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October 2007

West Midlands Metropolitan Authorities Pension Fund

Review of Investment Strategy

Anwen Owens

Agenda

- Initial Actuarial Valuation results
- The Liability Benchmark Portfolio
- The Current Strategic Benchmark
- Other Possible Investment Strategies
- Active Management Contribution and Manager Structure
- Other Strategic Issues
- Summary and Next Steps

Initial Actuarial Valuation Results

The actuarial valuation 2004 results and preliminary 2007 results Ongoing Basis

	2004 Results	2007 Preliminary Results
Market value of assets	£4,739m	£7,513m
Past service liabilities	£6,437m	£9,269m
Deficit	£1,698m	£1,756m
Funding level	74%	81%
Average employer contribution rate (as % of pensionable pay and including adjustment for deficit over 25 years)	16.0%	16.7%*

* 12.2% future service, 4.5% deficit recovery

Liability Profile of the Fund (at 31 March 2004 and 31 March 2007)

	31 March 2004	31 March 2007
	%	%
Liability Profile		
Active	51	52
Deferred	10	11
Pensioners	39	37
Funding Level	74	81

- The Fund’s liability profile has not significantly changed over the inter-valuation period.
- 31 March At 2007, the majority (c52%) of liabilities remain in respect of active members.

Market movements since 31 March 2007 to 30 September 2007

	Returns 31/03/07 – 30/09/07 %	Yields at 30/09/07 (31/03/07) %
Over 15 Yr Gilts	-0.5	4.6 (4.5)
Over 15 Yr IL Gilts	3.3	1.1 (1.2)
UK Equity	2.7	
US Equity	4.3	
Europe (ex UK) Equity	7.8	
Japanese Equity	-5.7	
Pacific (ex Japan) Equity	23.8	

- Other things being equal, from an investment viewpoint, we would expect that these market conditions will have had a marginally positive impact on the funding level since the last Valuation as a result of:

  - Positive equity performance (with the exception of Japan)

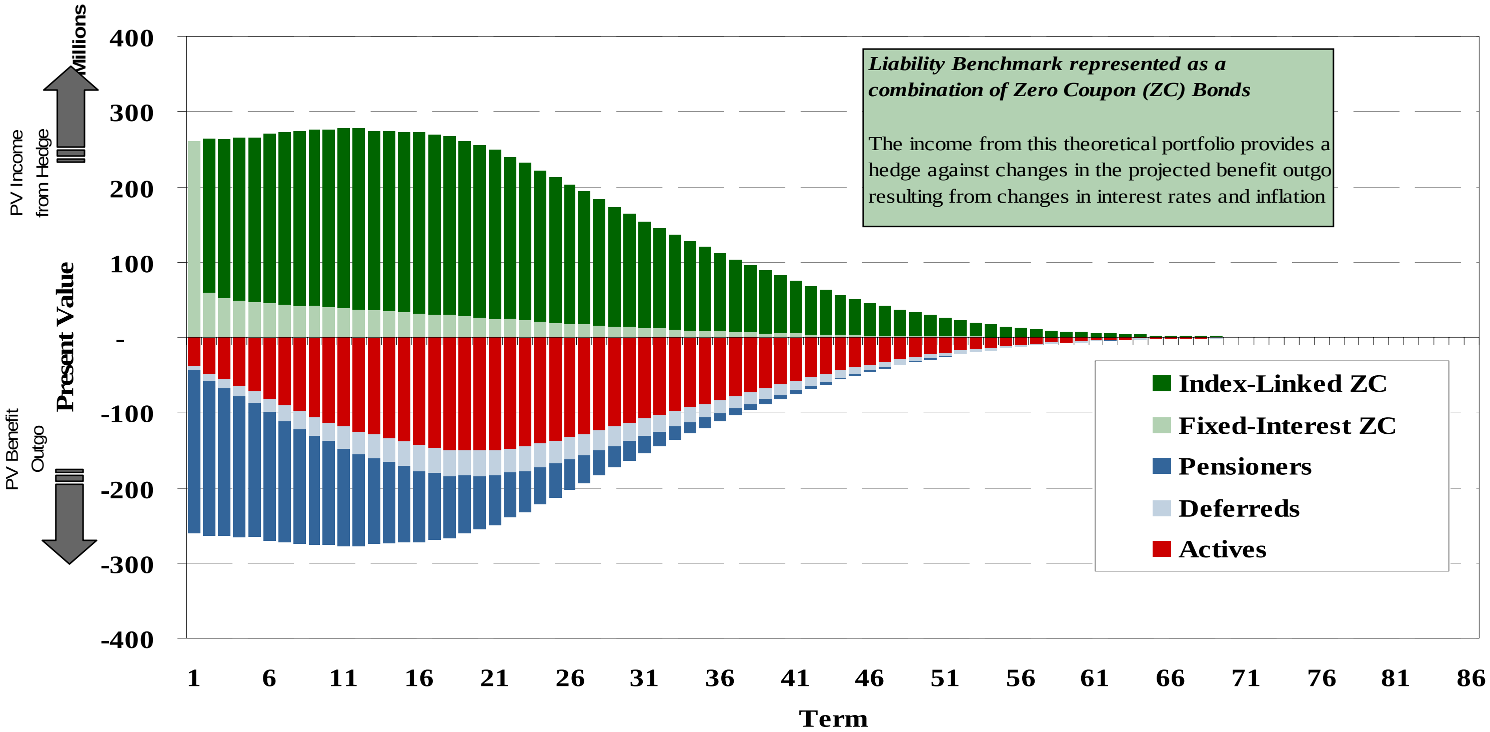
  - Little change in bond yields at the two dates shown, although yields did fluctuate over the period. The fixed interest gilt yield higher (positive), but the Index Linked Gilt yield lower (negative).

