



NORTHERN
TRUST

London Borough of Hillingdon

Investment Risk & Analytical Services

September 30, 2017

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Client Commentary

Total Scheme Commentary

A decade on from the financial crisis and the launch of the iPhone, the global economy is enjoying “entrenched growth” and c. 2bn people carry a “super computer” (by late 20th Century standards) in their pockets (500m on iOS and 1.4bn on android). Austerity remains and global growth is slower but the banking system as a whole is less leveraged and the current rates of growth, we hope, are sustainable without bust. There are still risk factors to beware; a mounting pile of US sub-prime car-loans, excessive global consumer debt, the expansion of asset managers and Chinese banks – the latter have tripled in size over the last decade. In the fixed income markets, sterling and UK gilt yields were jolted as the Bank of England primed investors for a more hawkish policy stance. The UK 10-year gilt yield climbed 10 basis points to 1.36% whilst the rate-sensitive two-year gilt yield rose 9 basis points to 0.38%. ML Sterling Non-Gilts index closed the quarter 0.15% higher, outperforming the FTSE All-Stock index which fell 0.45%. Despite the uncertainty surrounding Brexit, market action reflected the heightened possibility that the BoE would start unwinding a decade of ultra-loose monetary policy. With the CPI climbing to 2.9% in August, an increase from 2.6% in July, rate-setters agree that some withdrawal of stimulus is likely to help return inflation close to the Bank’s mandated target of 2%. The ONS attributed the rebound to the increasing cost of motor fuel and clothing, supporting the notion of retailers passing on higher import costs following the post-Brexit sterling slump. Meanwhile core inflation also rose, peaking at 2.7%, its highest level since 2011. The broader picture, however, remains one of persistent absence of UK wage growth despite falling unemployment and rising inflation – all of which poses a dilemma for policy makers.

Within this environment the London Borough of Hillingdon returned 1.59% which was broadly in line with the Total Plan benchmark of 1.60%. In monetary terms this is a growth in assets of £15 million and the value of the combined scheme now stands at £978.2 million as at 30th September 2017. Looking further into the analysis the results seen were caused by weights closely in line with the strategic position leading to a neutral allocation impact while minimal selection effects offset each other. Within selection the most notable effects were the positive impacts of M&G, UBS and AEW nullified by the negative impacts in Newton and Ruffer.

Still boosted by the positive results in the last quarter of 2016, the Scheme’s one year return of 9.55% is 0.74% ahead of the benchmark of 8.75%. The largest impact comes from selection, the most significant in UBS UK Equity (+0.98%) coupled with M&G (+0.49%), although these are slightly offset by the negative effect from Newton (-1.09%). While allocation has a negative impact coming through from underweighting LGT (-0.08%), while also overweighting AEW and Premira (both leading to -0.07%).

While over the longer periods, with ten positive quarters over the last 3 years, the Scheme continues to outperform, producing a return of 9.74% over three year versus 9.00%. Then the excess increases to 0.80% for the 5 year period where we see figures of 10.09% versus 9.21% per annum. Then since inception in September 1995, the Fund remains ahead of target by 14 basis points with an annualised return of 7.18% against a target of 7.03%.

Manager Commentary

AEW UK

Over the third quarter AEW UK Property produced a growth of 4.94%, which was 2.48% above the IPD UK PPFI All Balanced Funds index figure of 2.40%. They remain ahead of target over the year so far, and continue to be ahead over the rolling one year returning 14.41% against the benchmark of 9.28%. This translates as a +4.70% relative return. However, 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. In those three years since September 2014, the fund return is 11.49%, leading to an outperformance of 1.90% when compared to the IPD figure of 9.41%.

JP Morgan

In the latest quarter JP Morgan produces a growth in assets of 1.45% leading to an outperformance of 0.62% when compared to the 0.82% target for the 3 Month LIBOR + 3% p.a. Then with good results in the five of the last six quarters, the one year return of 4.72% is ahead of the 3.47% target by 1.21%. Then over three and five years they post returns closer to the benchmark with figures of 4.63% vs 3.63% and 3.82% vs 3.59% respectively. Since the mandate funded their return of 4.27% is +60 basis points above the target return of 3.65% on an annualised basis.

Legal & General 1

Over the last three months the Legal & General No. 1 mandate post a return of 1.37% against 1.38% for the custom fixed weight blended benchmark, a slight underperformance of -1 basis points. In the short period since inception in October 2016, they return 7.18%, which is just -4 basis points down on the benchmark return 7.22%. Further analysis demonstrates the passive strategy with all funds neutral when compared to the benchmark weights and in line with their respective benchmark returns.

Legal & General 2

During February 2017 the new Legal & General mandate was funded, now in its eighth month of investment they post a return of +1.83% against +1.88% 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 3.68% against 3.96% for the benchmark. The slight underperformance is due to the Emerging Equity and World Equity Hedged funds posting returns slightly below their benchmarks, while weights are slightly overweight leading to a negative allocation impact.

Client Commentary (cntd)

Manager Commentary

London CIV Ruffer

This quarter assets within the London CIV Ruffer portfolio saw their second consecutive fall in value, meaning the -0.71% return when compared to the LIBOR 3 Month GBP figure of 0.09%, leads to a relative return of -0.80%. This has dampened the good results from 2016 and the one year period exhibits a modest growth of 0.87% against the target of 0.47%. Outperformance remains in the longer periods. This is seen in a three year return of 5.75% versus 0.63%, then similarly for the five years with figures of 6.82% against 0.61%, culminating in since inception (May 2010) figures of 5.85% versus 0.83% per annum, which translates as a relative return of 4.98%.

M&G Investments

For the second consecutive period M&G posted gains in Q3 by producing a return of 5.18% against the 3 Month LIBOR +4% p.a. target of 1.07%, demonstrating an outperformance of 4.07%. Coupled with the previous good results, the full year return leads the benchmark by 15.04%, coming from figures of 20.19% against 4.47%. Over the three and five year the account registers figures of 10.87% vs 4.62% and 9.31% vs 4.59% respectively; since inception (May 2010) return falls slightly to 7.78% 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 8.87% opposed to the comparator of 4.69%.

Macquarie

Over the last three months, Macquarie produced a growth of 1.11%, against the 0.82% for the 3 Month LIBOR +3% p.a. this translates as an outperformance of 0.29%. With twelve consecutive quarters of positive absolute and relative returns, outperformance is seen in all longer periods. Over the rolling year a growth of 11.43% beats the target of 3.47% by 7.70%, similarly the three year result of 18.59% versus 3.62% exhibits the best relative return at 14.45%. The annualised return over 5 years falls to 12.36%, but still ahead of the 3.59% seen for the benchmark; then since inception (September 2010) the 4.47% is just ahead of the target of 3.68%. Although the since inception Internal Rate of Return for this portfolio jumps to 12.60%, which is ahead of the benchmark figure of 3.68%.

