London Borough of Haringey

Implementation of Strategic Asset Allocation

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For and on behalf of Hymans Robertson LLP

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General Risk Warning

Please note the value of investments, and income from them, may fall as well as rise. This includes equities, government or corporate bonds, and property, whether held directly or in a pooled or collective investment vehicle. Further, investments in developing or emerging markets may be more volatile and less marketable than in mature markets.

Exchange rates may also affect the value of an overseas investment. As a result, an investor may not get back the amount originally invested. Past performance is not necessarily a guide to future performance.

1. Background

This report represents the second part of the review of the strategic asset allocation of the London Borough of Haringey Pension Fund ("the Fund") and has been prepared for the Investment Committee ("the Committee").

In our previous paper we looked at the high level strategy for the Fund, in terms of the split between equities (i.e. growth-focussed assets) and bonds (i.e. essentially matching assets). The results of this analysis did not present any strong arguments for significant changes; as a result we proposed that the Committee should retain the current broad level of exposure to growth assets (mainly equities), subject to satisfying itself that it is happy with the level of risks involved.

In this paper, we take the asset allocation decision one stage further and consider the detailed split of the equity and non-equity components of the benchmark. In the section on equities, we discuss both the split between UK and overseas equities, and also the geographical split within overseas equities. Within the non-equity component, we discuss the role of other asset classes. We also consider some of the risk and return characteristics of selected asset allocation options from an 'efficiency' viewpoint, and we recommend a revised benchmark for the Fund.

Table 1 compares the asset mix of the average UK pension fund as at 31 December 2004 with the average asset mix over the previous 5 years.

Table 1

Asset Class	**WM2000 5-Year Ave 2000/2004**	**WM2000 31/12/04 %**
UK Equities	47.7	40.5
Overseas Equities	25.1	27.4
Total Equities	**72.8**	**67.9**
UK Fixed Income	11.3	15.0
UK Index-linked	4.4	5.8
Overseas Bonds	4.2	2.9
Total Bonds	**19.9**	**23.7**
Property	3.5	4.8
Cash	3.8	3.6
Total Assets	**100.0**	**100.0**

This illustrates some industry trends which are reflected in our advice:-

- A reducing overall exposure to equities (mainly reflecting the actions of private sector schemes);
- A trend towards a lower proportion of the equities invested in the UK and a higher proportion invested overseas;
- A lower allocation to overseas bonds;
- Property exposure has been increasing, albeit quite slowly.

The current strategic benchmark for the Fund is set out in Table 2.

Table 2

	Capital	Fidelity	Wellington	Bernstein	ING	Fund B'mark[1]
UK Equities	45.0	30.0	15.0	100.0	-	43.1
Overseas Equities	20.0	20.0	85.0	-	-	28.4
North America	*6.5*	*6.5*	*30.0*			*9.7*
Europe ex-UK	*6.5*	*6.5*	*30.0*			*9.7*
Japan	*3.5*	*3.5*	*12.5*			*4.5*
Pacific Basin	*2.5*	*2.5*	*7.5*			*2.9*
Emerging Markets	*1.0*	*1.0*	*5.0*			*1.6*
Total Equities	**65.0**	**50.0**	**100.0**	**100.0**	**-**	**71.5**
UK Gilts	10.0	15.0				6.7
Corporate Bonds	10.0	15.0				6.7
Overseas Bonds	8.0	6.0				3.8
Index-Linked	6.0	12.0				4.8
Total Bonds	**34.0**	**48.0**				**22.0**
Property	-	-			100.0	5.7
Cash	1.0	2.0				0.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Manager Allocation [3]	**27.5**	**26.3**	**19.8**	**20.7**	**5.7**	**100.0**
Performance Target[2]	**+1.5**	**+1.5**	**+2.0**	**+2.0**	**+0.75**	**1.7%**

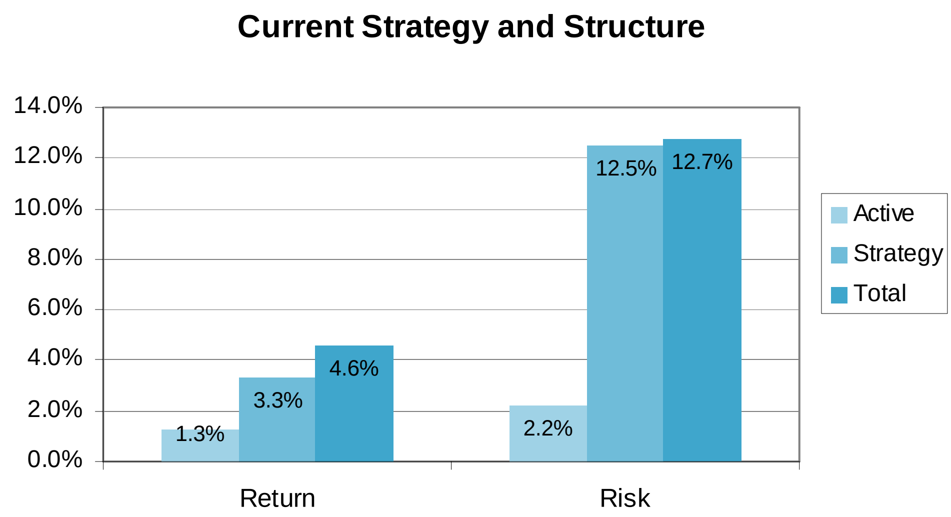
[1] The Fund benchmark is the composite of the benchmarks for each mandate assuming scheme assets are invested in line with the current Manager Allocation targets.

[2] Target based on investment managers mandate and represents excess return above benchmark per annum, before management fees.

[3] Share of Fund as at 30 September 2005.

The relationship, in terms of risk and return, between the Fund's investment strategy and the Fund's investment managers is summarised in the chart below.

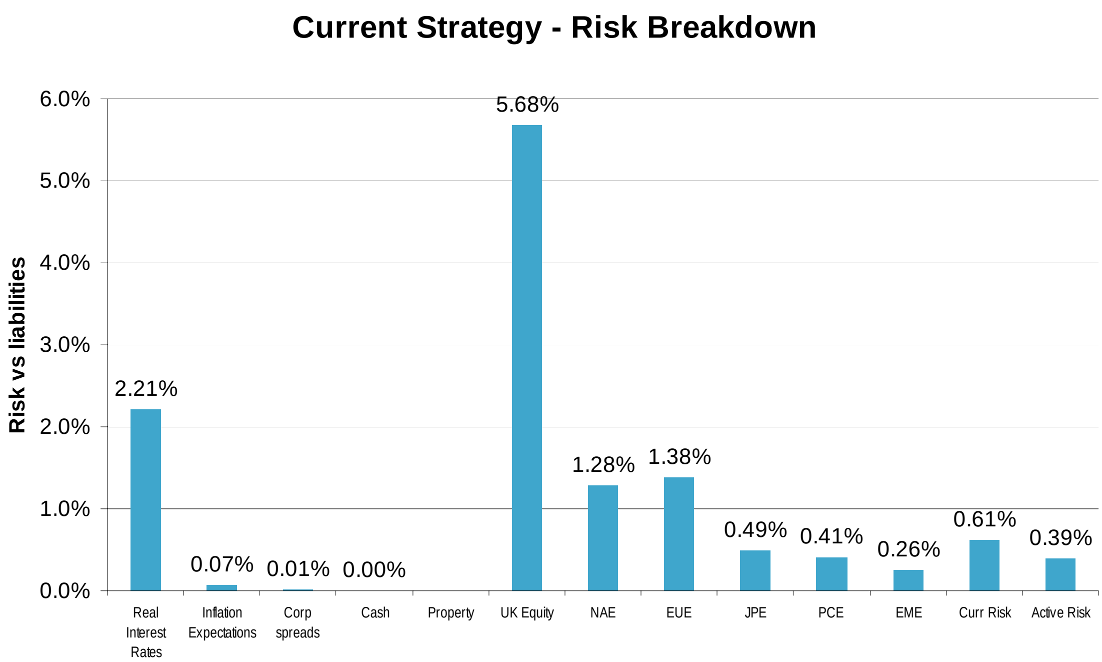
Chart 1 - Return and Risk for the Current Investment Strategy and Structure



The expected return from the structure is 4.6% p.a. in excess of the return on bond assets (used as a proxy for liability growth). This figure of 4.6% is made up of a strategic return of 3.3% (from higher return growth assets) and an additional active return of 1.3% p.a. (net of fees) arising from manager skill. The total risk corresponding to this mix of strategic and active return is 12.7%.

