.0 in August. Demand for UK exports staged a small recovery as manufacturers experienced more demand from the US and Europe. Nevertheless conditions remain challenging with Brexit concerns and heightened political uncertainty likely to impede stronger growth. Consumer price inflation unexpectedly accelerated to a six month high of 2.7% in August, pushed upwards by the rising cost of recreational goods, transport and clothes. In an attempt to cool the economy, the Bank of England voted unanimously for a milestone 25 basis point increase at its August meet, pushing the base rate to 0.75% and its highest level since March 2009. UK gilt yields climbed on the back of stronger than expected inflation data and a sell-off in dollar rates. The benchmark 10-year gilt hit a high of 1.63% before easing back to 1.57% at period end.

In the UK, Q3 2018 saw Sterling lose ground against the Dollar and Euro but strengthen slightly compared to the Yen. The Nationwide House Price Index showed the annual rate of house price growth in September at 2.0%, in line with the August figure. The North was the weakest performing region this quarter with prices down 1.7% year on year. The national average house price is now £214,922.

The UK unemployment rate came in at its lowest rate since 1975 at 4.0% in the three months to July 2018. This was in line with market expectations. The number of unemployed people between the ages of 16 and 65 is 1.36 million.

Within this environment the London Borough of Hillingdon returned +1.08% which was below the Total Plan benchmark of +1.45%. In monetary terms this is a gain in assets of £11.4 million and the value of the combined scheme now stands at £1,065 million as at 30<sup>th</sup> September 2018. Looking further into the analysis the results seen were caused by selection effects particularly within Epoch and UBS, these managers performed below their respective benchmark over quarter three. While Asset allocation effects overall were marginal over the 3 month period, the overweight position in Epoch did provide some boost to relative performance.

The Scheme's one year return of 5.63% is 1.14% behind the benchmark of 6.85% following four consecutive quarters of underperformance. While over the longer periods, with eleven positive quarters over the last 3 years, the Scheme has outperformed, producing a return of 10.69% over three year versus 10.41%. Then the excess marginally falls to 0.13% for the 5 year period where we see figures of 8.43% versus 8.28% per annum. Then since inception in September 1995, the Fund remains ahead of target by 9 basis points with an annualised return of 7.11% against a target of 7.02%.

### Manager Commentary

#### AEW UK

Over the third quarter AEW UK Property produced a growth of 1.05%, which was 0.54% below the IPD UK PPFI All Balanced Funds index figure of 1.60%. They remain ahead of target over the year, and continue to be ahead over the three year period returning 10.54% against the benchmark of 8.87%. This translates as a +1.53% relative return. With positive absolute returns in all but one period and only four quarters in the red on a relative basis, growth ahead of benchmark is seen since the fund inception. Since the funds inception date of July 2014, the fund return is 11.64%, leading to an outperformance of 1.75% when compared to the IPD figure of 9.72%.

#### JP Morgan

In the latest quarter JP Morgan posted a increase in assets of +4.52% leading to an outperformance of 0.85% when compared to the 3.64% target for the 3 Month LIBOR + 3% p.a. Then with positive results in only two of the last four quarters, the one year return of -0.06% is in negative territory and is behind the 3.70% target by 3.63%. Then over three and five years they post returns closer to the benchmark with figures of 4.52% vs 3.64% and 3.52% vs 3.63% respectively. Since the mandate funded their return of 3.63% is 3 basis points below the target return of 3.66% on an annualised basis.

#### Legal & General 1

Over the last three months the Legal & General No. 1 mandate post a return of +0.89% against +0.88% for the custom fixed weight blended benchmark, a marginal outperformance of +2 basis points. In the short period since inception in October 2016, they return 6.92%, which is below the benchmark return of 7.01%.

#### Legal & General 2

During February 2017 the Legal & General mandate was funded, now in its first full year of investment they post a return of 0.54% against 0.43% for the third quarter against the custom fixed weight blended benchmark consisting of FTSE Global Equity Hedged and Emerging Markets, FTSE Index Linked 15+ years and iBoxx UK Non-Gilts. In the short period since inception, they return 4.89% against 5.03% for the benchmark.

## Client Commentary (cntd)

### Manager Commentary

#### London CIV Ruffer

This quarter assets within the London CIV Ruffer portfolio saw a negative return at -0.33% when compared to the LIBOR 3 Month GBP figure of 0.22%, this leads to a relative return of -0.54%. This has dampened the results from quarter 2 and the one year period now shows a positive return of 2.01% against the target of 0.70%. Outperformance remains in the longer periods. This is seen in a three year return of 4.74% versus 0.63%, then similarly for the five years with figures of 4.57% against 0.64%, culminating in since inception (May 2010) figures of 5.38% versus 0.82% per annum, which translates as a relative return of 4.53%. This manager shows the largest outperformance of all the schemes managers over the since inception period.

#### M&G Investments

M&G posted a loss (albeit small) in Q3 by producing a return of -0.07% against the 3 Month LIBOR +4% p.a. target of 1.20%, demonstrating an underperformance of 1.25%. This is the second consecutive quarter of underperformance and the full year return now trails behind the benchmark by 2.70%, coming from figures of 1.87% against 4.70%. Over the three and five year the account registers figures of 9.26% vs 4.63% and 8.32% vs 4.62% respectively; since inception (May 2010) return falls slightly to 7.06% pa whilst the benchmark is 4.69% pa. Although the since inception Internal Rate of Return moves further ahead of target with a figure of 8.49% opposed to the comparator of 4.60%.

#### Macquarie

Over the last three months, Macquarie produced a growth of 3.53%, against the 0.95% for the 3 Month LIBOR +3% p.a. this translates as an outperformance of 2.55%. With twelve consecutive quarters of positive absolute and relative returns, outperformance is seen in all longer periods. Over the rolling year a growth of 14.57% beats the target of 3.70% by 10.49%, similarly the three year result of 18.27% versus 3.63% exhibits the best relative return at 14.13%. The annualised return over 5 years falls to 15.22%, but still ahead of the 3.62% seen for the benchmark; then since inception (September 2010) the 5.68% is ahead of the target of 3.68%. Although the since inception Internal Rate of Return for this portfolio jumps to 12.97%, which is ahead of the benchmark figure of 3.65%.

#### UBS

During Q3 the UBS UK Equity investments returned -1.80%, behind the -0.82% for the FTSE All Share. Looking into the attribution analysis this underperformance was a combined result of selection effects and allocation effects. The most significant being the selection decisions in Financials (-63bps) and Industrials (-62bps), while the largest positive impact comes from Telecommunications (+20 bps). Allocation effects also had a negative impact with the most significant being the underweighting in Health Care (-6 bps) as well as overweighting in Telecommunications (-6bps). The manager is now ahead over the one year, stemming from figures of 6.16% vs 5.87% translates as a relative return of +0.27%. This is largely attributable to allocation effects, the biggest impacts come from both underweighting Consumer Goods (+117bps) and overweighting Oil & Gas (+77 bps). The longer time periods show a positive picture, with three and five years ahead of the index, culminating in a since inception (January 1989) return of 10.18% versus 8.80% on an annualised basis

### Manager Commentary

#### Premira Credit

The Premira Credit Fund saw a growth of 1.19% over the third quarter of 2018, this was just behind the 3 Month LIBOR +4% p.a. target of 1.20%. The fund has outperformed in three of last four quarters and are still ahead of target, leading to an outperformance of 1.90%, created from figures of 6.69% against 4.70%. Then since the start of December 2014 when the fund incepted, the fund posts a return of 8.85% against the benchmark of 4.60%, leading to a relative position of 4.06%.