Newton

In the third quarter of 2017 Newton produced a return of -0.72%, which was well below the 2.35% seen for the FTSE World Index +2%. This negative relative is the third period of underperformance for the year, and they still fall -7.34% short of the benchmark generated from figures of 8.85% versus 17.48%. Then with only four other quarters in the black over the last twelve the three year return falls just short with figures of 15.87% versus 17.17%; then since inception in January 2013, the fund return of 13.62% falls short of the yardstick of 15.95% by -2.01% on an annualised basis.

Manager Commentary

Premira Credit

The Premira Credit Fund saw a growth of 2.36% over the third quarter of 2017, this compares favourably with the 3 Month LIBOR +4% p.a. target of 1.07%. All four quarters over the last year are still ahead of target, leading to an outperformance of 4.47%, created from figures of 9.13% against 4.47%. Then since the start of December 2014 when the fund inceptioned, the fund posts a return of 9.62% against the benchmark of 4.57%, leading to a relative position of 4.83%.

UBS

During Q3 the UBS UK Equity investments returned of 3.82%, well ahead of the 2.14% for the FTSE All Share. Looking into the attribution analysis this outperformance was achieved through Allocation effects, with the most significant being overweight in Basic Materials (+44 bps) as well as an underweighting in Consumer Goods (+43 bps) and being overweight Oil & Gas (+36 bps). Selection decisions were also notable, the most significant being the effects in Basic Materials (+46 bps) and Consumer Goods (+26 bps), while the largest negative impact comes from Industrials (-23 bps). With the previous good run of results they remain ahead over the one year, figures of 20.66% vs 11.94% translates as a relative return of 7.79%. This is attributable to both allocation and selection, the biggest impacts come from both overweighting Basic Materials (1.13%) and selection in the sector (1.75%), combined with the selection effect in Financials (1.71%); while the largest negative impact was once again the drag from the 3% cash exposure. This feeds into the longer time periods, with three and five years ahead of the index, culminating in a since inception (January 1989) return of 10.32% versus 8.91% on an annualised basis.

UBS Property

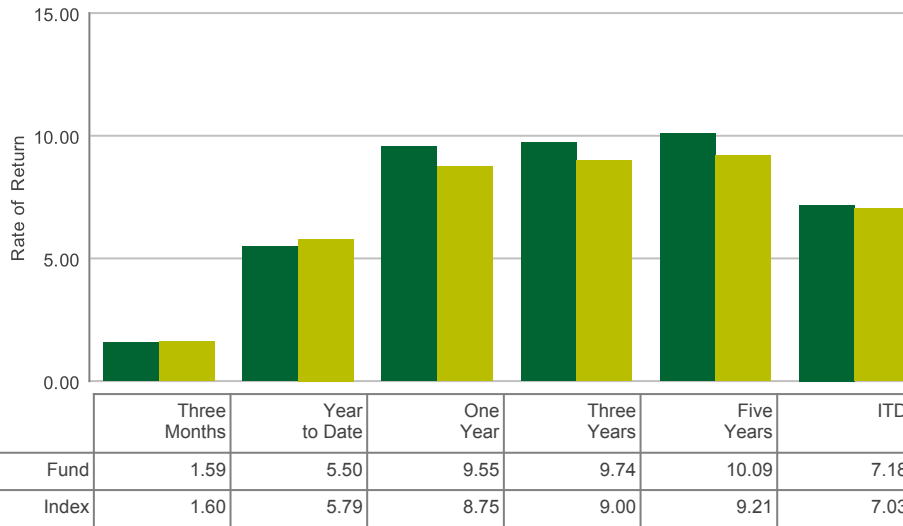
In contrast to the previous period, in the latest quarter the UBS Property posted an outperformance with +0.59%, generated from a return of 3.00% against the IPD UK PPFI All Balanced Funds index of 2.4%. Over the one year a deficit is recorded, with a full year return of 7.56% falling -1.58% behind the IPD target of 9.28%. However, the previous good run of results prior to the last year leads to high absolute returns staying ahead of the IPD target over the longer periods, peaking over the three year with a return of 9.93% against 8.90%. Then since inception, in March 2006, the fund return falls to 3.73% per annum which manages to stay just ahead of the benchmark figure of 3.67%.

Private Equity

The private equity assets saw a 1.32% rise in value for LGT. Adam Street saw a fall of 0.31%. 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 a figures of 17.38%, 20.91% and 16.17% for the one, three and five year periods respectively, while Adam Street posted 6.86%, 15.17% and 15.68% over the same periods; both exhibit some of the highest returns seen. Although they fall short of the proxy benchmark of MSCI AC World +4% p.a. which shows 19.41%, 19.15% and 18.11%. One exception being LGT over the 3 year period where they have outperformed by 1.47%. Then since their respective inceptions in January 2005 and May 2004, Adam Street drops to