The Liability Benchmark Portfolio

Key Assumptions

- Cash flows used to calculate least risk portfolio reflect past service only and therefore do not take into account benefit changes taking place in April 2008.
- All cash flow projections and liabilities quoted are based upon preliminary assumptions of the 2007 valuation.
- Asset class return and risk characteristics are based upon Mercer's standard asset class assumptions as at 30 June 2007. Equity Risk Premium is 3.7%. See Appendix A for more details.

Liability Benchmark Portfolio (“LBP”)
14% fixed interest gilts/86% index-linked gilts



- The LBP or ‘Least-Risk” portfolio provides income that directly meets the expected benefit outgo of the Fund (based on past service) and will react in the same way as the liabilities to changes in inflation expectations and changes to the yield curve.

Characteristics of the LBP

- The LBP behaves like the liabilities
  - 14% fixed interest (12 years duration)/86% index-linked gilts (20 years duration)
  - The overall duration for the least risk portfolio is 18.5 years
  - NB “least risk” does not mean no risk
- Risks that can be addressed:
  - interest rate changes
  - inflation rate changes
  - market risks (e.g. equity risk)
- Risks that are more difficult to address:
  - Non investment risks, e.g. demographic experience (especially mortality)
- Represents the “benchmark” against which the returns and risks of the asset portfolio can be assessed

Impact of Investing in the LBP

- Investing in the liability benchmark or least risk portfolio of assets would remove the scope for any asset outperformance assumption in calculating the liabilities
- Therefore the current value of the liabilities would rise to c£12,111m, the assets would remain at £7,513m, so the ‘least risk’ funding level would be c62%
- Investing in the least risk portfolio removes risk but also removes potential reward

The Current Strategic Benchmark

Strategic Benchmark

Asset Class	Current Strategic Allocation (%)
Equities	66.0
UK Equities	34.0
Global Equities	6.0
Overseas Equities	26.0
Fixed Interest	14.0
Index Linked Gilts	4.7
UK Fixed Interest	4.7
UK Corporate Bonds	4.6
Alternatives	19.5
Property	8.5
Private Equity	4.5
Emerging Market Debt	2.0
Active Currency	1.5
Commodities	2.0
Infrastructure	1.0
Cash	0.5
Total	100.0
Strategic Risk	13.9 p.a.
Strategic Excess Return	2.9 p.a.

