London Borough of Hammersmith & Fulham Pension Fund

Actuarial Valuation as at 31 March 2010
Valuation Report

Barnett Waddingham
Public Sector Consulting

31 March 2011

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Public Sector Consulting

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Dear Jane

Actuarial Valuation as at 31 March 2010

We have carried out an actuarial valuation of the London Borough of Hammersmith & Fulham ("the Fund") as at 31 March 2010. The Fund is part of the Local Government Pension Scheme ("LGPS").

The valuation is being carried out in accordance with Regulation 36 of The Local Government Pension Scheme (Administration) Regulations 2008 ("the Regulations") as amended.

The purpose of this report is to set out the results of the actuarial valuation of the Fund.

This report is addressed to the London Borough of Hammersmith and Fulham as administering authority to the Fund. It is not intended to assist any user other than London Borough of Hammersmith and Fulham in making decisions. Neither we nor Barnett Waddingham LLP accepts any liability in respect of this report.

This report has been written in accordance with "Technical Accounting Standard R: Reporting Actuarial Information" and "Technical Actuarial Standard D: Data" issued by the Board for Actuarial Standards and actuarial guidance note "GN9: Funding Defined Benefits – presentation of actuarial advice", insofar as they apply to the LGPS.

Our report is set out in the following sections.

1 Introduction

1.1 Purpose of the Valuation

1.1.1 The main purpose of the valuation is to review the financial position of the Fund and to determine the rate at which the employing bodies participating in the Fund should contribute in the future to ensure that the existing assets and future contributions will be sufficient to meet future benefit payments from the Fund.

1.1.2 The figures in this report count as part of a "planning exercise" for the purposes of the Board for Actuarial Standards' Technical Actuarial Standard R. This means the primary purpose of the figures is for "budgeting" or "target setting" – in this case setting the future levels of employer contributions payable to the Fund.

1.2 Previous Valuation

1.2.1 The last formal actuarial valuation of the Fund was carried out as at 31 March 2007 and the results of that valuation were set out in the formal valuation report carried out by Tim Lunn FIA of Hewitt Bacon and Woodrow Limited, dated March 2008.

1.2.2 The results of the formal valuation indicated that the assets of the Fund represented 70% of the accrued liabilities of the Fund. The Total Required Contribution Rate was certified as 22.2% of payroll which assumed that the past service funding level would be restored over a period of 25 years.

1.3 Changes to the LGPS

1.3.1 The 2010 Emergency Budget announced that in future, the pension increase orders will be linked to the Consumer Price Index or CPI rather than RPI.

1.3.2 Also, it was announced that State Pension Age will be increased to age 66 sooner than previously anticipated which is likely to influence future retirement patterns.

1.3.3 A report has recently been issued by an independent pensions commission led by Lord Hutton to investigate pension reform across the public sector. His report contains a number of recommendations which are likely to lead to some changes to the LGPS in future although at this stage it is difficult to assess the detail of what they might be.

1.3.4 The Chancellor has also indicated that the level of member contribution should be expected to increase at some point in future. We anticipate that these changes will be closer to being finalised by the date of the next valuation.

1.3.5 Full details of the current benefits and contribution structure are set out in Appendix 6.

2 Valuation Data

2.1 Data Sources

2.1.1 We have used the following items of data as provided by the London Borough of Hammersmith and Fulham:

- Membership extract as at 31 March 2010. The membership data has been checked for reasonableness and any missing or inconsistent data has been estimated where necessary. Whilst this should not be seen as a full audit of the data, we are happy that the data is sufficiently accurate for the purposes of the valuation.
- Fund accounts for the 3 years to 31 March 2010.

2.1.2 A summary of the data is set out in Appendix 2.

2.2 Assets

2.2.1 The asset allocation of the Fund as at 31 March 2010 was as follows:

Assets at This Valuation	31 March 2010	
	£(000)	%
UK Equities	156,399	28%
Overseas Equities	156,877	28%
Corporate Bonds	-	-
Cash	2,465	0%
UK Gilts	73,713	13%
Overseas Bonds	-	-
Property	-	-
Other assets	-	-
Alternative Assets	164,860	30%
Total	**554,314**	**100%**

2.2.2 We estimate that the annual return on the Fund in market value terms for the 3 years to 31 March 2010 is estimated to be 6% per annum.

2.3 Benefits

2.3.1 Since the previous valuation changes to the benefits have been introduced with effect from 1 April 2008.

2.3.2 The benefits being valued including these changes are as set out in the Regulations governing the Local Government Pension Scheme ("the LGPS") and are summarised in Appendix 6.

3 Actuarial Methods and Assumptions

3.1 Valuation Method

3.1.1 For the purposes of this valuation we have, as in the past, adopted an approach which separately considers the benefits in respect of service completed before the valuation date ("past service") and benefits in respect of service expected to be completed after the valuation date ("future service"). This approach enables us to focus on:-

3.1.2 The past service funding level of the Fund. This is the ratio of accumulated assets to liabilities in respect of past service after making allowance for future increases to members' pay and pensions in payment. A funding level in excess of 100% indicates a surplus of assets over liabilities; a funding level of less than 100% indicates a deficit.

3.1.3 The future service funding rate i.e. the level of contributions required from the employing bodies to support the cost of benefits building up in future.

3.1.4 There are various "funding methods" that can be used to determine the cost of providing benefits. The method we have adopted for employers open to new staff at this valuation is known as the "Projected Unit Method". The key feature of this method is that in assessing the future service cost we calculate the contribution rate which meets the cost of one year of benefit accrual.

3.1.5 For employers that are closed to new staff we have used the Attained Age Method. The key feature of this method is that we assess the average contribution required to fund the benefits earned until retirement.

3.1.6 This is the same method adopted at the previous valuation and is an appropriate method for a Fund which is open to new members.

3.2 Valuation Assumptions

3.2.1 The next step is to formulate assumptions about the factors affecting the Fund's future finances such as inflation, pay increases, investment returns, rates of mortality, early retirement and staff turnover etc.

3.2.2 Future levels of pay increases will determine the level of benefits to be paid in future in respect of active members as well as the contributions that will be received by the Fund. Once in payment, pension benefits, in excess of Guaranteed Minimum Pensions ("GMPs") are linked to the Retail Prices Index through increases granted in line with the Pensions (Increase) Act 1971. Although in future pension benefits will be linked to the CPI rather than RPI.

3.2.3 The cost of providing for benefits, however, depends not only upon the amount but also the incidence of benefits paid i.e. at what point in the future benefits begin to be paid and, for pension benefits, for how long they continue to be paid.

3.2.4 As money is being set aside now to provide for benefits payable in the future i.e. the benefits are being prefunded, then part of the cost of providing the benefits can be met from investment returns achieved by the Fund's assets. These assets build up from contributions paid by scheme members and participating employers to the Fund.

3.2.5 The assumptions adopted at the valuation can therefore be considered as:-

- The statistical assumptions which generally provide estimates of the likelihood of benefits and contributions being paid, and,
- The financial assumptions which determine the estimates of the amount of benefits and contributions payable as well as their current or present value.

3.2.6 We examine the assumptions in more detail in the next two sections of our report.

3.3 Funding Model

3.3.1 At this valuation we have used a market related funding model. The key features of the model are as follows:

3.3.2 Assumed future levels of retail price inflation are derived by considering the difference between index-linked gilt and fixed-interest gilt yields at the valuation date, as published by the Bank of England. At this valuation we have also included an adjustment known as an inflation premium. This inflation premium is deducted from the market implied inflation assumption to reflect the expectation that market implied inflation tends to overstate actual retail price inflation.

3.3.3 Pay increases are assumed to exceed future retail price inflation based on past experience and expectations of future experience.

3.3.4 Pension increases are assumed to be in line with CPI rather than RPI. It is assumed that CPI will be 0.5% per annum less than RPI, consistent with the historical average.

3.3.5 The expected future return from equities is based on dividend yields at the valuation date in addition to an allowance for real capital growth in asset values.

3.3.6 Rather than take "spot" yields and market values of assets at the valuation date we have used smoothed yields and asset values spanning the 6 month period around the valuation date.

3.3.7 The discount rate used to discount future payments to and from the Fund and so determine the value placed on the liabilities reflects the risk adjusted expected return that will be earned by the actual investment strategy adopted by the Fund.