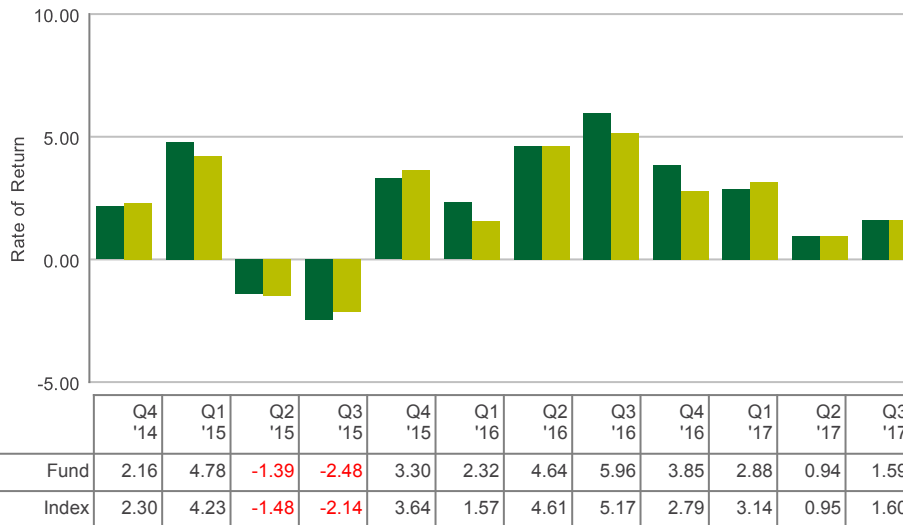
Executive Summary

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

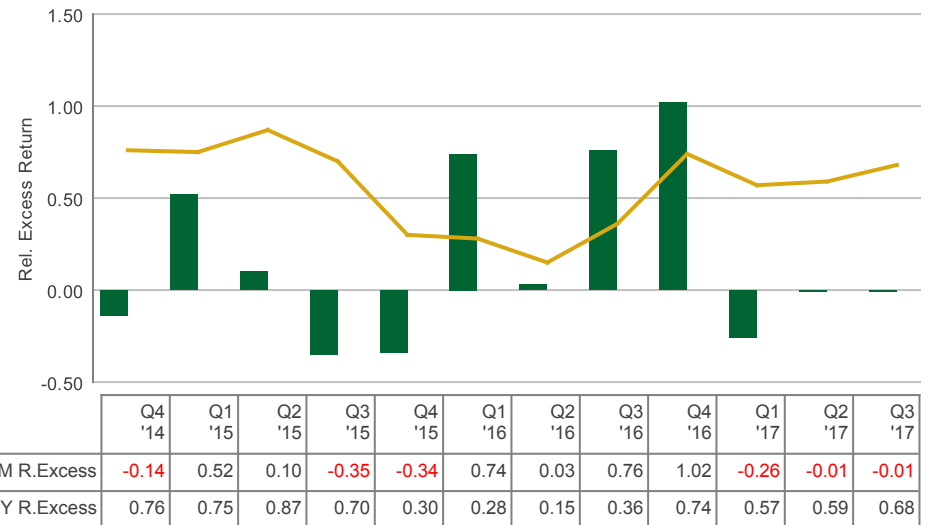
RISK STATISTICS

	1 Yr	3 Yrs	5 Yrs
Return	9.55	9.74	10.09
Index Return	8.75	9.00	9.21
Relative Excess Return	0.74	0.68	0.80
Standard Deviation	4.50	5.13	5.13
Index Standard Deviation	3.90	4.77	4.80
Tracking Error	0.96	1.15	1.08
Information Ratio	0.84	0.64	0.81
Sharpe Ratio	2.02	1.78	1.85
Index Sharpe Ratio	2.12	1.76	1.79
Sortino Ratio	-	-	3.61
Treynor Ratio	8.02	8.68	9.06
Jensen's Alpha	-0.30	0.29	0.43
Relative Volatility (Beta)	1.13	1.05	1.05
R Squared	0.97	0.95	0.96

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
London Borough of Hillingdon	978,183,943	100.00	1.59	1.60	-0.01	5.50	5.79	-0.28	9.55	8.75	0.74
Total Plan Benchmark											
AEW UK	51,617,689	5.28	4.94	2.40	2.48	10.46	6.82	3.41	14.41	9.28	4.70
LBH22 AEW Benchmark											
JP Morgan	56,101,422	5.74	1.45	0.82	0.62	5.07	2.57	2.44	4.72	3.47	1.21
LBH15 JPM LIBOR +3%pa											
Legal & General 1	228,525,168	23.36	1.37	1.38	-0.01	6.27	6.29	-0.01	-	-	-
LBH26 L&G Benchmark											
Legal & General 2	64,490,865	6.59	1.83	1.88	-0.06	-	-	-	-	-	-
LBH27 L&G Benchmark											
London CIV Ruffer	103,241,381	10.55	-0.71	0.09	-0.80	-1.16	0.32	-1.47	0.87	0.47	0.40
LBH11 Ruffer BM LIBOR											
M&G Investments	21,665,559	2.21	5.18	1.07	4.07	5.82	3.31	2.43	20.19	4.47	15.04
LBH10 3 Month LIBOR +4%pa											
Macquarie	27,732,610	2.84	1.11	0.82	0.29	7.88	2.57	5.18	11.43	3.47	7.70
LBH14 Macquarie LIBOR +3%pa											
Newton	138,262,523	14.13	-0.72	2.35	-3.01	4.95	9.81	-4.43	8.85	17.48	-7.34
LBH19 FTSE World Index +2%											
Premira Credit	52,562,776	5.37	2.36	1.07	1.28	6.41	3.31	3.00	9.13	4.47	4.47
LBH24 Premira LIBOR +4%pa											
UBS	134,419,461	13.74	3.82	2.14	1.65	8.26	7.75	0.48	20.66	11.94	7.79
LBH04 UBS Benchmark											
UBS Property	70,016,024	7.16	3.00	2.40	0.59	5.78	6.82	-0.98	7.56	9.28	-1.58
LBH06 UBS Property Benchmark											
Adam Street	14,645,949	1.50	-0.31	2.85	-3.07	-1.93	11.43	-11.99	6.86	19.41	-10.51
Adam Street PE Bmark											
LGT	8,206,945	0.84	1.32	2.85	-1.49	12.90	11.43	1.31	17.38	19.41	-1.70
LGT PE Bmark											

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	
London Borough of Hillingdon Total Plan Benchmark	9.74	9.00	0.68	10.09	9.21	0.80	7.18	7.03	0.14	30/09/1995
AEW UK LBH22 AEW Benchmark	11.49	9.41	1.90	-	-	-	11.98	9.98	1.82	30/06/2014
JP Morgan LBH15 JPM LIBOR +3%pa	4.63	3.63	0.96	3.82	3.59	0.22	4.27	3.65	0.60	08/11/2011
Legal & General 1 LBH26 L&G Benchmark	-	-	-	-	-	-	7.18	7.22	-0.04	31/10/2016
Legal & General 2 LBH27 L&G Benchmark	-	-	-	-	-	-	3.68	3.96	-0.28	22/02/2017
London CIV Ruffer LBH11 Ruffer BM LIBOR	5.75	0.63	5.09	6.82	0.61	6.17	5.85	0.83	4.98	28/05/2010
M&G Investments LBH10 3 Month LIBOR +4%pa	10.87	4.62	5.98	9.31	4.59	4.52	7.78	4.69	2.96	31/05/2010
Macquarie LBH14 Macquarie LIBOR +3%pa	18.59	3.62	14.45	12.36	3.59	8.47	4.47	3.68	0.77	30/09/2010
Newton LBH19 FTSE World Index +2%	15.87	17.17	-1.11	-	-	-	13.62	15.95	-2.01	24/01/2013
Premira Credit LBH24 Premira LIBOR +4%pa	-	-	-	-	-	-	9.62	4.57	4.83	30/11/2014
UBS LBH04 UBS Benchmark	11.13	8.51	2.41	13.62	10.02	3.27	10.32	8.91	1.30	31/12/1988
UBS Property LBH06 UBS Property Benchmark	9.93	8.90	0.95	10.08	9.47	0.55	3.73	3.67	0.07	31/03/2006
Adam Street Adam Street PE Bmark	15.17	19.15	-3.34	15.68	18.11	-2.06	6.29	-	-	31/01/2005
LGT LGT PE Bmark	20.91	19.15	1.47	16.17	18.11	-1.64	10.93	-	-	31/05/2004