Totals may be affected by rounding

Current Strategic Benchmark

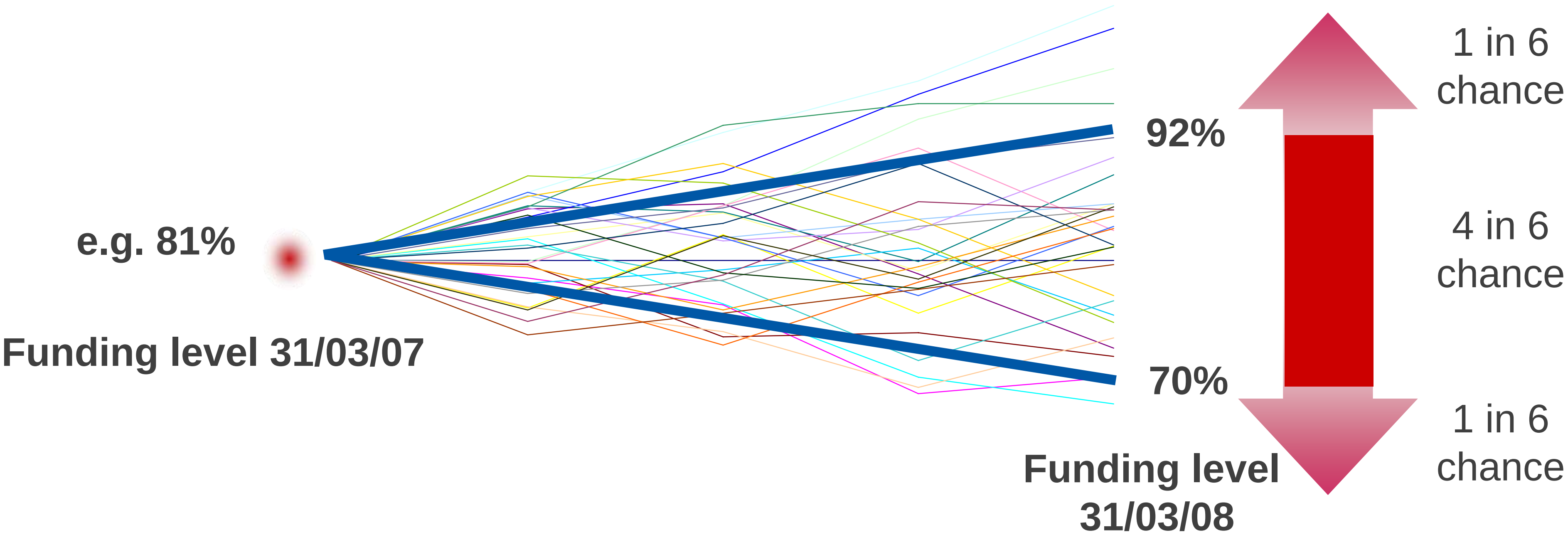
- Expected return
  – Central expectation (50% probability) is 7.8% p.a. (excluding active management returns) which is 2.9% p.a. above the least risk return

Note:

- We use best estimates – differs from actuarial prudence
- Return in excess of liabilities is key, not the absolute number. The Actuary assumes c1.4% p.a. overall excess return above liabilities for assessing the funding level.

What is meant by risk?

Calculated risk of 13.9% p.a. means …



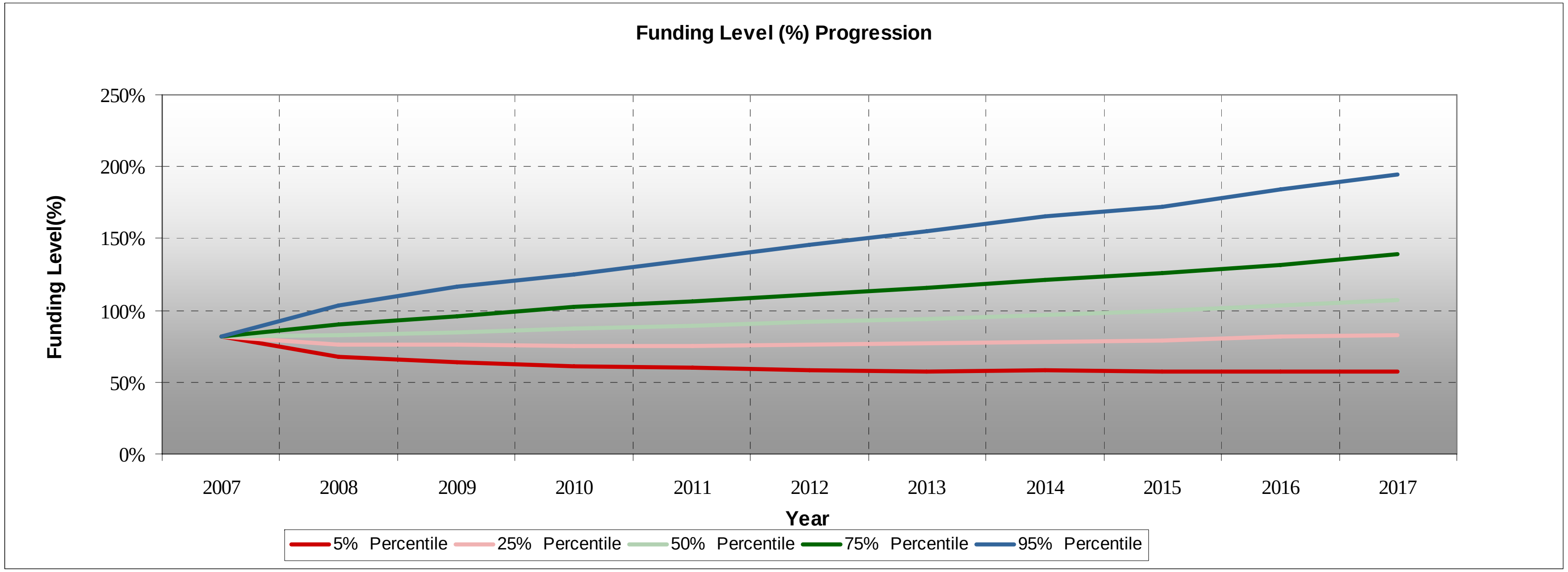
- One year from the Valuation date of 31 March 2007 there is a:
  - Two-thirds chance of the funding level being in the range 70% to 92% and a one in three chance that the funding level will fall outside of these limits (in particular, a one in six chance that it will have fallen below 70%).

