

# London Borough of Hillingdon

4th Quarter, 2009





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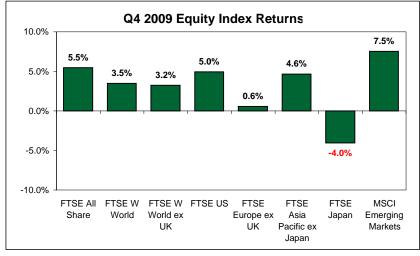
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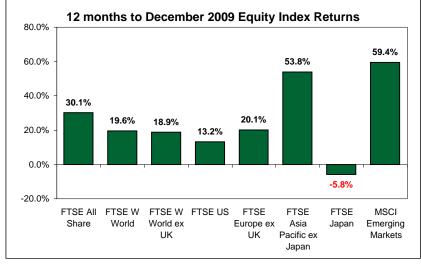




### London Borough of Hillingdon

### **Equity Overview**





All index returns are in GBP terms unless stated otherwise.



With the exception of Japan all major developed equity markets continued the upward momentum that began in March. Europe fell slightly behind regional counterparts following the downgrading of Greece by the ratings agencies but strong corporate results generally buoyed confidence. Comparing this decade with the 1930s, as the last period of similar financial catastrophe the S&P 500 showed an annual price return of -5.3% next to the -2.9% achieved at the end of 2009. The common feature of both being complacency fueled by easy credit. Many equity markets remain deeply in the red over 10 years for what has been called a "lost" decade following 2 significant bear markets. Excepting Japan, double digit returns have been enjoyed over 12 months across the board and Brazil, Russia, India and China have returned between 80-120%. The OECD has predicted that next year the US economy will expand by 2.5%, the Eurozone by 0.9% and Japan 1.9%. Gold prices surprised by gaining overall for the year, ending December at \$1,104 per ounce. The price of crude oil finished Q4 up at around \$79 per barrel. Some strategists predict a continued flight to risk and cyclical industrials, in particular metal and commodity related shares with links to the emerging markets. Other commentators fear a 10-30% downturn in mid 2010 as investors second guess the rally and keep an eye on the emerging threat of sovereign debt risk. The FTSE World was up 3.5% (GBP) in quarter 4 2009 finishing the year with a December return of 3.7% (GBP).

The FTSE 100 returned 6.2% over Q4 following the 25 year record breaking performance seen in Q3. December ended in solid fashion seeing a rotation out of cyclical sectors into defensives with utilities and food producers returning strong performance. Mixed news emerged over Q4; unemployment benefit claimants dropped for the first time since Q1 and the rate of increase slowed (the total is now 2.49m which is 7.8%). Less welcome figures showed retail sales dropping but a further revision to the 3rd quarter GDP up to - 0.2% from -0.3% (though 5.1% lower than Q3 2008) provided some confidence. Some have estimated a growth in GDP of 0.4% for Q4 heralding the beginning of national economic recovery. The BoE persevered with the all time low base rate of 0.5% but is now set to put the bond buy back programme on hold at an ownership level of roughly £200bn of mainly government notes. The CEBR in its latest UK prospects report predicts that rate will remain until 2011 and will not reach 2% until 2014 or 15. A survey of FTSE 100 CFOs carried out by Deloitte found that willingness to take risk had returned to the levels observed prior to the financial crash but that anxiety over a possible "double dip" recession persists. The FTSE All Share was up 5.5% (GBP) over the fourth quarter.

The FTSE Europe ex UK index returned 0.6% (GBP) ending a solid year in quieter fashion as the Eurozone ascended from recession. In Germany, the IFO business sentiment index moved up regaining levels last seen in July 2008 while unemployment fell away. Positive reports also emerged from both France (manufacturing up) and Italy (consumer confidence improved). Eurozone CPI inflation ended 2009 on a 10 month high at 0.9%, still well below the ECB's 2% ceiling. The ECB left its main rate unchanged at 1% and warned high borrowing governments about the dangers they themselves now pose to financial markets. Eurozone unemployment ended 2009 at 10%.

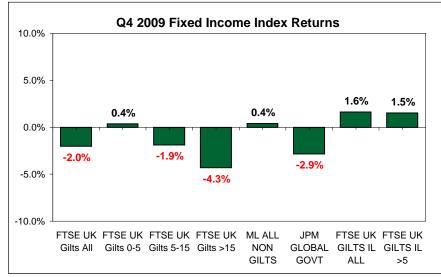
In the US; IT, Utilities and Telecoms led the way as Financials slowed. Manufacturing and housing figures surprised by ending the year with an upturn, indicating expansion. The well publicised international discord attained at the Copenhagen climate summit further weakened US relations with China, already strained by tensions over tariffs on subsidised steel imports. US unemployment ended the year unchanged month on month at 10%. Since the start of recession in 2007 7.2m jobs have gone in the US, 4.2m of those in 2009. The scheduled withdrawal of quantitative easing for March now seems less certain as rumours emerge that the Fed maintains a more cautious outlook for the economy and its fragile improvement. The Fed now owns approximately \$1,000bn of mortgages. Mortgage quarter GDP was 2.2% at the most recent estimate. The federal funds target rate was maintained at its all time low of 0-0.25%. The FTSE US index was up 5% (GBP) over the fourth quarter of 2009.

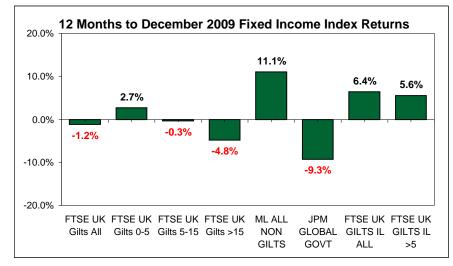
Japanese equities closed December on a rise though Q4 confidence was hit following substantial reductions to the Q3 GDP figure to 1.3% (down from the 4.8% estimate). Concerns over hyper deflation persist to which the Bank of Japan has responded with new loans to 3 major banks and the government announced further stimulus with a focus on employment initiatives. The FTSE Japan returned - 4% (GBP) for Q4; the FTSE Asia Pacific ex Japan returned 4.6% (GBP). The Reserve Bank of Australia continued in confident fashion with a 3rd consecutive monthly interest rate raise following strong employment statistics. Following a difficult Q3 in China, industrial production, imports and exports all showed strength. China is now thought to have surpassed Germany as the world's largest exporter. Despite a weaker finish to 2009 it was Latin American equities that were the top performers in a record breaking year for Emerging Markets as they significantly outperformed developed counterparts. This success was reflected in Brazil and Mexico with falling rates of unemployment. Many of the emerging economies are targeting further growth in the region of 8-10% in 2010. MSCI Emerging Markets Free index returned 7.5% (GBP) for the fourth quarter.



# London Borough of Hillingdon

### **Fixed Income Overview**





All index returns are in GBP terms unless stated otherwise.



Following the contagion resulting from the collapse of Lehman Brothers in September 2008, the global markets saw an unprecedented downturn in the first three months of 2009. Since then, alobal economic recovery now seems to be underway thanks to the aggressive actions of the major governments and central banks as well as the resilience of some of the emerging economies. At the end of Q4 2009 global GDP is now expanding, the major equity markets have bounced back impressively and the provision of global credit, while still hampered has undoubtedly improved. Japan, Germany and France returned to positive growth in Q2, and the US and Euro-zone in Q3. The laggard was the UK however December's purchasing managers' indices (PMI) for manufacturing and services underpinned confidence for a return to growth in the 4th guarter while the official estimate for Q4 GDP due on the 26th January is expected to confirm emergence from recession. Monetary policy 'exit' strategies look to be one of the dominant themes for 2010. The Bank of England (BoE) continues to maintain the base rate at a record low 0.5% and the asset purchase programme unchanged since November at £200bn. The three way split decision to extend the QE reflects the uncertainty of the outlook for the UK economy, while the BoE Quarterly Inflation Report (QIR) suggests that the door is far from closed for the prospect of further asset purchases. Government bonds rallied towards the end of November, driven by concerns about Dubai World's request to delay its debt repayments and a rise in risk aversion. The event sparked broader concerns about the high levels of public and private sector debt in both emerging and developed economies. Bond yields rose steadily through December as concerns re-surfaced over the UK's triple A status and the Pre-Budget Report failed to clearly outline a credible plan how to cut the medium term budget deficit. Concerns are that the current high level of policy stimulus risks a significant up-shift in inflation expectations. Combined with the expected strong UK PMI data for manufacturing and services sectors for December and higher equities, UK Gilt 10 year yields were pushed up above 4%. The FTSE All Stock Gilts closed the guarter down -2.04% (GBP), while on the corporate bond side the ML All Non-Gilts index was up 0.38% (GBP) for the guarter and 11.06% for the year.

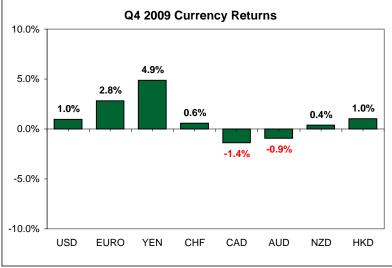
In Europe the European Central Bank (ECB) also maintained its main refinancing rate at 1.0% and is cautious regarding prospects for the economy, with the likely recovery path described by ECB President Jean-Claude Trichet as 'uneven'. However first steps have been taken to unwind some of its monetary stimulus measures, as Mr. Trichet announced that December's one-year Long Term Refinancing Operation would be the last, while six month operations would finish by end Q1 2010. In December the Euro-zone was dominated by the downgradeof Greece. Participants are not convinced of the country's debt reduction plan and switched out of peripheral paper into German bunds. Data at the end of December showed stronger German exports in November, a rise in euro zone unemploymentfrom 9.9% to 10% and a drop in confidence as the German ZEW economic sentiment survey droppedfrom 57.7 at the end of Q3 to 50.4 for December. The iTraxx Europe Index, representative of 125 investment grade entities across 6 sectors saw further tightening of spreads from 96.24 at the end of Septemberto 92.63 at year end. The JPM European Govt Bond index returned 0.39% (EUR) and the Barclay Capital Euro Aggregate Corporate Bond index returned 1.71% (EUR) for the fourth quarter.