Market Value Summary - Three Months

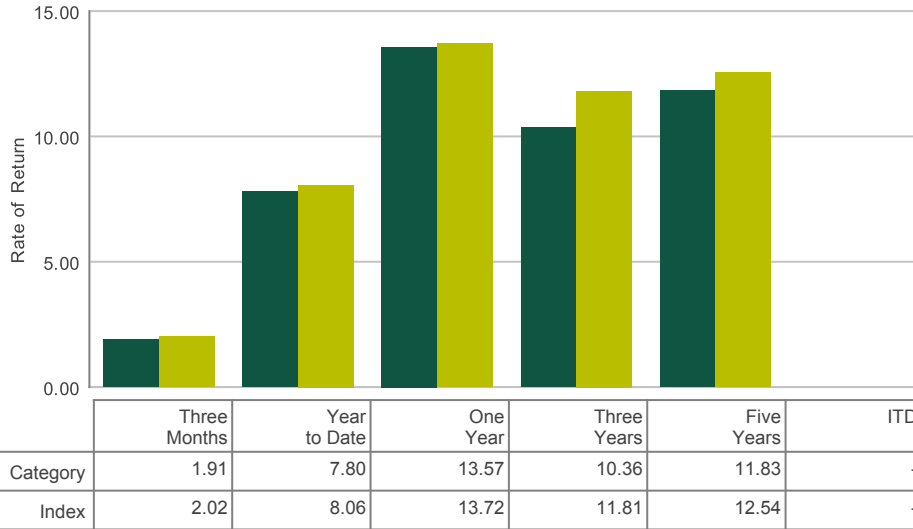
Account/Group	30/06/2017 Market Value	30/06/2017 Weight	Net Contribution*	Income	Fees	Appreciation	30/09/2017 Market Value	30/09/2017 Weight	Change in Weight
London Borough of Hillingdon	965,479,423	100.00	-2,638,131	4,526,276	1,638,131	10,816,376	978,183,943	100.00	0.00
AEW UK	49,186,231	5.09	0	520,530	0	1,910,928	51,617,689	5.28	0.18
JP Morgan	55,302,276	5.73	0	0	0	799,146	56,101,422	5.74	0.01
Legal & General 1	225,450,456	23.35	-4,244	0	4,244	3,078,956	228,525,168	23.36	0.01
Legal & General 2	63,333,307	6.56	0	0	0	1,157,558	64,490,865	6.59	0.03
London CIV Ruffer	103,981,030	10.77	0	572,614	0	-1,312,263	103,241,381	10.55	-0.22
M&G Investments	20,598,047	2.13	0	374	0	1,067,139	21,665,559	2.21	0.08
Macquarie	27,417,942	2.84	9,177	12,439	0	293,052	27,732,610	2.84	-0.00
Newton	139,271,739	14.43	0	0	0	-1,009,216	138,262,523	14.13	-0.29
Premira Credit	51,348,609	5.32	0	1,509,391	0	-295,224	52,562,776	5.37	0.06
UBS	129,475,421	13.41	0	1,237,494	0	3,706,546	134,419,461	13.74	0.33
UBS Property	69,581,120	7.21	-1,633,800	662,012	1,633,800	1,406,692	70,016,024	7.16	-0.05
Adam Street	16,591,599	1.72	-1,898,626	8,609	0	-55,634	14,645,949	1.50	-0.22
LGT	9,024,522	0.93	-942,962	5	0	125,380	8,206,945	0.84	-0.10
Cash & Other Assets	4,917,124	0.51	1,832,324	2,808	87	-56,682	6,695,573	0.68	0.18

Min -0.29  0.33 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.