3.3.8 Under TAS R a "funding model" is referred to as a "measure".

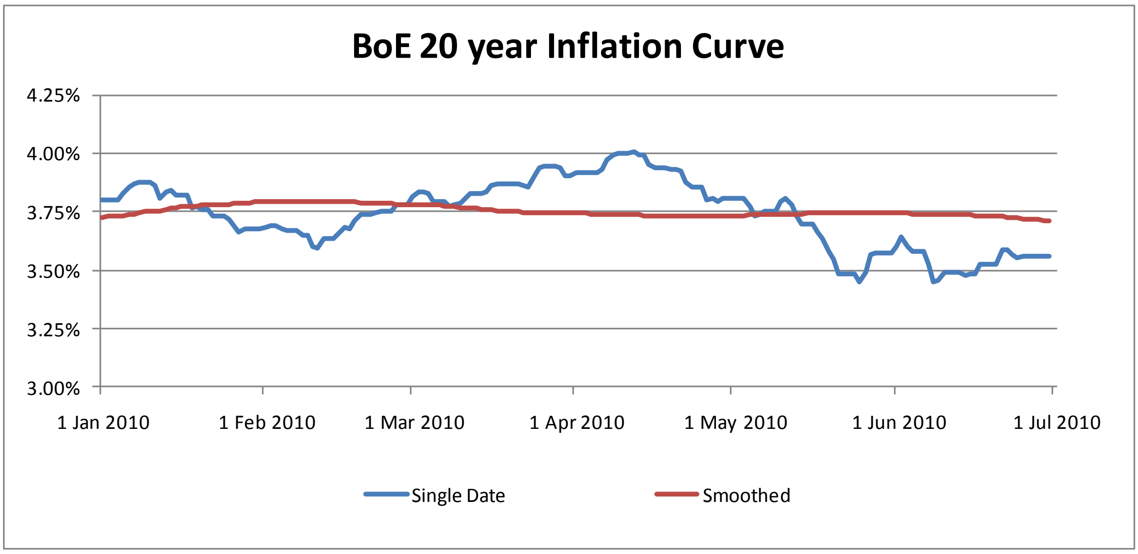
4 Financial Assumptions

4.1.1 The derivation of the key financial assumptions adopted at this valuation and how they compared as at the previous valuation are set out below. Further details are set out in Appendix 3.

4.2 Future Retail Price Inflation

4.2.1 The base assumption is the future level of retail price inflation. This is derived by considering the difference in yields from conventional and index linked gilts using the Bank of England Inflation Curve and then adjusting by an inflation premium.

4.2.2 The following chart plots the Inflation Curve over the 6 month period spanning the valuation date.



4.2.3 As at the valuation date the spot inflation projection was 3.90% and the average or smoothed level over the 6 months spanning the valuation date was 3.75%. We have used the smoothed level but then reduced by a 0.25% inflation premium adjustment to end up with an RPI assumption of 3.5% per annum.

4.3 Future Pension Increases

4.3.1 Previously, pension increases were assumed to be in line with retail price increases. The 2010 Emergency Budget announced that in future, the pension increase orders will be linked to the CPI rather than RPI. We have therefore assumed that pension increases will be 0.5% less than the price inflation assumption. i.e. 3.0% per annum.

4.4 Future Pay Inflation

4.4.1 As benefits are currently linked to pay levels at retirement, an assumption has to be made about future levels of pay inflation. Historically there has been a close link between price and pay inflation with pay increases in excess of price inflation averaging out at between 1% and 3% per annum depending on economic conditions.

4.4.2 The assumption adopted at the previous valuation was that pay increases, over and above increases due to promotion and other increments (or "salary scales"), would exceed price inflation by 1.5% per annum in the longer term. We have maintained this assumption for the current valuation.

4.4.3 In addition, in anticipation of Government policy we have completed calculations assuming a short term "pay freeze" for 2 years for those earning over £21,000 per annum.

4.4.4 We have adopted salary scales and these are shown in Appendix 3.

4.5 Future Investment Returns/Discount Rate

4.5.1 To determine the value of accrued liabilities and future contribution requirements at any given point in time it is necessary to discount future payments to and from the Fund. There are a number of different approaches which can be adopted in deriving the discount rate to be used. FRS 17 for example requires that the discount rate is related only to yields from corporate bonds.

4.5.2 In our view the discount rate adopted should depend on the purpose of the valuation and the overall funding objectives. The regulations require the actuary to adopt methods and assumptions which produce stable levels of employer contributions. In our view therefore, to help achieve this objective, the discount rate should reflect the expected investment return to be achieved from the underlying investment strategy.

4.5.3 In determining the assumption to be made in relation to future investment returns it is necessary to consider the investment strategy of the Fund and the resulting expected future return earned by the assets held.

4.5.4 The investment strategy of the Fund is to invest the assets in a mix of equities, bonds and alternative assets.

4.5.5 Redemption yields from gilts give an indication of the future rates of return from these asset classes. Redemption yields from corporate bonds are also readily available. There is however no comparable market indicator to derive the market expected future return from investing in equities, property or other alternative assets.

4.5.6 It is however possible to model future returns from equities by considering current dividend yields and making an assumptions regarding future growth in capital values.

4.5.7 The following table sets out the derivation of the expected return from equities at the valuation date.

Smoothed Equity Returns	March 2010 % p.a.
Net equity yield	3.3%
Inflation	3.5%
plus assumed real capital return	0.5%
Equity Return	7.3%

4.5.8 It would also be possible to derive the expected future return from other asset classes such as property and alternative asset classes. Intuitively we might expect that returns from asset classes other than equities and gilts might be expected to return somewhere between gilts and equities.

4.5.9 Accordingly we have assumed that the return from other alternative asset classes is the same as the expected return from equities.

4.5.10 We then derive the discount rate as firstly, the weighted average of future expected returns from the various asset classes based on the actual asset allocation as at the valuation date.

4.5.11 We then include a risk adjustment to the discount rate to reflect the amount of equity risk being taken relative to gilts. For a Fund with 75% or less exposure to equity type investments the risk adjustment is nil. For a Fund with more than 75% in equity type investments the reduction in discount rate is 50% of the extra return expected from the actual strategy compared to one invested 75% in equity type investments.

4.5.12 Finally to accommodate any extreme market conditions at the valuation date the resulting real discount rate is constrained to 4% per annum.

4.5.13 In summary therefore we have adopted the following assumptions.

Financial Assumptions	March 2010		March 2007	
	% p.a.	Real % p.a.	% p.a.	Real % p.a.
Investment Return				
Equities/absolute return funds	7.3%	3.8%		
Gilts	4.5%	1.0%		
Bonds & Property	5.6%	2.1%		
Risk Adjusted Discount Rate	6.7%	3.2%	6.5%	3.3%
Pay Increases	5.0%	1.5%	4.7%	1.5%
Price Inflation	3.5%	-	3.2%	
Pension Increases	3.0%	(0.5%)	3.2%	

4.6 Intervaluation Experience - Financial

4.6.1 The following table sets out the financial experience of the Fund during the intervaluation period compared to the assumptions adopted at the previous valuation.

Financial Experience	Actual % p.a.	Assumed % p.a.	Difference % p.a.
Investment Return	5.9%	6.5%	(0.5%)
Estimated Pay Increases	4.7%	4.7%	(0.0%)
Price Inflation/Pension Increases	2.9%	3.2%	(0.3%)

4.6.2 The principal conclusions are:

- Investment returns were less than expected.
- Pay increases were slightly less than expected.
- Pension increases were less than expected.

4.6.3 Overall the financial experience of the Fund during the intervaluation period compared to the assumptions adopted at the previous valuation was a negative factor.

5 Demographic Experience and Assumptions

5.1 Statistical Experience – Active Members

5.1.1 The following table sets out the actual number of membership movements amongst active members during the intervaluation period compared to the assumptions adopted at the previous valuation.

Active Membership Movements	Actual	Assumed	Difference %
Early Leavers	1,661	1,023.3	62%
Deaths in Service	11	10.8	2%
Retirements			
Ill health	12	34.7	(65%)
Age	450		
Voluntary	23		
Redundancy	228		
Efficiency	3		
Total	**716**		

5.1.2 There were more early leavers than expected and fewer ill-health retirements than expected.

5.1.3 Overall the demographic experience of the Fund during the intervaluation period compared to the assumptions adopted at the previous valuation was a positive factor during the intervaluation period.