#### UBS Property

In contrast from the previous period, the latest quarter for the UBS Property posted an underperformance of -0.10%, generated from a return of 1.50% against the IPD UK PFI All Balanced Funds index of 1.60%. Over the one year the manager is in line with the index, with a full year return of +8.86% vs +8.87%. The previous good run of results particularly during 2015 leads to high absolute returns staying ahead of the IPD target over the longer periods, peaking over the five year with a return of 11.29% against 10.43%. Then since inception, in March 2006, the fund return falls to 4.13% per annum which manages to stay just ahead of the benchmark figure of 4.07%.

#### Private Equity

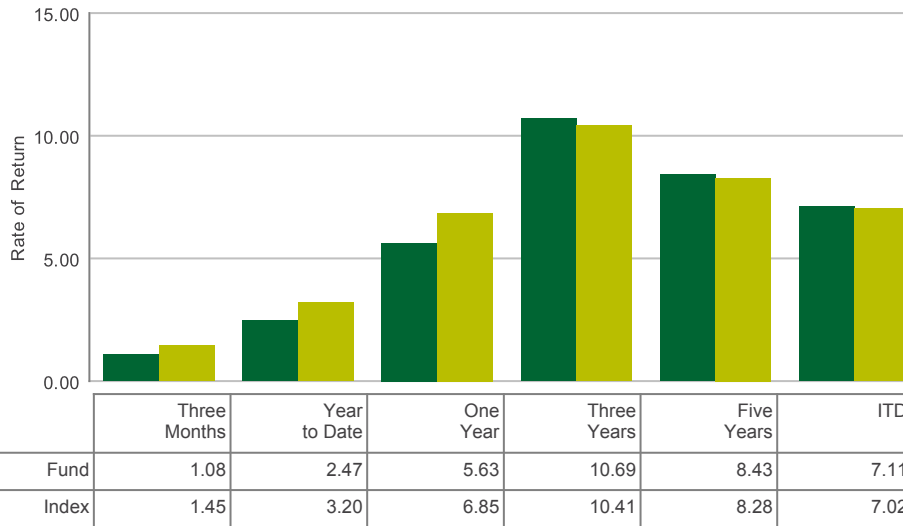
The private equity assets saw a 3.69% rise in value for LGT. Adam Street saw an increase of 4.99%. Over the longer periods, the outlook over which private equity investments should be measured, returns remain positive. LGT maintain a run of over 3 years of growth with figures of 20.06%, 23.14% and 17.92% for the one, three and five year periods respectively, while Adam Street posted 18.79%, 14.47% and 17.78% over the same periods. Although Adam St falls short of the proxy benchmark of MSCI AC World +4% p.a. over the three and five year period (which shows 23.89% and 18.00%). LGT also fall somewhat short over the three and five year underperforming by 60bps and 8bps respectively. Then since their respective inceptions in January 2005 and May 2004, Adam Street drops to 7.16% pa, while LGT sees a more modest dip to 11.55%.

#### Epoch

Over the third quarter the relatively new investment in Epoch's income equity fund generated a return of +4.59%. Since inception (November 2017) the fund has observed a rise in value +1.87% compared to the MSCI World figure of +8.91%, this leads to a relative return of -6.46%.

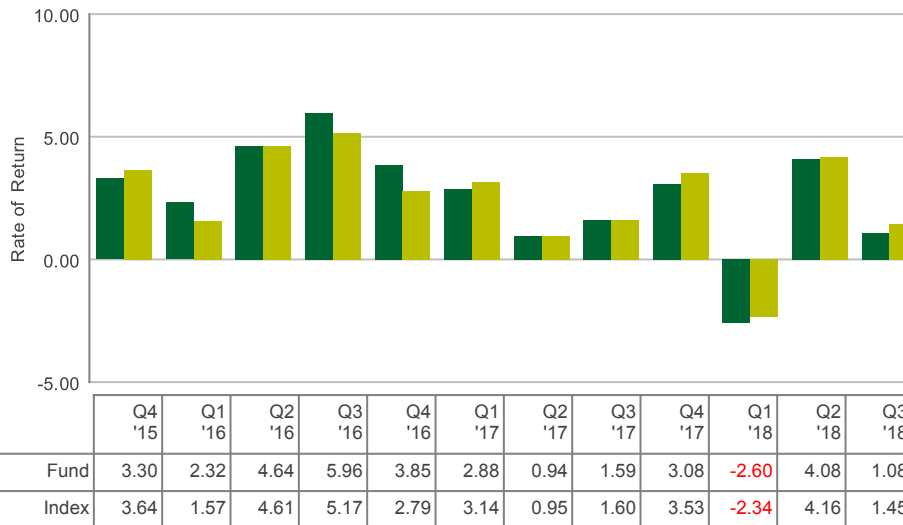
# Executive Summary

## LONDON BOROUGH OF HILLINGDON TOTAL FUND GROSS OF FEES



Index: Total Plan Benchmark

## LONDON BOROUGH OF HILLINGDON ROLLING QUARTERS TOTAL FUND GROSS OF FEES



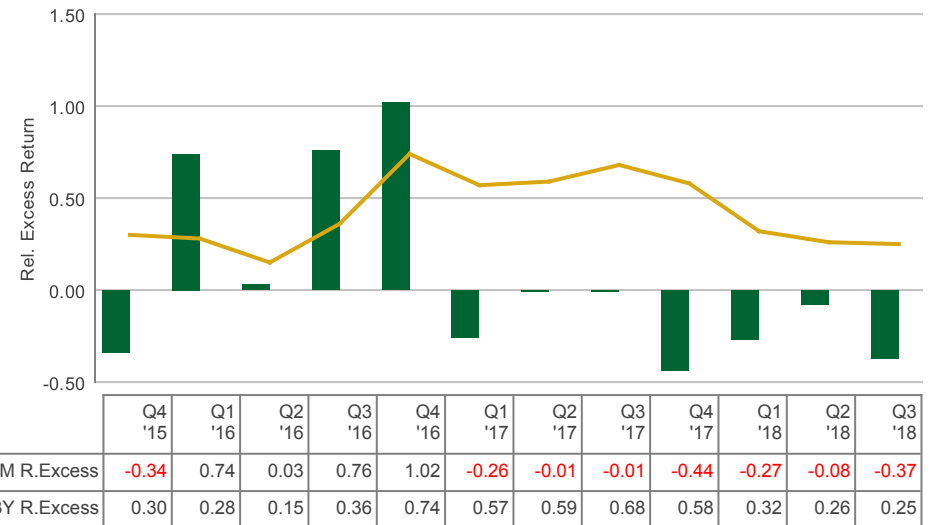
Index: Total Plan Benchmark

## RISK STATISTICS

	1 Yr	3 Yrs	5 Yrs
Return	5.63	10.69	8.43
Index Return	6.85	10.41	8.28
Relative Excess Return	-1.14	0.25	0.13
Standard Deviation	3.79	4.54	4.66
Index Standard Deviation	3.91	4.13	4.48
Tracking Error	1.12	1.25	1.09
Information Ratio	-1.09	0.22	0.13
Sharpe Ratio	1.31	2.21	1.68
Index Sharpe Ratio	1.57	2.37	1.71
Sortino Ratio	-	-	3.54
Treynor Ratio	5.34	9.51	7.72
Jensen's Alpha	-0.71	-0.27	0.07
Relative Volatility (Beta)	0.93	1.06	1.01
R Squared	0.92	0.93	0.95