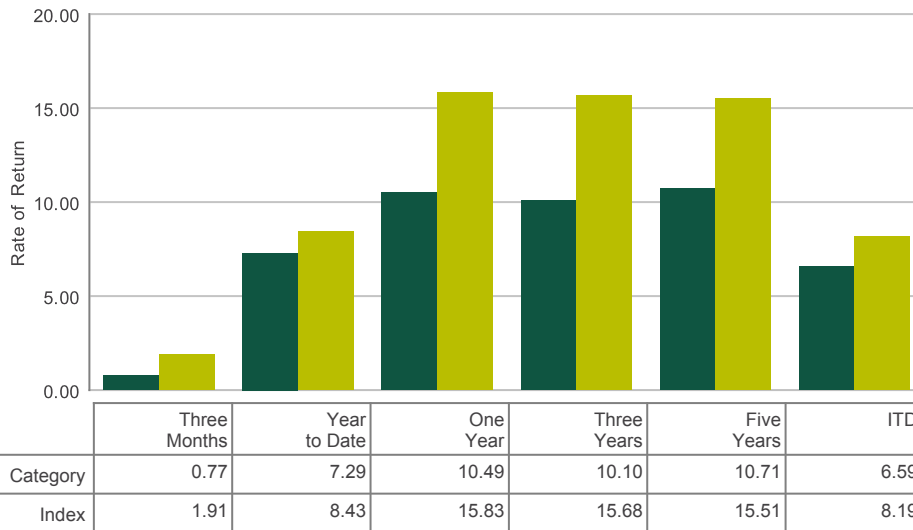
Historical Performance

EQUITY



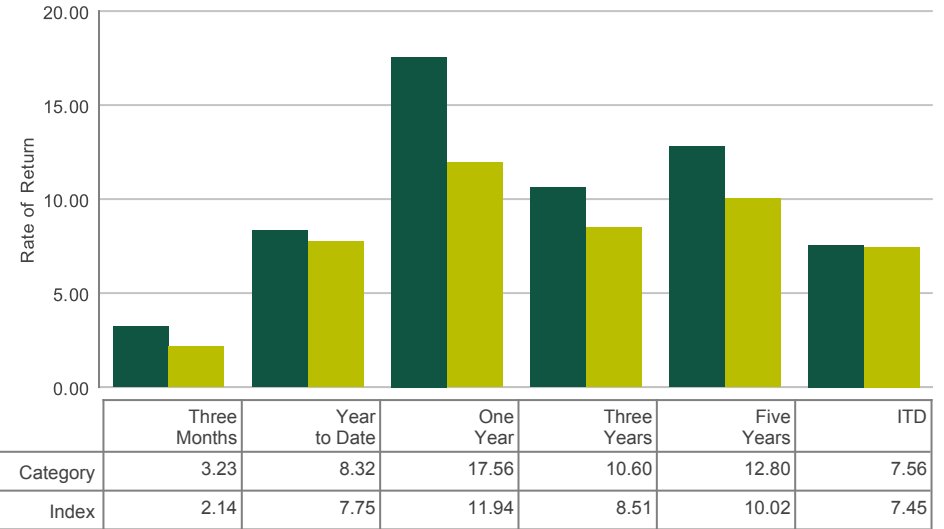
Index: Total Equity Benchmark

OVERSEAS EQUITIES



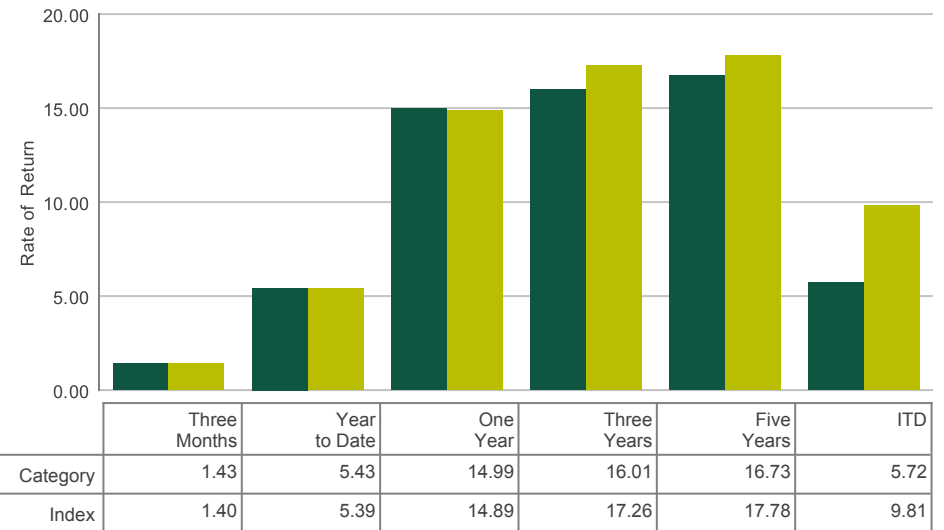
Index: Total Overseas Equity Benchmark

UNITED KINGDOM



Index: FTSE All Share UK Equity

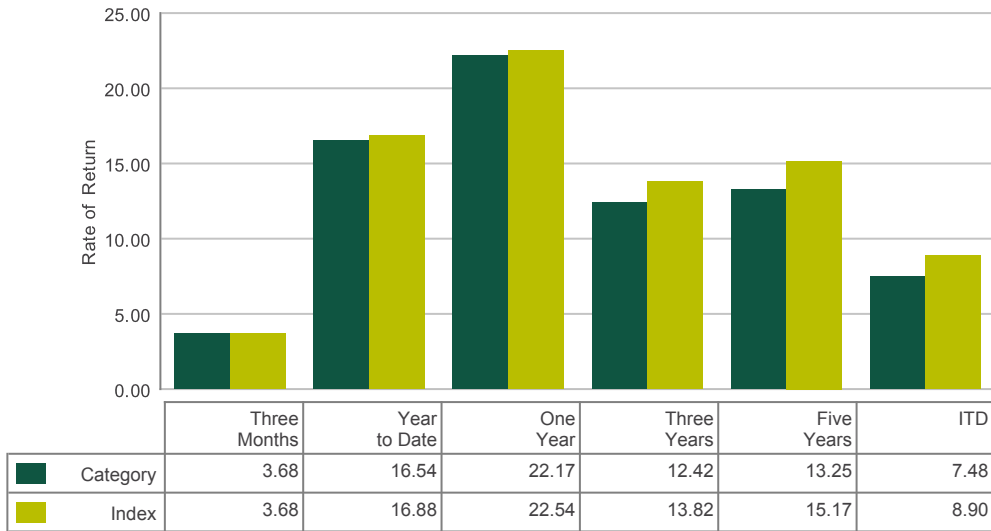
NORTH AMERICA



Index: FTSE North America

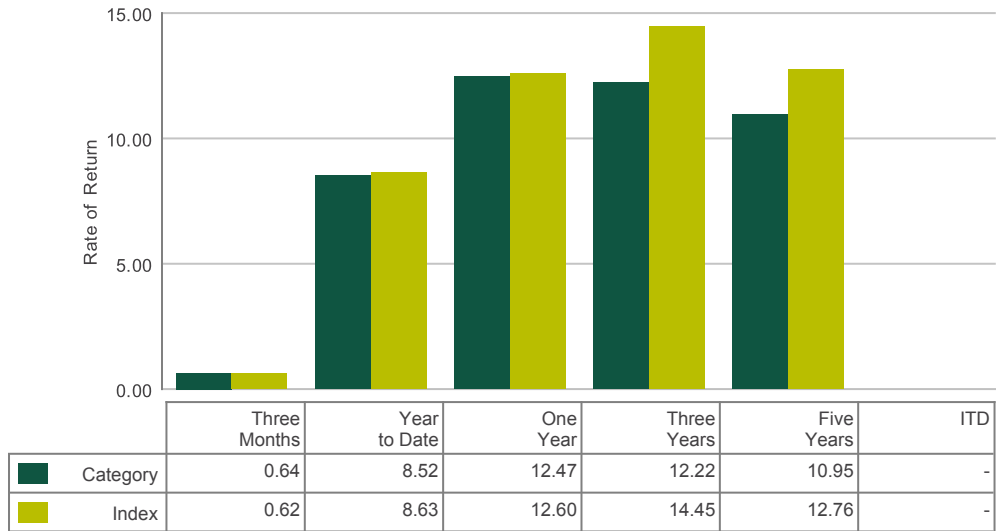
Historical Performance

EUROPE EX UK



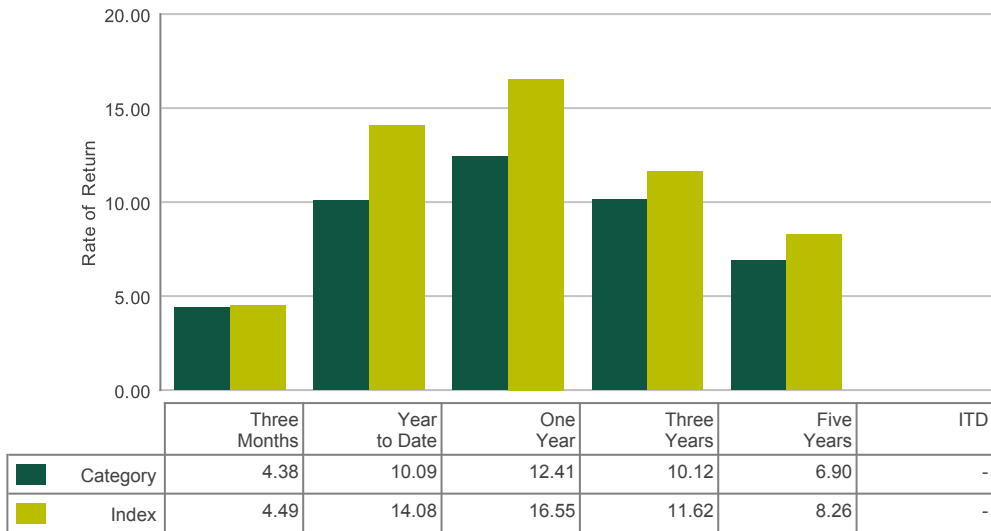
Index: FTSE AW Dev Europe ex UK

ASIA PACIFIC INC JAPAN



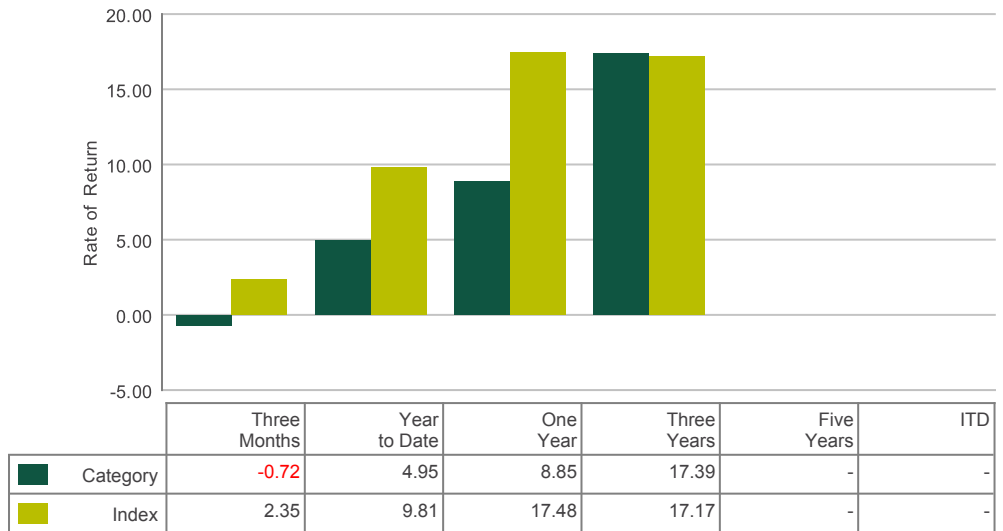
Index: FTSE AW Dev Asia Pacific

EMERGING MARKETS



Index: LBH Emerging Markets

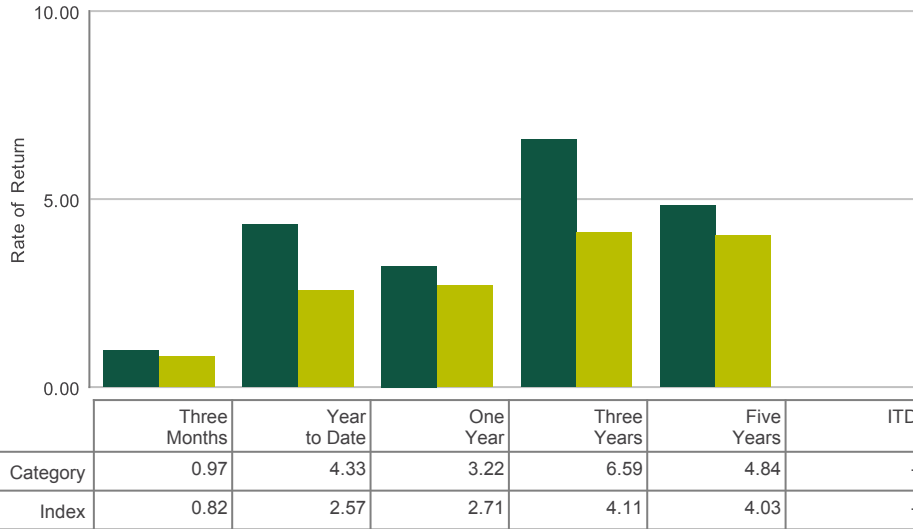