5.1.4 We have adjusted our pre retirement assumptions to better reflect recent actual experience.

5.2 Pensioner Mortality

5.2.1 Mortality investigations over the last few years have concluded that the population across the UK is living longer and that this improvement will continue at a faster rate than seen in the past. Our analysis of LGPS pensioner longevity over the course of the last 20 years or so confirms that pensioners are living longer although experience does vary across the country and from Fund to Fund.

5.2.2 The following table sets out the actual and expected mortality of pensioners during the intervaluation period.

Pensioner Deaths By Number	Pensioners	Dependants	Total
Actual	287	107	**394**
Assumed	214	86	**300**
% Difference	34%	25%	**31%**
By Amount of Pension	**£**	**£**	**£**
Actual	1,613,702	256,918	**1,870,620**
Assumed	1,227,746	277,762	**1,505,508**
% Difference	31%	(8%)	**24%**

5.2.3 The number of pensioners dying during the intervaluation period was higher than expected. In terms of the amount of pension ceasing this was also more than expected.

5.2.4 Overall the mortality experience over the intervaluation period had a positive impact on the financial position of the Fund in that the amount of pension ceasing was more than expected.

5.2.5 We have reviewed the mortality assumptions adopted at this valuation which bring the assumptions closer to recent experience but also allow for future improvements in mortality over the next 20 years.

5.3 Retirement Ages – Active Members

5.3.1 At the previous valuation it was assumed that active members will retire as soon as they are able to on unreduced benefits without requiring employer consent – typically satisfying the Rule of 85 but no earlier than age 60 no later than age 65.

5.3.2 Experience suggests that whilst the Rule of 85 is an influencing factor on when active members choose to retire, State Pension Age is also a major factor, as for many active members, they need the additional income payable from the State before they can afford to retire.

5.3.3 There are existing plans in place to increase State Pension Age albeit very slowly. The new Government have, however, indicated that State Pension Age will be 66 from 2020.

5.3.4 It is difficult to assess what the impact will be but we have completed calculations assuming that active members will retire 1 year later than they would be entitled to retire and receive unreduced benefits.

6 Initial Valuation Results

6.1 Past Service Funding Position and Contribution Rates

6.1.1 The following table sets out the valuation results for the Fund. We show

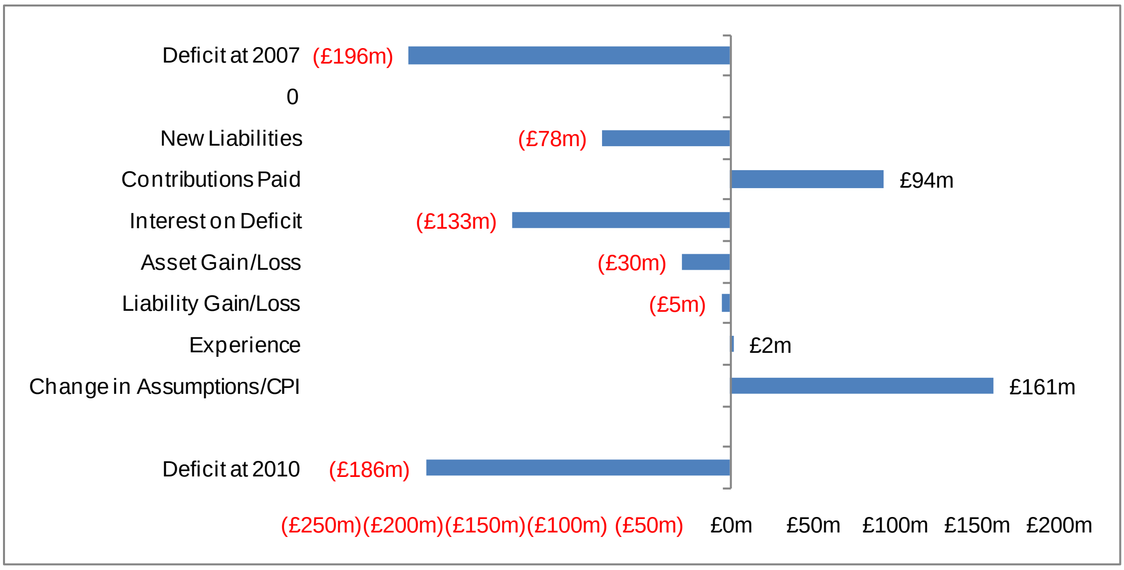
- The past service funding position
- The required average ongoing employer contribution rate for future service benefits
- The required total employer contribution rate to restore the funding position to 100% over a 25 year period following the valuation date.

Past Service Funding Position		31 March 2010 £(000)
Smoothed Asset Value		531,719
Past Service Liabilities		
Active Members	248,701	
Deferred Pensioners	128,702	
Pensioners	340,452	
Value of Scheme Liabilities		717,855
Surplus (Deficit)		(186,136)
Funding Level		74%
Employer Contribution Rates		**% of Payroll**
Future Service Contribution Rate		13.1%
Deficit recovery (25 years)		8.4%
Total Contribution Rate		**21.5%**

6.1.2 As we see, the funding level was 74% and the average required employer contribution to restore the funding position to 100% over the next 25 years is 21.5% of pensionable pay.

6.2 Reconciliation of Past Service Position

6.2.1 A reconciliation of the intervaluation experience on the past service position in the 3 years to the valuation date is set out in the following chart.



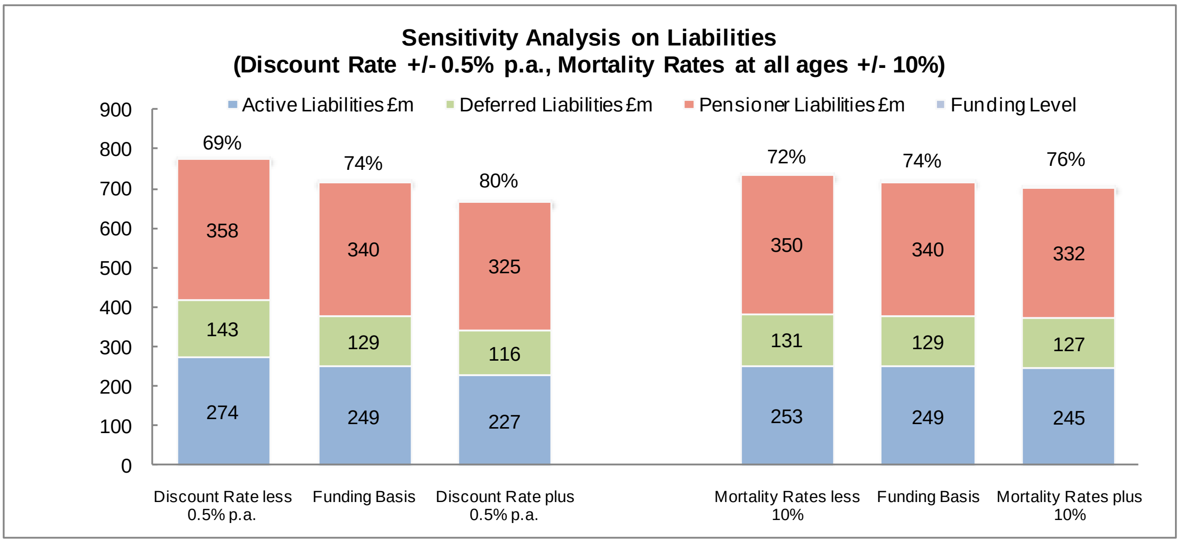
6.2.2 As we can see, overall the deficit decreased slightly during the intervaluation period.

6.3 Sensitivity Analysis

6.3.1 It is important that it is understood that the valuation results for the Fund are based on the assumptions used to determine the liabilities. Changes to the adopted assumptions will affect the funding position of the Fund.

6.3.2 In order to illustrate this, a number of calculations have been carried out to highlight the sensitivity of the funding position to the assumptions adopted, focusing on the assumptions to which the funding position is most sensitive.

6.3.3 To highlight the sensitivity of the funding position to changes in the discount rate, we have considered the impact of changing this assumption by 0.5% p.a. in either direction. We have also considered the impact of mortality rates at all ages being either 10% higher or lower than assumed. The result of this analysis is shown in the chart below:



7 Comments and Conclusions

7.1 Financial Position

7.1.1 The funding level has shown an increase since the 2007 valuation.

7.1.2 This is due to a combination of factors but primarily due to lower than assumed investment returns being offset by

- Future pension increases being linked to CPI
- Later retirement age assumptions
- Short term pay freeze assumption

7.2 Employer Contribution Rates

7.2.1 The contribution rates that we have certified have been set to fund each employer's share of their deficiency in the Fund over the period shown in Appendix 5

7.2.2 The certified contribution rates for each employer are set out in our certificate in Appendix 5.

7.3 New Employers joining the Fund

7.3.1 We would recommend that any new small employers or admitted bodies joining the Fund with no previous interest in the Fund should be referred to us for individual calculation as to the required level of contribution.