Progression of funding level

Current strategic benchmark allowing for market risk and return over 10 year period to 31 March 2017

Excess Return = 2.9%

Market Risk = 13.9%



Percentile	31/03/2007	31/03/2008	31/03/2009	31/03/2010	31/03/2011	31/03/2012	31/03/2013	31/03/2014	31/03/2015	31/03/2016	31/03/2017
5.00%	81.3%	68.1%	64.0%	61.2%	59.7%	58.4%	57.7%	58.2%	57.8%	57.1%	57.1%
25.00%	81.3%	76.4%	76.0%	75.5%	75.6%	76.5%	77.4%	78.0%	79.4%	81.8%	82.9%
50.00%	81.3%	83.0%	85.0%	87.3%	89.5%	92.1%	94.2%	97.2%	100.0%	103.0%	107.1%
75.00%	81.3%	90.5%	96.1%	102.3%	106.2%	111.0%	115.4%	121.1%	126.1%	131.1%	138.9%
95.00%	81.3%	103.4%	116.5%	125.2%	135.6%	145.8%	155.0%	165.0%	172.3%	184.4%	194.6%

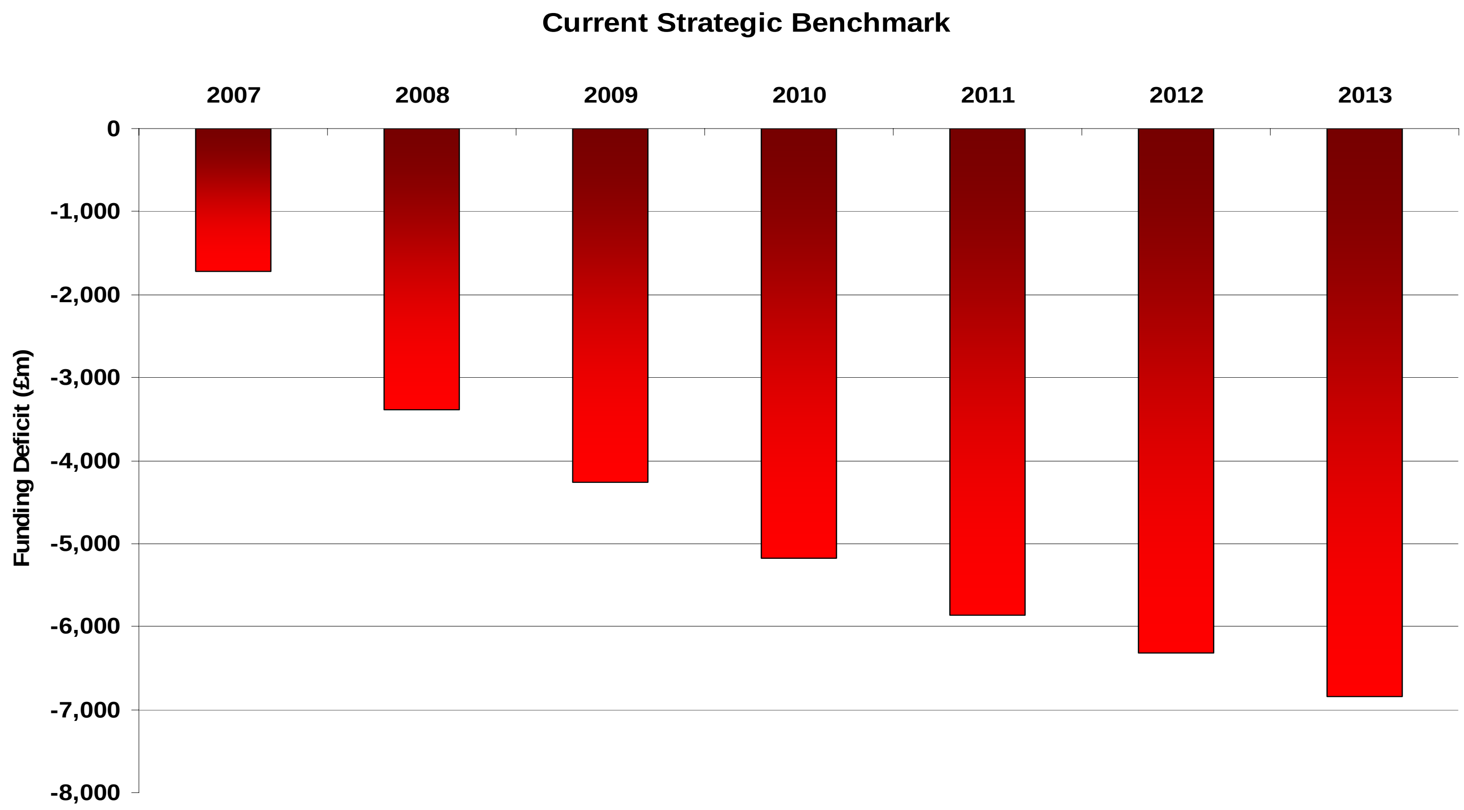
Return objective implied by current strategic benchmark