GLOBAL - NEWTON



Index: FTSE World Index +2%

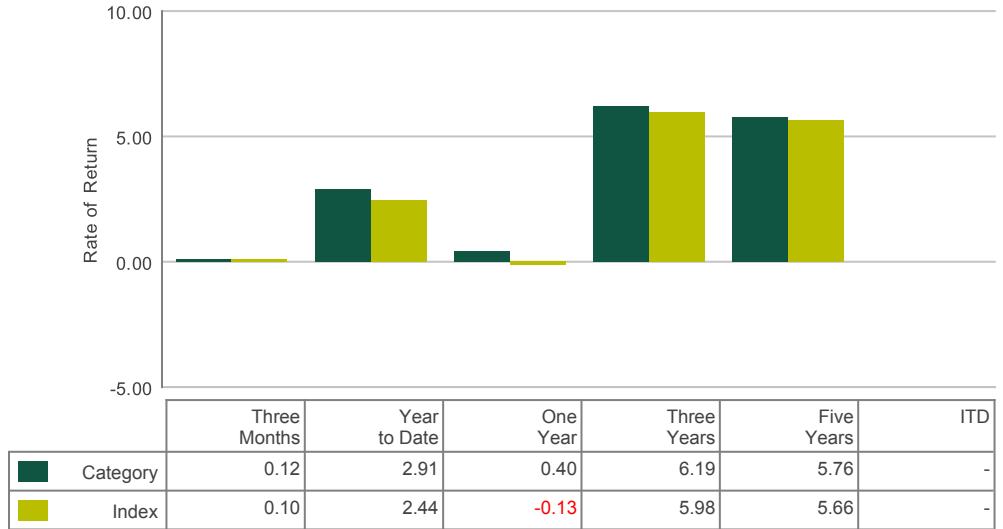
Historical Performance

FIXED INCOME



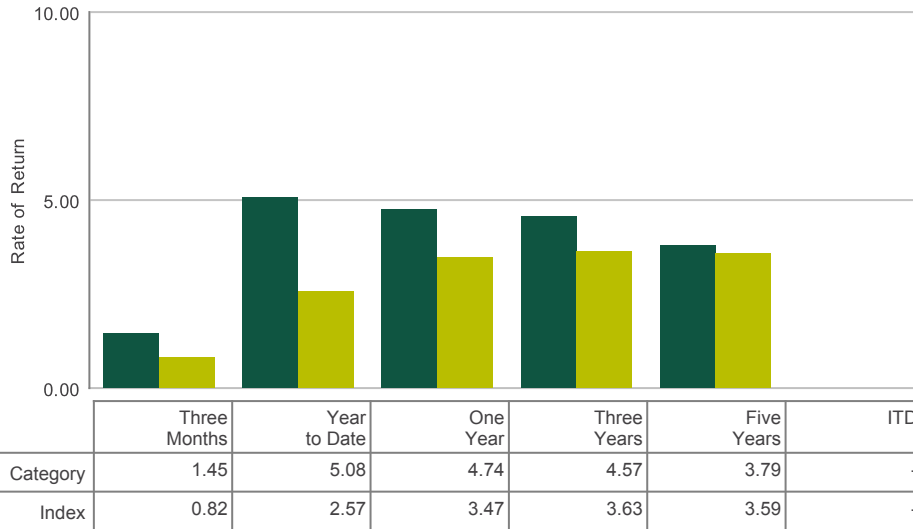
Index: LBH Fixed Income Benchmark

UK CORPORATE BONDS



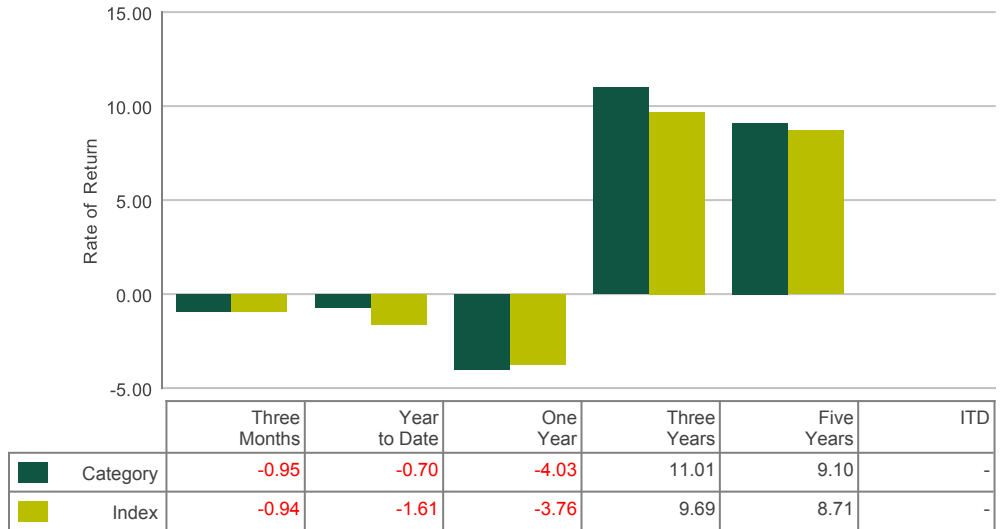
Index: LBH Non-Gilts Benchmark

GLOBAL CORPORATE BONDS



Index: LIBOR GBP 3 Month +3% pa

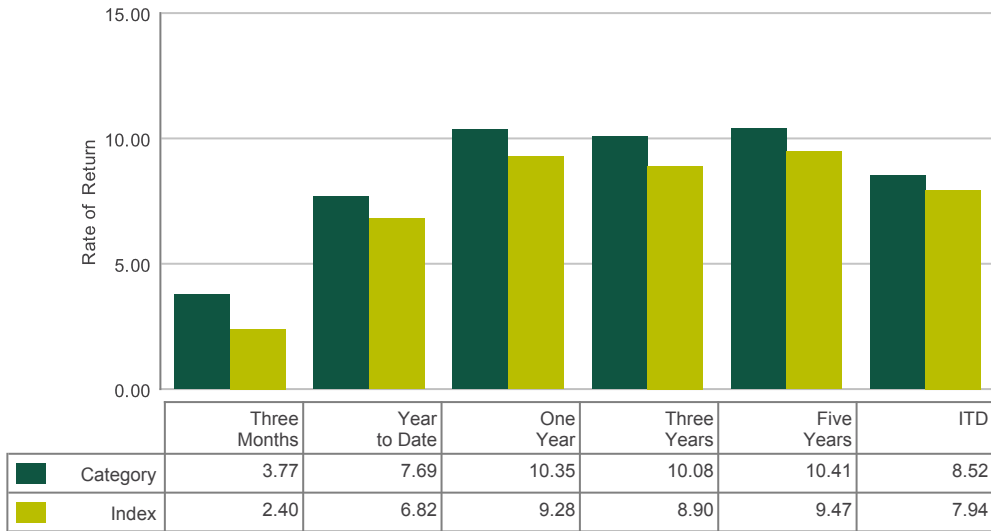
INDEX LINKED GILTS



Index: LBH Index Linked Benchmark

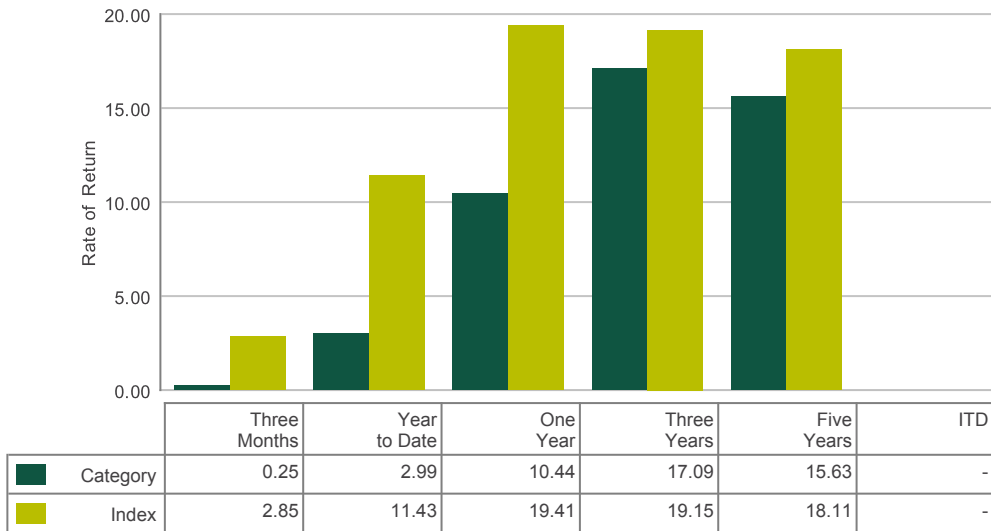
Historical Performance

REAL ESTATES



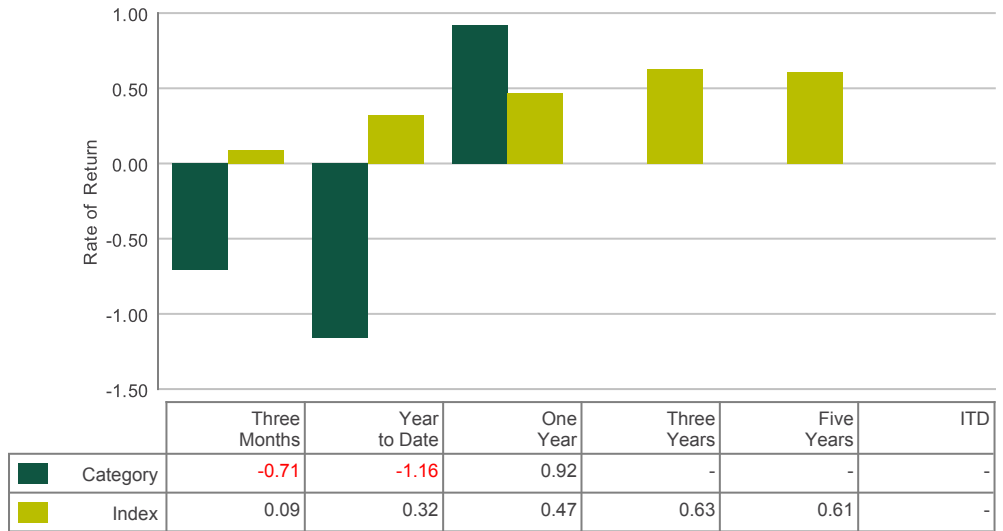
Index: IPD UK PFI All Bal Funds Index

PRIVATE EQUITY



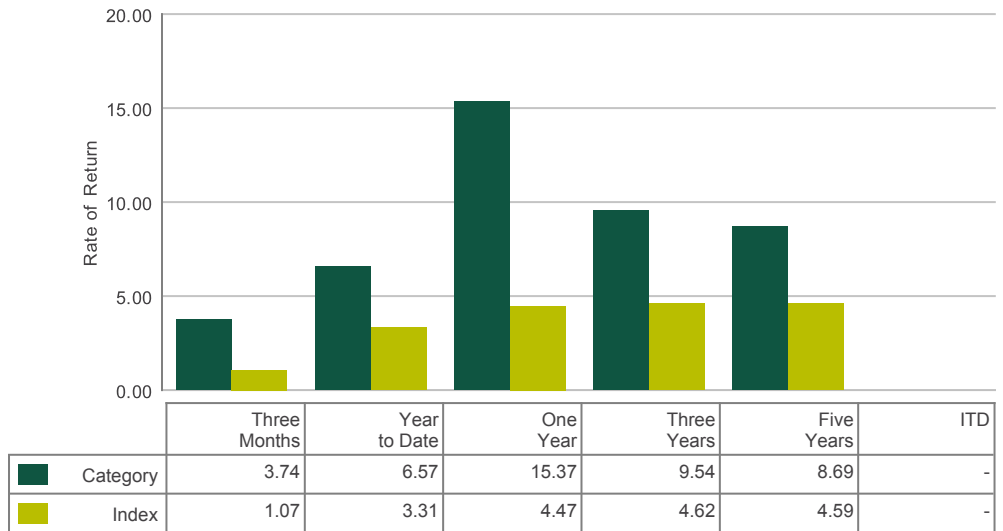
Index: MSCI ACWI +4% pa

DGF/ABSOLUTE RETURN