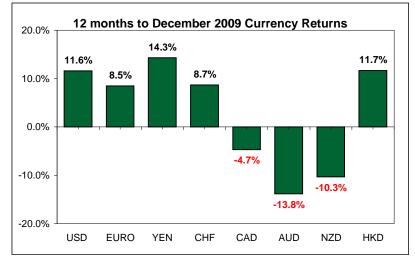
The Federal Reserve's open market committee (FOMC) followed the decisions by the ECB, BoE and Bank of Japan (BoJ) to keep interest rates pegged at 0-0.25% and reiterated that it believes that current economic conditions continue to warrant 'exceptionally low levels of the federal funds rate for an extended period'. With the continuing low money market rates coupled with increased risk appetites, there has been a broad sell off of the longer term Treasuries morinto and pushing credit markets to strong annual returns. US Treasuries came under upward pressure throughout December on fairly upbeat economic data, higher equities and confidence of a first gain in the monthly employment report. November's non-farm payroll came in at only down -11,000, although unemploymentstill stands at 10%. The 10 year Treasury yields closed the quarter at 3.84% up from 3.31% for end of September and 2 year Treasury yields increased to 1.14%, up from 0.96% for the same period. For the quarter, the JPM US Govt Bond index returned - 1.31% (USD) and the Barclay Capital Global Aggregate Corporate Bond index returned 0.75%. Over the year however the corporate bond index returned a very strong 19.18% (USD).



### London Borough of Hillingdon

### **Currency Market Overview**





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As debate centered on the sustainability of a global recovery, the final quarter of 2009 saw markets focused on the ballooning budget deficits of major developed countries and the Eurozone, anticipated upcoming inflationary pressures and central banks' intention on monetary policy heading into 2010. A meeting of G20 leaders in November concluded that global financial markets remained too fragile for immediate withdrawal of full government support. Australia raised their official interest rate from a 49-year low of 3.0% to 3.5% which further strengthened the Aussie dollar against the pound, euro and US dollar. Norway also increased its rate by 25 basis points to 1.5% making it the first European country to do so since the onset of the financial crisis.

Volatility in the global currency markets over the quarter was punctuated by events in Dubai and Greece. Dubai's US\$100 billion debt burden was highlighted when its government had to request a 6 month credit extension on behalf of Dubai World, a government related entity, on servicing its US\$26 billion debt. The event spooked markets in Europe and Asia as doubts grew on the possibility of sparking a second round of the credit crisis. Rating agencies, Moody and S&P, reacted by downgrading a host of other Dubai government related entities. The FTSE 100, FTSE Eurotop 300 and Nikkei indices all plummeted 3.2% on the day from their respective levels while oil prices also took a hit. Risk aversion dominated as markets seeked the safe-haven of the US dollars and bonds while the euro and sterling (versus US dollar) knee-jerked to lows of 1.4828 and 1.6273 respectively. The eventual Dubai bail out came from fellow emirate Abu Dhabi once again with a provision of a US\$10 billion lifeline to prevent Dubai's imminent default.

The US dollar gained against the euro and yen by 1.9% and 3.9% respectively over the quarter but lost -1.0% against sterling. Easing fears of a stalling recovery in the US, the unemployment rate slowed despite the jobless total still at a 26 year high. The US Institute of Supply Management manufacturing data rose into territory not seen since 2006 as industrial production gained forward momentum with US factory orders improving over 6 consecutive months, outstripping expectations. The dollar appreciated in line with global stock prices and reached a three and a half month high as Federal Reserve Chairman Ben Bernanke upgraded assessment of the US economy and signaled possible intention to consider unwinding from quantitative easing and low interest rate earlier than planned. However, the decline in consumer spending and drop in new housing surrendered some of the dollar's gains. Year end saw the Chicago Board Options Exchange Volatility Index decreased by 43% from beginning of the year and 72% from peak of credit crisis in Q4 2008.

The Pound made ground over the latest quarter against most major developed currencies with the exception of the Canadian and Aussie dollar. Sterling was initially buoyed by the central bank's positive comment on the "scale and speed of impact" of its asset purchase program but fell when investors turned their attention on UK's ever growing budget deficit and possibility of a rating downgrade with the likes of Greece. 10 year gilt yields rose as government bonds suffered substantial sell offs on the government's perceived lack of conviction in addressing the deficit. Furthermore, the country was confirmed as the only developed economy to remain in recession from Q3. The Bank of England left base rate unchanged at 0.5% and increased quantitative easing by another £25 billion, bringing the total to date to £200 billion. For the quarter, sterling was up 1% vs. the dollar, 2.8% vs. euro and 4.9% vs. yen. The FTSE All Share recovered 30% over 2009 whilst the pound had gains of 11.6%, 8.5% and 14.3% against the dollar, euro and yen respectively over the same period.

The Eurozone exited recession and its interest rate was kept steady at 1% with markets not expecting any changes until the latter half of 2010. European Central Bank President Jean-Claude Trichet announced plans to start reversing emergency measures in December against IMF's advice as the currency zone reported a worsening trade budget deficit and prediction of rising unemployment well into the new year, with Spain's jobless rate hitting19.3%. Purchasing Managers data from Markit showed business activity rose at the fastest level since December 2007 in the region which was strongly supported by the German Ifo business confidence index peaking at its highest since August 2008 and France also recording an increase in business confidence. The euro lost ground against the US dollar (-1.9%) and British pound (-2.8%), but advanced on the Yen by 2.0% over the quarter.

Gold prices continued to ascend, up by 25% in 2009, as investors took shelter from rising inflationary prospects. Oil, US and Brent crudes also headed north on the support of strong Chinese demand and signs of US demand recovery. The Yen fell against the dollar, sterling and euro as Japan boosted its stimulus package by some US\$82 billion and kept its interest rate ultra low to combat deflation and a stronger currency.



#### **Scheme Performance**

During the fourth quarter of 2009 London Borough of Hillingdon underperformed the Total Plan Benchmark by -0.78% (relative), returning 3.02% vs. 3.83%. Asset allocation (-0.60%) and the passive currency effect (-0.62%) were the primary sources of underperformance. Underweighting profitable asset classes and overweighting unprofitable asset classes throughout the entire Fund caused asset allocation to have a negative effect on performance. Stock selection (0.47%), particularly among Overseas Equity (0.86%) compensated for some of the losses.

Three of the current seven managers, holding 49.14% of Total Assets, underperformed during the quarter. Their relative underperformance ranged from -0.46% to -3.74%. Relative performance for the remaining managers was either flat or minor (less than 0.50%) and did not balance the negative contributions incurred by the underperforming funds.

Historically, the Fund shows a pattern of underperformance with nine of the last twelve quarters having negative relative returns. Consequently, the Fund underperforms over all short and long term periods.

### **Manager Performance**

#### Alliance Bernstein

Alliance Bernstein continued to underperform returning 3.47% compared to the benchmark's 3.94%. Poor stock selection (-0.61%), particularly UK Equity (-0.92%) and Asia Pacific ex Japan (-0.29%) produced the quarter's underperformance. This was the tenth consecutive quarter of below benchmark returns. Eleven of the last twelve quarters showed a negative relative return and cause the Managers to underperform over all time frames.

#### **Goldman Sachs**

Goldman Sachs outperformed the benchmark for the third consecutive quarter (1.25% vs. 0.79%). Consequently, the Manager was well positioned to outperform over the one year period (11.71% vs. 7.73%). However, weak historical returns cause GS to underperform over long term periods.

#### UBS

During the fourth quarter of 2009, UBS underperformed the FTSE All Share 3.41% vs. 5.47%. Stock selection (-1.65%), particularly Financials (-1.04%), Consumer Services (-0.36%) and Industrials (-0.36%), caused the underperformance. Asset allocation (-0.31%) further expanded the negative performance gap. The year was evenly split between two outperforming quarters and two underperforming quarters, with the latter slightly outweighing the former and resulting in a 29.47% vs. 30.12% return for the year. The three and five year periods also show underperformance (-0.50% vs. 1.77% and 5.05% vs. 7.10%, respectively). Since inception in December 1988, UBS outperforms 10.13% vs. 8.93%.

#### **UBS Property**

UBS Property underperformed the benchmark (3.86% vs. 7.90%) for the second quarter in a row. Combined with the negative relative return of the previous quarter, this quarters results caused the Manager to fall behind the benchmark over all time frames. Since inception in March 2006, UBS Property returns -6.43% vs. 5.67%.



| (S)                 |                | 4th Quarter, 2009 | London Borough of Hillingdon |
|---------------------|----------------|-------------------|------------------------------|
| Active Contribution | <u>11/09 -</u> | <u>10/09 -</u>    | <u>9/09 -</u>                |
|                     | <u>12/09</u>   | <u>11/09</u>      | <u>10/09</u>                 |

#### By Manager

|                    | Active<br>Contribution<br>Q4 09 | Portfolio | Benchmark | Excess<br>Return | Relative<br>Return | Active<br>Contribution<br>12/09 | Portfolio | Benchmark | Excess<br>Return | Relative<br>Return | Active<br>Contribution<br>11/09 | Portfolio | Benchmark | Excess<br>Return | Relative<br>Return | Active<br>Contribution<br>10/09 |
|--------------------|---------------------------------|-----------|-----------|------------------|--------------------|---------------------------------|-----------|-----------|------------------|--------------------|---------------------------------|-----------|-----------|------------------|--------------------|---------------------------------|
| Goldman Sachs      | 277,812.05                      | -1.56     | -1.72     | 0.16             | 0.16               | 96,029.69                       | 1.25      | 1.32      | -0.06            | -0.06              | -37,881.37                      | 1.58      | 1.22      | 0.36             | 0.36               | 219,663.73                      |
| UBS                | -1,962,772.90                   | 3.74      | 4.34      | -0.60            | -0.57              | -603,792.25                     | 2.27      | 2.96      | -0.69            | -0.67              | -669,632.50                     | -2.54     | -1.82     | -0.72            | -0.73              | -689,348.15                     |
| Alliance Bernstein | -449,665.68                     | 3.95      | 3.90      | 0.05             | 0.05               | 52,341.52                       | 3.37      | 3.48      | -0.11            | -0.10              | -111,061.31                     | -3.71     | -3.32     | -0.39            | -0.40              | -390,945.89                     |
| UBS Property       | -1,595,268.77                   | 1.02      | 2.18      | -1.16            | -1.14              | -485,147.89                     | 1.13      | 3.01      | -1.88            | -1.82              | -785,472.13                     | 1.67      | 2.51      | -0.84            | -0.82              | -324,648.75                     |
| SSGA               | -35,286.35                      | 2.76      | 2.79      | -0.03            | -0.03              | -31,557.85                      | 2.89      | 2.91      | -0.03            | -0.02              | -24,476.31                      | -2.22     | -2.24     | 0.02             | 0.02               | 20,747.81                       |
| SSGA Drawdown      | 4,457.09                        | -0.66     | -0.63     | -0.03            | -0.03              | -7,282.17                       | 0.57      | 0.57      | 0.01             | 0.01               | 1,259.42                        | 0.36      | 0.31      | 0.05             | 0.05               | 10,479.84                       |
| SSGA Temporary     | 50,663.89                       | 3.74      | 3.70      | 0.04             | 0.04               | 32,169.52                       | 4.32      | 4.27      | 0.05             | 0.04               | 33,177.28                       | -4.65     | -4.63     | -0.02            | -0.02              | -14,682.91                      |