- Maintaining the current investment strategy and proposed contribution rate (and ignoring any gains/losses from active investment management) leads to:
  – An expectation of the funding level rising to 87% by time of next actuarial valuation in 2010.
  – An expectation of the funding level reaching 100% by 2015.
- Probability of being at least 100% funded at the end of the ten year period in 2017 is 57%.

Downside risk implied by current strategic benchmark

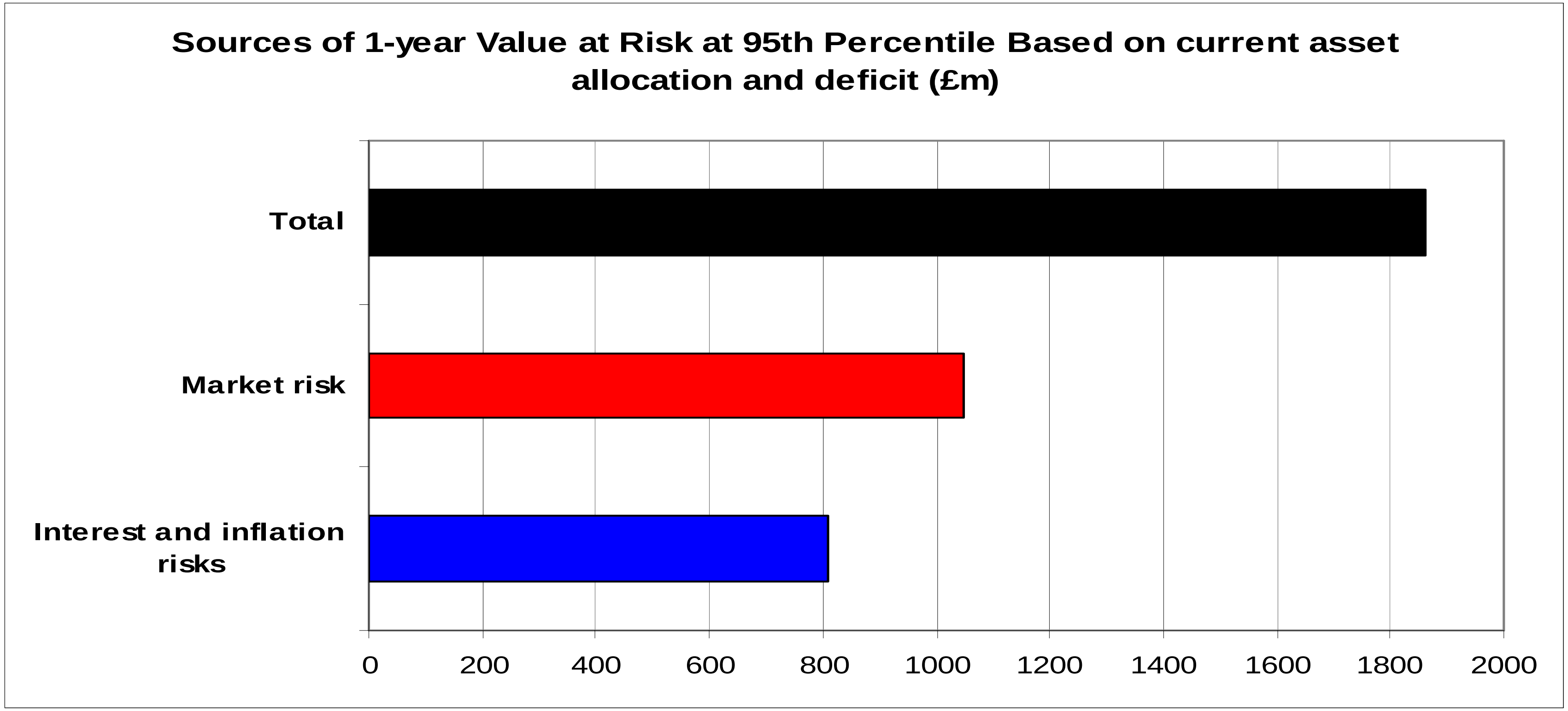
- Maintaining the current strategic benchmark and proposed contribution rate leads to:
  - A probability of the funding level falling below the current level (81%) at the end of the ten year period in 2017 of 23% (i.e. almost one in four chance).
  - A probability of the funding level falling below the current level (81%) at the 2010 Valuation of 37% (i.e. greater than a one in three chance)
  - A 25% (i.e. one in four) chance that the funding level will have fallen below 75% at the 2010 Valuation and 16% (i.e. one in six) chance at the end of the ten year period in 2017.
  - A 5% chance that the funding level will have fallen below 61% by the next valuation or 57% by the end of the ten year period.