The following chart sub-divides the Fund's total risk of 12.7% by source: asset class risk, currency risk and active management risk.

Chart 2



- Approximately 75% of Fund risk comes from the equity allocation. 50% of Fund risk comes from the allocation to UK equities (UKE), the largest equity component.
- The currency risk is a consequence of any allocation to assets not denominated in Sterling. Active risk is the risk from the active management of the Fund's assets.
- the next most significant component of Fund risk arises from changes in real interest rates. This risk is a meaningful part of the total risk; it arises because the value of the liabilities are largely dependent on real yields. By contrast, the value of the majority of the assets (equities) are largely independent of real yields (over short time periods).
- The Fund's allocation to bonds does not contribute to the total risk in any meaningful way as bonds provide a good match to the liabilities. The inflation expectations risk, which is inherent within ordinary (non-index linked) bonds is fairly low, as these bonds provide a good match to the non-inflation linked liabilities.

In the following sections we investigate the way in which changes in the overall asset allocation and the introduction of some alternative assets classes can help to diversify the risk within the Fund and also increase the expected level of outperformance for a given level of risk.

2. Active and Passive Management

Active and Passive Management

All of the Fund's assets are currently managed on an active basis. The quantitative analysis we set out in this paper assumes that the current structure remains in place, with all of the assets actively managed,.

Passive management captures the market index return from assets. For growth assets, such as equities, there is an expectation of an equity risk premium, i.e. a higher return than is available from bonds, because equities are risky. Passive management captures this risk premium as (if) it is delivered. There are strong fundamental economic reasons to expect a positive equity risk premium which all long term investors in equities would be expected to receive.

Active management seeks to add value in excess of index returns through manager skill. This can only be achieved by managers identifying and capitalising on mis-pricings of assets. The problem is that a manager can only be successful if other investors, in aggregate, suffer. If the manager buys a cheap share, the seller will have lost out and if he sells an expensive share the buyer will lose out. This means that the return available from skill in the market is zero (less costs of trade).

In essence, it is only worth using active managers if they can outperform. At the same time, using active management is not inherently any riskier than adopting passive management. Consequently, if you can appoint outperforming active managers, you can obtain higher returns without adding risk. Further, because skill is a potential diversified source of return, it is likely to be the case that the potential added value delivered by skilful managers is worth including.

In order to illustrate the difference between active and passive management of the Fund's assets, we have included in this section an illustration of the impact on the expected return and risk figures of a partial use of passive management.

Switching a portion of the Fund's assets to passive management would have an impact on the return and risk figures shown in Chart 1 in Section 1.

To illustrate the impact, we have assumed that 20% of the equity assets are switched from active management to passive management. If this were to happen, the expected return from active management would reduce from 1.3% p.a. to 1% p.a. and the total expected return would reduce from 4.6% p.a. to 4.3% p.a.

As indicated above, the impact on the risk figures is insignificant. The risk from active management would reduce from 2.2% to 2.1% and total risk would be essentially unchanged at 12.7%.

These figures are expectations. To date, the actual performance from the managers has fallen short of these expectations. A detailed analysis of the managers will be the subject of our next report.

A full discussion of passive and active management could be included in a subsequent report, if appropriate.

3. Allocation to Equity

The rationale for holding equities is that they are expected to outperform bonds; bonds are a closer match to the Fund's liabilities. Arguably, the return objective of the equity portfolio could be 'to achieve a return higher than the return on the Liability Benchmark Portfolio (the "LBP")'; we defined in our previous paper.

Any investment in equities implies a departure from the matching portfolio in the pursuit of higher expected returns. Therefore, the equity benchmark should be structured in such a way as to meet this aim, providing a framework for generating the highest return for a given level of risk, and to provide appropriate diversification, rather than being considered as matching the liabilities in any way.

3.1 Current Equity Benchmark

The fund's current target equity allocation is approximately 70%, and, as we can see in Table 2 above, the split of this allocation between UK and overseas equities is broadly 60/40. Table 3 breaks down the fund's overseas equity allocation into the various regions and compares this to the market capitalisation of the world markets, using the FTSE All World Index as at 30 September 2005.

Table 3

Asset Class	**Current Effective (%)**	**Equity Allocation (%)**	**Global Market Capitalisation (%)**	**Haringey vs Market Cap**
UK Equities	43.1	60.4	10.0	+50.4
Overseas Equities	28.4	39.6	90.0	-50.4
North America	*9.7*	*13.6*	51.8	-38.2
Europe ex-UK	*9.7*	*13.6*	18.2	-4.6
Japan	*4.5*	*6.3*	9.0	-2.7
Pacific ex-Japan	*2.9*	*4.1*	4.0	+0.1
Emerging Markets	*1.6*	*2.2*	7.0	-4.8
Total Equities	**71.5**	**100.0**	**100.0**	

The market capitalisation figures in the table above consider only quoted equity markets. The quoted markets represent the most accessible equity investment opportunities. It has been estimated that around 50% of the wealth generated globally is generated by private companies, i.e. companies not quoted on a public stock exchange. However, this inclused very large numbers of small family operated business which are essentially uninvestable. Private equity investing is one way to access a small part of this unquoted segment of global wealth formation. We consider possible allocations to private equity in 3.5 below.

3.2 UK versus Overseas Equities

The fund currently has a split between UK and overseas equities of approximately 60/40. The Fund's allocation of 60% of its equity investments to the UK is 6 times weighted relative to global market capitalisation. This represents a significant domestic bias.

In our view, the arguments for reducing the domestic bias over the long term are very strong. However, the timing of reductions is not something that we have a strong view on. In five years time, we think that most funds will have moved towards a 40/60 split between the UK and overseas equities markets.

Within the UK equity market, the four large sectors, Banks, Telecoms, Pharmaceuticals and Oil & Gas, comprised 49% of the FTSE All Share Index at 31 December 2005. All but one of the ten largest stocks fall into one of these four sectors. Together, the 10 accounted for 39% of the same index.

This degree of concentration increases the risk inherent within the index because diversification is reduced. Although it can be argued that many UK companies, particularly large companies, operate in a wide range of geographical areas and business lines, they are each ultimately controlled by a single senior management team.

Equity markets have become more 'global' in the sense that companies are increasingly competing and operating outside their country of domicile and are exposed to many geographical regions. Indeed, a many UK companies now derive a significant proportion of their profits from outside of their home market (for example, GlaxoSmithKline and AstraZeneca both derive over 90% of their earnings from outside the UK, and BP earns around 75% from overseas markets).

There are also other factors contributing to this effect, for example a number of non UK companies have chosen to list on the UK stock market (e.g. Old Mutual and Dimension Data, two South African companies, are both listed on the London Stock Exchange).

The degree to which globalisation has occurred varies by industry. Sectors such as Oils, Pharmaceuticals and Automobiles clearly now operate on a global basis, whereas Banks and Retailers have tended to remain more regional.

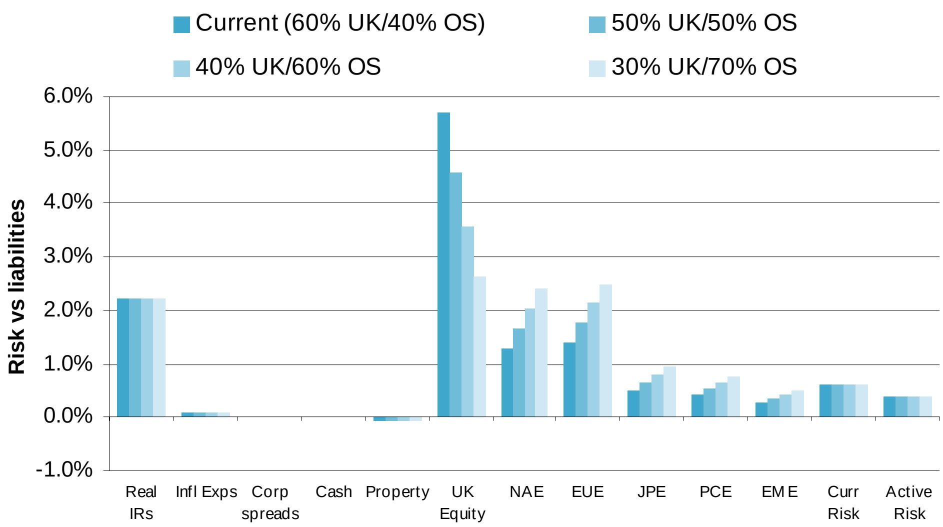
This has had an effect on market behaviour. Historically, the country in which a company was listed tended to have the biggest influence on that company's stock price. However more recently, particularly for the global sectors mentioned above where the majority of a company's earnings are no longer derived from the domestic market, the prospects for that sector have the greatest effect. BP's future prospects are far more likely to be linked to those of Exxon Mobil and Total Fina (and the oil price) than to those of Tesco and Lloyds TSB.

