2016 Actuarial Valuation: London Borough of Harrow valuation results and contribution strategy

Executive summary

Valuation Results

The table below summarises the funding position for the London Borough of Harrow Council, a participating employer in the London Borough of Harrow Pension Fund, as at 31 March 2016. The results of the previous valuation at 31 March 2013 are shown for comparison.

Past Service Position	31 March 2013 (£m)	31 March 2016 (£m)
Past Service Liabilities	713	793
Market Value of Assets	497	584
Surplus / (Deficit)	(217)	(209)
Funding Level	**70%**	**74%**

These results are based on the assumptions detailed below for this valuation.

Contribution strategy

As part of the 2016 valuation, the contribution stability mechanism that applies to the London Borough of Harrow was reviewed to test whether it remained appropriate. This review was carried out using Asset Liability Modelling. The contribution stability mechanism in place from April 2014 to March 2017 limited annual contribution increases and decreases to 0.5% of pay.

As a result of the 2016 review, the Administering Authority, on the advice of the Fund Actuary, believes that the contribution stability mechanism should be revised to increase the likelihood of long term funding success. Following extensive modelling, the Administering Authority has settled upon a contribution strategy whereby contributions will increase by 1% of payroll each year from April 2017 to March 2020, followed by a stability mechanism whereby annual contribution increases are set to 1.5% of pay and decreases are set to 0.6% of pay per annum). The Actuary's modelling indicates that this strategy has a significantly greater likelihood of funding success in the long term than the current strategy. The contributions that will be paid in the period 1 April 2017 to 31 March 2020 are as follows:

Contributions currently in payment 2016/17			
	31 March 2018	31 March 2019	31 March 2020
16.0% of payroll plus £4,315k	16.0% of payroll plus £5,315k	16.0% of payroll plus £6,315k	16.0% of payroll plus £7,315k

The annual increases of £1m over this period broadly relate to 1% of projected payroll in each year.

Modelling was also carried out on an alternative investment strategy i.e. with a lower allocation to growth assets. This modelling indicated that the Fund should consider and understand the level of risk in its strategy and my understanding is that this will be carried out in 2017.

Scope and Introduction

Scope

This document has been requested by and is addressed to the London Borough of Harrow Council in its capacity as Administering Authority ("the Administering Authority" to the London Borough of Harrow Pension Fund ("the Fund"). It has been prepared by Hymans Robertson to provide information on the results arising from the 2016 actuarial valuation and the outcome of the Asset Liability Modelling exercise for information for at the Pensions Committee meeting on 7 March 2017. It has not been prepared for use for any other purpose and should not be so used.

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Introduction

We have carried out a valuation of the Fund as at 31 March 2016. The valuation of the Fund on a triennial basis is a regulatory requirement and is used to determine contribution rates payable by participating employers for the 3 year period commencing 1 April 2017.

The purpose of this document is to communicate the valuation results for the London Borough of Harrow ("the Employer"), a participating employer in the Fund, and to explain the approach adopted to setting its contribution strategy.

The results shown are on the basis discussed with the officers of the Fund and agreed by the Committee over the last year. This basis has been used to set the funding strategy and contributions for the period April 2017-March 2020.

2016 – Assumptions: Past service position

Broadly speaking, our assumptions fall into two categories – financial and demographic.

Demographic assumptions typically try to forecast **when** exactly benefits will come into payment and what form these will take. For example, when members will retire (e.g. at their normal retirement age or earlier), how long they will then survive and whether they will exchange some of their pension for tax-free cash.

Financial assumptions typically try to predict the **size** of these benefits. For example, how large members' final salaries will be at retirement and how their pensions will increase over time. In addition, the financial assumptions also help us to estimate how much all these benefits will cost the Fund in today's money (using the discount rate).

A summary of our assumptions for this valuation are set out below and full details can be found in Appendix A. These assumptions were discussed at the Pensions Committee meeting on 21 June 2016.