7.3.2 Any employer who ceases to participate in the Fund should be referred to us in accordance with Regulation 38.

7.3.3 We would be pleased to answer any questions arising from this report.

Graeme D Muir FFA **Alison Hamilton FFA**

Appendix 1. Valuation Method

Valuation of Liabilities

Using our assumptions we estimate the payments which will be made from the Fund throughout the future lifetime of existing active members, deferred benefit members, pensioners and their dependants. We then calculate the amount of money which, if invested now would be sufficient together with the income and growth in the accumulating assets to make these payments in future, using our assumption about investment returns.

This amount is called “the present value” (or, more simply, “the value”) of members benefits. Separate calculations are made in respect of benefits arising in relation to service before the valuation date (“past service”) and for service after the valuation date (“future service”).

Past Service Funding Level

A comparison is made of the value of the existing assets with the value of benefits in relation to past service (allowing for future pay and pension increases). If there is an excess of assets over past service liabilities then there is a past service surplus. If the converse applies there is a past service deficiency.

Future Service Funding Rate

The first stage is to calculate the value of benefits accruing to existing active members in the future, by reference to projected pay as at the date of retirement or earlier exit.

For employers that are still open to new staff we have used the Projected Unit Method which considers the benefits accruing in the year following the valuation date. The value of benefits accruing in the year following the valuation date is then expressed as a percentage of payroll over the same period having first deducted the equivalent contribution paid by the active members.

The method described above results in a stable, long term contribution rate over time, if the assumptions adopted are borne out in practice and there is a steady flow of new entrants to the Fund. If the admission of new entrants is such that the average age of the membership profile increases then the contribution rate calculated at future valuations would be expected to increase.

For employers that are closed to new staff we have used the Attained Age Method. The key feature of this method is that we assess the average contribution required to fund the benefits earned until retirement.

Valuation of Assets

Assets have been valued at a 6 month smoothed market value straddling the valuation date.

Appendix 2. Valuation Data

A summary of the membership records submitted for the valuation is as follows.

Active Members	Number		Actual Pensionable Pay £ (000)		Average £	
Full Time	**2010**	**2007**	**2010**	**2007**	**2010**	**2007**
Males	1,339	1,879	46,764	52,706	34,924	28,050
Females	1,164	2,883	40,224	56,283	34,556	19,522
Part Time						
Males	244	-	3,358	-	13,760	-
Females	1,378	-	17,358	-	12,597	-
Total	**4,125**	**4,762**	**107,703**	**108,989**	**26,110**	**22,887**

Pensioners	Number		Annual Pensions £ (000)		Average £	
	2010	**2007**	**2010**	**2007**	**2010**	**2007**
Males	1,399	1,456	11,314	9,917	8,087	6,811
Females	1,626	1,644	7,578	6,761	4,660	4,112
Dependants	589	564	1,646	1,217	2,795	2,158
Total	**3,614**	**3,664**	**20,538**	**17,895**	**5,683**	**4,884**

Deferred Pensioners (incl "undecideds")	Number		Annual Pensions £ (000)		Average £	
	2010	**2007**	**2010**	**2007**	**2010**	**2007**
Males	2,380	1,648	5,455	4,188	2,292	2,541
Females	3,652	2,338	5,864	4,472	1,606	1,913
Total	**6,032**	**3,986**	**11,319**	**8,660**	**1,877**	**2,173**

Notes

- The numbers relate to the number of records and so will include members in receipt of, or potentially in receipt of, more than one benefit.
- Annual pensions are funded items only and include pension increases up to and including the 2010 PI Order.
- Pensionable pay is actual earnings.

A summary of the assets held by the fund at the valuation date is as shown below.

Assets at This Valuation	31 March 2010 £(000)	%
UK Equities	156,399	28%
Overseas Equities	156,877	28%
Corporate Bonds	-	-
Cash	2,465	0%
UK Gilts	73,713	13%
Overseas Bonds	-	-
Property	-	-
Other assets	-	-
Alternative Assets	164,860	30%
Total	**554,314**	100%

Revenue Accounts	Year to	March 2010 £ (000)	March 2009 £ (000)	March 2008 £ (000)	TOTAL £ (000)
EXPENDITURE	Retirement Pensions	21,752	19,828	18,647	60,227
	Retirement Lump Su	6,146	4,281	4,898	15,325
	Death Benefits	855	518	298	1,671
	Leavers benefits	4,985	3,353	4,379	12,717
	Admin/Investment E	947	970	995	2,912
	Other Expenditure	-	-	-	-
		34,685	28,950	29,217	92,852
TOTAL					
INCOME	Employees Ctbns	7,576	7,527	6,713	21,816
	Employers Ctbns	24,425	23,577	23,786	71,788
	Transfer Values	3,267	1,961	2,916	8,144
	Investment Income	5,167	9,106	8,291	22,564
	Other Income	29	35	31	95
TOTAL		40,464	42,206	41,737	124,407
Fund Value		**£ (000)**	**£ (000)**	**£ (000)**	**£ (000)**
Assets at Start of Year		420,871	460,445	457,070	457,070
Cashflow		5,779	13,256	12,520	31,555
Change in value		127,664	(52,828)	(9,141)	65,695
Assets at End of Year		554,314	420,873	460,449	554,314
Annual Returns					
Approx Rate of Return		31.5%	-9.5%	-0.2%	5.9%

Appendix 3. Actuarial Assumptions

The valuation process is essentially a projection of future cashflows into and out of the Fund. The amount of future cashflows out of the Fund i.e. benefits provided will depend on rates of future pay increases and price inflation. The timing or incidence of the cashflows will depend upon future rates of retirement, mortality etc.

As money is being set aside now to provide for benefits payable in the future then part of the cost of providing the benefits can be met from investment returns achieved by the Fund's assets which then build up. The higher the rate of return achieved by the assets the lower the contribution requirement that has to be paid in future to meet the cost of the benefits.

Financial Assumptions

The principal financial assumptions adopted in the valuation are therefore as follows:-

Price Inflation

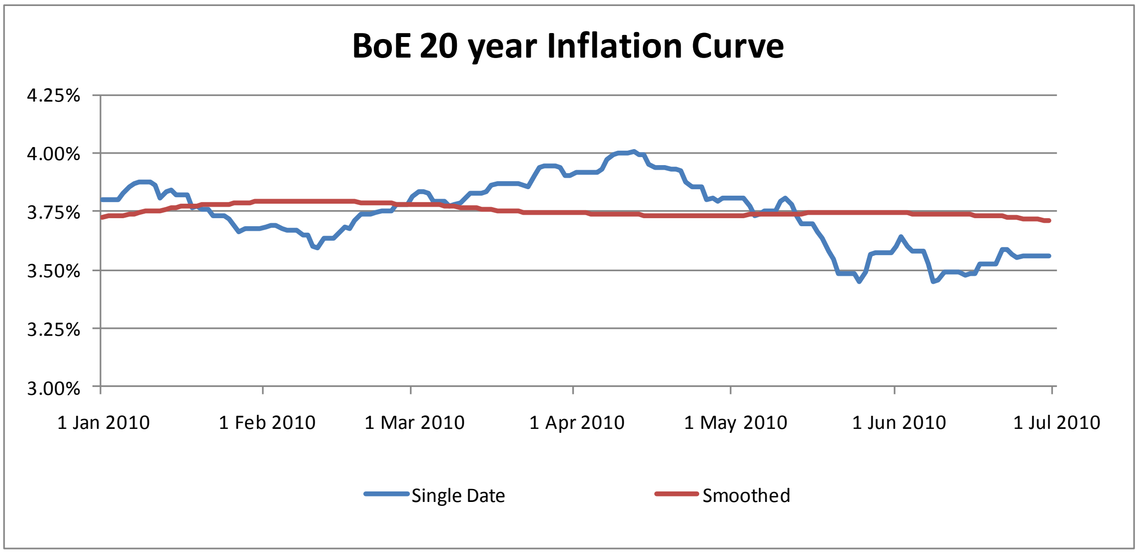
There are number of ways to try to estimate what future levels of inflation might be.