Given the global focus of much of the FTSE 350, it is hard to see why UK equities should form such a dominant part of UK pension funds. Increasing the 'global' allocation relative to UK would increase the opportunity set for managers and improve diversification. In order to move towards such a global allocation for the Haringey Fund, the Committee may wish to consider introducing an explicit allocation to global equity as defined by the market capitalisation index - we will return to this later in this report.

3.3 Changing the UK/overseas equity split

The Fund currently has roughly 60% in UK equities and 40% in overseas. In Chart 3 below, we consider the impact on the sources of risk if the split between UK and overseas equities is altered.

Chart 3 – Sources of Risk



- The total risk is broadly similar across each of the strategies. We have assumed that the risk arising from an increase in exposure to overseas currency is removed using a currency hedge.
- By reducing the UK equity exposure, UK equities no longer dominate the risk skyline and the risks are much better diversified (albeit total risk won't have changed).

The UK market has some elements in its favour, e.g. it has a higher dividend yield than most equity markets, corporate governance standards are amongst the highest globally, and the market is very open to merger and acquisition activity. It is also a favoured market for global investors. Despite these attractions, we still think they are insufficient to merit holding a 6 times weighted allocation.

In summary, we think there are strong reasons to support a reduction in the Fund's bias to UK equities and we believe that the Fund should consider moving to a more equal allocation between UK and overseas equities. The Fund should also consider hedging its overseas currency exposure. We consider currency hedging and active management of currencies in section 4 of this report.

3.4 Split within Overseas Equities

The focus for determining the split should be to reduce risk and maximise both opportunity and diversification as far as possible.

At first sight this implies that the optimal (least risk) investment would be attained by equally weighting investment in the non-UK markets. However, this conclusion should be tempered by consideration of other factors such as: -

- the size of the market (strategically speaking, it would be a very strong bet indeed to ignore completely the current size of the market in deciding allocation);
- technical features of the markets, such as restrictions on non-domestic investors and liquidity;
- the size of the economy relative to the size of the market.

The last point is particularly highlighted with an example of an 'emerging' market such as China. The size of the Chinese stock market is disproportionately small (less than 1% of the world's capital markets) in the context of the size and importance of the Chinese economy (about 12% of the world's output as measured by GDP).

The factors above lead us to conclude that there are the following two main options for the equity benchmarks (in the absence of a strong view of the relative opportunities of each market):

- the principle of diversification would suggest a broadly equal split between the three main geographical regions (North America, Europe and the rest of the world);

- set the benchmark weighting in line with the size of each market, on the grounds that this captures the broadest available opportunity set. This would imply using a World (ex UK) Index for the overseas equity benchmark.

One could argue that adopting a World Index approach has merits in providing the maximum degree of diversification and the greatest possible opportunity set. However, the World Index itself is a kind of peer group index (albeit the average of every global investors' views) and therefore it can suffer from the same type of herding as any peer group benchmark.

At present, the United States makes up over 50% of global market capitalisation while Japan comprises less than 10%. In early 1989, the height of the Japanese bubble, Japan formed the largest component of global market capitalisation at over 40% of the index with the US component at 30%. An investor adopting a market capitalisation approach in 1989 would have suffered dreadful absolute performance as Japanese stocks underperformed for most of the next 15 years. A similar price bubble occurred with the increase in the weight to Information Technology (principally in the US in the late 1990s; that part of the market also fell substantially (and has not recovered)..

Consideration also has to be given to the current position. Moving towards a Global Market Capitalisation or World Index approach would be a significant departure, involving costs of transition and approach by the managers. It would also result in a significant increase in exposure to the US market at the expense of other markets. Table 3 on page 8 provides an indication of the scale of the changes that would be required. Even without making any judgement on relative valuations, we would caution against making significant changes in asset allocation at any single point in time.

Consequently, any exercise in setting benchmarks needs to include a degree of pragmatism. Further, although benchmarks are set with a strategic time horizon (i.e. a 10 year view or beyond), they do need to be monitored from time to time to safeguard against distortions which might arise because of underlying index changes or because of prevailing market conditions.

We continue to favour broadly fixed weight allocations in overseas equity markets and our approach to deriving the weights is as follows.

- We start with the split between Developed and Emerging Markets. A Market Capitalisation approach would lead to c. 92% in Developed Markets and c. 8% in Emerging Markets. From a strategic point of view, it seems reasonable to us that we should hold a modestly overweight position in Emerging Markets.
- Table 3 above illustrated that a full market cap weighted distribution for overseas equities would constitute a significant bet on the US economy.
- It is questionable whether the market cap of particular economies should determine the appropriate asset allocation. GDP might produce a better result. In practice, we favour a compromise between these two.

Table 4 below gives the approximate split of different regions (ex UK) by market cap, GDP and purchasing power parity adjusted GDP (i.e. GDP adjusted for currency effects) and details the current split between the overseas equity components of the Fund's benchmark.

Table 4:

	Market Cap (%)	GDP (%)	GDP (PPP adjusted) (%)	Current Effective (%)	Hymans Preferred Approach (%)
North America	58	34	24	*34.2*	35 – 45
Europe (ex UK)	20	28	19	*34.2*	25 – 35
Japan	10	13	7	*15.8*	15 – 20
Pacific (ex Japan)	4	8	20	*10.2*	5 – 10
Emerging Markets	8	17	30	5.6	5 - 15

The current benchmark allocations lie broadly within our preferred allocations. The greatest differences are the allocations to North America and Emerging Markets which are at the lower end of the ranges and the allocations to Europe and the Pacific which are at the higher end of the ranges. We are not proposing significant changes in the current allocations but we recommend the Fund consider introducing a fully global equity mandate within the current structure.

Changing one of the existing global equity mandates to a market capitalisation approach would alter the current allocation among overseas equity markets in an appropriate manner. In addition, assuming the investment manager for this mandate adopts a flexible approach to the country allocation underlying the mandate, the Fund's actual split within overseas equity markets would become a little more dynamic than currently.

This approach would transfer some of the responsibility for the Fund's allocation to equity markets from the Committee to the global equity investment manager. The current structure and mandates (Table 2) inhibit all of the investment managers from investing without constraints in world equity markets.

3.5 Allocation to Private Equity

Private equity (sometimes called, and confused with, venture capital) involves providing finance for business development. In return for providing finance, investors purchase a share of the business. These businesses are unquoted; their value (both at the time of investment and subsequently) is hard to determine. The worth of the business can only be established accurately when it is realised (either through a trade sale or by floating the company on a stockmarket), normally 3-4 years after the private equity investment is made.

Businesses may require funding at different stages of their development - for example, early stage finance, development capital, capital for buy-outs and buy-ins, etc. Private equity investors provide funding for all of these stages, with the aim of maximising their profit over a relatively short period of years. Private Equity is a higher risk form of investment than quoted equity. However, there is evidence to suggest that returns from Private Equity can be higher and, to a limited extent, less correlated with quoted equity markets and so can provide a degree of diversification to the fund.

We have carried out some analysis to consider the impact of adding an allocation to private equity.

- This suggests that an exposure of up to 10% to Private Equity can enhance the overall risk/return characteristics of the benchmark; however, 10% would be very much at the top end of our recommendations (above that level, the overall level of risk increases, as well as the return). Pragmatically, it is a more difficult and lengthy process to build a weighting in private equity (compared with quoted equity). An investment of less than 3% is unlikely to make a meaningful contribution to risk diversification. But, private equity is not a mainstream asset class, it is illiquid, and involves long term commitment, so generally we recommend that an investment of around 5% of assets (at least in the preliminary stage) as a maximum.

