Merseyside Pension Fund ("the Fund")

Proposed Model Portfolio

In the table below we set out the proposed Mercer model portfolio for the Fund. In considering this portfolio it should be noted that it is based on a number of assumptions and inputs, namely: -

- Recent discussions between Mercer and the Fund regarding the results of the Mercer Risk and Return Healthcheck for the current target strategy (attached)
- Specifically, an assumption that the Fund wishes to maintain, or enhance, the return expectations of the Fund's current investment arrangements for now whilst reducing the overall level of risk of the arrangements where opportunities are identified to do so
- Mercer's dynamic asset allocation views over a 3 to 5 year horizon

	Fund Strategy	**Model Portfolio**	**Difference**
Asset Class	**%**	**%**	
Equity	59	58	-1
UK	*30*	*20*	*-10*
Overseas (Developed)	*25*	*30*	*+5*
Emerging Market	*4*	*8*	*+4*
Bond	20	22	+2
Index Linked Gilts	*12*	*8*	*-4*
Fixed Interest Gilts	*4*	*3*	*-1*
Corporate Bonds	*4*	6	+2
High Yield	*0*	3	+3
Infrastructure	*0*	3	+3
Alternative	10	10	-
Other Investments	*6*	*6*	-
Private Equity	*4*	*4*	-
Property	10	10	-
Cash	1	0	-1
Total	**100**	**100**	

We set out below the rationale for some of the changes to the current arrangements and also comment on the detail of how each section of the portfolio might be managed in practice.

Equity Portfolio – Strategy

- Equity exposure broadly maintained at current levels but strategic exposure to emerging market equities significantly increased

- The portfolio further "globalised" with a reduced exposure to UK equities used to fund the investment in emerging markets and developed overseas markets

- Analysis suggests that some currency hedging of the overseas equity exposure would have a marginally beneficial impact on the risk and return trade-off

Equity Portfolio – Implementation

- To enable active stock selection across global sectors we suggest consideration is given the introduction of a global equity mandate

- We also suggest the Fund considers introducing a specialist smaller capitalisation equity mandate into the portfolio (and increasing the Fund's exposure to this section of the market beyond that implied by the current benchmark indices)

Bond Portfolio – Strategy

- Slight increase in bond exposure overall relative to current target

- Reduction in index-linked gilt exposure reflects Mercer view that this asset class is overvalued (even after taking into account the inflation protection it offers)

- Reduction in fixed interest gilt exposure reflects Mercer view that this asset class is also overvalued and forms only a small part of the identified Least-Risk Portfolio for the Fund

- Marginal increase in corporate bond exposure reflects preference for this asset class over gilts

- Introduction of high yield (corporate debt and emerging market sovereign debt) and infrastructure debt reflects sharp contraction in credit spreads on investment grade debt over last two years. Additional yield available on high yield and infrastructure now considered more attractive on risk-adjusted basis both from a strategic and tactical perspective

Bond Portfolio – Implementation

- We suggest the Fund gives consideration to widening the investment restrictions for the current bond managers in order to permit increased exposure to identified opportunities in global bond markets

- We also suggest that the Fund considers its approach to exploiting any significant increase in gilt yields that may occur in the future that might enable the Fund to “lock in” the positive funding experience this might generate (for example, the Healthcheck suggests that a 0.5% pa increase in real gilt yields across the yield curve has the potential to reduce the present value of the Fund’s liabilities by just under 10%)

Alternative and Property Portfolio – Strategy & Implementation

- Current overall target exposures maintained
- Within property allocation, an explicit allocation to high lease to value properties could be considered a reasonable inflation hedge. Alternative or property exposure could also incorporate an exposure to the distressed property refinancing opportunity that has been previously discussed with the Fund

Merseyside Pension Fund (“the Fund”)

Risk Return Analysis and Strategy Healthcheck

Executive Summary

- Our best estimate risk and return assumptions suggest a return expectation of 3.1% p.a. in excess of the expected return on the liabilities of 4.5%, with an expected risk level of c14.6%p.a. associated with the current strategy.

- The current strategy supports the funding strategy and valuation assumptions and implementation of ‘increased Investment Return Allowance’ up to 3.1% over the Least Risk Portfolio of matching assets.

- Our “best estimate” expectation of the funding level in 10 years time is c92%; albeit with a risk profile that could see a significant reduction in the funding level at any time.

- Therefore, all other things being equal, the current strategy supports the longer term funding strategy being developed as part of the 2010 valuation process.