Downside risk - possible funding deficits (£)
Deficit at 31 March 2007 is £1,756m



- Chart shows a worst case scenario (5th percentile or 1 in 20 chance) for the funding deficit with current level of overall risk (i.e. 13.9% p.a.) and expected excess return (i.e. 2.9%).

Value at Risk



The chart above indicates where the risks lie in the Fund’s current benchmark strategy. With a bias towards “return seeking” non-matching assets like equities, market risk dominates. However, interest and inflation risks are still significant.

Potential (Downside) Impact on Contribution Rate in 2010

		2010		
	2007	50% Probability %	25% Probability %	5% Probability %
Total Cost of Accrual	18.7	19.4	23.3	29.8
Employee Share	(6.5)	(6.5)	(6.5)	(6.5)
Employer Share	12.2	12.9	16.8	23.3
Deficit Recovery	4.5	3.1*	6.9*	12.8*
Total Employer Cost	16.7%	16.0%	23.7%	36.2%

*Assumes deficit re-spread over 25 years

- Approx one in three chance of total employer's contribution rate rising by more than 20% above the current rate at the next valuation.

The Medium Term Strategic Benchmark

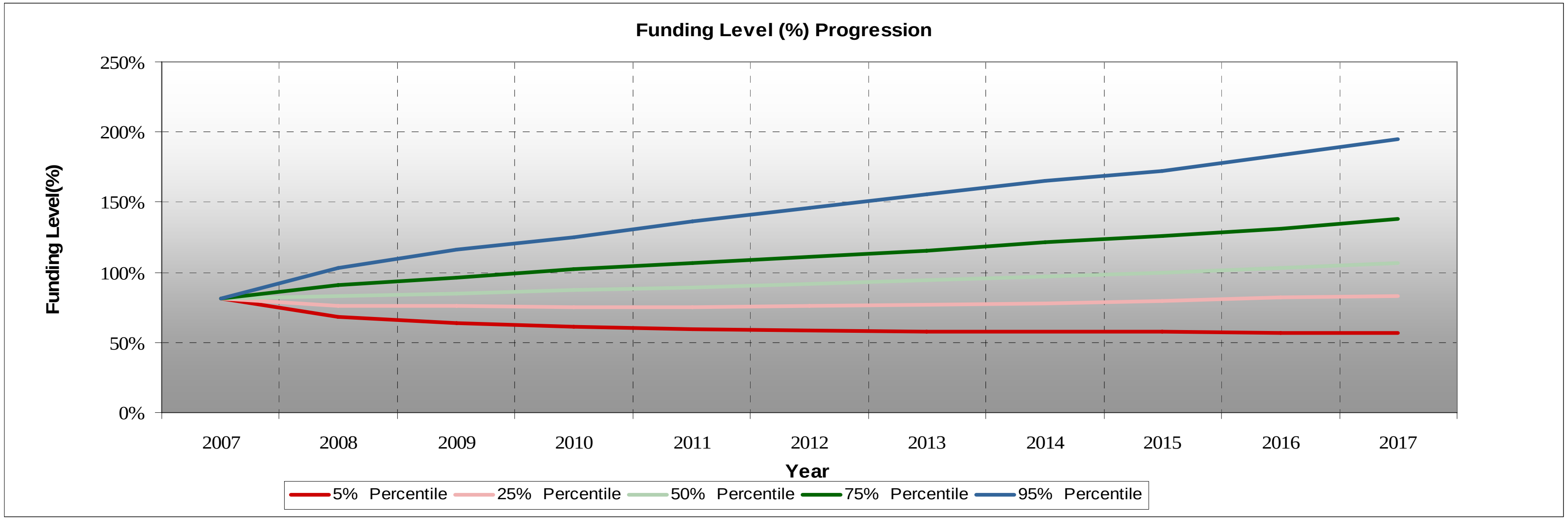
Medium Term Benchmark

Asset Class	Current Strategic Allocation (%)
Equities	60.0
UK Equities	30.0
Global Equities	6.0
Overseas Equities	24.0
Fixed Interest	14.0
Index Linked Gilts	4.7
UK Fixed Interest	4.7
UK Corporate Bonds	4.6
Alternatives	25.0
Property	10
Private Equity	7.0
Emerging Market Debt	2.0
Active Currency	2.0
Commodities	2.0
Infrastructure	2.0
Cash	1.0
Total	100.0
Strategic Risk	14.0 p.a.
Strategic Excess Return	2.9 p.a.