Total Fund Market Value at Qtr End: £505.7 M



XD

4th Quarter, 2009

# London Borough of Hillingdon

| Scheme Performance              | rmance Three <u>Months</u> |           |           |           |                  |                    |           | <u>Ye</u><br><u>To E</u> |                  |                    | <u>One</u><br><u>Year</u> |           |                  |                    |  |
|---------------------------------|----------------------------|-----------|-----------|-----------|------------------|--------------------|-----------|--------------------------|------------------|--------------------|---------------------------|-----------|------------------|--------------------|--|
|                                 | Market<br>Value £m         | % of Fund | Portfolio | Benchmark | Excess<br>Return | Relative<br>Return | Portfolio | Benchmark                | Excess<br>Return | Relative<br>Return | Portfolio                 | Benchmark | Excess<br>Return | Relative<br>Return |  |
| London Borough of<br>Hillingdon | 505.7                      | 100.00    | 3.02      | 3.83      | -0.81            | -0.78              | 18.58     | 19.35                    | -0.77            | -0.65              | 18.58                     | 19.35     | -0.77            | -0.65              |  |

#### By Manager

|                    | Market<br>Value £m | % of Fund | Portfolio | Benchmark | Excess<br>Return | Relative<br>Return | Portfolio | Benchmark | Excess<br>Return | Relative<br>Return | Portfolio | Benchmark | Excess<br>Return | Relative<br>Return |
|--------------------|--------------------|-----------|-----------|-----------|------------------|--------------------|-----------|-----------|------------------|--------------------|-----------|-----------|------------------|--------------------|
| Goldman Sachs      | 60.8               | 12.02     | 1.25      | 0.79      | 0.46             | 0.46               | 11.71     | 7.73      | 3.98             | 3.69               | 11.71     | 7.73      | 3.98             | 3.69               |
| UBS                | 100.3              | 19.82     | 3.41      | 5.47      | -2.07            | -1.96              | 29.47     | 30.12     | -0.65            | -0.50              | 29.47     | 30.12     | -0.65            | -0.50              |
| Alliance Bernstein | 107.0              | 21.16     | 3.47      | 3.94      | -0.48            | -0.46              | 22.02     | 25.40     | -3.37            | -2.69              | 22.02     | 25.40     | -3.37            | -2.69              |
| UBS Property       | 41.3               | 8.16      | 3.86      | 7.90      | -4.04            | -3.74              | -5.49     | -1.78     | -3.71            | -3.78              | -5.49     | -1.78     | -3.71            | -3.78              |
| SSGA               | 100.0              | 19.78     | 3.38      | 3.41      | -0.03            | -0.03              | 22.04     | 22.02     | 0.02             | 0.01               | 22.04     | 22.02     | 0.02             | 0.01               |
| SSGA Drawdown      | 21.0               | 4.16      | 0.26      | 0.24      | 0.02             | 0.02               | -         | -         | -                | -                  | -         | -         | -                | -                  |
| SSGA Temporary     | 75.0               | 14.84     | 3.19      | 3.12      | 0.07             | 0.06               | -         | -         | -                | -                  | -         | -         | -                | -                  |

Total Fund Market Value at Qtr End: £505.7 M





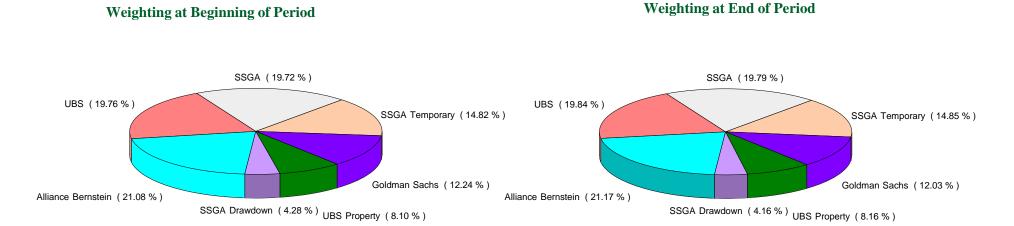
# London Borough of Hillingdon

| Scheme Performance              |           | <u>Thi</u><br>Yes |                  |                    |           | <u>Fiv</u><br>Yea |                  |                    |                   | Inception<br>To Date |             |                  |                    |  |  |
|---------------------------------|-----------|-------------------|------------------|--------------------|-----------|-------------------|------------------|--------------------|-------------------|----------------------|-------------|------------------|--------------------|--|--|
| _                               | Portfolio | Benchmark         | Excess<br>Return | Relative<br>Return | Portfolio | Benchmark         | Excess<br>Return | Relative<br>Return |                   | Portfolio            | Benchmark   | Excess<br>Return | Relative<br>Return |  |  |
| London Borough of<br>Hillingdon | -2.15     | 0.58              | -2.73            | -2.71              | 4.73      | 6.67              | -1.95            | -1.83              |                   | 6.23                 | 6.54        | -0.31            | -0.29              |  |  |
| By Manager                      | Portfolio | Benchmark         | Excess<br>Return | Relative<br>Return | Portfolio | Benchmark         | Excess<br>Return | Relative<br>Return | Inception<br>Date | Portfoli             | o Benchmark | Excess<br>Return | Relative<br>Return |  |  |
| Goldman Sachs                   | 4.64      | 5.56              | -0.92            | -0.87              | 8.07      | 8.61              | -0.54            | -0.50              | 31/12/01          | 5.48                 | 6.19        | -0.71            | -0.67              |  |  |
| UBS                             | -0.50     | 1.77              | -2.28            | -2.24              | 5.05      | 7.10              | -2.05            | -1.91              | 31/12/88          | 10.13                | 8.93        | 1.20             | 1.10               |  |  |
| Alliance Bernstein              | -3.69     | 1.02              | -4.71            | -4.66              | -         | -                 | -                | -                  | 31/03/06          | -1.54                | 2.07        | -3.61            | -3.54              |  |  |
| UBS Property                    | -11.24    | -10.92            | -0.32            | -0.35              | -         | -                 | -                | -                  | 31/03/06          | -6.43                | -5.67       | -0.76            | -0.80              |  |  |
| SSGA                            | -         | -                 | -                | -                  | -         | -                 | -                | -                  | 30/11/08          | 28.72                | 28.61       | 0.11             | 0.09               |  |  |
| SSGA Drawdown                   | -         | -                 | -                | -                  | -         | -                 | -                | -                  | 30/06/09          | 5.02                 | 4.84        | 0.18             | 0.17               |  |  |
| SSGA Temporary                  | -         | -                 | -                | -                  | -         | -                 | -                | -                  | 30/06/09          | 26.89                | 26.72       | 0.17             | 0.13               |  |  |

Total Fund Market Value at Qtr End: £505.7 M





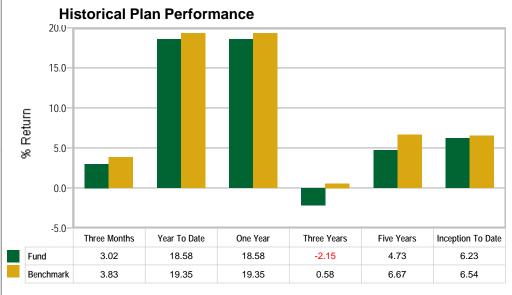


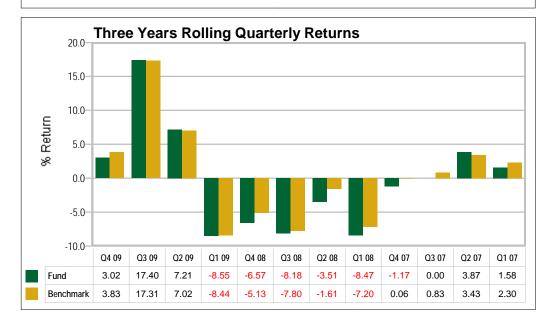
|                              | Opening Market % of Fund<br>Value |        | Net Investment | Appreciation | Income Received | Closing Market<br>Value | % of Fund |
|------------------------------|-----------------------------------|--------|----------------|--------------|-----------------|-------------------------|-----------|
|                              | £(000)                            |        | £(000)         | £(000)       | £(000)          | £(000)                  |           |
| London Borough of Hillingdon | 492,921                           | 100.00 | -2,073         | 12,902       | 1,943           | 505,693                 | 100.00    |
| Capital International        | 30                                | 0.01   | -3             | 1            | 2               | 30                      | 0.01      |
| Goldman Sachs                | 60,292                            | 12.23  | -246           | 679          | 78              | 60,803                  | 12.02     |
| UBS                          | 97,344                            | 19.75  | -400           | 2,450        | 856             | 100,251                 | 19.82     |
| Alliance Bernstein           | 103,828                           | 21.06  | -426           | 3,060        | 531             | 106,992                 | 21.16     |
| UBS Property                 | 39,882                            | 8.09   | -165           | 1,060        | 480             | 41,256                  | 8.16      |
| SSGA                         | 97,139                            | 19.71  | -394           | 3,276        | -0              | 100,021                 | 19.78     |
| SSGA Drawdown                | 21,070                            | 4.27   | -84            | 55           |                 | 21,041                  | 4.16      |
| SSGA Temporary               | 72,996                            | 14.81  | -288           | 2,320        |                 | 75,029                  | 14.84     |
| Nomura                       | 340                               | 0.07   | -67            | -0           | -3              | 270                     | 0.05      |