- However, consideration needs to be given to the risks inherent within the strategy going forward noting that, as expected, both the deficit (in terms of the exposure to adverse changes in interest rates and inflation) and the bias towards equities within the current investment strategy pose the greatest sources of risk.

Introduction

This paper has been prepared by Mercer with the aim of providing a review of the risk / return profile of the current investment strategy of the Fund. It is intended that this analysis will form part of the assumption setting process within the 2010 actuarial valuation of the Fund as well as providing an indication of the adequacy of the current strategy in the context of the longer term funding plan.

Current Strategy

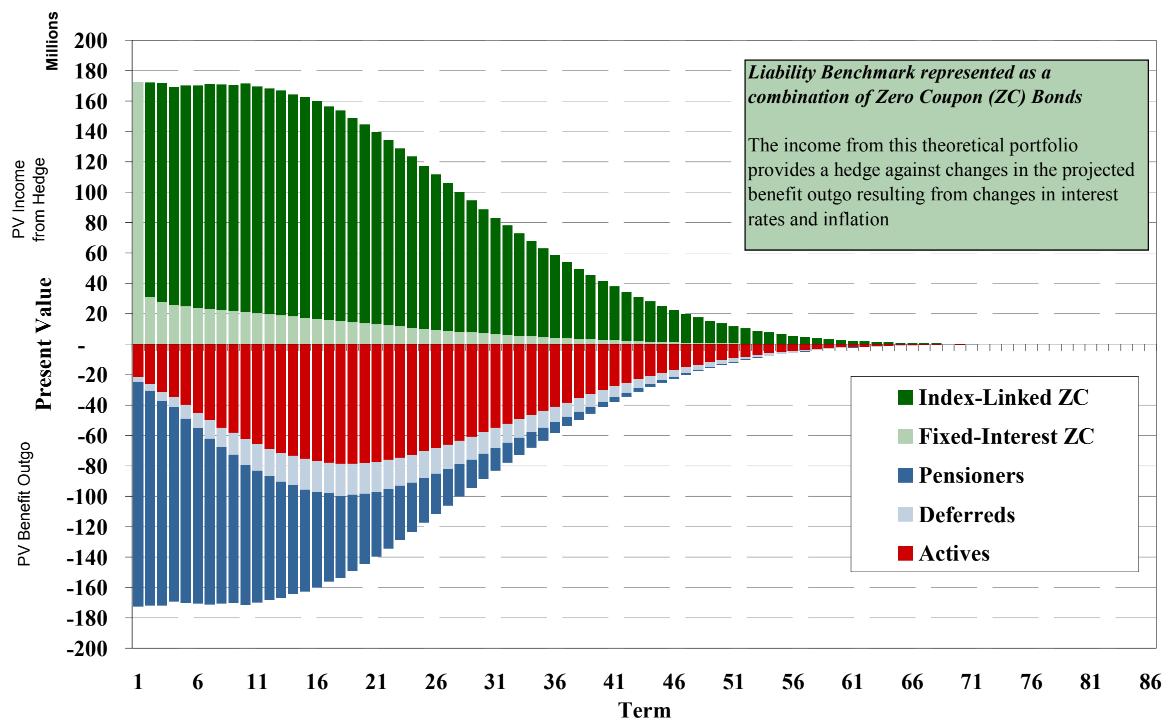
The Fund's asset allocation is set out below for completeness.

Asset Class	%
Equity	59
UK	*30*
Overseas	*29*
Bonds	20
Index Linked Gilts	*12*
Fixed Interest Gilts	*4*
Corporate Bonds	*4*
Alternatives	10
Other Investments	*6*
Private Equity	*4*
Property	10
Cash	1
Total	**100**

Risk and Return of Current Strategy

The liabilities of the Fund are a stream of payments to be paid to members in future years. Therefore, the portfolio of assets that would best match these liabilities would be that which produces income cashflows at the same time as benefit payments need to be made. In theory, a portfolio of government bonds could be constructed, serving as a proxy for the liabilities, such that those bonds produce income payments at the right times. It is this portfolio that represents the baseline risk level and we term it the least risk portfolio ("LRP").