Financial assumptions

The table below summarises the financial assumptions used for the valuation of members' benefits at this valuation. The corresponding assumptions from the 2013 valuation are shown for reference.

	31 March 2013		31 March 2016	
Financial assumptions	**Nominal**	**Real**	**Nominal**	**Real**
Discount Rate	4.6%	2.1%	3.8%	1.7%
Salary Increases*	3.8%	1.3%	2.4%	0.3%
Price Inflation / Pension Increases	2.5%	-	2.1%	-

** Excluding promotional increases*

We prepared an analysis paper on the Asset Outperformance Assumption (AOA) that is built into the discount rate, and this was discussed with Officers. The paper considered whether to retain the 2013 assumption of 1.6% pa, or move to an alternative assumption (AOAs of 1.4% and 1.8% were tested for comparison). Following discussion with officers, and presentation to the Pensions Committee in June, the valuation has been carried out on an AOA of 1.6% p.a. for the 2016 valuation i.e. no change since 2013.

Longevity

Of all the demographic factors, longevity (or mortality) is the one that presents the greatest uncertainty. Many pension funds now regard longevity to be their second largest risk (after investment performance).

In setting the assumptions for longevity, there are two principal factors that we must consider:

- The life expectancy for members based on what we know today – known as "baseline longevity".
- How this life expectancy is forecast to improve in the future – known as the "longevity improvement".

At the 2013 valuation, we reflected the recent improvement in life expectancy in the assumptions. The emerging evidence is that these assumptions continue to remain broadly appropriate with only some minor revisions required. As a result, the longevity assumption has remained similar at this valuation to give the following sample average future life expectancies (in years) for members:

	31 March 2013	31 March 2016
Male		
Pensioners	22.1 years	22.2 years
Non-pensioners	24.5 years	24 years
Female		
Pensioners	24.4 years	24.4 years
Non-pensioners	26.9 years	26.4 years

Other demographic assumptions

We are in the unique position of having a very large local authority data set from which to derive our other demographic assumptions. This year, as in previous years, we have made full use of this to analyse the trends and patterns that are present in the membership of local authority funds and tailor our assumptions to reflect LGPS experience.

As with the financial and longevity assumptions, these demographic assumptions affect both the past service and future service valuation results. Further details on these assumptions are set out in Appendix A.

Further comments on the assumptions

Level of prudence

As required for Local Government Pension Scheme valuations, the approach to this valuation must include a degree of prudence. This has been achieved by explicitly allowing for a margin of prudence in the Asset Outperformance Assumption that is built into the discount rate (see Appendix A).

For the avoidance of doubt, we believe that all other proposed assumptions represent the “best estimate” of future experience. This effectively means that there is a 50% chance that future experience will be better or worse than the chosen assumption.

Taken as a whole, we believe that the assumptions are more prudent than the best estimate.

2016 – Employer valuation results

Past service – funding level and deficit

The table below shows the results of the past service position of the Employer at 31 March 2016. These 2016 figures are based on the valuation assumptions, as set out in the previous section. The final results of the previous valuation at 31 March 2013 are also shown for reference.

Valuation Date	31 March 2013	31 March 2016
Past Service Position	***(£m)***	**(£m)**
Past Service Liabilities		
Employees	249	223
Deferred Pensioners	121	152
Pensioners	343	418
Total Liabilities	713	793
Market Value of Assets	497	584
Surplus / (Deficit)	**(217)**	**(209)**
Funding Level	**70%**	**74%**

Post-valuation events

These valuation results are effectively a snapshot of the Employer as at 31 March 2016. However, since that date various events have taken place which will have had an effect on the financial position of the Employer. Whilst we have not explicitly altered the valuation results to allow for these events a short discussion of these "post-valuation events" can still be beneficial in understanding the likelihood of meeting the various funding objectives.

2016 – Employer contribution strategy

Stabilisation

A key challenge for the Administering Authority is to balance the need for stable, affordable employer contributions with the requirement to take a prudent, longer-term view of funding and ensure the solvency of the Fund. As a long term, secure employer in the Fund, the London Borough of Harrow follows a contribution stability mechanism. This is a mechanism whereby employer contribution rate variations from year to year are kept within a pre-determined range, thus allowing the Employer's contribution rate to be relatively stable over time.