Index: Total Plan Benchmark. Risk Free Index: JP Morgan 3 month Cash (GBP)  
Category: Total Fund Gross of Fees. Calculation Frequency: Monthly

## LONDON BOROUGH OF HILLINGDON ROLLING QUARTERS TOTAL FUND GROSS OF FEES



Index: Total Plan Benchmark

## Investment Hierarchy

Account/Group -% Rate of Return	Ending Market Value GBP	Ending Weight	Three Months			Year to Date			One Year		
			Port	Index	Relative Excess	Port	Index	Relative Excess	Port	Index	Relative Excess
<b>London Borough of Hillingdon</b>	<b>1,064,786,331</b>	<b>100.00</b>	<b>1.08</b>	<b>1.45</b>	<b>-0.37</b>	<b>2.47</b>	<b>3.20</b>	<b>-0.71</b>	<b>5.63</b>	<b>6.85</b>	<b>-1.14</b>
Total Plan Benchmark											
<b>AEW UK</b>	<b>57,057,176</b>	<b>5.36</b>	<b>1.05</b>	<b>1.60</b>	<b>-0.54</b>	<b>7.51</b>	<b>5.60</b>	<b>1.80</b>	<b>10.54</b>	<b>8.87</b>	<b>1.53</b>
LBH22 AEW Benchmark											
<b>JP Morgan</b>	<b>81,095,195</b>	<b>7.62</b>	<b>1.30</b>	<b>0.95</b>	<b>0.35</b>	<b>-0.82</b>	<b>2.85</b>	<b>-3.57</b>	<b>-0.06</b>	<b>3.70</b>	<b>-3.63</b>
LBH15 JPM LIBOR +3%pa											
<b>Legal &amp; General 1</b>	<b>242,384,488</b>	<b>22.76</b>	<b>0.89</b>	<b>0.88</b>	<b>0.02</b>	<b>1.46</b>	<b>1.60</b>	<b>-0.14</b>	<b>6.07</b>	<b>6.21</b>	<b>-0.13</b>
LBH26 L&G Benchmark											
<b>Legal &amp; General 2</b>	<b>97,688,102</b>	<b>9.17</b>	<b>0.54</b>	<b>0.43</b>	<b>0.11</b>	<b>-0.43</b>	<b>-0.49</b>	<b>0.07</b>	<b>4.12</b>	<b>4.06</b>	<b>0.06</b>
LBH27 L&G Benchmark											
<b>M&amp;G Investments</b>	<b>10,445,644</b>	<b>0.98</b>	<b>-0.07</b>	<b>1.20</b>	<b>-1.25</b>	<b>1.25</b>	<b>3.59</b>	<b>-2.26</b>	<b>1.87</b>	<b>4.70</b>	<b>-2.70</b>
LBH10 3 Month LIBOR +4%pa											
<b>Macquarie</b>	<b>27,934,674</b>	<b>2.62</b>	<b>3.53</b>	<b>0.95</b>	<b>2.55</b>	<b>12.00</b>	<b>2.85</b>	<b>8.90</b>	<b>14.57</b>	<b>3.70</b>	<b>10.49</b>
LBH14 Macquarie LIBOR +3%pa											
<b>Premira Credit</b>	<b>62,982,650</b>	<b>5.92</b>	<b>1.19</b>	<b>1.20</b>	<b>-0.01</b>	<b>4.90</b>	<b>3.59</b>	<b>1.26</b>	<b>6.69</b>	<b>4.70</b>	<b>1.90</b>
LBH24 Premira LIBOR +4%pa											
<b>UBS</b>	<b>139,750,694</b>	<b>13.12</b>	<b>-1.80</b>	<b>-0.82</b>	<b>-0.99</b>	<b>2.17</b>	<b>0.86</b>	<b>1.30</b>	<b>6.16</b>	<b>5.87</b>	<b>0.27</b>
LBH04 UBS Benchmark											
<b>UBS Property</b>	<b>76,924,973</b>	<b>7.22</b>	<b>1.50</b>	<b>1.60</b>	<b>-0.10</b>	<b>5.46</b>	<b>5.60</b>	<b>-0.13</b>	<b>8.86</b>	<b>8.87</b>	<b>-0.01</b>
LBH06 UBS Property Benchmark											
<b>Adam Street</b>	<b>13,078,032</b>	<b>1.23</b>	<b>4.99</b>	<b>6.55</b>	<b>-1.46</b>	<b>15.40</b>	<b>11.14</b>	<b>3.83</b>	<b>18.79</b>	<b>17.53</b>	<b>1.08</b>
Adam Street PE Bmark											
<b>LGT</b>	<b>5,605,104</b>	<b>0.53</b>	<b>3.69</b>	<b>6.55</b>	<b>-2.68</b>	<b>16.46</b>	<b>11.14</b>	<b>4.79</b>	<b>20.06</b>	<b>17.53</b>	<b>2.16</b>
LGT PE Bmark											
<b>Epoch Investment P Income</b>	<b>144,315,276</b>	<b>13.55</b>	<b>4.59</b>	<b>6.28</b>	<b>-1.60</b>	<b>2.80</b>	<b>9.37</b>	<b>-6.01</b>	<b>-</b>	<b>-</b>	<b>-</b>
LBH11001 MSCI World ND											
<b>London CIV Ruffer</b>	<b>105,308,406</b>	<b>9.89</b>	<b>-0.33</b>	<b>0.22</b>	<b>-0.54</b>	<b>-0.63</b>	<b>0.61</b>	<b>-1.23</b>	<b>2.01</b>	<b>0.70</b>	<b>1.30</b>
LBH11003 Ruffer BM Libor											