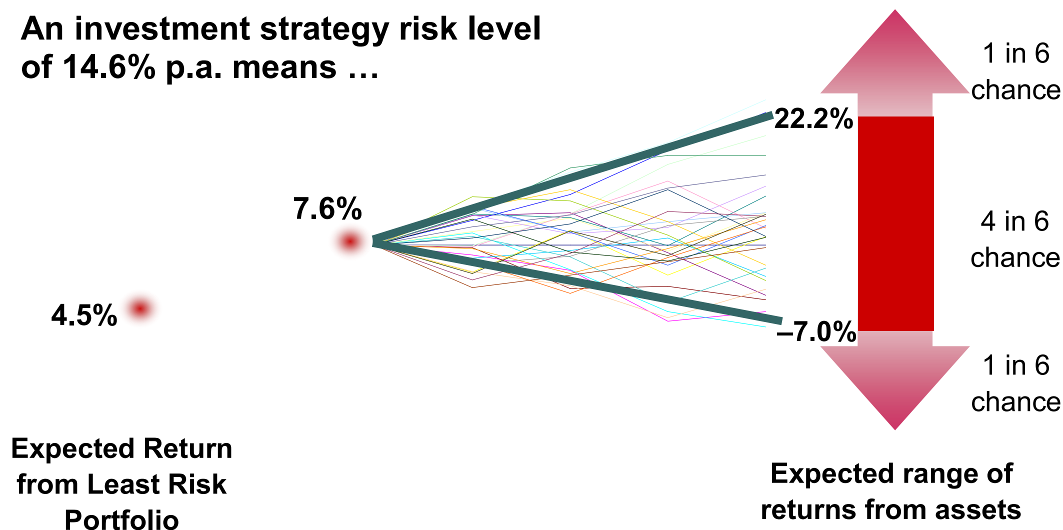
The LRP for the Fund is illustrated below by the green bars, which mirror the liability cashflows shown in red and blue.



The LRP for the Fund was found to be best represented by 86% index linked gilts and 14% fixed interest gilts with an average duration of 18 years.

We have calculated that the Fund's current strategy has an expected return of 7.6% p.a. which is 3.1% p.a. in excess of that of the LRP. (This compares to the current funding assumption of c.1.4% above gilts, reflecting the prudence in the actuarial assumptions). However, it is important to recognise that this is only an expectation and there are risks that the return from the current strategy will be lower than the return on the least risk portfolio which could lead to a decrease in the funding position. We estimate the risk level associated with the current strategy to be around 14.6% p.a. relative to the liabilities.

By stating a risk level of 14.6% p.a., along with an expected return of 7.6% p.a. we are saying (assuming that returns are normally distributed) that we expect the returns from the Fund's investments to fall within 14.6% of the expected return with a 2 in 3 chance, i.e. the current strategy is expected to return between -7.0% p.a. and 22.2% p.a. in 2 years out of 3 (on average). The following diagram illustrates the idea:

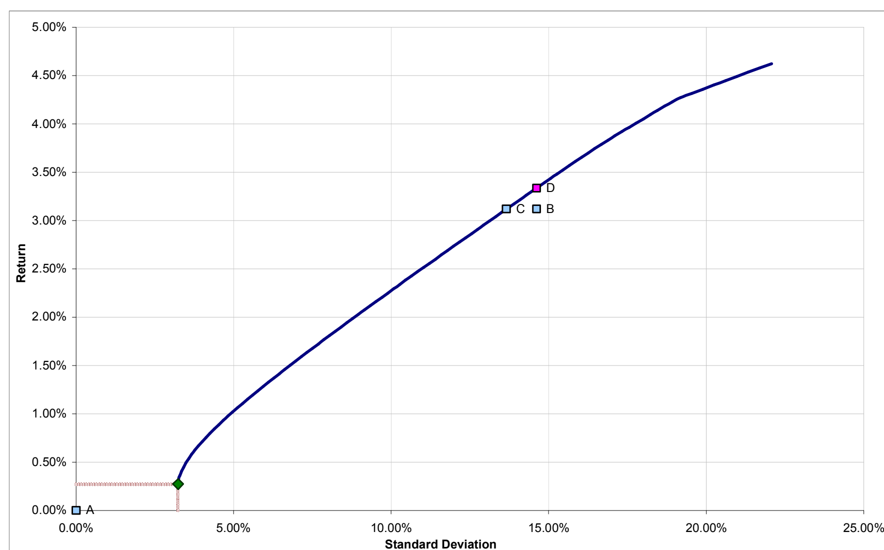


It should be noted that this initial analysis takes into account asset class risk and return only. The use of active management will alter the expected risk return profile to a degree and the Pensions Committee may wish to take this into account at a later stage in order to further refine the investment strategy. However, it is asset allocation (rather than manager structure) that accounts for the lion's share of risk and return and so we have not focused on manager issues here.