Northern Trust

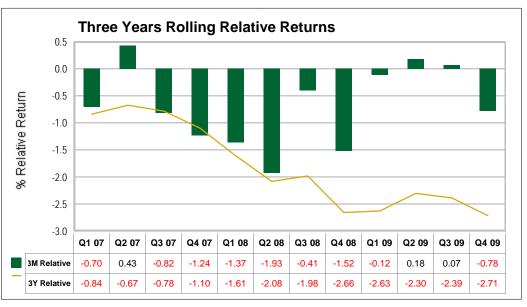
# London Borough of Hillingdon







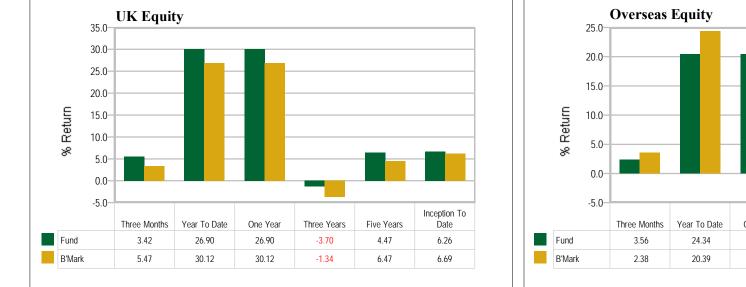
| <b>Risk Statistics - 3 years</b> | Fund     | B'mark |
|----------------------------------|----------|--------|
| Performance Return               | -2.15    | 0.58   |
| Standard Deviation               | 15.25    | 14.77  |
| Relative Return                  | -2.71    |        |
| Tracking Error                   | 1.29     |        |
| Information Ratio                | -2.12    |        |
| Beta                             | 1.03     |        |
| Alpha                            | -2.55    |        |
| R Squared                        | 0.99     |        |
| Sharpe Ratio                     | -0.47    | -0.30  |
| Percentage of Total Fund         | 100.0    |        |
| Inception Date                   | Sep-1995 |        |
| Opening Market Value (£000)      | 492,921  |        |
| Net Investment £(000)            | -2,073   |        |
| Income Received £(000)           | 1,943    |        |
| Appreciation £(000)              | 12,902   |        |
| Closing Market Value (£000)      | 505,693  |        |

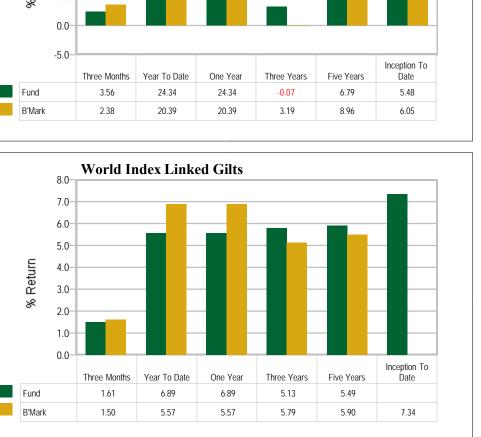


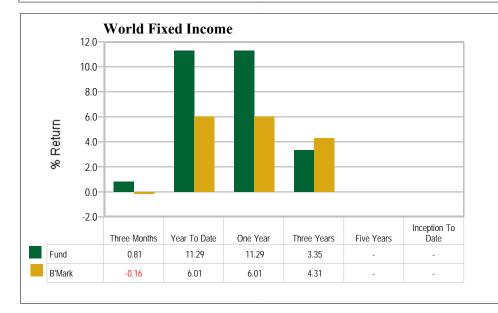




### London Borough of Hillingdon







Northern Trust



# London Borough of Hillingdon

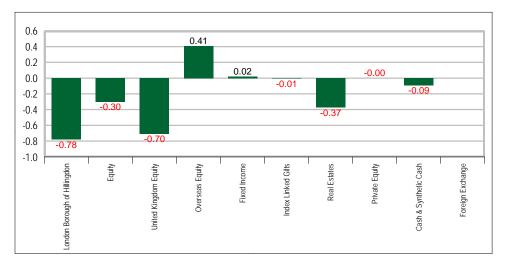






# **London Borough of Hillingdon**

### **Relative Contribution - Three Months**

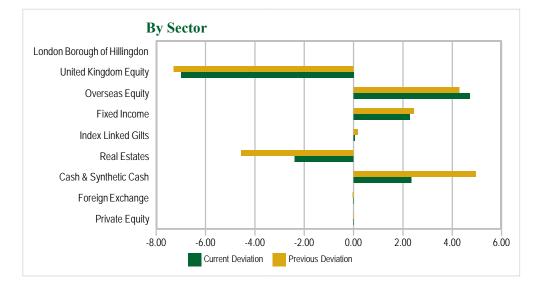


|                                 | Return | Benchmark | Relative<br>Return | Hedging<br>Effect | Passive<br>Currency | Asset<br>Allocation | Stock<br>Selection<br>Effect | Relative contribution |
|---------------------------------|--------|-----------|--------------------|-------------------|---------------------|---------------------|------------------------------|-----------------------|
| London Borough of<br>Hillingdon | 3.02   | 3.83      | -0.78              | 0.00              | -0.62               | -0.60               | 0.47                         | -0.78                 |
| Equity                          | 3.50   | -         | 3.50               | 0.00              | -0.36               | -0.21               | 0.28                         | -0.30                 |
| United Kingdom Equity           | 3.42   | 5.47      | -1.95              | 0.00              | 0.04                | -0.17               | -0.58                        | -0.70                 |
| Overseas Equity                 | 3.56   | 2.38      | 1.15               | 0.00              | -0.40               | -0.05               | 0.86                         | 0.41                  |
| Fixed Income                    | 0.81   | -0.16     | 0.98               | 0.00              | -0.26               | -0.09               | 0.37                         | 0.02                  |
| Index Linked Gilts              | 1.61   | 1.50      | 0.10               | 0.00              | -0.00               | -0.01               | 0.00                         | -0.01                 |
| Real Estates                    | 5.31   | 7.90      | -2.40              | 0.00              | 0.00                | -0.20               | -0.18                        | -0.37                 |
| Private Equity                  | 0.00   | -         | 0.00               | 0.00              | -0.00               | -0.00               | 0.00                         | -0.00                 |
| Cash & Synthetic Cash           | 0.44   | -         | 0.44               | 0.00              | 0.00                | -0.09               | 0.00                         | -0.09                 |
| Foreign Exchange                | -      | -         | 0.00               | -                 | -                   | -                   | -                            | -                     |

Northern Trust



# London Borough of Hillingdon

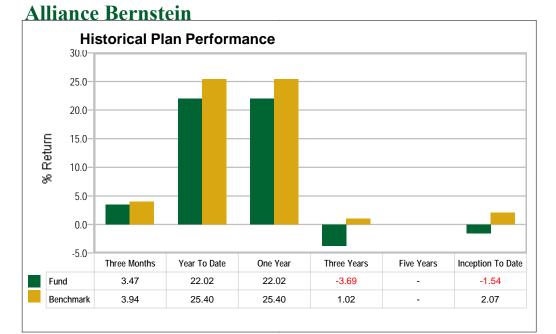


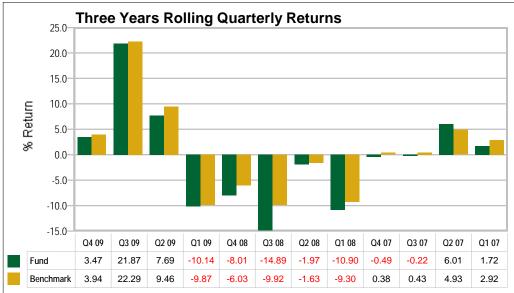
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|------------------------------|----------------|-----------------|----------------------|----------------------|-----------------------|-----------------------|
| London Borough of Hillingdon | 100.00         | 100.00          | 100.00               |                      | 100.00                |                       |
| United Kingdom Equity        | 29.85          | 29.55           | 36.84                | -6.99                | 36.84                 | -7.29                 |
| Overseas Equity              | 41.57          | 41.14           | 36.85                | 4.72                 | 36.85                 | 4.29                  |
| Fixed Income                 | 12.79          | 12.97           | 10.52                | 2.27                 | 10.52                 | 2.45                  |
| Index Linked Gilts           | 5.31           | 5.43            | 5.26                 | 0.05                 | 5.26                  | 0.17                  |
| Real Estates                 | 8.14           | 5.98            | 10.53                | -2.39                | 10.53                 | -4.55                 |
| Cash & Synthetic Cash        | 2.35           | 4.96            |                      | 2.35                 |                       | 4.96                  |
| Foreign Exchange             | -0.02          | -0.05           |                      | -0.02                |                       | -0.05                 |
| Private Equity               | 0.01           | 0.01            |                      | 0.01                 |                       | 0.01                  |



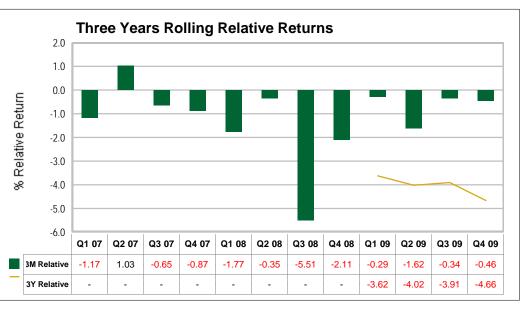


# London Borough of Hillingdon





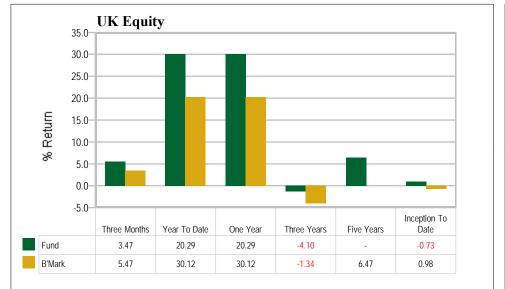
| <b>Risk Statistics - 3 years</b> | Fund     | B'mark |
|----------------------------------|----------|--------|
| Performance Return               | -3.69    | 1.02   |
| Standard Deviation               | 19.88    | 19.04  |
| Relative Return                  | -4.66    |        |
| Tracking Error                   | 2.12     |        |
| Information Ratio                | -2.22    |        |
| Beta                             | 1.04     |        |
| Alpha                            | -4.42    |        |
| R Squared                        | 0.99     |        |
| Sharpe Ratio                     | -0.44    | -0.21  |
| Percentage of Total Fund         | 21.2     |        |
| Inception Date                   | Mar-2006 |        |
| Opening Market Value (£000)      | 103,828  |        |
| Net Investment £(000)            | -426     |        |
| Income Received £(000)           | 531      |        |
| Appreciation £(000)              | 3,060    |        |
| Closing Market Value (£000)      | 106,992  |        |