## Investment Hierarchy(2)

Account/Group -% Rate of Return	Three Years			Five Years			Inception to Date			Inception Date
	Port	Index	Relative Excess	Port	Index	Relative Excess	Port	Index	Relative Excess	
<b>London Borough of Hillingdon</b> Total Plan Benchmark	10.69	10.41	0.25	8.43	8.28	0.13	7.11	7.02	0.09	30/09/1995
<b>AEW UK</b> LBH22 AEW Benchmark	10.22	7.62	2.42	-	-	-	11.64	9.72	1.75	30/06/2014
<b>JP Morgan</b> LBH15 JPM LIBOR +3%pa	4.52	3.64	0.85	3.52	3.63	-0.11	3.63	3.66	-0.03	08/11/2011
<b>Legal &amp; General 1</b> LBH26 L&G Benchmark	-	-	-	-	-	-	6.92	7.01	-0.08	31/10/2016
<b>Legal &amp; General 2</b> LBH27 L&G Benchmark	-	-	-	-	-	-	4.89	5.03	-0.14	22/02/2017
<b>M&amp;G Investments</b> LBH10 3 Month LIBOR +4%pa	9.26	4.63	4.42	8.32	4.62	3.54	7.06	4.69	2.26	31/05/2010
<b>Macquarie</b> LBH14 Macquarie LIBOR +3%pa	18.27	3.63	14.13	15.22	3.62	11.20	5.68	3.68	1.93	30/09/2010
<b>Pemira Credit</b> LBH24 Pemira LIBOR +4%pa	2.71	4.63	-1.84	-	-	-	8.85	4.60	4.06	30/11/2014
<b>UBS</b> LBH04 UBS Benchmark	15.50	11.45	3.63	8.88	7.49	1.29	10.18	8.80	1.26	31/12/1988
<b>UBS Property</b> LBH06 UBS Property Benchmark	7.77	7.12	0.61	11.29	10.43	0.78	4.13	4.07	0.06	31/03/2006
<b>Adam Street</b> Adam Street PE Bmark	14.47	23.89	-7.60	17.78	18.00	-0.19	7.16	-	-	31/01/2005
<b>LGT</b> LGT PE Bmark	23.14	23.89	-0.60	17.92	18.00	-0.08	11.55	-	-	31/05/2004
<b>Epoch Investment P Income</b> LBH11001 MSCI World ND	-	-	-	-	-	-	1.87	8.91	-6.46	08/11/2017
<b>London CIV Ruffer</b> LBH11003 Ruffer BM Libor	4.74	0.63	4.08	4.57	0.64	3.91	5.38	0.82	4.53	28/05/2010

## Market Value Summary - Three Months

Account/Group	30/06/2018 Market Value	30/06/2018 Weight	Net Contribution*	Income	Fees	Appreciation	30/09/2018 Market Value	30/09/2018 Weight	Change in Weight
<b>London Borough of Hillingdon</b>	<b>1,053,934,020</b>	<b>100.00</b>	<b>-508,427</b>	<b>6,771,149</b>	<b>8,427</b>	<b>4,589,589</b>	<b>1,064,786,331</b>	<b>100.00</b>	<b>0.00</b>
AEW UK	56,463,582	5.36	0	0	0	593,594	57,057,176	5.36	0.00
JP Morgan	80,050,834	7.60	0	0	0	1,044,362	81,095,195	7.62	0.02
Legal & General 1	240,240,695	22.79	-4,386	0	4,386	2,148,179	242,384,488	22.76	-0.03
Legal & General 2	86,794,371	8.24	10,495,958	0	4,042	397,774	97,688,102	9.17	0.94
M&G Investments	11,254,872	1.07	-802,353	1,309	0	-8,183	10,445,644	0.98	-0.09
Macquarie	28,263,882	2.68	-1,285,241	107	0	955,926	27,934,674	2.62	-0.06
Newton	0	0.00	0	0	0	0	-	-	-
Premira Credit	60,350,532	5.73	1,904,024	1,807,200	0	-1,079,106	62,982,650	5.92	0.19
UBS	144,266,926	13.69	-1,942,965	1,640,101	0	-4,213,367	139,750,694	13.12	-0.56
UBS Property	76,278,886	7.24	-491,023	712,439	0	424,672	76,924,973	7.22	-0.01
Adam Street	13,593,963	1.29	-1,147,679	0	0	631,748	13,078,032	1.23	-0.06
LGT	6,467,233	0.61	-1,078,269	10	0	216,129	5,605,104	0.53	-0.09
Cash & Other Assets	6,271,425	0.60	-6,156,493	18,857	0	82,128	215,917	0.02	-0.57
Epoch Investment P Income	137,982,661	13.09	0	2,081,511	0	4,251,104	144,315,276	13.55	0.46
London CIV Ruffer	105,654,158	10.02	0	509,616	0	-855,368	105,308,406	9.89	-0.13
Cash & Other Assets	0	0.00	0	0	0	0	0	0.00	-0.00
Transition	0	0.00	0	0	0	0	0	0.00	0.00

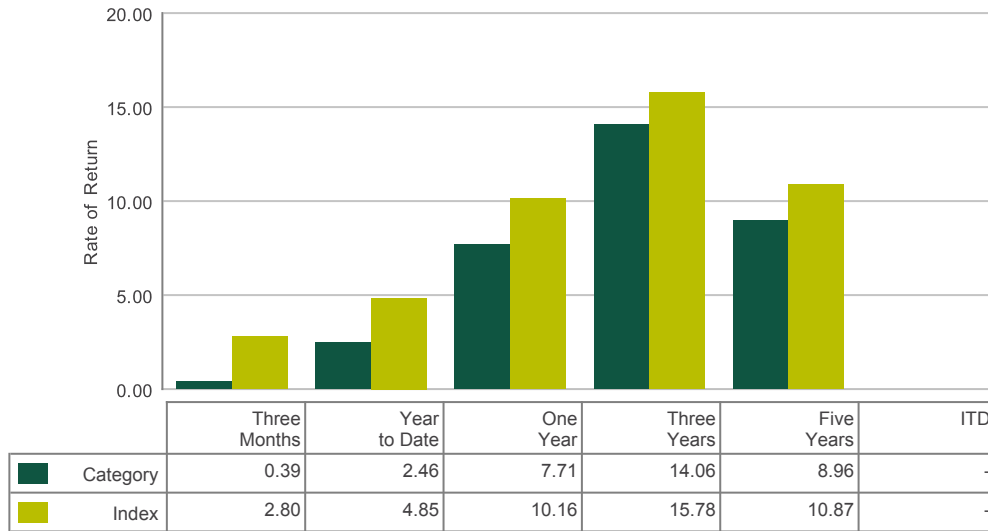
Min -0.57  0.94 Max

\*Net Contributions include Cash Contributions/Distributions, Security Deliveries/Receipts, Fees/Fee Rebates, Inter Account transfers for Consolidations & Benefits Payments.  
Copied History or Backloaded Data may not display the correct Contributions/Withdrawals creating misrepresentation.