Efficiency of the Current Strategy

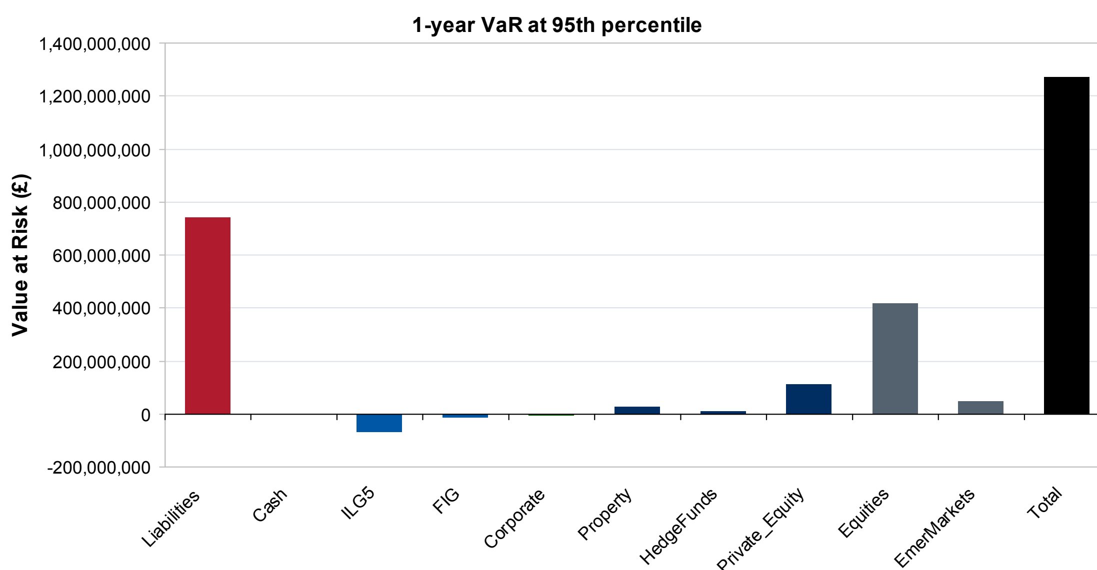
The chart below shows the "Efficient Frontier" as the blue line on the risk (horizontal axis) and return (vertical axis) space, with both risk and return expressed relative to the liabilities. The Efficient Frontier represents all asset portfolios with the best possible level of return for a given level of risk.

The LRP is shown by the blue square A. The current strategy is shown by the blue square B, and it can be seen that (based on our asset class assumptions) it is reasonably efficient. That said, there is further analysis and advice that we could provide with the aim of making the assets "work harder" (and move up to the Efficient Frontier as per strategies C and D) and we briefly cover this in the Conclusion to this note.



Risk Attribution – Where Does the Risk Come From?

The following chart provides a breakdown of the exposure of the current investment strategy to interest rate and inflation risk (shown as liability risk) and asset class risks. We illustrate this in terms of a Value at Risk measure which represents the likelihood that the change in deficit in one year's time will exceed the amount shown with a 5% probability. So under the current strategy, there is a 5% chance that the amount by which the assets fall short of the liabilities will increase by at least £1.2 billion. However, please note that this represents the worst 5% of outcomes.



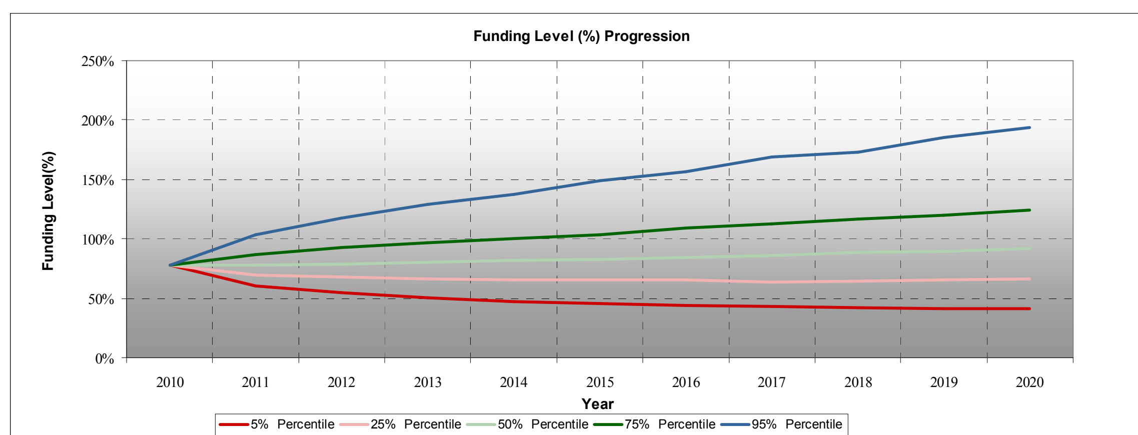
It can be seen that both the market risk, driven by the equity content, and interest and inflation (liability) risks inherent in the current strategy are significant. The interest and inflation risks derive from the fact that the duration of the current bond portfolio is materially different from that of the liabilities (interest rate risk) and that the portfolio is not inflation proofed to the same degree as the least risk portfolio.