- In practice, the Fund has to "over-commit" to private equity funds in order to actually achieve the desired exposure. In order to achieve a target of 5%, the Fund would need to set a commitment of around 7.5%.

- Private Equity can be a moderate diversifier within pension schemes. Nevertheless, it is not as ideally diversified from quoted equity as is often portrayed. Since the value of individual ventures is usually released by trade sales or stockmarket flotations, private equity retains a reasonably high correlation to quoted equity.

- In order to gain suitable diversification of exposure by investment manager, development phase, industry and geography, we recommended that a 'Fund of Funds' approach should be adopted for Private Equity. The exposure will be built up over time and it will be several years before the target exposure is achieved.

3.6 Bringing it all together

Table 5 below outlines the current benchmark exposure to each equity region and proposes one way that the Committee could revise the benchmark in order to accommodate the ideas outlined above (i.e. reduce the bias to UK equity, move towards a more global approach and introduce private equity).

Table 5

Asset Class	**Current Effective (%)**	**Proposed (%)**	**Shift required (%)**	**Effective Quoted Equity allocation [2] (%)**
UK Equities	43.1	30.0	-12.1	30.5
Regional Equities	28.4	30.0	+1.6	34.5
North America	*9.7*	*10.0*	*+0.3*	*12.6*
Europe ex-UK	*9.7*	*10.0*	*+0.3*	*10.9*
Japan	*4.5*	*5.0*	*+0.5*	*5.5*
Pacific ex-Japan	*2.9*	*2.5*	*+0.4*	*2.7*
Emerging Markets	*1.6*	*2.5*	*+0.9*	*2.8*
Global Equity [1]	0.0	5.0	**+5**	
Private Equity	0.0	5.0	**+5**	
Total Equities	**71.5**	**70.0**	**-1.5**	

[1] Global Equity mandate will have market capitalisation benchmark allocation.

[2] Based on world market capitalisation as at 30/9/05.

The final column of the table provides the overall quoted equity allocation allowing for the explicit allocation to global equities, which would be managed against a world market capitalisation benchmark. We have not split the proposed 5% allocation to private equity into regional markets.

The revised effective allocation within overseas is set out in Table 6 below.

Table 6

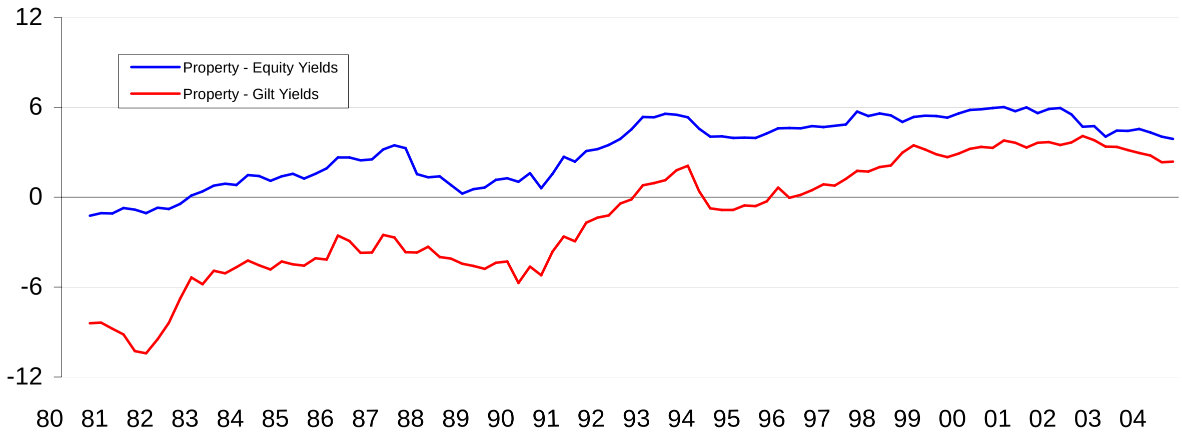
	Current (Table 4) (%)	Proposed Overseas Equity Allocation (%)	Change (%)	Hymans Preferred Ranges (%)
North America	34.2	36.6	+2.4	35 – 45
Europe (ex UK)	34.2	31.6	-2.6	25 – 35
Japan	15.8	15.9	+0.1	15 – 20
Pacific (ex Japan)	10.2	7.8	-2.4	5 – 10
Emerging Markets	5.6	8.1	+2.5	5 – 15

4. Property

The Fund currently has an effective target allocation to property of 5.7%. (The original target was 6%, but the lower "effective" target reflects the actual size of ING's mandate.) Over time, we would be supportive of a further increase in the exposure to property, despite the recent strong performance of this asset class.

The yields available on property remain very favourable when compared with both equities and gilts on a historical basis. Chart 4 below shows the yield differences from 1980 to 31 December 2004. At that date, the yield on property (allowing for known growth in rental income) was 6.9%; this compared with yields of 3.1% on UK equities and 4.5% on gilts. In addition, although the short term outlook for tenant demand in some classes of property is not particularly positive, we would still expect some growth in rental income if we take a medium term (5 to 10 year) view.

Chart 4 –Property Yield Gap



Given its high running yield, property does not have to enjoy much by way of rental growth or capital appreciation to achieve high single digit returns before allowance for the costs associated with investing in property. In the present low inflation environment, that appears very attractive even when these costs are taken into account.

It is important to appreciate the diversification benefits of investing in property. Historically, returns have exhibited a very low correlation with those from other asset classes, which means that property is highly effective at reducing overall risk within a pension fund portfolio that already contains a significant proportion of equity assets. Some of the benefit may be more perceived than real, given that property is not "marked to market" (i.e. valued on a daily or more frequent basis) in the same way as equities or bonds. However, even allowing for this 'artificial' smoothing, the diversification benefits remain strong.

The volatility of returns from property (in terms of the magnitude of the swings from one year to another) has been higher than that of bonds but significantly lower than that of equities. Again, some of this low volatility is an artefact of the valuation process, but applying 'unsmoothing' techniques still results in a volatility that is usually lower than equities.

We do not expect property to outperform equities over the longer term, but we do believe that the gap between the return from equities and property (and other asset classes) will be lower in future than in the past. Therefore, in terms of both risk and return looking forward, we would regard property as being positioned somewhere between bonds and equities.

Property can be a relatively illiquid asset class, and the costs of buying and selling individual properties (and pooled property funds) can be substantial. Funds should only invest in property if they have a sufficiently long time horizon to allow the impact of these additional dealing costs to be spread over a number of years. This is not an issue for LGPS Funds; they are well placed in this regard.

Analysis

In order to provide an indication of the sensitivity of increasing the property allocation beyond the 6% level, we have carried out some modelling looking at various levels of exposure to property.

- Our analysis suggests that an increase in the Fund's exposure to property up to 10% of the overall portfolio maintains the overall risk/return characteristics of the benchmark. Increasing the property exposure further, towards 15%, reduces risk but also return. This reflects the trade off between increased diversification from property and a lower expected return.
- Bearing in mind that the Fund's current exposure to property is 6%, and that property can be illiquid and difficult to acquire, then on balance we would recommend increasing the target exposure to 10%.
- The increase from 6% to 10% should be implemented gradually over the next 12 to 24 months. ING, the Fund's property manager, should be informed of the Fund's intentions and asked to outline its proposal to move towards the increased allocation over time.

Additional details of the results from our modelling can be found in Appendix 1.

5. Currency Risk and Active Overlays

The figures provided in Table 2 indicate that 28.4% of Fund assets are invested in overseas equities and 3.8% of Fund assets are invested in overseas bonds. In total, 32.2% of Fund assets are currently exposed to foreign currencies.

Any increase in the allocation to unhedged overseas equities and bonds increases the exposure of the Fund to foreign currencies. As the proportion of overseas equities and bonds increases, the currency mismatch between the assets and the sterling-denominated liabilities increases, unless the currency is hedged.

This extra volatility is a source of additional risk relative to the liabilities of a pension scheme. Any reward for the additional risk being run would be down to luck, since the expected return from a currency position is zero. To this extent, the risk is uncompensated. It is an additional volatility without a compensating additional expected risk premium. If it is possible to remove this risk for little or no cost, then the overall portfolio will be more efficient.

The benefits of hedging (in terms of lower volatility) will only offset the costs of hedging if the absolute amount invested in overseas assets is significant.