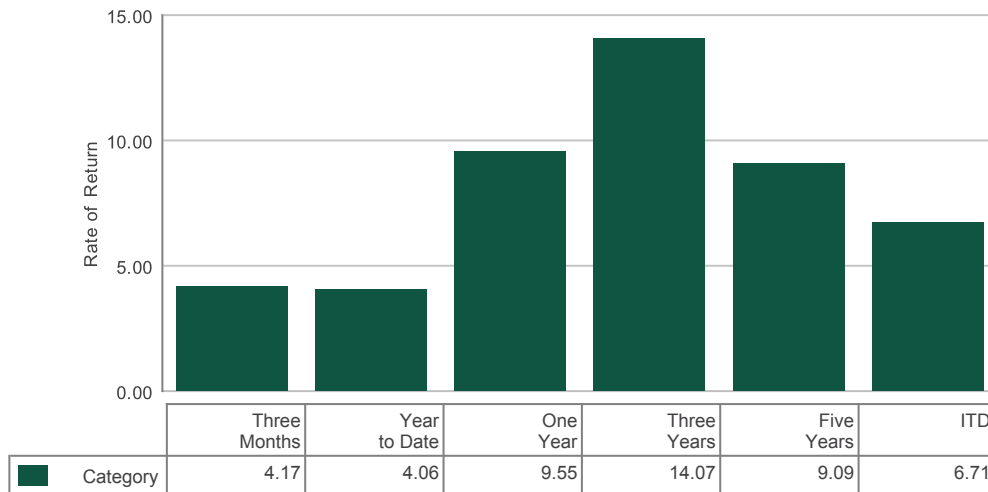
# Historical Performance

## EQUITY

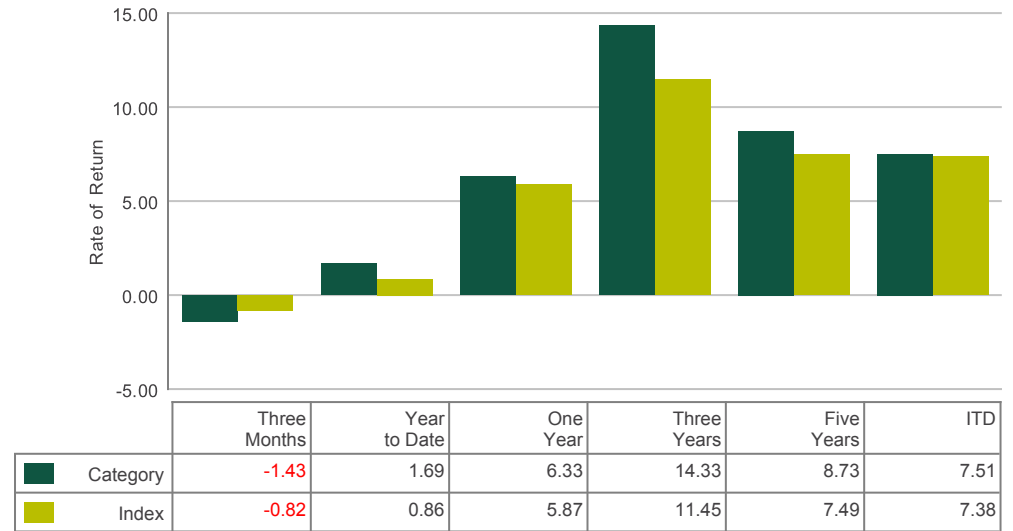


Index: Total Equity Benchmark

## OVERSEAS EQUITIES

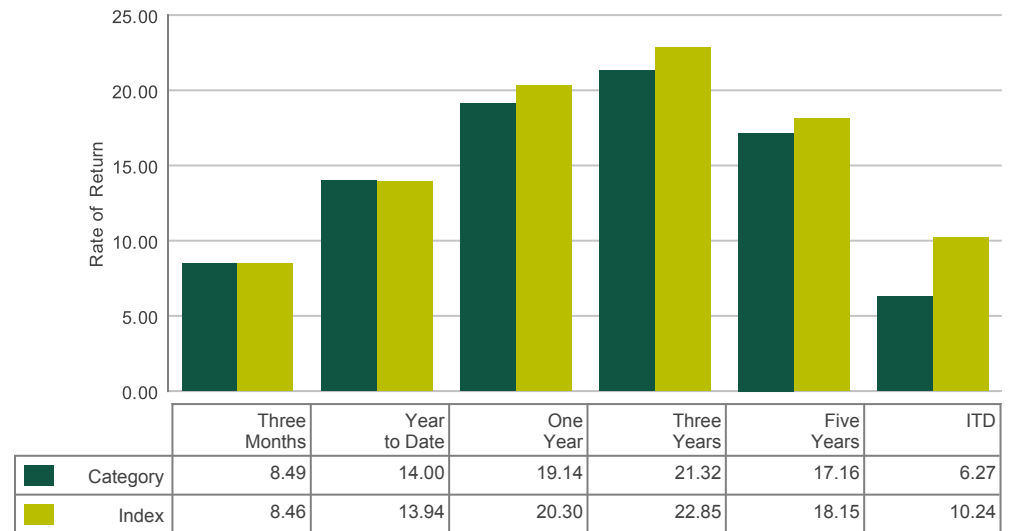


## UNITED KINGDOM



Index: FTSE All Share UK Equity

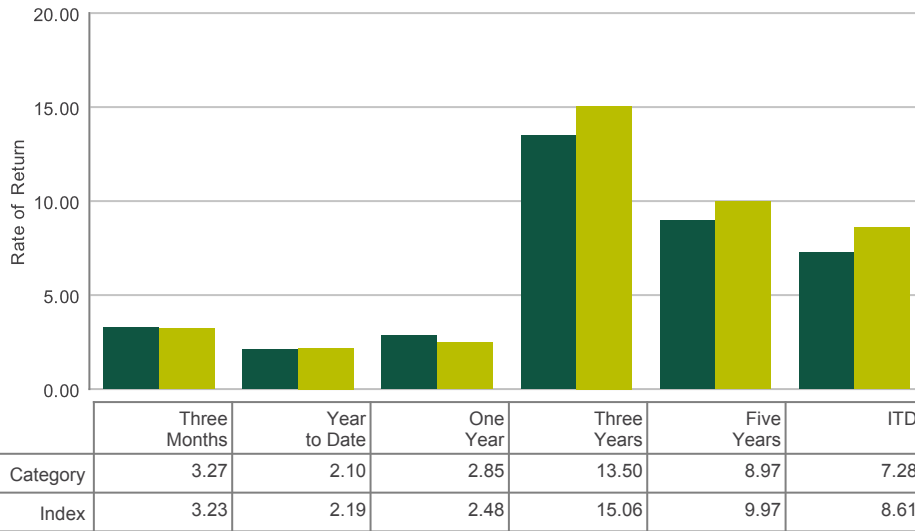
## NORTH AMERICA



Index: FTSE North America

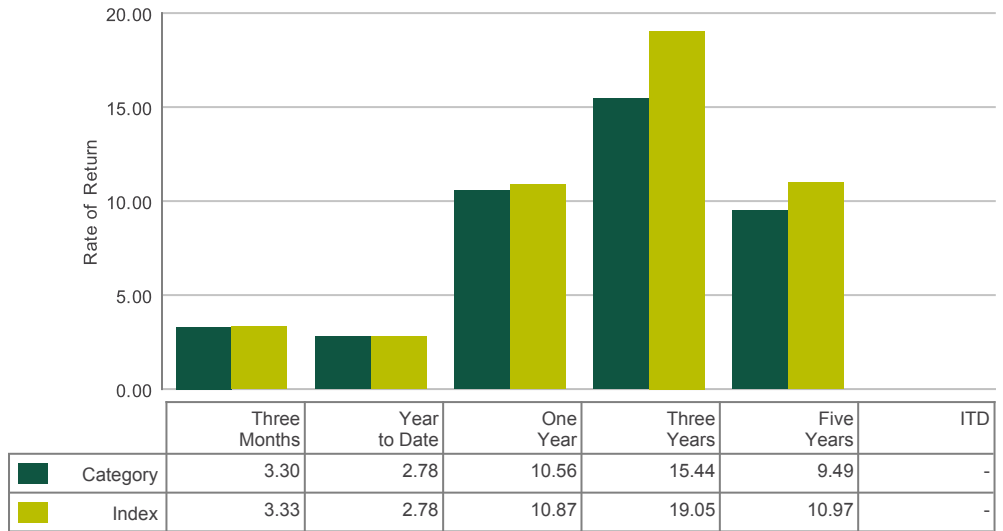
# Historical Performance

## EUROPE EX UK



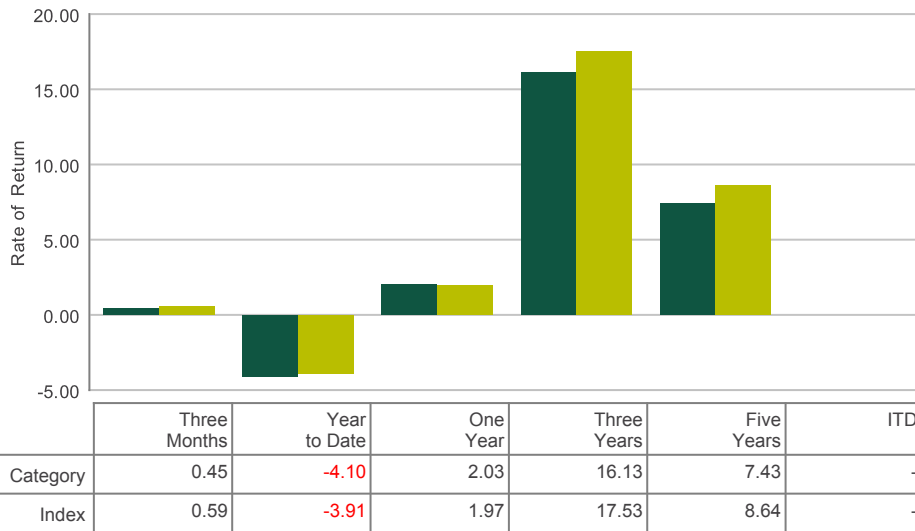
Index: FTSE AW Dev Europe ex UK

## ASIA PACIFIC INC JAPAN



Index: FTSE AW Dev Asia Pacific

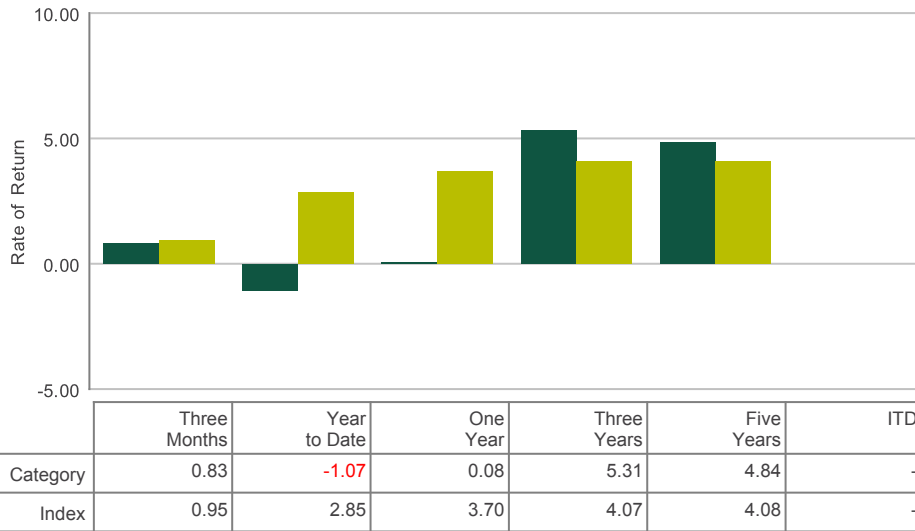
## EMERGING MARKETS



Index: LBH Emerging Markets

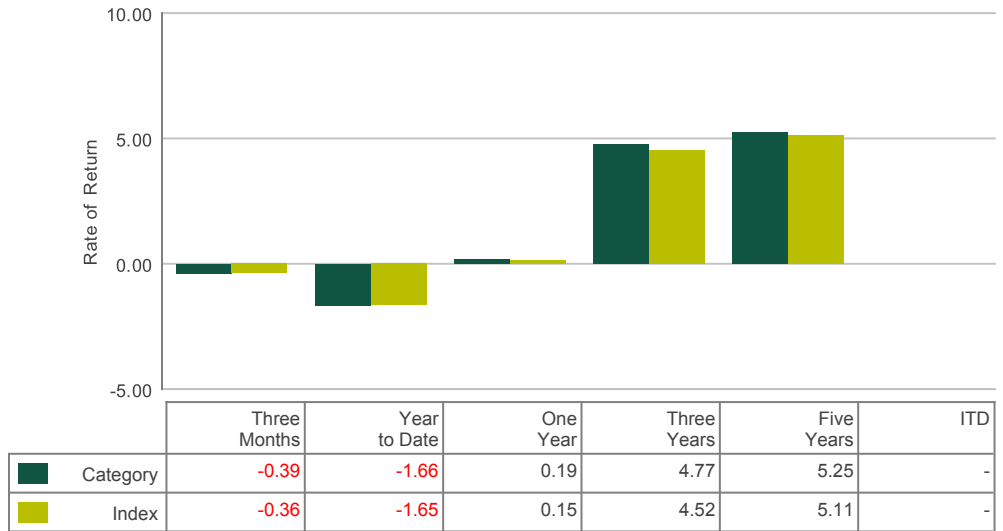
# Historical Performance

## FIXED INCOME



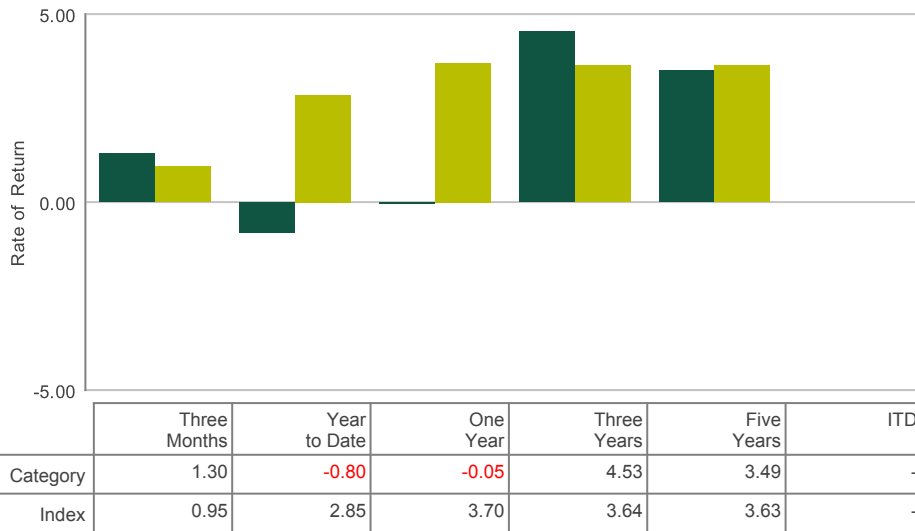
Index: LBH Fixed Income Benchmark

## UK CORPORATE BONDS



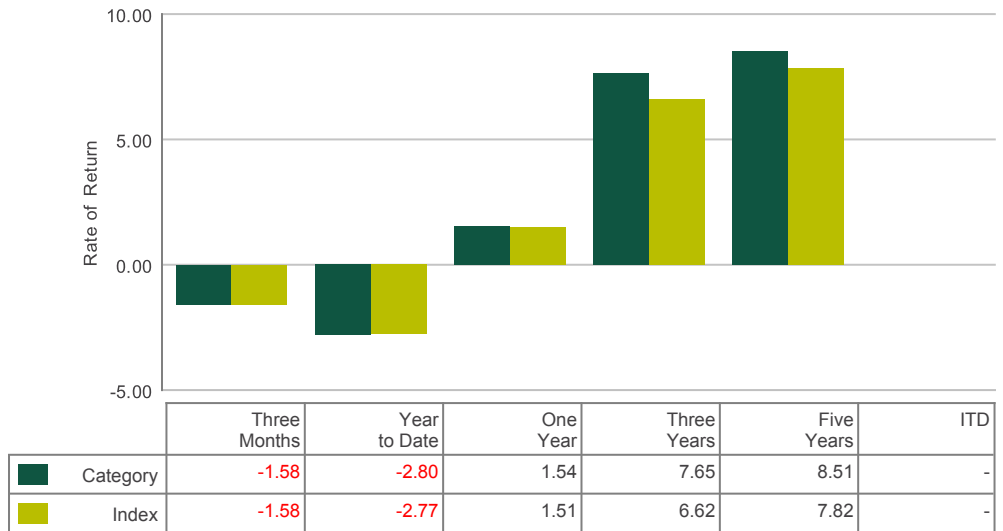
Index: LBH Non-Gilts Benchmark

## GLOBAL CORPORATE BONDS



Index: LIBOR GBP 3 Month +3% pa

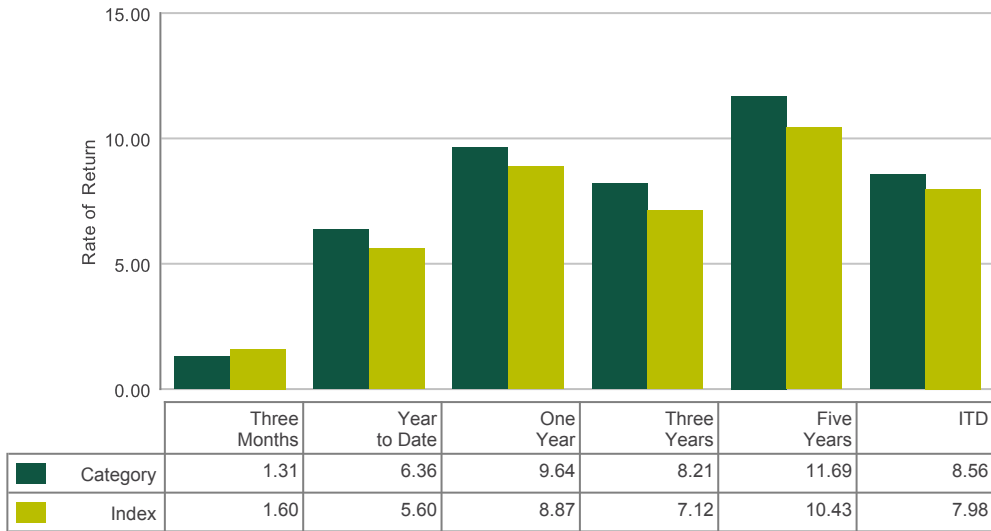
## INDEX LINKED GILTS



Index: LBH Index Linked Benchmark

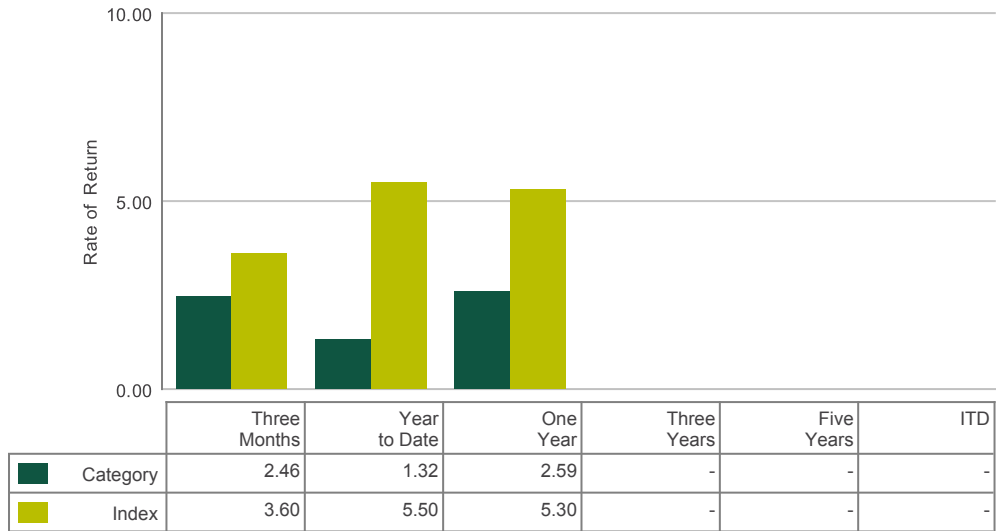
# Historical Performance

## REAL ESTATES



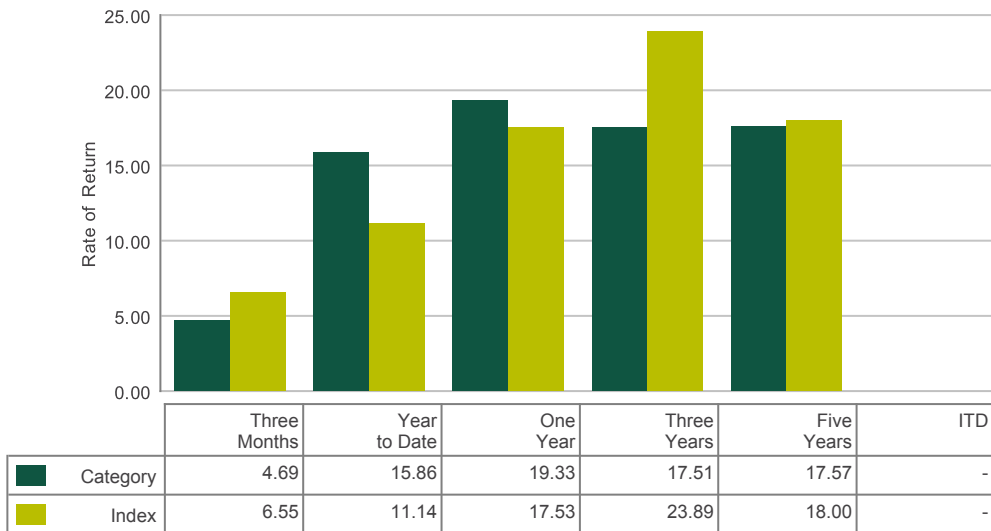
Index: IPD UK PPFI All Bal Funds Index

## BALANCED FUNDS



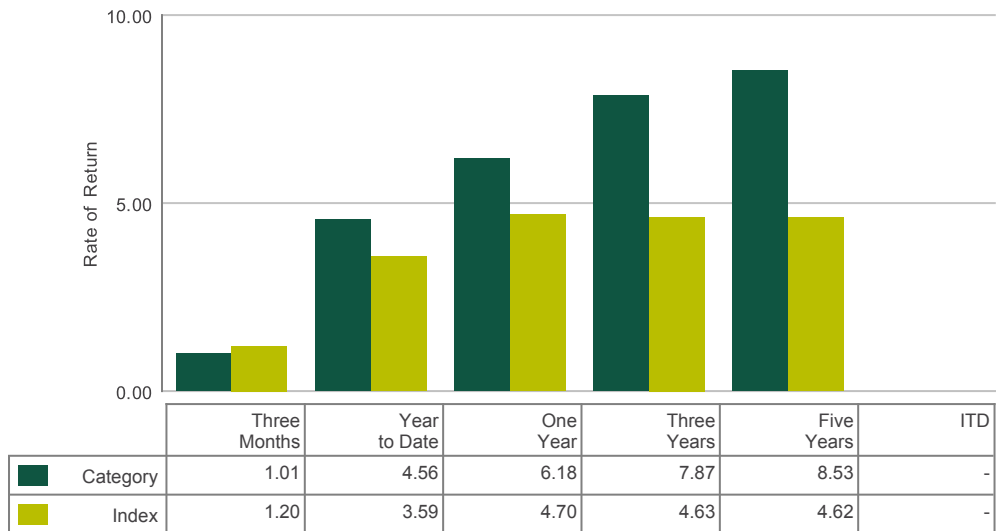
Index: Balanced Fund Benchmark

## PRIVATE EQUITY



Index: MSCI ACWI +4% pa

## PRIVATE CREDIT



Index: LIBOR GBP 3 Month +4% pa

## Benchmark Composition

### Total Plan Benchmark (from May 2018)

1.84	MSCI All Countries World Index + 4%
1.39	FT Japan
2.43	FT North America
0.97	FTSE Developed Asia Pacific ex Japan
2.25	FTSE Developed Europe ex UK
1.68	FTSE Developed GBP Hedged
22.78	FTSE All Share
3.60	FTSE Index Linked Gilts
4.66	FTSE Index Linked Gilts 15+ Years
2.31	FTSE Emerging Markets
12.46	IPD UK PPFi All Balanced Funds Index
6.84	3 Month LIBOR +4%pa
10.09	3 Month LIBOR
10.25	3 Month LIBOR +3%pa
12.85	MSCI World
0.61	LIBID 7 Day
2.99	iBoxx Sterling Non-Gilts