Progression of funding level

Medium Term strategic benchmark allowing for market risk and return over 10 year period to 31 March 2017

Excess Return = 2.9%
Market Risk = 14.0%



Percentile	31/03/2007	31/03/2008	31/03/2009	31/03/2010	31/03/2011	31/03/2012	31/03/2013	31/03/2014	31/03/2015	31/03/2016	31/03/2017
5.00%	81.34%	68.07%	63.93%	61.10%	59.59%	58.22%	57.45%	57.94%	57.61%	56.99%	56.87%
25.00%	81.34%	76.36%	75.96%	75.34%	75.55%	76.43%	77.21%	77.89%	79.23%	81.74%	82.61%
50.00%	81.34%	82.98%	84.94%	87.24%	89.45%	92.05%	94.16%	97.03%	99.92%	102.80%	106.94%
75.00%	81.34%	90.52%	96.08%	102.36%	106.22%	110.97%	115.37%	121.07%	125.86%	131.03%	138.51%
95.00%	81.34%	103.48%	116.40%	125.24%	135.99%	145.93%	155.25%	165.25%	172.16%	183.92%	194.63%

Conclusions: Fund is a long term investor

- Medium Term Benchmark has very similar risk/return characteristics to current benchmark.
- Expected return 2.9% p.a. above liabilities, 7.8% p.a. absolute (cf. 7.7% in draft SIP).
- Expected returns in excess of actuarial assumptions lead to a swifter recovery of 100% funding (by 2016 with a 50% probability).
- Adoption of Medium Term Benchmark does not seem unreasonable.

Question : Given these expectations, why not consider a lower risk strategy?

Conclusions: Short Term Risk Remains

- Strategic Risk of 14% p.a.
- Greater than one in three (37%) chance of deterioration of funding level by next valuation (2010).
- One in four (25%) chance of funding level being below 75% at next valuation.
- One in twenty (5%) chance of funding level being below 61% at next valuation.

Question: Are these potential downsides tolerable in pursuit of return?

Conclusions: Manager Structure

- Not modelled – by agreement.
- WMPF work suggests additional return of 1.3% p.a.
- Manager and Strategic risk are uncorrelated.
- Manager risk expected to add up to 0.2% per annum to the overall risk figure (14.2% p.a.)

Other Strategic Issues
Split within equities

- Current split c. 50/50 UK/Overseas
- With hedging of 70% of overseas currency risk could shift bias further towards overseas equities.
- Within overseas equities, support retention of fixed weights to maintain diversification, noting that it is implemented via regional allocations and global mandates.

Other Strategic Issues
Split within Bonds

- Spurious accuracy unnecessary whilst only c.15% of assets.
- Comfortable to retain existing fixed weight but note
  - index linked gilts significant part of least risk portfolio.
  - Credit currently offers good medium term value (following recent spread widening).

<u>Unless</u> wish to consider addressing interest rate and inflation risk

Other Strategic Issues
Alternatives Portfolio

- Essential elements : Diversification, ability to monitor and assess risk across portfolio.
- Main areas already covered.
- Support proposal to move into non-UK property.
- Other possibilities: Global Tactical Asset Allocation (GTAA), high yield debt, market neutral/long-short managers, 130/30 equity managers, commodity alpha.

Manager Structure Considerations

- Still happy with “quant” focus within equities?
- Place for less constrained “best ideas” managers (particularly in a well-diversified satellite structure)?

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- *Investments denominated in a foreign currency will fluctuate with the value of the currency.*
- *A change in investment strategy will incur transaction costs.*