Whether or not this reduction in risk is worthwhile depends on the cost of achieving it being less than or equal to the reduction in expected return as a result of the equivalent risk-reducing equity to bond switch.

The total costs of introducing a currency hedge will be a result of the following:-

- Direct costs – relating to transaction costs of rolling the hedges as they mature (i.e. bid / offer spreads) and rebalancing the hedging as the underlying markets move.
- Indirect costs – arising from tracking errors (due to frequency of rebalancing, use of proxy currencies and any unhedged exposures) and the impact of cash flow.
- Fees – charged by the overlay manager.

In total, we would expect the costs for a mandate of Haringey's size to be relatively low (perhaps of the order of 5 to 10 basis points) when expressed as a proportion of the overall fund, though we would want to explore this further with individual managers.

There are some other practical considerations, e.g. currency hedging can require significant cash flows, which can be a practical problem for many funds.

Our conclusions from an analysis of the impact of introducing active currency overly are as follows:

- The introduction of the active currency overlay manager increases the potential total return on the portfolios as it effectively adds another manager who will actually manage the currency exposure of the overseas equity proportion of the Fund's assets.

- As the proportion of the currency exposure is hedged the level of risk within the fund begins to fall. Overall this provides a more efficient fund structure.

- The introduction of an active currency manager hedging 50-100% of the currency exposure would be the most optimal solution. The analysis assumes that the currency manager manages the currency on an active basis. It is possible to use a combination of active and passive management of the currency exposure of the Fund. In particular, fully hedging the currency exposure is not necessarily the best option (we typically recommended 50%).

Additional details of the results from our modelling can be found in Appendix 1.

We believe that currency management is an effective way of increasing the risk return characteristics of the Fund and we would recommend the introduction of a currency overlay manager.

Our analysis is based on the Fund's current exposure to foreign currencies. Currency will become increasingly important if the Fund invests a greater proportion of its assets in overseas markets.

6. Hedge Funds

Increased diversification can have a beneficial impact of the risk return profile of the Fund.. As such many managers are now promoting alternative products such as hedge funds.. At Hymans Robertson, our stance on hedge funds has been cautious so far.. If the managers can actually deliver the promised performance, then hedge funds would be a valuable addition to the opportunity set of the Fund.. However, we feel that the fees charged by hedge fund managers, many of which are hidden, are at such a high level that (net of fee) performance is likely to have little impact on the Fund's return.

The conclusions from our analysis of hedge funds as a possible asset class for the Fund are as follows.

- Introducing an allocation to hedge funds out of equities does not improve the expected return on the Fund, even when we use the optimistic assumptions of most hedge fund managers.
- Hedge funds do have a beneficial impact on the overall level of risk as they provide a good diversifier to the other assets of the Fund.
- When these two points are both taken into account we find that on Hymans Robertson's central assumptions, the introduction of an allocation to hedge funds has a negative impact on the risk return profile of the Fund. If we believe the managers 'optimistic' assumptions then making an allocation to hedge funds results in only a marginal improvement in the efficiency of the Fund.

Therefore, we would not recommend that the Fund invests in hedge funds at the present time.

7. Detailed Asset Allocation: Conclusions

In this section, we draw together the recommendations contained in our previous paper, Review of Strategic Asset Allocation, and the views contained in the earlier sections of this paper.

On the assumption of no material change in the degree of risk tolerance, we have proposed that the Committee either maintain or, at the margin, reduce the equity exposure within the Fund benchmark. In the modelling in our first paper, we concentrated on the impact on the Fund's financial position of different proportions of bond and equity investments. In practice, the Fund also has a weighting to property of around 6%. In terms of risk and return characteristics, we regard property as being a lower risk investment than equities but a higher risk investment than bonds.

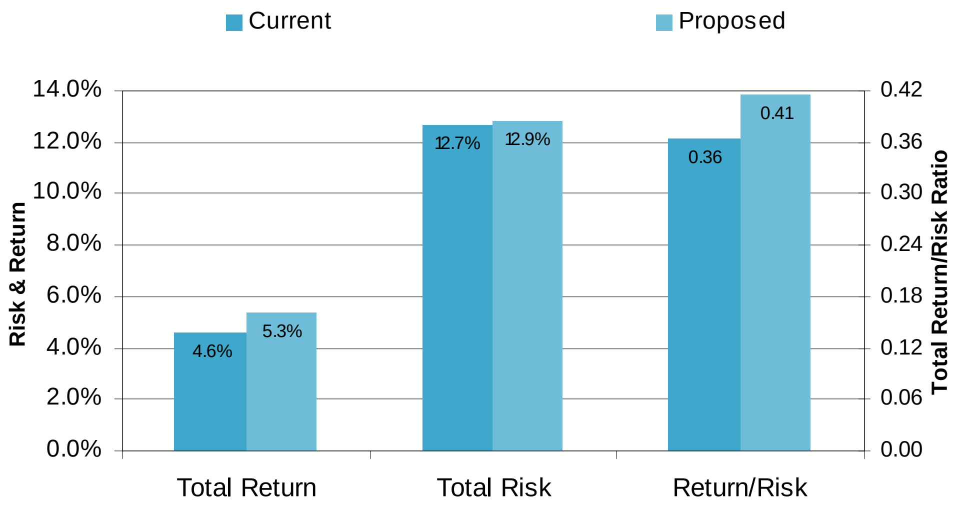
In considering a detailed asset allocation benchmark, we have taken into account the fact that a proportion of the non-equity component is already invested in property and our view that properly managed, a further increase in property exposure would be beneficial.

In arriving at a suggested asset allocation, we have therefore incorporated the following:-

- No immediate change in the overall equity exposure of 70% within the benchmark.
- Introduce private equity with a target exposure of 5%. The assets will be sourced from quoted equity in order to maintain the overall target exposure to equity of 70%.
- Change the balance between UK and overseas equities to reduce the bias to UK equities.
- Within overseas equities, we have set the overall split as discussed earlier in this report.
- A gradual increase in the property weighting from the current 6% to 10%.
- The Committee should consider the use of some form of currency hedging overlay.

If all of the above recommendations were implemented then we would expect to see the risk and return profile shown in Chart 5 below:

Chart 5 – Impact of Proposals on return and risk



In this report we have not considered the Fund's allocation to bonds in detail. However, there are two changes that we would recommend within the bond component of the Fund's strategic benchmark. Cash is not a long term asset and is not a "matching" asset for pension fund liabilities. We recommend the removal of the small allocation to cash from the Fund's benchmark. Secondly, we do not think it is necessary for the Fund to have a strategic allocation to overseas bonds. We think that the Fund's bond managers should have the freedom to invest in bonds that are not denominated in sterling but that their benchmarks should consist only of sterling bond classes.

Bringing together all of the recommendations we have made in this report, the revised asset allocation that we recommend for the Haringey Fund is set out in Table 7 below. Our recommendation represents a pragmatic interpretation of the quantitative analysis described in this report and takes into account our experience of many similar pension funds.

Table 7 – Proposed New Strategic Benchmark

	Current Benchmark %	**Proposed Benchmark %**
UK Equities	43.1	30.0
Overseas Equities	28.4	30.0
US	*9.7*	*10.0*
Europe ex UK	*9.7*	*10.0*
Japan	*4.5*	*5.0*
Pacific ex Japan	*2.9*	*2.5*
Emerging Markets	*1.6*	*2.5*
Global Equity	0.0	5.0
Private Equity	0.0	5.0
Total Equities	**71.5**	**70.0**
Property	5.7	10.0
Index Linked	4.8	6.0
UK Gilts	6.7	7.0
UK Corporates	6.7	7.0
Overseas Bonds	3.8	0.0
Cash	0.8	0.0
Total Non-Equities	**28.5**	**30.0**

We look forward to discussing our recommendations with the Officers and the Committee.