## Disclaimer(s)

The Global Industry Classification Standard ("GICS") was developed by and is the exclusive property and a service mark of Morgan Stanley Capital International Inc. ("MSCI") and Standard & Poor's, a division of The McGraw-Hill Companies, Inc. ("S&P") and is licensed for use by The Northern Trust Corporation and its wholly owned subsidiaries. Neither MSCI, S&P, nor any other party involved in making or compiling the GICS or any GICS classifications makes any express or implied warranties or representations with respect to such standard or classification (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability and fitness for a particular purpose with respect to any of such standard or classification. Without limiting any of the foregoing, in no event shall MSCI, S&P, any of their affiliates or any third party involved in making or compiling the GICS or any GICS classifications have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

The Dow Jones Wilshire Indexes are calculated, distributed and marketed by Dow Jones & Company, Inc. pursuant to an agreement between Dow Jones and Wilshire and have been licensed for use. All content of the Dow Jones Wilshire Indexes © 2005 Dow Jones & Company, Inc. & Wilshire Associates Incorporated.

Standard and Poor's including its subsidiary corporations ("S&P") is a division of the McGraw-Hill Companies, Inc. Reproduction of S&P Index Alerts in any form is prohibited except with the prior written permission of S&P. Because of the possibility of human or mechanical error by S&P sources, S&P or others, S&P does not guarantee the accuracy, adequacy, completeness or availability of any information and is not responsible for any errors or omissions or for the results obtained from the use of such information. S&P gives not express or implied warranties, including, but not limited to, any warranties or merchantability or fitness for a particular purpose or use. In no event shall S&P be liable for any indirect, special or consequential damages in connection with subscriber's or others' use of S&P Index Alerts.

All MSCI equity characteristic results except for Dividend Yield, Price to Book Value, Price to Cash Earnings and Price Earnings Ratio were calculated by The Northern Trust Company.