One approach would be to look at the long term trend in the past although much depends on the measurement period.

In these days of "marked to market" valuations, the usual approach is to look at the difference between yields from fixed-interest and index-linked gilts.

At this valuation we have looked at 20 year Bank of England Inflation curve which is the level of future RPI over the next 20 years as implied by the gilt market.

The following chart shows this on a daily basis during the 6 month period straddling the valuation date. We have also shown the smoothed or rolling average observation over that period.

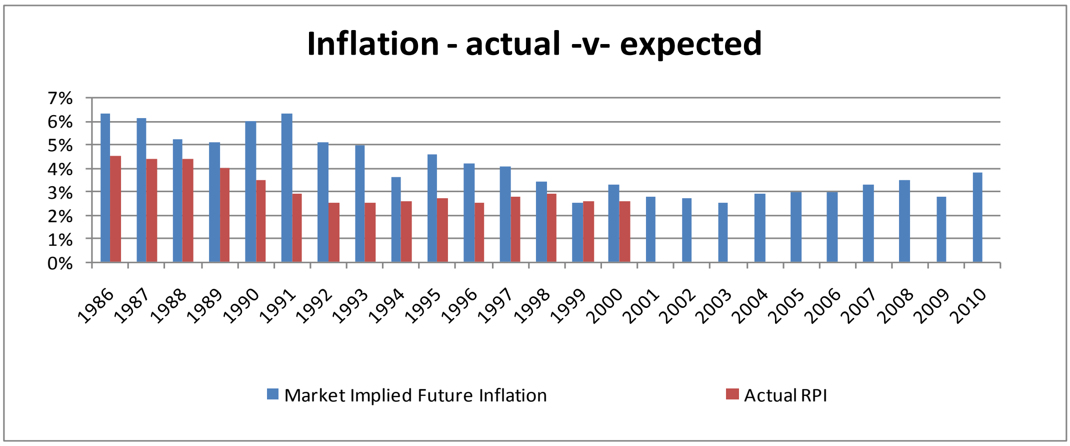


However one of the issues in adopting such an approach is the arguably imperfect nature of the gilt market. The supplier of gilts (the Government) is a reluctant supplier, especially for long-dated gilts (which are the ones which are most useful for estimating future inflation for pension schemes).

On the demand side, there are certain institutions (insurance companies for example) who are essentially "forced holders" of gilts to meet various solvency requirements. Accordingly, the pricing of gilts is not perfect.

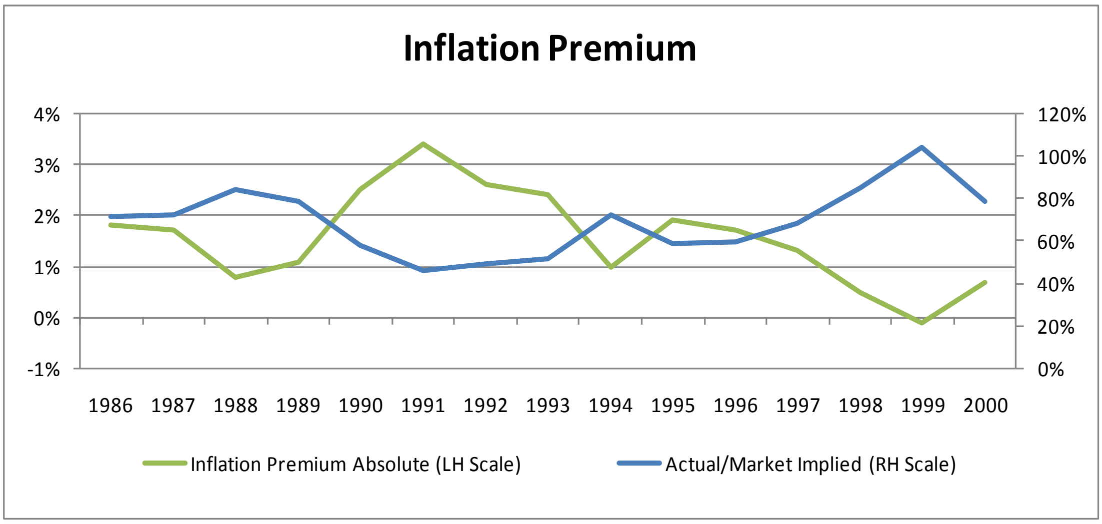
There is also the issue of what is known as the "inflation premium". The argument is that investors will pay a premium for inflation protection and so arguably index-linked gilts are "more expensive" than fixed-interest gilts or equivalently index-linked gilt yields are lower than they might otherwise be.

The following chart shows how the gilt market implied 10 year inflation level at the beginning of each year has compared with the resulting 10 year actual level of inflation.



As we see the market implied level of inflation has consistently over-estimated the actual level of inflation.

The following chart shows the inflation premium both at an absolute level – the difference between actual and expected inflation and in relative terms (actual/expected).



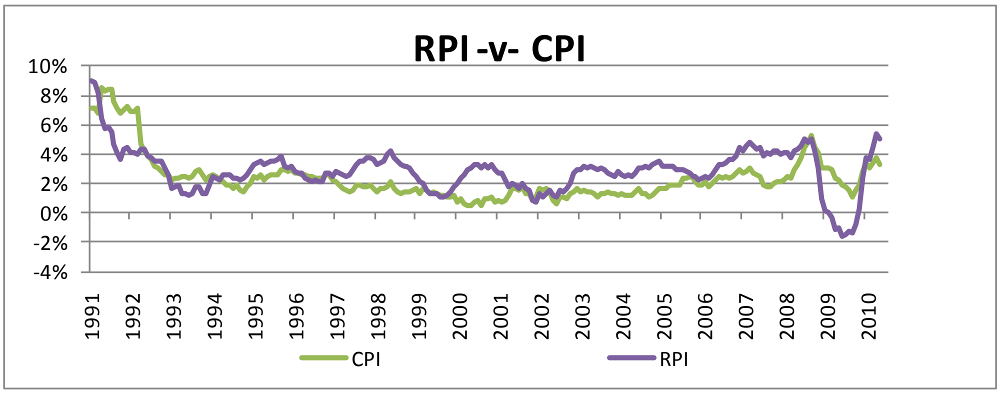
Pension Increases

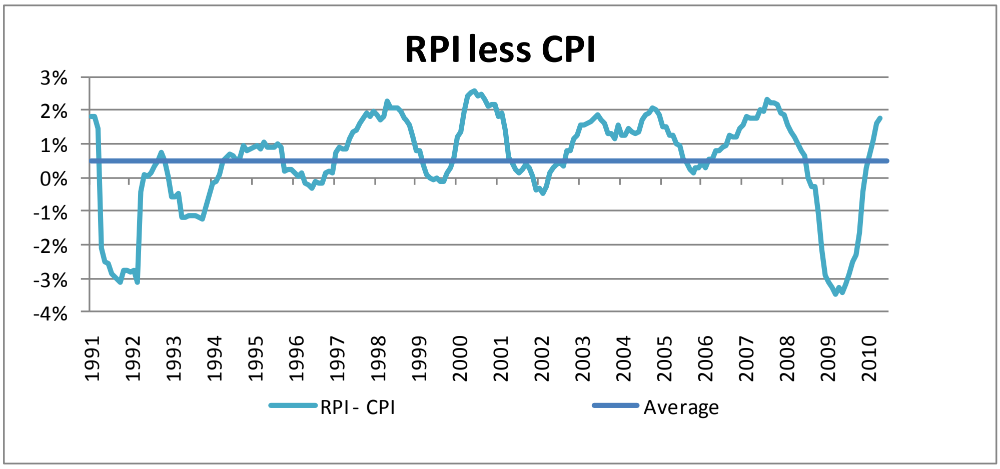
The Retail Price Index has long been the established measure of inflation in the UK. It measures the change in prices of a number of things including housing costs such as mortgage interest payments.

However in the 1990's the Government introduced the Consumer Price Index which is based on the prices of a range of consumer goods – similar to the RPI but it specifically excludes housing costs. The CPI is now the favoured measure the Government uses for measuring inflation in the economy.

The 2010 Emergency Budget delivered by George Osborne announced that in future, the pension increase orders will be linked to the CPI rather than RPI. This was expected to save some pennies implying that the Government expects CPI to be below RPI.