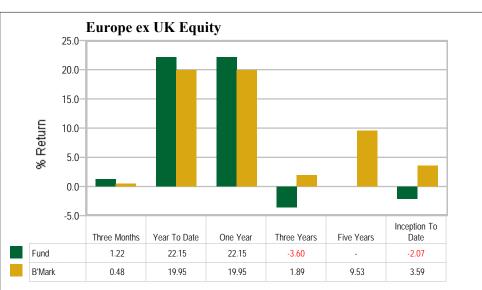


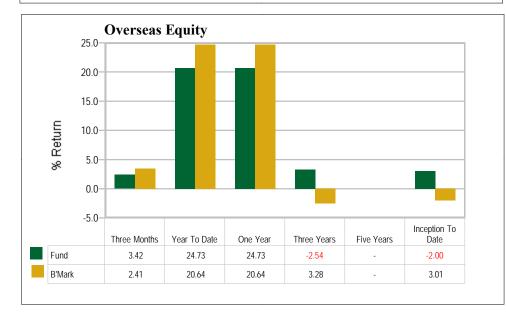


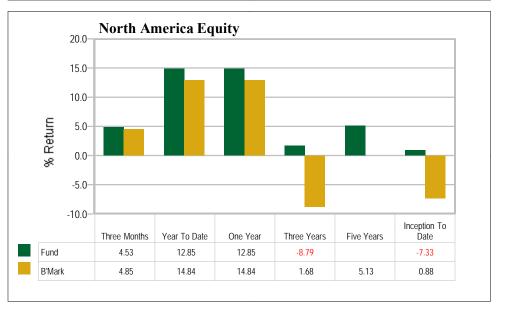


### **Alliance Bernstein**





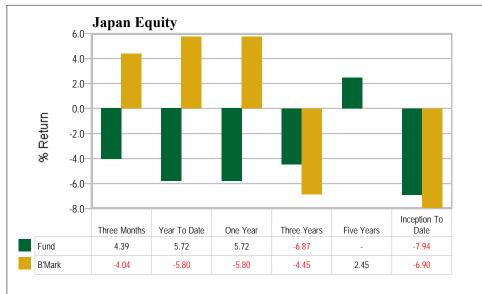


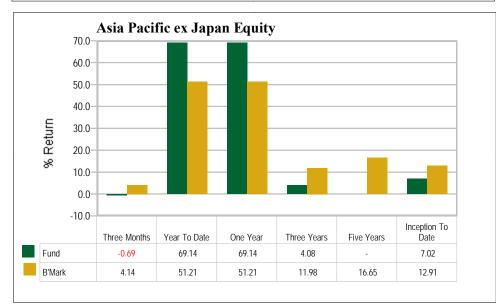


Northern Trust



### **Alliance Bernstein**





Northern Trust

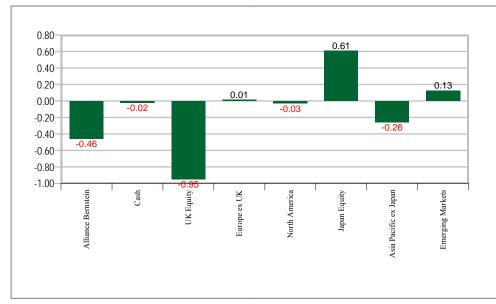
XII)

4th Quarter, 2009

London Borough of Hillingdon

# **Alliance Bernstein**

### **Relative Contribution - Three Months**



| 1.00<br>0.00<br>-0.37<br>-1.00                                                      |                  |
|-------------------------------------------------------------------------------------|------------------|
| -0.37 -0.35                                                                         | 0.30             |
|                                                                                     |                  |
| -2.00                                                                               |                  |
| -3.00 -2.69                                                                         |                  |
| Alliance Bernstein<br>Cash<br>Europe ex UK<br>Japan Equity<br>Asia Pacific ex Japan | Emerging Markets |

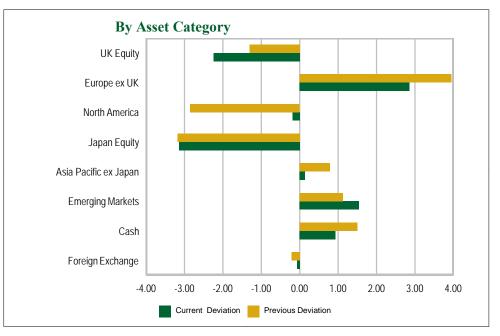
### **Relative Contribution - One Year**

|                       | Return | B'mark | Relative<br>Return | Hedging<br>Effect | Currency<br>Effect | Asset<br>Allocation | Stock<br>Selection | Relative<br>Contribution |                       | Return | B'mark | Relative<br>Return | Hedging<br>Effect | Currency<br>Effect | Asset<br>Allocation | Stock<br>Selection | Relative<br>Contribution |
|-----------------------|--------|--------|--------------------|-------------------|--------------------|---------------------|--------------------|--------------------------|-----------------------|--------|--------|--------------------|-------------------|--------------------|---------------------|--------------------|--------------------------|
| Alliance Bernstein    | 3.47   | 3.94   | -0.46              | 0.02              | 0.13               | -0.02               | -0.61              | -0.46                    | Alliance Bernstein    | 22.02  | 25.40  | -2.69              | -0.14             | 0.57               | 0.14                | -3.28              | -2.69                    |
| UK Equity             | 3.47   | 5.47   | -1.90              | 0.00              | -0.01              | -0.01               | -0.92              | -0.95                    | UK Equity             | 20.29  | 30.12  | -7.55              | 0.00              | -0.13              | 0.01                | -3.69              | -3.80                    |
| Europe ex UK          | 1.22   | 0.48   | 0.73               | 0.00              | -0.05              | -0.07               | 0.13               | 0.01                     | Europe ex UK          | 22.15  | 19.95  | 1.83               | 0.00              | 0.05               | -0.04               | 0.14               | 0.15                     |
| North America         | 4.53   | 4.85   | -0.30              | 0.00              | 0.01               | -0.03               | -0.01              | -0.03                    | North America         | 12.85  | 14.84  | -1.73              | 0.00              | -0.01              | -0.05               | -0.29              | -0.35                    |
| Japan Equity          | 4.39   | -4.04  | 8.78               | 0.00              | 0.14               | 0.11                | 0.36               | 0.61                     | Japan Equity          | 5.72   | -5.80  | 12.23              | 0.00              | 0.28               | 0.46                | 0.50               | 1.25                     |
| Asia Pacific ex Japan | -0.69  | 4.14   | -4.65              | 0.00              | 0.03               | 0.00                | -0.29              | -0.26                    | Asia Pacific ex Japan | 69.14  | 51.21  | 11.86              | 0.00              | 0.39               | -0.21               | 0.09               | 0.26                     |
| Emerging Markets      | 9.30   | 7.83   | 1.36               | 0.00              | -0.03              | 0.02                | 0.13               | 0.13                     | Emerging Markets      | 61.90  | 62.54  | -0.39              | 0.00              | 0.00               | 0.32                | -0.02              | 0.30                     |
| Cash                  | 2.55   | -      | 2.55               | 0.00              | 0.05               | -0.07               | 0.00               | -0.02                    | Cash                  | -3.73  | -      | -3.73              | 0.00              | -0.01              | -0.36               | 0.00               | -0.37                    |





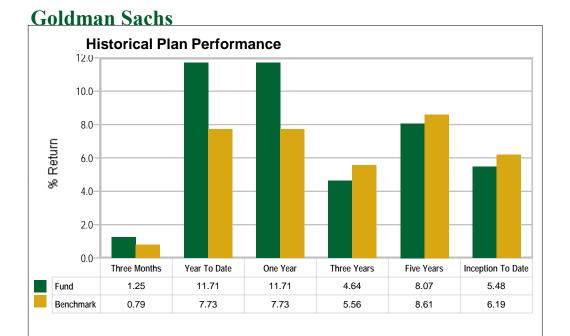
# **Alliance Bernstein**

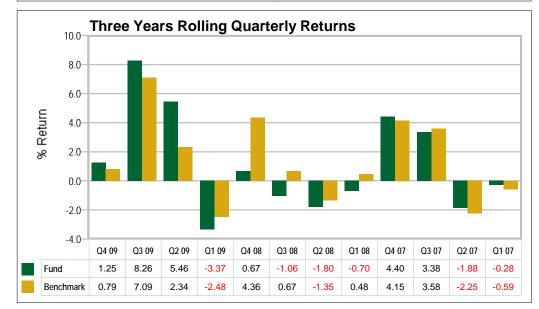


|                       | Current<br>Qtr | Previous<br>Qtr | Current<br>Benchmark | Current<br>Deviation | Previous<br>Benchmark | Previous<br>Deviation |
|-----------------------|----------------|-----------------|----------------------|----------------------|-----------------------|-----------------------|
| UK Equity             | 47.75          | 48.69           | 50.00                | -2.25                | 50.00                 | -1.31                 |
| Europe ex UK          | 17.85          | 18.96           | 15.00                | 2.85                 | 15.00                 | 3.96                  |
| North America         | 17.30          | 14.65           | 17.50                | -0.20                | 17.50                 | -2.85                 |
| Japan Equity          | 4.35           | 4.31            | 7.50                 | -3.15                | 7.50                  | -3.19                 |
| Asia Pacific ex Japan | 5.14           | 5.79            | 5.00                 | 0.14                 | 5.00                  | 0.79                  |
| Emerging Markets      | 6.54           | 6.13            | 5.00                 | 1.54                 | 5.00                  | 1.13                  |
| Cash                  | 0.92           | 1.50            |                      | 0.92                 |                       | 1.50                  |
| Foreign Exchange      | -0.07          | -0.21           |                      | -0.07                |                       | -0.21                 |