FTSE ® is a trade mark of London Stock Exchange Plc and The Financial Times Limited and is used by FTSE under license. All rights in the FTSE Indices vest in FTSE and/or its licensors. Neither FTSE nor its licensors accept any liability for any errors or omissions in the FTSE Indices or underlying data.

The Merrill Lynch Indices are used with permission. Copyright 2007, Merrill Lynch, Pierce, Fenner & Smith Incorporated. All rights reserved. The Merrill Lynch Indices may not be copied, used, or distributed without Merrill Lynch's prior written approval.

The Citi Index data is provided to you on an "AS IS" basis and you agree that use of the index data is at your sole risk. Citi Index makes no representations or warranties, express or implied, to you or any other person or entity, including without limitation any warranty of merchantability, originality, suitability or fitness for a particular purpose of the index data or any other matter and no warranty is given that the index data will conform to any description thereof or be free of omissions, errors, interruptions or defects. 4. In no event shall Citi Index be liable to you or any other person or entity for any direct, incidental, indirect, special or consequential damages (including, without limitation, lost profits or revenues, loss of data, loss of use or claims of third parties), arising out of or in any manner in connection with your use of (or inability to use) the index data, whether or not you have been advised of, or otherwise might have anticipated the possibility of, such damages. Without limitation on the foregoing, you acknowledge that the index data may be incomplete or condensed, is for information purposes only and is not intended as, and shall not be construed to be, an offer or solicitation with respect to the purchase or sale of any security. All opinions and estimates provided constitute judgments as of their respective dates and are subject to change without notice. Such data, information, opinions and estimates are furnished