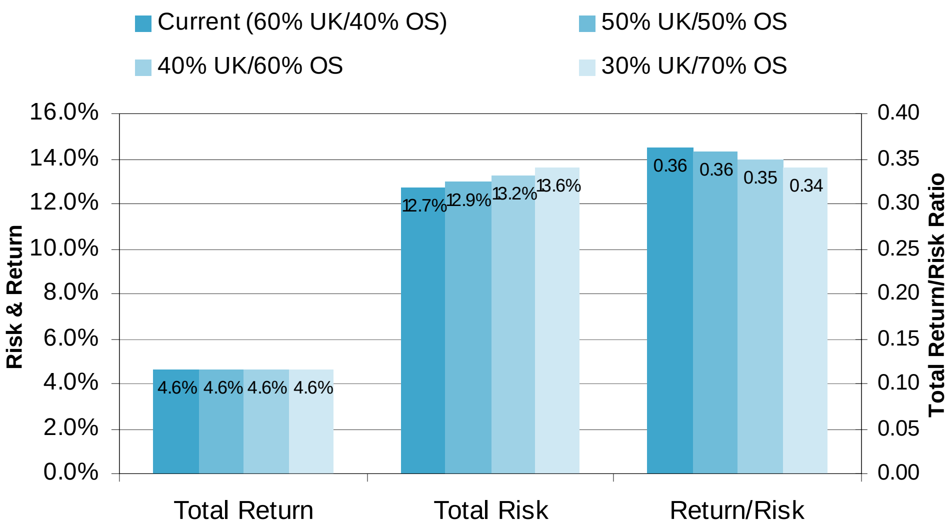
Appendix 1 Additional Modelling Results

In this Appendix we have included the quantitative results that are discussed in Sections 2, 3 and 4 of this report. The results are grouped under the same heading as the relevant section.

1.1 Allocation to Equity (Section 2)

Charts A1 and A2 below illustrate the impact of reducing the UK equity allocation of the Fund. Chart A2 differs from Chart A1 only in the introduction of currency hedging on the non-sterling currency exposure. The charts assume no change in the Fund's current split between overseas equity markets.

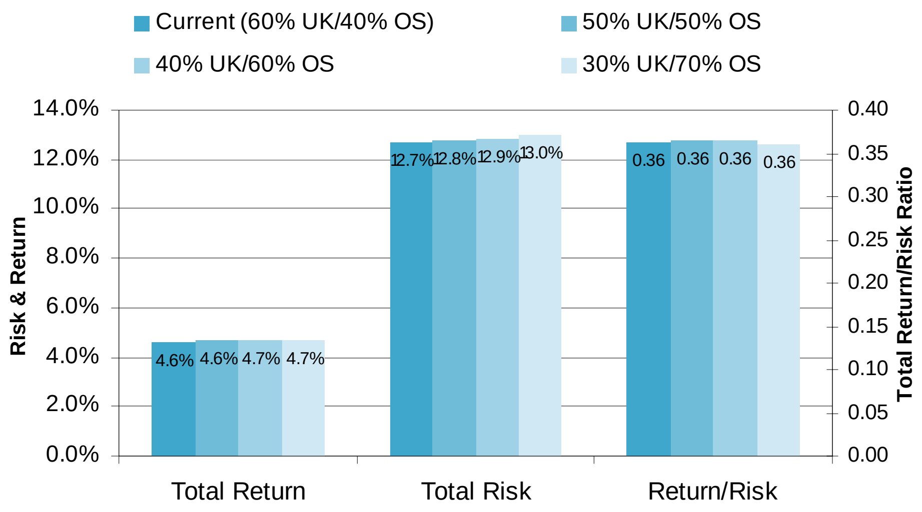
Chart A1 – Unhedged



- Using our assumptions, there is no change in the expected total return of 4.6% p.a. (relative to the liabilities) as the allocation to UK equities is reduced in favour of overseas equities.
- Total risk increases as the allocation to UK equities is reduced in favour of overseas equities. This is a direct consequence of increasing the currency risk.

Chart A2 below considers the impact of reducing the UK equity exposure in favour of overseas and simultaneously hedging the increase in the overseas currency exposure back to sterling.

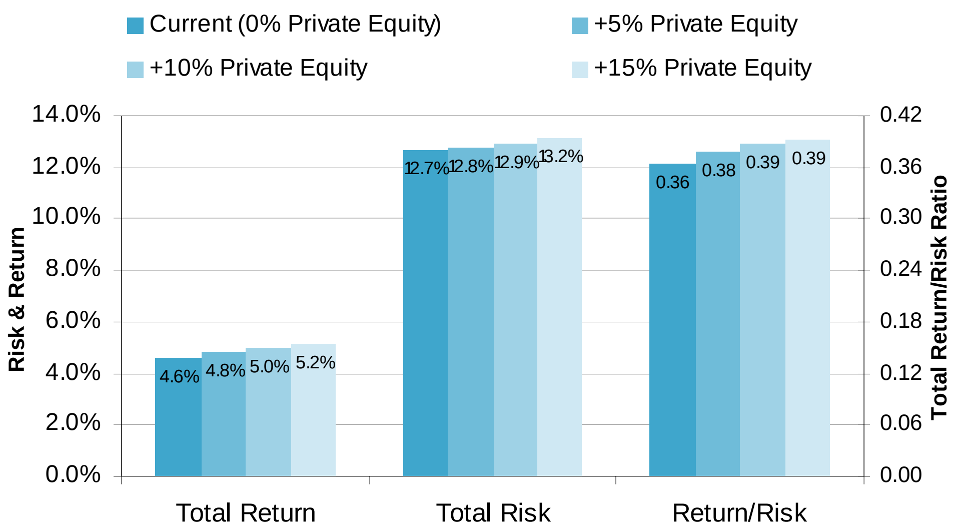
Chart A2 – Hedged



- The risk-reduction benefit of hedging the non-sterling currency exposure is clear.
- Compared with Chart A1, total risk increases only at the margin as the allocation to overseas equities increases.

In Chart A3 below we show the effect of introducing private equity allocations of 5%, 10% and 15% to the Fund while reducing listed equity exposure by a commensurate amount.

Chart A3 Allocation to Private Equity

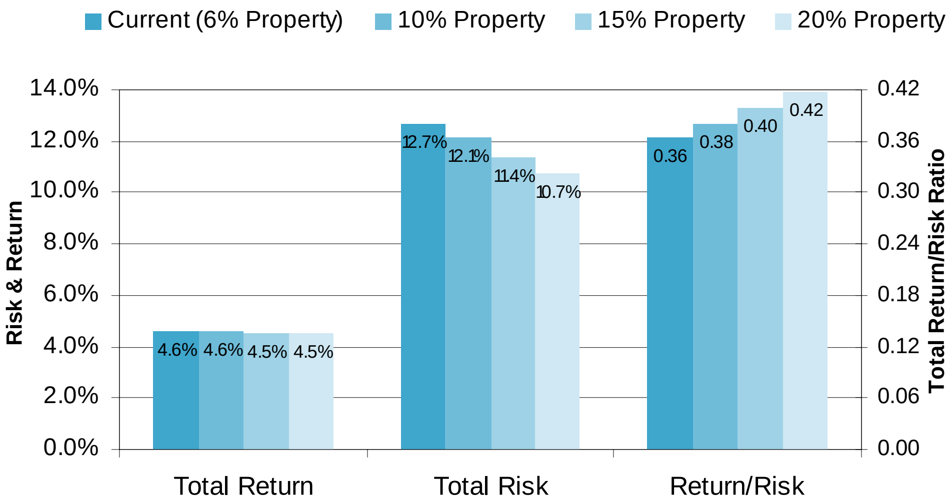


It can be seen that the introduction of private equity enhances expected return and marginally increases the total risk of the Fund versus its liabilities (albeit, this conclusion is sensitive to our assumptions about risk and return).

1.2 Property (Section 3)

Chart A4 below illustrates the effect of introducing 10%, 15% and 20% property allocations to the Fund, sourced through a reduction in equity exposure. It can be seen that the substitution of property for equity reduces the expected return, while reducing the total risk of the Fund. Overall efficiency (as measured by the total return/risk ratio) remains relatively stable.

Chart A4 Switching Equity to Property



1.3 Currency Risk & Active Overlays (Section 4)

Chart A5 below summarises the benefits in terms of risk reduction of hedging currency risk. Taking the current position of the Fund with equity exposure of c.70% and an overseas proportion of 40%, the red circle shows the approximate position of the Fund in the lighter blue band. The coloured scale to the right hand side of the chart indicates that the lighter blue band corresponds to a 2% to 3% reduction in equity exposure. In other words, hedging 100% of the Fund's overseas currency risk provides the same reduction in risk as would be obtained from a reduction in the Fund's overall equity exposure from 70% to 67-68%. (In practice, less than 100% of the currency risk would be hedged as the cost/benefit equation deteriorates as the 100% level is approached).