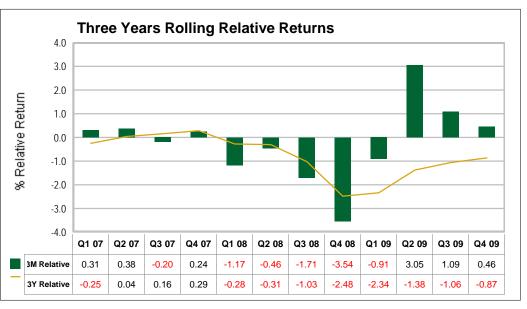


# London Borough of Hillingdon





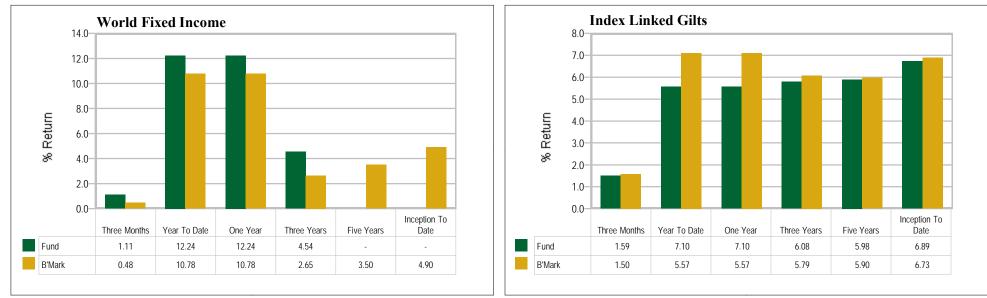
| <b>Risk Statistics - 3 years</b> | Fund     | B'mark |
|----------------------------------|----------|--------|
| Performance Return               | 4.64     | 5.56   |
| Standard Deviation               | 7.25     | 6.75   |
| Relative Return                  | -0.87    |        |
| Tracking Error                   | 2.13     |        |
| Information Ratio                | -0.43    |        |
| Beta                             | 1.04     |        |
| Alpha                            | -0.87    |        |
| R Squared                        | 0.92     |        |
| Sharpe Ratio                     | -0.06    | 0.07   |
| Percentage of Total Fund         | 12.0     |        |
| Inception Date                   | Dec-2001 |        |
| Opening Market Value (£000)      | 60,292   |        |
| Net Investment £(000)            | -246     |        |
| Income Received £(000)           | 78       |        |
| Appreciation £(000)              | 679      |        |
| Closing Market Value (£000)      | 60,803   |        |







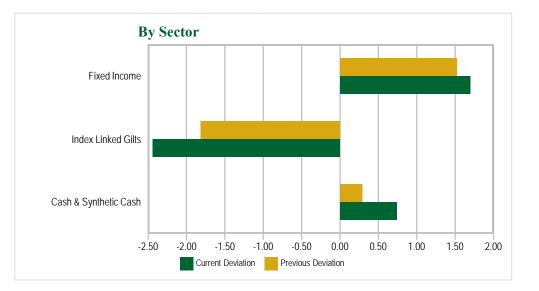
### **Goldman Sachs**







# **Goldman Sachs**



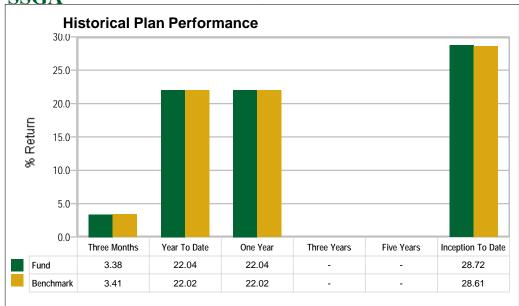
|                       | Current<br>Qtr | Previous<br>Qtr | Current<br>Benchmark | Current<br>Deviation | Previous<br>Benchmark | Previous<br>Deviation |
|-----------------------|----------------|-----------------|----------------------|----------------------|-----------------------|-----------------------|
| Fixed Income          | 71.70          | 71.52           | 70.00                | 1.70                 | 70.00                 | 1.52                  |
| Index Linked Gilts    | 27.56          | 28.19           | 30.00                | -2.44                | 30.00                 | -1.81                 |
| Cash & Synthetic Cash | 0.74           | 0.29            |                      | 0.74                 |                       | 0.29                  |

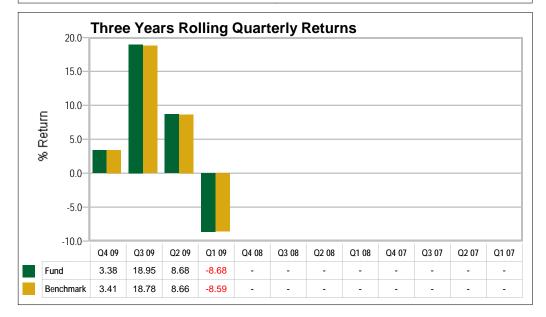




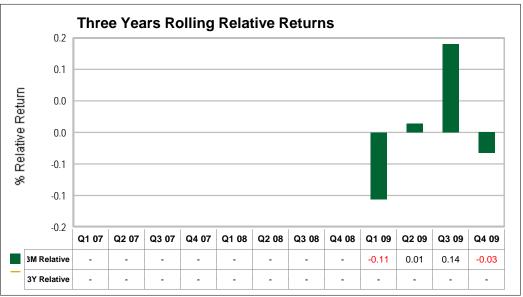
# London Borough of Hillingdon

### SSGA





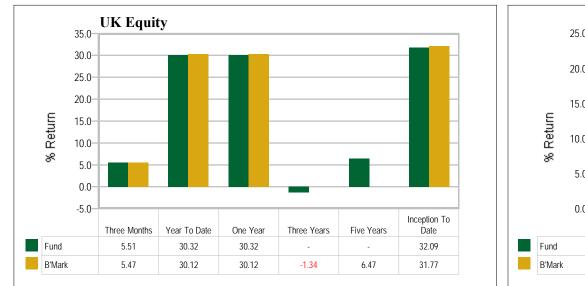
| Risk Statistics - 3 years   | Fund     | B'mark |
|-----------------------------|----------|--------|
| Performance Return          | -        |        |
| Standard Deviation          | -        |        |
| Relative Return             | -        |        |
| Tracking Error              | -        |        |
| Information Ratio           | -        |        |
| Beta                        | -        |        |
| Alpha                       | -        |        |
| R Squared                   | -        |        |
| Sharpe Ratio                | -        |        |
| Percentage of Total Fund    | 19.8     |        |
| Inception Date              | Nov-2008 |        |
| Opening Market Value (£000) | 97,139   |        |
| Net Investment £(000)       | -394     |        |
| Income Received £(000)      | -0       |        |
| Appreciation £(000)         | 3,276    |        |
| Closing Market Value (£000) | 100,021  |        |