The following chart show how the 2 have compared since 1990.





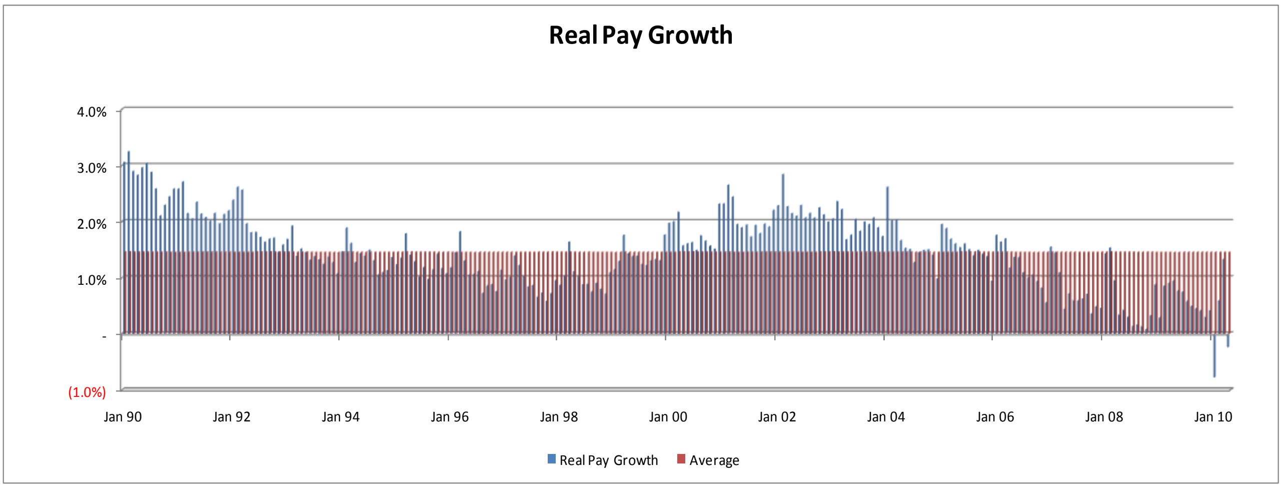
As we see RPI has indeed generally been higher the CPI and the average "gap" over the last 20 years has been around 0.5% per annum.

Thus, if this past trend continues then we would expect future pension increases to be 0.5% less than previously projected.

Pay Increases

Having determined our assumption about future levels of price inflation, the next stage is to assess future levels of pay increases relative to price inflation.

Historically there is, not surprisingly, a strong correlation between pay and price inflation as we see in the following charts.



The trend has been that real pay increases have been around 1% to 3% per annum although as overall levels of inflation have reduced so too has the level of real pay growth. The long term average is 1.5% more than RPI although there is evidence of a declining trend.

At this valuation we have assumed that future salary growth will be 1.5% more than RPI.

Investment Returns

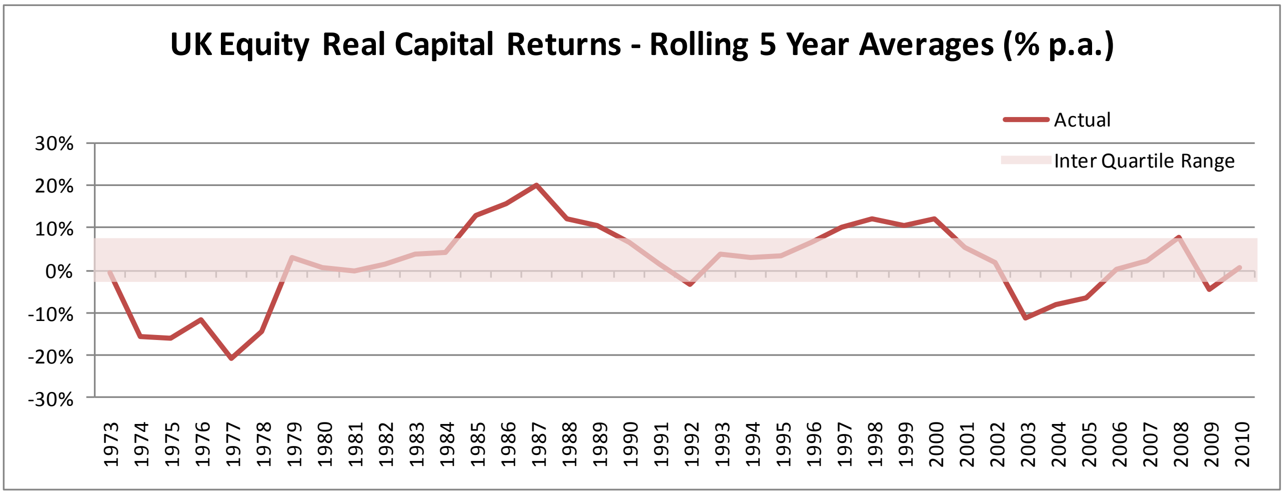
In a market-related valuation it is necessary to assess future average levels of return in current market conditions.

Redemption yields from gilts give an indication of the market's expectations of long term interest rates and so some indication about future risk free rates of return. There is however no comparable market indicator to derive the market's expected future return from investing in equities at any particular point in time.

We have assumed that the real return to be earned in future from equities from current market levels will be the current net dividend yield plus future real growth in share values.

The next chart shows the long term capital return from UK equities in real terms over the last 35 years or so together with the "inter quartile range" – the range of observations that account for 50% of all observations around the median.

As we see the actual return has averaged out at around 2 per cent per annum although there have been prolonged periods when the real capital returns have been significantly different to this average.



For the purposes of the valuation therefore we have assumed that real capital returns will be 0.5% per annum.

The derivation of the equity risk premium is therefore as follows:-

Smoothed Equity Returns	March 2010 % p.a.
Net equity yield	3.3%
Inflation	3.5%
plus assumed real capital return	0.5%
Equity Return	7.3%

It would also be possible to derive the expected future return from other asset classes such as property and alternative asset classes. Intuitively we might expect that returns from asset classes other than equities and gilts might be expected to return somewhere between gilts and equities – what we usually see from corporate bonds.

Accordingly we have assumed that the return from other alternative asset classes is the same as the expected return from equities.

We then derive the discount rate as the weighted average of future expected returns from the various asset classes based on the actual investment strategy.

We then include a risk adjustment to the discount rate to reflect the amount of equity risk being taken relative to gilts. For a Fund with 75% or less exposure to equity type investments the risk adjustment is nil. For a Fund with 100% in equity type investments the reduction in discount rate is 50% of the extra return expected from a Fund invested 100% in equity type investments compared to one invested 75% in equity type investments.

Finally to accommodate any extreme market conditions at the valuation date the resulting real discount rate is constrained to 4%.

In summary therefore we have adopted the following assumptions.

Financial Assumptions	March 2010		March 2007	
	% p.a.	Real % p.a.	% p.a.	Real % p.a.
Investment Return				
Equities/absolute return funds	7.3%	3.8%		
Gilts	4.5%	1.0%		
Bonds & Property	5.6%	2.1%		
Risk Adjusted Discount Rate	6.7%	3.2%	6.5%	3.3%
Pay Increases	5.0%	1.5%	4.7%	1.5%
Price Inflation	3.5%	-	3.2%	
Pension Increases	3.0%	(0.5%)	3.2%	

Statistical Assumptions

The statistical assumptions we have adopted are based on our analysis of the incidence of retirement, and withdrawal of our Local Authority client funds. The mortality assumptions are based on national mortality tables.