In the interests of stability and affordability of employer contributions, the Administering Authority, on the advice of the Fund Actuary, believes that stabilising contributions can still be viewed as a prudent longer-term approach.

This stabilisation mechanism allows short term investment market volatility to be managed so as not to cause volatility in employer contribution rates, on the basis that a long term view can be taken on net cash inflow, investment returns and strength of employer covenant.

The stabilisation mechanism in force for the Employer between 1 April 2014 and 31 March 2017 limited increases and decreases to contribution rates to 0.5% of pensionable payroll each year i.e. the maximum increase over 3 years is 1.5% of pay.

As part of the 2016 valuation, we carried out Asset Liability Modelling ("ALM") work for the Employer to investigate whether any changes were required to the existing contribution stability mechanism.

We modelled seven different stabilisation mechanisms for the Employer. The scenarios are detailed below:

Stabilisation mechanism	Results label
Current stabilised contribution rate: annual increases/decreases limited to 0.6% of pay*	+0.6/-0.6%
Alternative stabilised contribution rate: annual increases limited to 1.0% of pay, decreases limited to 0.6% of pay	+1.0%/-0.6%
Alternative stabilised contribution rate: annual increases limited to 1.5% of pay, decreases limited to 0.6% of pay	+1.5%/-0.6%
Alternative stabilised contribution rate: annual increases limited to 1.0% of pay, decreases limited to 0.6% of pay, with an overall cap of 30% of pay	+1.0%/-0.6%, <30%
Alternative stabilised contribution rate: annual increases limited to 1.5% of pay, decreases limited to 0.6% of pay, with a notional cap of 30% of pay	+1.5%/-0.6%, <30%
Alternative stabilised contribution rate: Annual increases of 1.0% of pay until 31 March 2020, then annual increases limited to 1.5% of pay, decreases limited to 0.6% of pay, with a notional cap of 40% of pay	+1% for 3, +1.5%/-0.6%, <40%
Alternative stabilised contribution rate: Contributions re-assessed at each triennial valuation and certified based on market conditions at that time (i.e. allowing for no stabilisation)**	unstabilised

*this scenario represents the contribution strategy in place between 1 April 2014 and 31 March 2017. As a result of falling payroll, and the fact the Employer's contributions are certified in part as a monetary contribution (as opposed to a percentage of payroll), the contribution increase that had taken place from 1 April 2016 was effectively 0.6% of payroll.

**this scenario is modelled to allow the Administering Authority and Employer a comparison between contributions based on the stabilisation mechanism and contributions that are not stabilised.

Our ALM projects the assets, liabilities and contribution rate of the Employer over a period of 21 years. The aim of our analysis was to examine the different stabilisation mechanisms against three key financial measures - **Prudence**, **Affordability** and **Stewardship** – to select an appropriate funding strategy.

Prudence

The Actuary needs to satisfy professional requirements that the funding plans in place are prudent and ensure there is a reasonable chance there will be enough money set aside for members' benefits. The analysis enables us to quantify the likelihood of being fully funded (or 'likelihood of success') in 21 years' time. Ideally, we want around 2 in 3 outcomes to be successful or more. .

The Actuary also needs to ensure that the funding plans are not too risky and limit the likelihood of poor funding outcomes. We do this by examining the average of the worst 5% of outcomes ('the downside risk').

Affordability

The cost of the pension benefits is a major expense for employers. The analysis shows the range of potential outcomes for the employer contribution rate in the longer term and allows us to assess the probability that the rate exceeds a particular threshold.

Stewardship

This measure allows us to examine the expected funding level and the range of potential outcomes for the funding level in the longer term. This provides a measure of the expected future financial health of the Fund and enables us to assess the probability that any given strategy is consistent with the safe stewardship of the Fund.