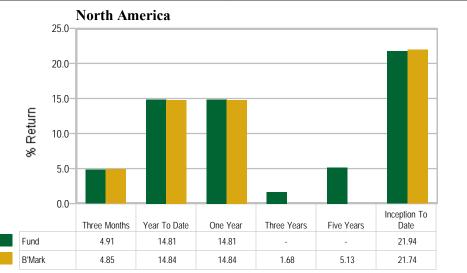


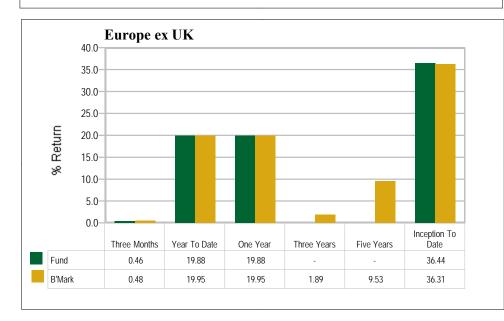




**SSGA** 





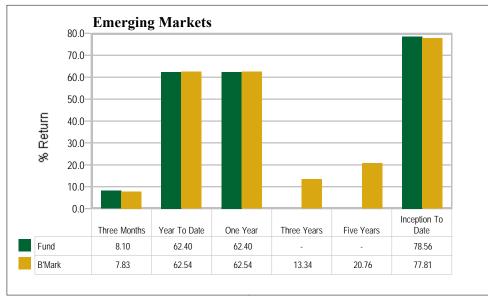




Northern Trust



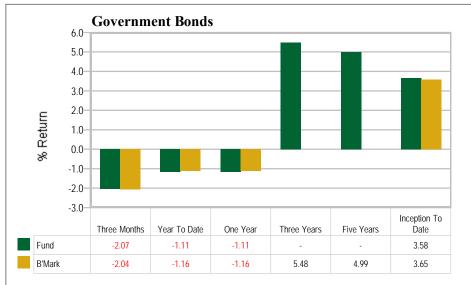
# **SSGA**

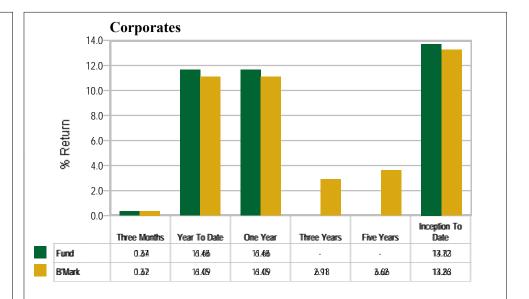


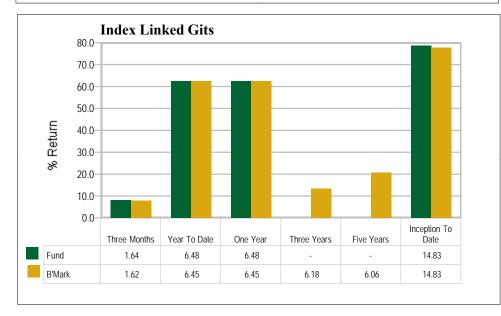




### **SSGA**

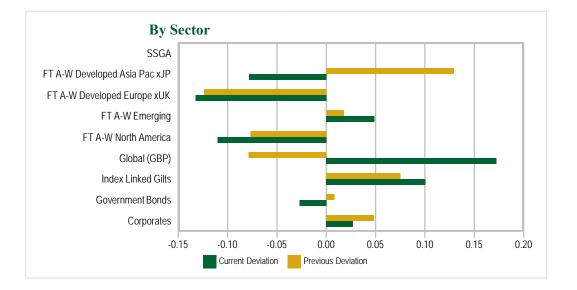






Northern Trust

# **SSGA**



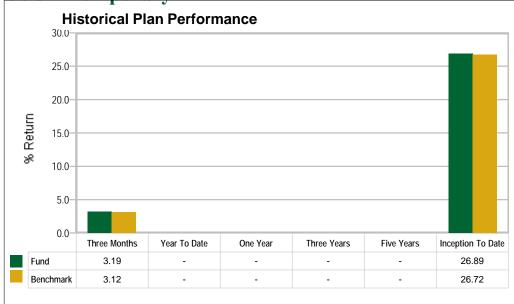
|                               | Current<br>Qtr | Previous<br>Qtr | Current<br>Benchmark | Current<br>Deviation | Previous<br>Benchmark | Previous<br>Deviation |
|-------------------------------|----------------|-----------------|----------------------|----------------------|-----------------------|-----------------------|
| SSGA                          | 100.00         | 100.00          | 100.00               |                      | 100.00                |                       |
| Equity                        | 79.90          | 79.87           |                      | 79.90                |                       | 79.87                 |
| FT A-W Developed Asia Pac xJP | 10.92          | 11.13           | 11.00                | -0.08                | 11.00                 | 0.13                  |
| FT A-W Developed Europe xUK   | 10.87          | 10.88           | 11.00                | -0.13                | 11.00                 | -0.12                 |
| FT A-W Emerging               | 3.05           | 3.02            | 3.00                 | 0.05                 | 3.00                  | 0.02                  |
| FT A-W North America          | 10.89          | 10.92           | 11.00                | -0.11                | 11.00                 | -0.08                 |
| Global (GBP)                  | 44.17          | 43.92           | 44.00                | 0.17                 | 44.00                 | -0.08                 |
| Fixed Income                  | 10.00          | 10.06           |                      | 10.00                |                       | 10.06                 |
| Index Linked Gilts            | 10.10          | 10.08           | 10.00                | 0.10                 | 10.00                 | 0.08                  |
| Government Bonds              | 1.47           | 1.51            | 1.50                 | -0.03                | 1.50                  | 0.01                  |
| Corporates                    | 8.53           | 8.55            | 8.50                 | 0.03                 | 8.50                  | 0.05                  |

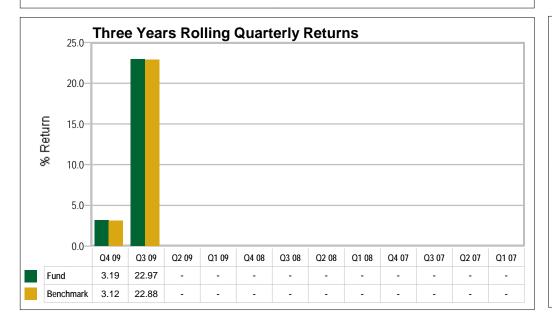




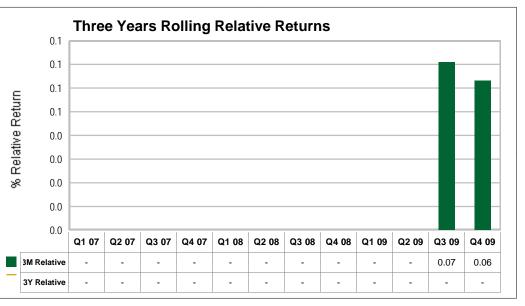
# London Borough of Hillingdon

### **SSGA Temporary**





| <b>Risk Statistics - 3 years</b> | Fund     | B'mark |
|----------------------------------|----------|--------|
| Performance Return               | -        |        |
| Standard Deviation               | -        |        |
| Relative Return                  | -        |        |
| Tracking Error                   | -        |        |
| Information Ratio                | -        |        |
| Beta                             | -        |        |
| Alpha                            | -        |        |
| R Squared                        | -        |        |
| Sharpe Ratio                     | -        |        |
| Percentage of Total Fund         | 14.8     |        |
| Inception Date                   | Jun-2009 |        |
| Opening Market Value (£000)      | 72,996   |        |
| Net Investment £(000)            | -288     |        |
| Income Received £(000)           | 0        |        |
| Appreciation £(000)              | 2,320    |        |
| Closing Market Value (£000)      | 75,029   |        |

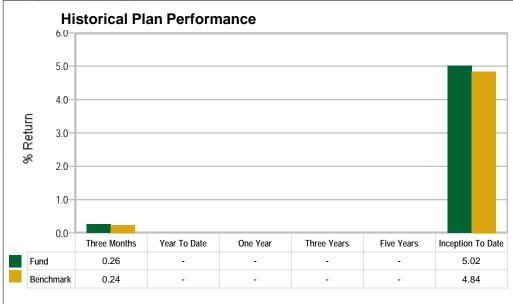


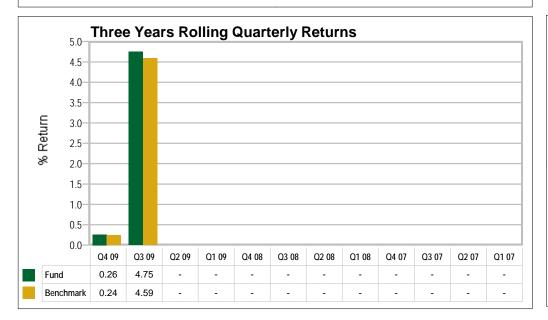




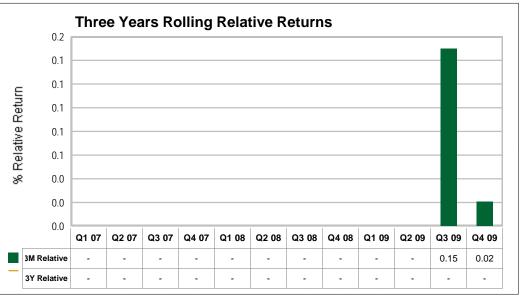
# London Borough of Hillingdon

### SSGA Drawdown





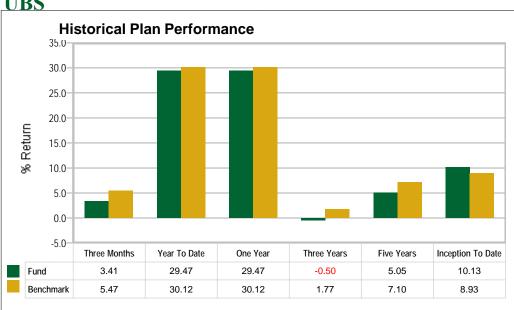
| <b>Risk Statistics - 3 years</b> | Fund     | B'mark |
|----------------------------------|----------|--------|
| Performance Return               | -        |        |
| Standard Deviation               | -        |        |
| Relative Return                  | -        |        |
| Tracking Error                   | -        |        |
| Information Ratio                | -        |        |
| Beta                             | -        |        |
| Alpha                            | -        |        |
| R Squared                        | -        |        |
| Sharpe Ratio                     | -        |        |
| Percentage of Total Fund         | 4.2      |        |
| Inception Date                   | Jun-2009 |        |
| Opening Market Value (£000)      | 21,070   |        |
| Net Investment £(000)            | -84      |        |
| Income Received £(000)           | 0        |        |
| Appreciation £(000)              | 55       |        |
| Closing Market Value (£000)      | 21,041   |        |

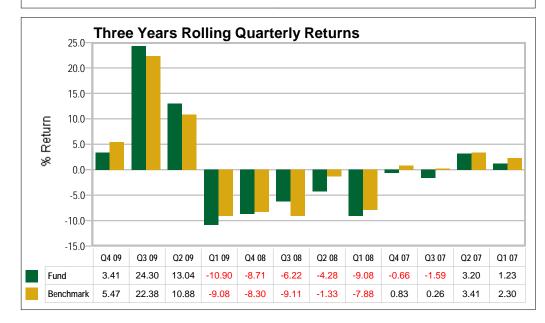




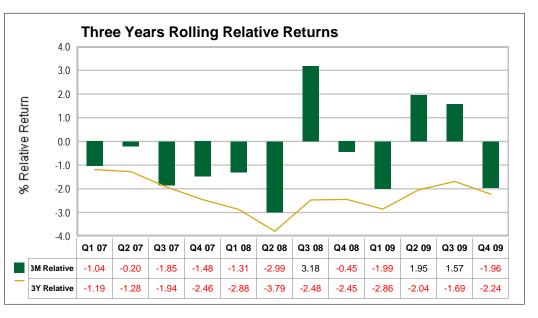
## London Borough of Hillingdon







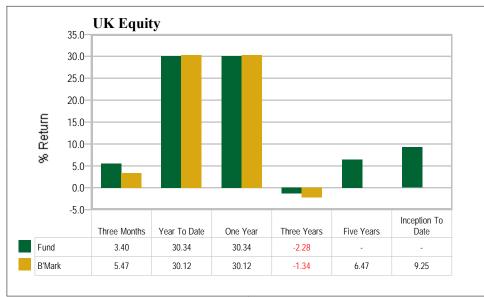
| <b>Risk Statistics - 3 years</b> | Fund     | B'mark |
|----------------------------------|----------|--------|
| Performance Return               | -0.50    | 1.77   |
| Standard Deviation               | 18.51    | 16.74  |
| Relative Return                  | -2.24    |        |
| Tracking Error                   | 4.20     |        |
| Information Ratio                | -0.54    |        |
| Beta                             | 1.08     |        |
| Alpha                            | -1.81    |        |
| R Squared                        | 0.95     |        |
| Sharpe Ratio                     | -0.30    | -0.20  |
| Percentage of Total Fund         | 19.8     |        |
| Inception Date                   | Dec-1988 |        |
| Opening Market Value (£000)      | 97,344   |        |
| Net Investment £(000)            | -400     |        |
| Income Received £(000)           | 856      |        |
| Appreciation £(000)              | 2,450    |        |
| Closing Market Value (£000)      | 100,251  |        |