Sample rates are shown in the following tables: -

	Incidence per 1000 active members per annum								Salary Scales			
	Males				Females							
	Death	Ill Health		Withdrawal	Death	Ill Health		Withdrawal	Males		Females	
Age		FT	PT			FT	PT		FT	PT	FT	PT
20	0.5	0.0	0.0	600	0.2	0.0	0.0	600	100.0	100	100.0	100
25	0.4	0.0	0.0	540	0.2	0.1	0.1	540	122.8	100	114.2	100
30	0.3	0.1	0.1	396	0.3	0.2	0.2	396	145.5	100	125.8	100
35	0.5	0.1	0.1	276	0.5	0.3	0.3	276	166.3	100	133.6	100
40	0.9	0.3	0.3	162	0.6	0.4	0.4	162	183.1	100	136.6	100
45	1.3	0.4	0.4	72	0.8	0.6	0.6	72	194.4	100	136.6	100
50	2.5	0.8	0.8	0	1.4	1.1	1.1	0	198.8	100	136.6	100
55	4.3	1.8	1.8	0	2.2	2.1	2.1	0	198.8	100	136.6	100
60	6.9	3.7	3.7	0	3.1	4.2	4.2	0	198.8	100	136.6	100
64	11.1	6.6	6.6	0	4.0	5.8	5.8	0	198.8	100	136.6	100

Other assumptions		
Age Retirements	It is assumed that active members will retire at age 60 or when they would first satisfy the rule of 85 if later, no later than 65, plus 1 year.	
Mortality	All	90% S1PA Heavy tables allowing for medium cohort projection, with a minimum 1% improvement
	Ill Health Retirement	As above but with 200% multiplier
Probability of partners pension coming into payment (including a loading for dependants benefits)		90%
Partner Age Difference	Males are assumed to be 3 years older than their partners	
Commutation	It is assumed that members at retirement will commute pension to provide a lump sum of 50% * (3/80ths lump sum + HMRC maximum lump sum) at a rate of £12 of lump sum for £1 of pension.	
Ill health tiers	It is assumed that 50% of ill health retirements will be eligible for benefits based on full prospective service and 50% will qualify for a service enhancement of 25% of prospective service.	

Appendix 4. Individual Employer Data as at 31 March 2010

Employer	Code	Active Members			Pensioners			Deferred Pensioners		
		Number	Actual Pay £ 000's	Average £	Number	Annual Pensions £ 000's	Average £	Number	Annual Pensions £ 000's	Average £
London Borough of Hammersmith and Fulham	80	3,121	83,239	26,671	3,945	22,816	5,784	5,717	10,404	1,820
Mortlake Crematorium Board	81	11	207	18,843	5	31	6,288	4	2	543
Blythe Neighbourhood Council	82	-	-	-	2	2	846	1	1	1,249
Family Mosaic Housing	83	39	717	18,379	8	98	12,283	15	65	4,360
Hammersmith and Fulham Community Law Centre	84	3	115	38,333	2	12	6,123	10	48	4,809
Hammersmith and Fulham Police Consultative Group	85	-	-	-	1	13	12,577	-	-	-
ROOM the National Council	86	-	-	-	2	13	6,436	2	1	486
Peter Pan Trust	87	-	-	-	-	-	-	5	28	5,686
Urban Partnership Group	88	8	274	34,194	1	3	2,549	9	30	3,389
London Oratory School	89	27	655	24,247	-	-	-	16	19	1,214
Disabilities Trust	90	2	24	12,243	-	-	-	11	10	873
Medequip Assistive Technology Ltd	91	2	54	27,035	-	-	-	1	0	142
H&F Homes	92	297	9,423	31,727	66	717	10,857	84	320	3,813
Greenwich Leisure Ltd	93	-	-	-	1	1	1,303	13	34	2,607
Glencross Cleaning Ltd	94	3	17	5,584	-	-	-	3	1	358
Inspace Partnerships Ltd - Fulham Repairs	95	8	166	20,777	7	43	6,090	10	53	5,273
Inspace Partnerships Ltd - Voids Repairs	96	5	139	27,788	2	9	4,647	5	18	3,594
Burlington Danes Academy	97	36	740	20,569	3	4	1,272	19	14	733
H & F Bridge Partnership	98	60	2,538	42,297	10	144	14,411	29	187	6,442
P H Jones Ltd	99	1	26	26,467	-	-	-	-	-	-
Status 8 - no liability	199	-	-	-	-	-	-	43	5	115
Unknown employer	311	-	-	-	1	22	22,329	-	-	-
Irish Cultural Centre	830	1	22	22,187	-	-	-	1	6	5,741
Kier Support Services Ltd	831	22	668	30,384	1	21	20,921	1	4	4,308
Quadron Services Ltd	832	48	1,155	24,057	1	13	12,959	15	58	3,869
Serco	833	141	3,576	25,362	6	22	3,617	9	9	983
Tendis	834	3	104	34,730	-	-	-	1	0	161

Employer	Code	Active Members Number	Active Members Actual Pay £ 000's	Active Members Average £	Pensioners Number	Pensioners Annual Pensions £ 000's	Pensioners Average £	Deferred Pensioners Number	Deferred Pensioners Annual Pensions £ 000's	Deferred Pensioners Average £
Turners Cleaning	835	114	951	8,338	3	13	4,423	4	1	350
FM Conway	836	16	555	34,674	1	4	3,550	-	-	-
Family Mosaic - Supporting People contract	837	5	137	27,361	-	-	-	-	-	-
Receiving Unfunded pensions	838	-	-	-	162	416	2,570	-	-	-
Receiving Teachers' pensions	839	-	-	-	37	136	3,674	-	-	-
Kier - Non Responsive Repairs contract	840	1	27	26,742	-	-	-	-	-	-
Thames Reach	841	1	30	29,570	-	-	-	-	-	-
Eden Food Services	842	139	1,716	12,347	2	1	704	4	3	793
Financial Data Management Ltd	843	2	73	36,331	-	-	-	-	-	-
EC Harris LLP	844	7	307	43,892	-	-	-	-	-	-
Crime Reduction Initiatives (CRI)	845	2	48	23,960	-	-	-	-	-	-
Total		4,125	107,703	26,110	4,269	24,554	5,752	6,032	11,323	1,877

Appendix 5. Rates and Adjustments Certificate

Jane West
Director or Resources and Corporate Services
London Borough of Hammersmith and Fulham
6th Floor, Town Hall Extension, King Street
London
W6 9JU

Dear Ms West

On your instruction, we have made an actuarial valuation of the London Borough of Hammersmith & Fulham ("the Fund") as at 31 March 2010.

In accordance with Regulation 36 of The Local Government Pension Scheme (Administration) Regulations 2008 we have made an assessment of the contributions which should be paid to the Fund by the employing authorities as from 1 April 2011 in order to maintain the solvency of the Fund.

The required contribution rates are set out in the following Contribution Schedule.

Graeme D Muir FFA **Alison Hamilton FFA**

Contribution Schedule

The Common Rate of Contribution payable by each employing authority under Regulation 36 for the period 1 April 2011 to 31 March 2014 is 21.5% of pensionable payroll.

Individual Adjustments payable by each employing authority under Regulation 36 for the period 1 April 2011 to 31 March 2014 resulting in Minimum Total Contribution Rates are as set out below: -

Each employer shall pay the shown total rate as a percentage of payroll, or future service rate plus additional monetary amounts as agreed between the Administering Authority and the employer.

		Certified Total Rates % payroll			Future Service Rate	Additional Monetary Amounts £			Recovery Period (years)
Code	Employer	2011/12	2012/13	2013/14		2011/12	2012/13	2013/14	
80	London Borough of Hammersmith and Fulham	23.3%	23.3%	23.3%	13.5%	9,080,000	9,080,000	9,080,000	25
81	Mortlake Crematorium Board	24.0%	24.0%	24.0%	16.9%	14,700	14,700	14,700	25
83	Family Mosaic Housing	19.0%	19.0%	19.0%	15.2%	27,250	27,250	27,250	25
84	Hammersmith and Fulham Community Law	19.0%	19.0%	19.0%	15.5%	4,000	4,000	4,000	25
88	Urban Partnership Group	25.6%	25.6%	25.6%	13.8%	32,300	32,300	32,300	25
89	London Oratory School	15.0%	15.0%	15.0%	14.3%	4,600	4,600	4,600	25
90	Disabilities Trust	19.0%	19.0%	19.0%	15.1%	950	950	950	25
91	Medequip Assistive Technology Ltd	19.0%	19.0%	19.0%	17.3%	900	900	900	1
93	Greenwich Leisure Ltd	15.0%	15.0%	15.0%	15.0%	-	-	-	25
94	Glencross Cleaning Ltd	23.5%	23.5%	23.5%	18.9%	750	750	750	25
95	Inspace Partnerships Ltd - Fulham Repairs	20.8%	20.8%	20.8%	15.9%	8,150	8,150	8,150	2
96	Inspace Partnerships Ltd - Voids Repairs	20.4%	20.4%	20.4%	17.3%	4,300	4,300	4,300	25
97	Burlington Danes Academy	14.0%	14.0%	14.0%	13.9%	750	750	750	25
98	H & F Bridge Partnership	17.1%	17.1%	17.1%	12.6%	115,000	115,000	115,000	25
New Employers									
99	P H Jones Ltd	20.7%	20.7%	20.7%	17.2%	950	950	950	5
830	Irish Cultural Centre	28.5%	28.5%	28.5%	12.2%	3,600	3,600	3,600	25
831	Kier Support Services Ltd	21.5%	21.5%	21.5%	14.6%	46,050	46,100	46,100	5
832	Quadron Services Ltd	22.3%	22.3%	22.3%	16.6%	65,000	65,000	65,000	7
833	Serco	15.1%	15.1%	15.1%	13.8%	50,000	50,000	50,000	7
834	Tendis	24.9%	24.9%	24.9%	11.0%	14,500	14,500	14,500	25
835	Turners Cleaning	18.5%	18.8%	19.0%	16.0%	23,900	26,200	28,500	3
836	FM Conway	19.4%	19.7%	19.9%	15.8%	20,100	21,400	22,750	5
837	Family Mosaic - Supporting People contract	15.0%	15.0%	15.1%	13.3%	2,250	2,350	2,450	3
840	Kier - Non Responsive Repairs contract	13.9%	13.9%	13.9%	8.7%	1,400	1,400	1,400	3
841	Thames Reach	20.7%	20.7%	20.7%	16.2%	1,350	1,350	1,350	3
842	Eden Food Services	18.6%	18.7%	18.9%	16.0%	45,000	45,000	50,000	3
843	Financial Data Management Ltd	17.5%	18.3%	19.2%	11.9%	4,100	4,700	5,300	3
844	EC Harris LLP	17.3%	17.3%	17.3%	14.6%	8,300	8,300	8,300	25
845	Crime Reduction Initiatives (CRI)	16.7%	16.7%	16.7%	14.5%	1,050	1,050	1,050	25