Appendix A
Asset Class Assumptions

Appendix A – Asset Class Assumptions as at 30 June 2007

	Expected Absolute Return (%pa)	**Investment Risk** - Standard Deviation of Relative Returns (%pa)	**Correlation Matrix - Relative Returns**																			
			Cash	ILGs 19.6 years duration	FIGs 11.9 years duration	AA ILBs 50years duration	AA FIBs 50years duration	ILGs (>5s)	FIGs (All)	FIGs (>15)	UK £ Credit (All)	UK £ Credit(>10)	Conventional Property	HLV Property	Active Currency	Commodities	Emerging Market Debt	Infrastructure (Listed Equity)	Infrastructure (Unlisted Equity)	Private Equity	Equities	Equities (Currency Hedged)
Cash	4.90%	9.6%	**1.0**	0.0	-0.2	-0.6	-0.6	0.9	0.4	-0.3	0.4	-0.1	0.4	0.3	0.7	0.5	0.5	0.3	0.2	0.2	0.3	0.3
ILGs 19.6 years duration	4.90%	1.1%	0.0	**1.0**	-1.0	0.1	-0.6	0.3	-0.9	-1.0	-0.8	-0.8	-0.2	-0.2	0.1	0.1	0.1	0.0	0.2	0.2	0.1	0.1
FIGs 11.9 years duration	4.90%	6.3%	-0.2	-1.0	**1.0**	0.0	0.8	-0.5	0.8	1.0	0.6	0.8	0.1	0.1	-0.2	-0.2	-0.3	-0.1	-0.2	-0.3	-0.1	-0.1
AA ILBs 50years duration	5.50%	18.4%	-0.6	0.1	0.0	**1.0**	0.6	-0.5	-0.3	0.0	0.0	0.4	-0.2	-0.2	-0.3	-0.3	0.3	0.0	0.1	0.1	0.0	0.0
AA FIBs 50years duration	5.50%	21.3%	-0.6	-0.6	0.8	0.6	**1.0**	-0.8	0.3	0.8	0.4	0.8	-0.1	0.0	-0.4	-0.4	-0.1	0.0	-0.1	-0.1	-0.1	-0.1
ILGs (>5s)	4.90%	1.9%	0.9	0.3	-0.5	-0.5	-0.8	**1.0**	0.1	-0.5	0.2	-0.3	0.3	0.2	0.6	0.5	0.6	0.2	0.2	0.2	0.2	0.2
FIGs (All)	4.90%	6.7%	0.4	-0.9	0.8	-0.3	0.3	0.1	**1.0**	0.7	0.9	0.7	0.3	0.2	0.1	0.1	0.1	0.0	-0.1	-0.2	0.0	0.0
FIGs (>15)	4.90%	6.5%	-0.3	-1.0	1.0	0.0	0.8	-0.5	0.7	**1.0**	0.6	0.8	0.1	0.1	-0.3	-0.3	-0.3	-0.1	-0.2	-0.3	-0.1	-0.1
UK £ Credit (All)	5.50%	6.7%	0.4	-0.8	0.6	0.0	0.4	0.2	0.9	0.6	**1.0**	0.9	0.3	0.2	0.2	0.1	0.5	0.2	0.0	0.0	0.1	0.1
UK £ Credit(>10)	5.50%	6.7%	-0.1	-0.8	0.8	0.4	0.8	-0.3	0.7	0.8	0.9	**1.0**	0.2	0.1	-0.1	-0.1	0.3	0.1	-0.1	-0.1	0.0	0.0
Conventional Property	6.65%	17.2%	0.4	-0.2	0.1	-0.2	-0.1	0.3	0.3	0.1	0.3	0.2	**1.0**	1.0	0.3	0.2	0.3	0.3	0.3	0.2	0.3	0.3
HLV Property	5.90%	12.2%	0.3	-0.2	0.1	-0.2	0.0	0.2	0.2	0.1	0.2	0.1	1.0	**1.0**	0.2	0.2	0.2	0.2	0.2	0.1	0.2	0.2
Active Currency	6.65%	12.2%	0.7	0.1	-0.2	-0.3	-0.4	0.6	0.1	-0.3	0.2	-0.1	0.3	0.2	**1.0**	0.4	0.4	0.7	0.6	0.5	0.7	0.6
Commodities	4.90%	25.0%	0.5	0.1	-0.2	-0.3	-0.4	0.5	0.1	-0.3	0.1	-0.1	0.2	0.2	0.4	**1.0**	0.3	0.2	0.2	0.2	0.2	0.2
Emerging Market Debt	6.00%	8.8%	-0.1	-0.8	0.8	0.4	0.8	-0.3	0.7	0.8	0.9	1.0	0.2	0.1	-0.1	-0.1	**1.0**	0.1	-0.1	-0.1	0.0	0.0
Infrastructure (Listed Equity)	7.80%	14.6%	0.3	0.0	-0.1	0.0	0.0	0.2	0.0	-0.1	0.2	0.1	0.3	0.2	0.7	0.2	0.3	**1.0**	1.0	0.8	1.0	1.0
Infrastructure (Unlisted Equity)	9.75%	30.5%	0.2	0.2	-0.2	0.1	-0.1	0.2	-0.1	-0.2	0.0	-0.1	0.3	0.2	0.6	0.2	0.3	1.0	**1.0**	0.8	1.0	1.0
Private Equity	10.25%	33.5%	0.2	0.2	-0.3	0.1	-0.1	0.2	-0.2	-0.3	0.0	-0.1	0.2	0.1	0.5	0.2	0.3	0.8	0.8	**1.0**	0.8	0.9
Equities	8.60%	16.9%	0.3	0.1	-0.1	0.0	-0.1	0.2	0.0	-0.1	0.1	0.0	0.3	0.2	0.7	0.2	0.3	1.0	1.0	0.8	**1.0**	1.0
Equities (Currency Hedged)	8.55%	16.7%	0.3	0.1	-0.1	0.0	-0.1	0.2	0.0	-0.1	0.1	0.0	0.3	0.2	0.6	0.2	0.3	1.0	1.0	0.9	1.0	**1.0**

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