as part of a general service, without regard to your particular circumstances, and Citi Index shall not be liable for any damages in connection therewith. Citi Index is not undertaking to manage money or act as a fiduciary with respect to your accounts or any of your managed or fiduciary accounts and you acknowledge and agree that the index data does not and shall not serve as the primary basis for any investment decisions made with respect to such accounts.

Please note that this report has been prepared using best available data. This report may also contain information provided by third parties, derived by third parties or derived from third party data and/or data that may have been categorized or otherwise reported based upon client direction - Northern Trust assumes no responsibility for the accuracy, timeliness or completeness of any such information. If you have questions regarding third party data or direction as it relates to this report, please contact your Northern Trust relationship team.

**INVESTMENT ADVICE NOTICE:** The data and analysis contained in this report is for informational purposes only. In providing the information contained herein, The Northern Trust Company is not undertaking to provide "investment advice" or to give advice in a fiduciary capacity for purposes of the Employee Retirement Income Security Act of 1974, as amended. Nothing in this report is intended as, or should be understood as, a recommendation to hire, retain, or terminate an investment manager or engage in any purchase or sale transaction with such a manager or any fund that it manages. The Northern Trust Company and/or its affiliates may have business relationships with one or more investment managers or funds for included in this report, and may receive compensation for providing custody, administration, banking, brokerage, foreign exchange or other services to such investment managers or funds. The Northern Trust Company and its affiliates shall have no responsibility for the consequences of investment decisions made in reliance on information contained in this report.