Notes

1. Further sums should be paid to the Fund to meet the costs of any early retirements using methods and assumption issued by us from time to time.

2. The certified contribution rates represent the minimum level of contributions to be paid. Employing authorities may pay further amounts at any time and future periodic contributions may be adjusted on a basis approved by ourselves.

Appendix 6. LGPS Benefits

	LGPS 1997	LGPS 2008
General Features		
Type of Scheme	Final salary	
Relationship with S2P	Contracted-out	
Member Contributions	6% 5% for manual workers in scheme prior to 01/04/1998	Banded Contributions based on full time pay as at 1st April 2011 Range / Cont Rate: £0 - £12,900: 5.50% £12,901 - £15,100: 5.80% £15,101 - £19,400: 5.90% £19,401 - £32,400: 6.50% £32,401 - £43,300: 6.80% £43,301 - £81,100: 7.20% More than £81,100: 7.50% Bands to be increased annually with Pension Increase Orders. Transitional protection for members currently paying 5% until 2011/2012.
Final Pay	In general, best of the last 3 years pensionable pay	
Pensionable Pay	Normal salary plus any shift allowance, bonuses, contractual overtime, Maternity Pay, Paternity Pay, Adoption Pay and any other taxable benefit specified as being pensionable.	
Retirement Benefits		
Normal Retiring Age	Age 65	
Early Retirement	Age 55+ (existing members remains at age 50+ for retirements up to 31 March 2010. Employer consent required if below age 60. Minimum 3 months membership or transfer in Benefits reduced unless Rule of 85 applies (member of the scheme as at 30th September 2006) Rule of 85 does not apply for service from 1 April 2008, subject to transitional protections. Employer's discretion to waive any actuarial reduction. No reductions applied for redundancy retirements.	
Transitional Protections	If born before 1 April1960 and an existing member of the Scheme as at 30 September 2006 then 85 year rule stays for service up to 1 April 2016 with tapered protection to 1 April 2020.	

<table>
<tr><th>General Features</th><th>LGPS 1997</th><th>LGPS 2008</th></tr>
<tr><td>Flexible Retirement</td><td colspan="2">Age 55+

(existing members remains at age 50+ for retirements up to 31/03/2010)

Minimum 3 months membership or transfer in

Reduce hours or move to a lower graded post

Draw pension and salary

Employers discretion to waive any actuarial reduction</td></tr>
<tr><td>Late Retirement</td><td colspan="2">Continue to day before eve of 75th birthday

Benefits accrue to date of retirement</td></tr>
<tr><td>Ill Health Retirement</td><td>Permanently unable to undertake own job or any comparable job with employer. Benefits are enhanced as per the table below with a maximum enhancement of potential membership to age 65

<table><tr><th>Accrued Membership</th><th>Benefit Payable</th></tr><tr><td>Less than 3 months</td><td>Refund of contributions</td></tr><tr><td>3 months to 5 yrs</td><td>Accrued Membership</td></tr><tr><td>5 but less than 10 yrs</td><td>Membership Doubled</td></tr><tr><td>10 yrs to 13 yrs 122 days</td><td>Membership Enhanced to 20 yrs</td></tr><tr><td>13 yrs 123 days or more</td><td>Membership Enhanced by 6 2/3 yrs</td></tr></table></td><td>Permanently unable to undertake own job or any comparable job with employer. Benefits are graded based on how likely you are to be capable of gainful employment after you leave.

First Tier - No reasonable prospect of alternative employment ever again then service enhanced by 100% of prospective service to age 65.

Second Tier - No prospect of obtaining gainful employment within a reasonable period of leaving local government employment, but likely to be able to obtain gainful employment before 65 then service enhanced by 25% of prospective service.

Third Tier - Reduced likelihood of obtaining gainful employment within 3 years of leaving, or before age 65 if earlier then no service enhancement. Payment of these benefits will be stopped after 3 years, or earlier if the member is in gainful employment or becomes capable of such employment, provided they are not age 65 by then.</td></tr>
<tr><td>Benefit Accrual</td><td>Pension = 1/80th

Lump Sum = 3/80th plus increased lump sum by commutation 12:1 up to a maximum of 25% of lifetime allowance

Spouse's Pension = 1/160th</td><td>Pension = 1/60th

Lump Sum = By commutation 12:1 up to a maximum of 25% of lifetime allowance

Spouse's Pension = 1/160th</td></tr>
<tr><th colspan="3">Death and Survivor Benefits</th></tr>
<tr><td>Lump Sum Death Benefit</td><td>Active = 2 x Pensionable Pay

Deferred = Current value of deferred lump sum</td><td>Active = 3 x Pensionable Pay

Deferred = 5 x Current value of deferred annual pension</td></tr>
</table>

General Features	LGPS 1997	LGPS 2008
	Pensioner = 5 year guarantee less pension paid	Pensioner = 10 year guarantee less pension paid (for death before age 75)
Dependants' Provision	Widow(er)s Registered civil partners	Widow(er)s Registered civil partners Nominated cohabiting partners
Dependants' Pension (Death in Service)	If membership > 3 months 50% x notional ill health pension Otherwise 1/160th x accrued membership	1/160th x full prospective service to age 65
Spouse's Short Term Pension	Active = 3 months x salary (increased to 6 months if dependent children) Deferred = none Pensioner = 3 months x member's pension (increased to 6 months if dependent children)	None
Children's Pensions	**Surviving Parent** 1 child = 1/4 x notional pension 2+ children = 1/2 x notional pension divided by number of children **Orphans** 1 child = 1/3 x notional pension 2+ children = 2/3 x notional pension divided by number of children For death in service the notional pension is the ill health pension or a pension based on the lesser of 10 years and full service to age 65 where this is higher.	**Surviving Parent** 1 child = 1/2 x dependant's pension 2+ children = 1 x dependant's pension divided by number of children **Orphans** 1 child = 2/3 x dependant's pension 2+ children = 1 1/3 x dependant's pension divided by number of children
Increasing Benefits		
AVCs	Maximum contributions – 50% of taxable earnings Options available: Open market annuity LGPS Top Up Pension Tax Free Lump Sum (100% of fund up to max of 25% of Lifetime Allowance)	

	LGPS 1997	LGPS 2008
General Features		
	LGPS Service Credit (if commenced AVCs prior to 13/11/2001)	
Added Years/Pension	Maximum purchase 6 2/3 years Payable from next birthday to age 65 (contracts taken out before 01/10/2006 may have an earlier date than age 65)	Maximum purchase £5,000 extra pension (in multiples of £250).
Leaving the Scheme		
Benefits on Leaving	**Less than 3 months membership and no transfer in** Refund of contributions CETV Defer decision **More than 3 months membership or transfer in** CETV Defer Benefits until NRA	