## UBS

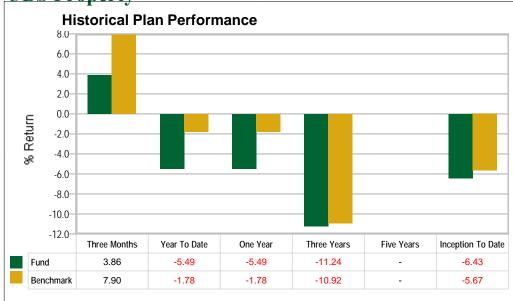


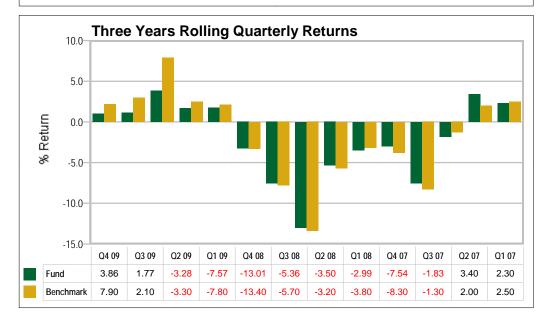




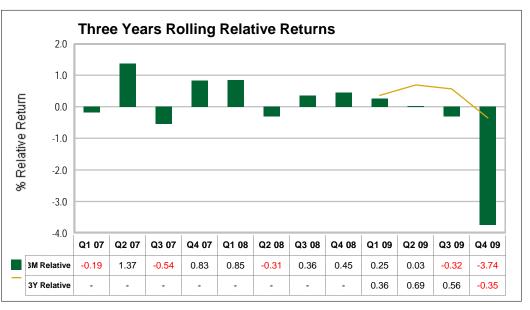
# London Borough of Hillingdon

### **UBS Property**





| <b>Risk Statistics - 3 years</b> | Fund     | B'mark |
|----------------------------------|----------|--------|
| Performance Return               | -11.24   | -10.92 |
| Standard Deviation               | 6.30     | 6.56   |
| Relative Return                  | -0.35    |        |
| Tracking Error                   | 2.81     |        |
| Information Ratio                | -0.11    |        |
| Beta                             | 0.88     |        |
| Alpha                            | -2.33    |        |
| R Squared                        | 0.84     |        |
| Sharpe Ratio                     | -2.59    | -2.44  |
| Percentage of Total Fund         | 8.2      |        |
| Inception Date                   | Mar-2006 |        |
| Opening Market Value (£000)      | 39,882   |        |
| Net Investment £(000)            | -165     |        |
| Income Received £(000)           | 480      |        |
| Appreciation £(000)              | 1,060    |        |
| Closing Market Value (£000)      | 41,256   |        |







### London Borough of Hillingdon

Tracking Error

$$\sigma_{ER} = \sqrt{\frac{\sum (ER_t - \overline{ER})^2}{T}} \quad \text{for } t=1 \text{ to } T$$

Annualised tracking error =  $\sigma_{ER} \times \sqrt{p}$ 

W hereEqualsERExcess return (Portfolio Return minus Benchmark Return)ERArithmetic average of excess returns (Portfolio Return minus E<br/>Return)

T Number of observations

*p* Periodicity (number of observations per year)

The tracking error measures the extent to which a portfolio tracks its benchmark. The higher the tracking error, the higher the variability of the portfolio returns around the benchmark. The tracking error will always be greater than zero, unless the portfolio is exactly tracking the benchmark.

#### Information Ratio

Information Ratio =  $\frac{\overline{ER}}{\sigma_{ER}}$ 

Annualised Information Ratio = Information Ratio  $\times \sqrt{p}$ 

| Where                 | Equals                                                                 | $R_{yi}$                             | Portfo        |
|-----------------------|------------------------------------------------------------------------|--------------------------------------|---------------|
| <b>ER</b><br>R eturn) | Arithmetic average of excess returns (Portfolio Return minus Benchmark | $\beta$ those of the mark            | Beta –<br>ket |
| Т                     | Number of observations                                                 | n                                    | Numb          |
| р                     | Periodicity (number of observations per year)                          | The portfolio's b<br>benchmark's vol |               |

The information ratio is a measure of risk adjusted return. The higher the information ratio, the higher the risk adjusted return.

<u>Alpha</u>

$$\alpha = \frac{\sum R_{yi}}{n} - \beta \frac{\sum R_{xi}}{n}$$

|           | Where                            | Equals                                                                       |
|-----------|----------------------------------|------------------------------------------------------------------------------|
|           | R <sub>xi</sub><br>Proxy return) | Market / Benchmark excess return (Benchmark return minus Risk Free           |
|           | $R_{yi}$                         | Portfolio excess return (Portfolio return minus Risk Free Proxy return)      |
| Benchmark | eta those of the mark            | Beta – measure of the sensitivity of a portfolio's rate of return against et |

Number of observations

The alpha is the value added to the portfolio by the manager – the higher the alpha, the better the manager has done in achieving excess returns.

Beta

п

$$\beta = \frac{n \sum R_{xi} R_{yi} - \sum R_{xi} \sum R_{yi}}{n \sum (R_{xi})^2 - (\sum R_{xi})^2}$$

WhereEquals $R_{xi}$ <br/>Proxy return)Market / Benchmark excess return (Benchmark return minus Risk Free<br/>Proxy return) $R_{yi}$ Portfolio excess return (Portfolio return minus Risk Free Proxy return)turn minus Benchmark $\beta$ <br/>those of the masure of the sensitivity of a portfolio's rate of return against<br/>those of the marketnNumber of observationsThe portfolio's beta is calculated by comparing the portfolio's returns are to<br/>movements in the benchmark's volatility over time. The more sensitive a portfolio's returns are to<br/>movements in the benchmark is possible to the post of the sensitive the postfolio's returns are to

movements in the benchmark, the higher the portfolio's beta will be. A beta greater than one implies the portfolio is more volatile than the benchmark, whilst a beta less than one implies the portfolio is less volatile than the benchmark.





London Borough of Hillingdon

**R-Squared** 

$$r^{2} = \frac{(n \sum R_{xi} R_{yi} - \sum R_{xi} \sum R_{yi})}{[n \sum (R_{xi})^{2} - (\sum R_{xi})^{2}][n \sum (R_{yi})^{2} - (\sum R_{yi})^{2}]}$$

Where Equals

| <i>R<sub>xi</sub></i><br>Proxy return) | Market / Benchmark excess return (Benchmark return minus Risk Free      |
|----------------------------------------|-------------------------------------------------------------------------|
| $R_{yi}$                               | Portfolio excess return (Portfolio return minus Risk Free Proxy return) |
|                                        |                                                                         |

*n* Number of observations

The  $R^2$  is the square of the correlation co-efficient between the portfolio return and the benchmark return in the above equation and is a measure of the fund's sensitivity to the benchmark, i.e. the percentage of the portfolio's movement that can be explained by movement in the benchmark. The  $R^2$  statistic ranges from 0 to 1 (or 0 to 100%) with a score of 1 indicating that all the portfolio's movement can be explained by the benchmark.

#### <u>Sharpe Ratio</u>

$$\frac{(R_{ap}-R_{af})}{\sigma_{ap}}$$

| Where    | Equals                                |
|----------|---------------------------------------|
| $R_{ap}$ | Annualised (portfolio) rate of return |
| $R_{af}$ | Annualised risk-free rate of return   |

 $\sigma_{ap}$  Annualised portfolio standard deviation

The Sharpe ratio measures the excess return over the risk-free rate per unit of volatility. For a given return, the lower the volatility of the portfolio, the higher the Sharpe ratio.







Price/Earnings Ratio (P/E) Security Level Calculation: Current price/Trailing 12 months earning per share Description:

The price/earnings ratio is a traditional indicator of how much an investor is paying for a company's earning power. Stocks have a p/e greater than the market are usually considered to be growth stocks.

5 Year Earnings Per Share Growth Rate Security Level Calculation: None

Description:

This is the percentage change in the annual earning per share growth rate over the last five years of all stock in the portfolio. This measure is usually viewed as agrowth factor. A stock must have been public for at least five years to have this characteristic.

Price to Book Ratio Security Level Calculation: Current price/Most recent book value per share Description: This is usually considered to be a measure of "value", with stocks having high price to book ratios considered to be undervalued.

Dividend Yield Security Level Calculation: Dividend for current fiscal year/Period end closing price Description: This measures the annual rate that dividends are being paid by a company,

including any extra dividends. High dividend yields can also be an attribute of value stocks.

Debt to Capital

Security Level Calculation:

Long term liabilties, deferred taxes, tax credits, minority interest/Sum of debt, total common equity and total preferred stock

Description:

This measure indicates the amount of leverage (debt) being used. A large debt to capital ratio is usually indicative of a highly leveraged company. Stocks having a zero value are still included in the total portfolio calculation.

Price to Sales Ratio

Security Level Calculation:

Current price/Annual sales per share

Description:

This is used primarily by value managers to identify companies having low profit margins. Value managers use this as another indicator in finding undervalued stocks with the potential for improved profitability. This measure varies in informational value by industry, as different industries have different price to sales ratio expectations.

Return on Equity Security Level Calculation: Net profits after taxes/Book value Description: This relates a company's profitabaility to it's shareholders equity. A high ROE indicates that the portfolio is invested in companies that have been profitable. This measure is also impacted by financial leverage.





Coupon Rate

Description:

The stated interest rate of a bond. It is a money weighted average for the portfolio.

#### Years to Maturity

#### Description:

The average number of years to the maturity date of all bonds held in a portfolio. Often, managers will use the weighted average life for mortgages and mortgage backed securities since most mortgages are prepaid and never reach maturity.

#### Macaulay Duration

#### Description:

The mathematical estimate of a fixed income portfolio's sensitivity to a change in interest rates, computed as the weighted average time to receipt of the portfolio's cash flows. The Macaulay duration does not take the impact of embedded options into consideration and this usually results in a higher value than the effective duration.

#### Yield to Maturity

Description:

This is the rate of return that is expected if a fixed income security is held to maturity. It is essentially an internal rate of return that uses the current market value and all expected interest and principal cash flows.

Moody Quality Rating

Description:

This is a measure of the quality, safety and potential performance of a bond issue. Also indicates the creditworthiness of a security's issuer. Moody's evalutes the bond issues and assigns a code with Aaa as the highest and C as the lowest.





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