In addition, the presence of a material deficit, i.e. liabilities that are not covered by any assets, contributes to the interest rate and inflation risks. It should be noted that the LRP is designed to match inflation increases in line with RPI. The benefits in the Fund will be linked to CPI from April 2011 which means that index linked government bonds are not a precise match for the benefit cashflows. However, in the absence of any instruments that match CPI inflation, an LRP derived from index linked gilts is the best available proxy.

Interest rate and inflation risk can be mitigated through the use of bonds (and derivatives) that match the payment profile of the liabilities. Equity risk can be mitigated by reducing the equity content and / or diversifying into alternative sources of return.

Implications of Current Risk / Return Profile

The chart below projects the Fund's expected funding level progression based upon the current investment strategy. The chart shows the range of potential outcomes in future years by allocating the results to different percentile groups. For example, the light green line indicates the central expectation under which 50% of results are better and 50% worse than the line. Results that fall below the red line are the very worst 5% of expected outcomes.



Percentile	31/03/2010	31/03/2011	31/03/2012	31/03/2013	31/03/2014	31/03/2015	31/03/2016	31/03/2017	31/03/2018	31/03/2019	31/03/2020
5.00%	77.59%	60.56%	54.44%	50.13%	47.07%	45.21%	43.65%	43.35%	42.23%	41.08%	41.35%
25.00%	77.59%	69.59%	67.82%	66.56%	65.80%	65.41%	65.08%	64.01%	64.16%	65.14%	66.05%
50.00%	77.59%	77.80%	78.80%	80.05%	81.85%	83.15%	84.31%	86.14%	88.19%	89.72%	91.99%
75.00%	77.59%	87.33%	92.32%	96.56%	99.99%	103.86%	109.24%	112.97%	116.53%	120.17%	123.98%
95.00%	77.59%	103.46%	117.36%	129.04%	137.09%	148.61%	156.70%	169.15%	172.85%	185.68%	193.93%

It can be seen that the funding level is expected to progress steadily over the next 10 years to a c92% funded position. That said, the downside risks are not insignificant, and there is a 1 in 20 chance that the funding level will fall to below 50% within the next 4 years.

The results shown are based on the preliminary estimate of the 2010 valuation results which show a funding level of approximately 78%, based on assumptions consistent with RPI inflation at this stage. The projections also assume a continuation of the current employer contribution rates and current benefit structure. This will be refined as part of the 2010 valuation process. However, we would not expect the outcome to materially affect our conclusions here.

Conclusion

Our best estimate risk and return assumptions suggest a return expectation of 3.1% p.a. in excess of the liabilities, with a “best estimate” expectation of c92% funding within 10 years; albeit with a risk profile that could see a significant reduction in the funding level over the medium term. Therefore, all other things being equal, the current strategy supports the longer term funding strategy being developed as part of the 2010 valuation process. However, consideration needs to be given to the risks inherent within the strategy going forward.

As expected, both the deficit (in terms of the exposure to adverse changes in interest rates and inflation) and the bias towards equities within the current investment strategy pose the greatest sources of risk.

The Fund has already taken steps to mitigate equity risk by diversifying into alternatives such as property and private equity. A further source of analysis could be to look at the drivers of risk and return within the Fund’s “growth” assets, in order to help understand the underlying return drivers for various asset classes and to build a portfolio of assets that is not exposed to a small number of risk factors. Our growth portfolio toolkit could be utilised as such and we would be happy to provide further analysis as required.

We fully recognise that equities have an important part to play and we would also welcome the opportunity to share the thoughts we have on constructing a global equity portfolio that is well placed to capture “topical” sources of return, whilst aiming for protection against extreme events.

Mitigating interest rate and inflation risk typically points towards “liability driven investment”, which in its most general sense involves heavy investment in bonds. A higher allocation to bonds at the expense of return seeking assets would increase the costs of funding, and in light of the current deficit within the Fund, and the prevailing market environment (i.e. low yields) we would not suggest that this type of de-risking is a priority at the present time. Again, we would be happy to discuss further if required.

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