Chart A5 The Impact of Currency Risk

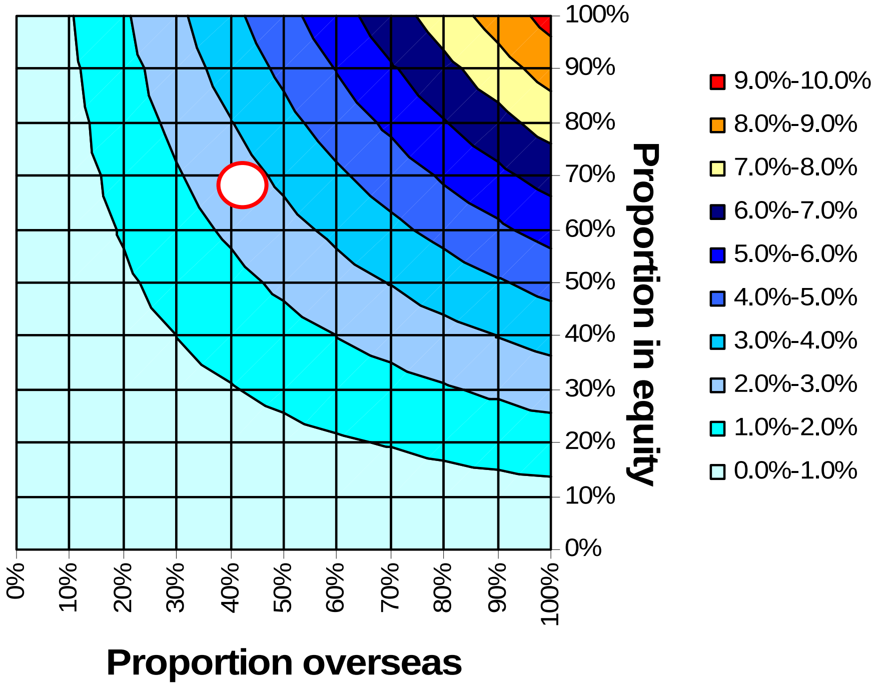
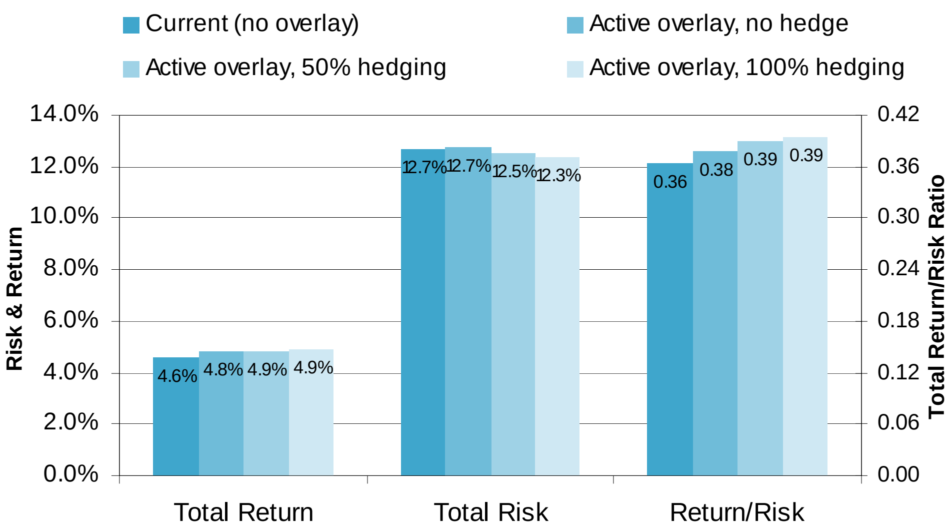


Chart A6 below shows the relative impact on the level of expected return and risk within the Fund if an active currency overlay is put in place. We have examined 4 different portfolios; one on the current strategy with no currency overlay, one where an active currency overlay manager has been introduced but the currency exposure is not hedged, another where 50% of the currency has been hedged and one where the currency exposure has been fully hedged.

Chart A6 Active currency management and hedging



Appendix 2 Overview of LPFA Strategy Changes

The London Pension Fund Authority (LPFA) carried out a review of its investment strategy during 2005. A copy of the explanatory paper they published is included in Appendix 3. The proposed revisions to the Haringey Fund's investment strategy that we have outlined in this report are similar to a number of the changes implemented by LPFA.

- LPFA had an allocation to a single global equity manager. Following the review the exposure to global equities was increased and two new managers were added to the structure.
- A currency manager was appointed to hedge 50% of the overseas currency exposure to reduce risk and the manager was given an active management brief in order to enhance the expected return.
- The LPFA has targeted 15% of the Fund to be invested in alternative assets split between private equity, property and PFI. The proposals in this report for the Haringey Fund would increase the property exposure to 10% and introduce a 5% allocation to private equity.

One area where the LPFA changes go further than the options we have considered in this report is that the LPFA fund introduced an exposure to a targeted return approach, with a benchmark performance objective of RPI+ 5%. They appointed two firms, Merrill Lynch and UBS, to manage these mandates.

LPFA had a particular interest in targeted return approaches. The size of the Fund and the existence of separate active and pensioner funds, also made it easier to fit a targeted return approach into their structure. We would be happy to discuss targeted return as an additional option for the Haringey Fund.

Appendix 3 LPFA- Review of Investment Strategy Changes

REVIEW OF INVESTMENT STRATEGY CHANGES

This paper outlines the background to the investment strategy review undertaken by the Board of the London Pensions Fund Authority (LPFA) during 2005 and provides further information on:

- Key strategic decisions and advice taken
- The process
- New mandates
- The next steps

Background

- The exceptional period of poor global equity market returns from 2000 to 2003 affected the fund's overall investment performance and managers were not meeting targets. This had a significant impact on asset values in the triennial valuation.

- The way the investment portfolios were structured and the index benchmarks were not encouraging our investment managers to actively seek performance.

- Liabilities were increasing due to low bond yields used by the actuaries to calculate their value and because pensioners were drawing their pensions for longer through early retirement and longer life expectancy.

- In 2002, the LPFA Board set new asset allocation targets. The main change was a shift from quoted equities to alternative assets. However, progress on implementing these changes was hampered by low equity prices.

- The actuarial valuation as at 31st March 2004 revealed a substantial deficit in the Active Sub-fund (74% funded), and a significant deficit in the Pensioner Sub-fund (91% funded).

- The policy of holding a very substantial portfolio of index linked gilts to match pensioner liabilities had proved to be only partially successful, for reasons of longevity and increased liability valuations caused by falling gilt yields. The poor returns on the small (15%) equity holding compared to expected returns, had exacerbated the position.

- The introduction of a Funding Strategy Statement in 2004 required a fresh look at investments in relation to those liabilities, taking account of the ability of individual employers' to meet their share of the cost in higher contribution rates.

Key strategic decisions and advice taken

- The Board decided on a fundamental review of investment strategy. This took place over a two day period during which the Board agreed an overall investment plan of activities for 2005-06.

- LPFA is a long-term, responsible investor and takes decisions in regard to investment strategy on a prudent but practicable basis, assessing risk over a time horizon which is consistent with liability profiles.

- Hymans Robertson (as the scheme actuary) was appointed to guide the review throughout and manage the public procurement process.

- The Board was also advised in the process by the officers, the independent advisers, and received a presentation from an investment manager on liability driven investment processes.

- The actuary provided detailed analysis of the liabilities and the risk involved both in different investment strategies, and in different types and combinations of investment management approaches.

- It was also agreed to identify and appoint suitable legal advice and support, and to establish a budget for the costs of the process.

- After endorsing the continuing split of the Fund between Active and Pensioner Sub-funds for investment purposes, the Board decided not to make any significant changes to the asset allocation in the current strategy, but agreed a radical change in the structure and management arrangements of the investment mandates.

- For the Active Sub-fund, it was agreed to maintain the assumption that equities will outperform bonds over the long term. The allocation to quoted equities was reduced in favour of absolute return portfolios.

- The Pensioner Sub-fund requires an investment return of approximately 1.5% above the projected cash out-flow to meet the deficit revealed by the actuarial valuation. To meet those requirements, Hymans advised a more aggressive investment policy for the largely passive index linked gilt portfolio.

The process

- The Board followed a procurement process using the European Community directive guidelines for selecting asset managers.