Index: LIBOR GBP 3 Month

PRIVATE CREDIT



Index: LIBOR GBP 3 Month +4% pa

Total Plan Benchmark

2.96	MSCI All Countries World Index + 4%
1.37	FT Japan
2.46	FT North America
0.96	FTSE Developed Asia Pacific ex Japan
2.32	FTSE Developed Europe ex UK
1.63	FTSE Developed GBP Hedged
22.63	FTSE All Share
1.80	FTSE Index Linked Gilts
4.81	FTSE Index Linked Gilts 15+ Years
2.31	FTSE Emerging Markets
12.09	IPD UK PPFI All Balanced Funds Index
6.39	3 Month LIBOR +4%pa
11.03	3 Month LIBOR
7.55	3 Month LIBOR +3%pa
14.41	FTSE World Index +2%
2.03	LIBID 7 Day
3.25	iBoxx Sterling Non-Gilts

Portfolio Benchmarks

AEW UK

100.00 IPD UK PFI All Balanced Funds Index

JP Morgan

7.55 3 Month LIBOR +3%pa

Legal & General

5.88 FT Japan

10.53 FT North America

4.10 FTSE Developed Asia Pacific ex Japan

9.92 FTSE Developed Europe ex UK

38.75 FTSE All Share

7.72 FTSE Index Linked Gilts

13.34 FTSE Index Linked Gilts15+ Years

2.94 FTSE Emerging Markets

6.82 iBoxx Sterling Non-Gilts

Legal & General

25.67 FTSE Index Linked Gilts15+ Years

24.52 FTSE Emerging Markets

25.09 iBoxx Sterling Non-Gilts

24.72 FTSE Developed GBP Hedged

London CIV Ruffer

100.00 3 Month LIBOR

M&G Investments

100.00 3 Month LIBOR +4%pa

Macquarie

100.00 3 Month LIBOR +3%pa

Newton

100.00 FTSE World Index +2%

Premira Credit

100.00 3 Month LIBOR +4%pa

UBS

100.00 FTSE All Share

UBS Property

100.00 IPD UK PFI All Balanced Funds Index

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