- At an early stage in the process, a transition manager was selected and appointed, so that the transition plan would be in place for when manager appointments were decided.

- After expressions of interest were obtained for the new mandates, long-lists of potential candidates to be invited to tender were selected by a meeting of Board members and advisers using information and selection criteria supplied by Hymans.

- The tender submissions were whittled down to short-lists for interview following the same process. At the same time, a transition manager was selected, following interview, from a short-list recommended by Hymans.

- The manager selection process was intended to result in the appointment of managers with differing investment styles to further enhance risk diversification.

- All short-listed candidates were interviewed by Board members and advisers, and assessed on common criteria. All Board members were invited to participate and all interview meetings were well attended by a variety of members, and one or both advisers. The representative from Hymans was present at all meetings.

- At the end of each meeting, preferred managers were agreed for recommendation and these decisions were reviewed at a special meeting prior to the full Investment Strategy Committee meeting.

- All managers were approached to discuss fee calculations and to seek reductions. Further discussions were also held to obtain additional explanations from some managers.

- Three mandates the European Credit Management (ECM) mandate and the two target return mandates for Merrill Lynch and UBS were subject to extra due diligence by the Chairman, David Rough and Philip Jones in view of the differences to what have hitherto been accepted as investment norms. These meetings also helped frame the investment management agreements.

- The decisions on manager selections and mandates were put to a full meeting of the Board on 6th October for consideration and approval. Following that meeting, the existing managers were given notice of the changes that had been agreed and the transition process started, managed by the Merrill Lynch TRIM team.

- The transition of assets was undertaken on a confidential basis due to market sensitivity but details were published, subject to any commercial interests, once that process was complete.

New Mandates

Active Sub-fund

- The existing Goldman Sachs (GSAM) global equities portfolio, with a bespoke benchmark and plus 1% performance target, which has exceeded target from inception, was retained as a core, lower risk, portfolio and increased by 50%.

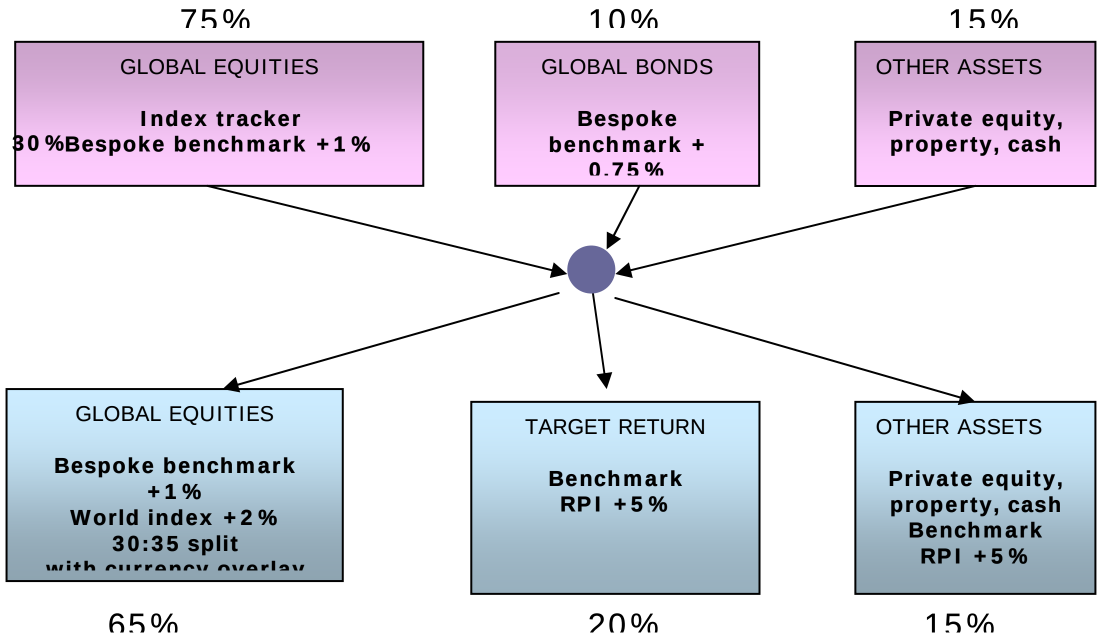
- Two new global equities mandates of £300m each were established, with slightly more aggressive targets at global benchmark +2%. MFS and Newton were appointed to manage these portfolios.

- To further develop our risk management, we appointed a currency manager (Record Currency Management) in relation to exposure to overseas currencies in the equity portfolios managed by the active equity managers. The currency manager will provide a hedge for 50% of this exposure and an active management brief to add extra return.

- Two new mandates of £175m each using a target return approach were established, with the targets set at RPI +5%. This relatively new approach to investment matches our desire to achieve an investment return that reflected our index linked liabilities, and also provide a counterweight to more traditional equity mandates which move in line with equity benchmarks. We could have very successful managers in our global equities mandates, in terms of target performance who actually lose us money. The target return mandates should always add value, and Merrill Lynch and UBS have been appointed to do that.

- The Alternative Investment portfolio at c. 15% of the Active Sub-fund was left largely unchanged, with exposure to property, private equity and PFI. Investments within this portfolio will be managed by the Chairman, in conjunction with the Investment Strategy Committee, and an overall benchmark of RPI plus 5% was set for performance monitoring purposes.

ACTIVE SUB-FUND

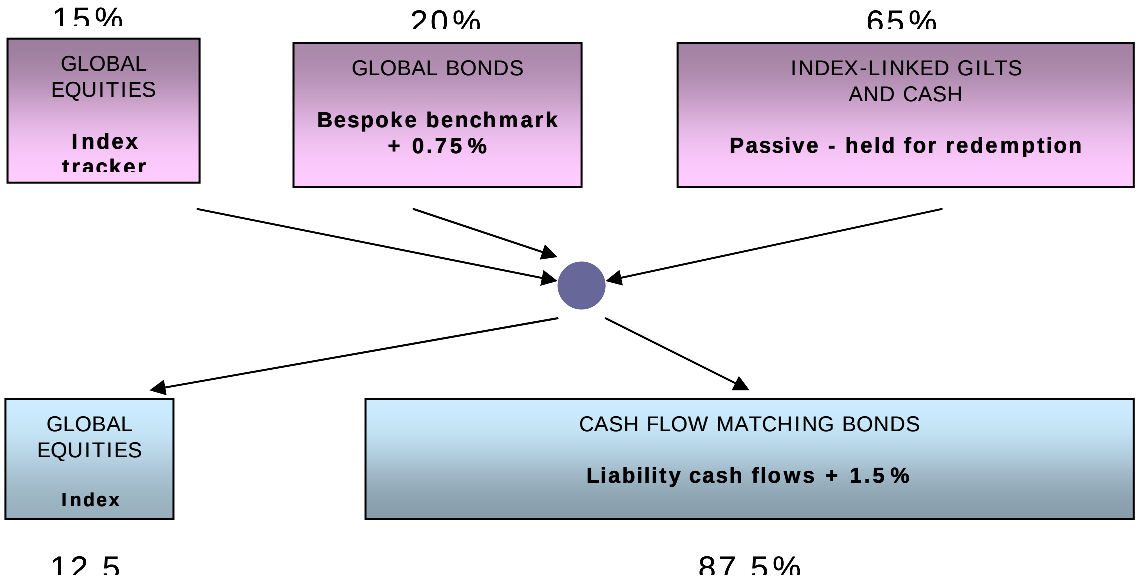


Pensioner Sub-fund

- The equity mandate has been retained to diversify risk but has been reduced to 12.5% and will continue to be managed on a passive basis with LGIM. We will review the options for enhanced index tracking to lift returns without undue added risk.

- Three mandates, one of c£300m (ECM), and two of c£450m (BGI and Insight), have been structured to arrive at an aggregate 1.5% outperformance. Again, a mix of investment styles has been an essential ingredient in manager selection.

PENSIONER SUB-FUND



Next Steps

- The Board will receive a full report on the transition process and will review the outcomes, process efficiency and costs incurred.
- The portfolios created for the new mandates will be handed over to each manager and will be effective from 1st January 2006.
- New monitoring arrangements will be drawn up for consideration by the Board to reflect the more diverse structure of the portfolios and the number of managers involved.
- The role of Board members in the monitoring process will be reviewed, including the frequency and length of Investment Strategy Committee meetings, and also the involvement of the investment advisers.

20th December 2005

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