Methodology and assumptions

Details of the modelling approach and underlying assumptions are described in the technical Appendix B.

Results

The table below summarises the outcome of the ALM under each of the measures above for each stabilisation mechanism tested.

Stabilisation mechanism	Prudence – likelihood of success	Prudence – downside risk	Affordability	Stewardship
+0.6/-0.6%	🟡	🔴	🟡	🔴
+1.0%/-0.6%	🟡	🔴	🟡	🟡
+1.5%/-0.6%	🟢	🟡	🔴	🟡
+1.0%/-0.6%, <30%	🟡	🔴	🟡	🔴
+1.5%/-0.6%, <30%	🟡	🔴	🟡	🔴
+1% for 3, +1.5%/-0.6%, <40%	🟢	🟡	🟡	🟡
unstabilised	🟢	🟢	🔴	🟡

- 🔴 Clearly does not satisfy the measure
- 🟡 On the borderline of satisfying the measure
- 🟢 Satisfies the measure

The above results are based on the following success criteria:

Stabilisation mechanism	Prudence – likelihood of success	Prudence – downside risk	Affordability	Stewardship
Success measure	Likelihood of full funding in 21 years' time	Average of the worst 5% of potential funding levels in 21 years' time	Highest median contribution rate during the next 21 years (excluding expenses of 1.2%)	Median projected funding level in 21 years' time
🟢	>65%	>45%	<25%	>120%
🟡	55-65%	25-45%	25-35%	100-120%
🔴	<55%	<25%	>35%	<100%

The results of the ALM exercise show that the current stabilisation mechanism, limiting annual contribution rate increases/decreases to 0.5% of pay (0.5% allowing for current payroll), is no longer an appropriate funding plan.

In fact, the level of downside risk in all stabilised scenarios is high. This is mainly due to the proportion of growth assets in the Fund's strategy and their inherent volatility. However, there is an improvement in the level of downside risk with higher annual contribution rate increases, therefore our advice to the Fund was to incorporate increases of 1.5% of payroll per annum into the contribution strategy. Based on this advice, the strategies shortlisted for consideration were as follows:

- annual increases limited to 1.5% of pay, decreases limited to 0.6% of pay ("+1.5%/-0.6%")
- Annual increases of 1.0% of pay until 31 March 2020, then annual increases limited to 1.5% of pay, decreases limited to 0.6% of pay, with a notional cap of 40% of pay ("+1% for 3, +1.5%/-0.6%, <40%")

Following discussions with the Employer and the Fund Actuary, the Administering Authority has settled on a *variation* the latter of these contribution strategies **- annual increases of (broadly) 1.0% of pay until 31 March 2020, then annual increases limited to 1.5% of pay, decreases limited to 0.6% of pay.**

The resulting certified contribution rates will be as follows:

Contributions currently in payment 2016/17	Minimum Contributions for the Year Ending		
	31 March 2018	31 March 2019	31 March 2020
16.0% of payroll plus £4,315k	16.0% of payroll plus £5,315k	16.0% of payroll plus £6,315k	16.0% of payroll plus £7,315k

This contribution strategy provides some time for the Employer to adjust to the higher contribution increases (by phasing them in over the next 3 years)).

Due to the downside risk i.e. the chance that the Fund ends up in a poor funding outcome, it is not appropriate to consider capping contribution at this time as if the funding position deteriorated significantly, contributions may be required to ensure that all benefit payments could be met when they fell due.

The Asset Liability Modelling showed little difference between the shortlisted strategies on the prudence and stewardship measures, giving all parties comfort that the finalised strategy is appropriate.

Reliances and limitations

This document has been prepared for the purpose of informing the Pensions Committee of the 2016 formal valuation results and nothing contained within it affects any member's benefits. Furthermore, none of the figures should be used for accounting purposes (e.g. under FRS102 or IAS19) or setting employer contribution rates in isolation, or for any other purpose.

The results of the valuation are dependent on the quality of the data provided to us by the Administering Authority for the specific purpose of this valuation.

The figures in this report are based on our understanding of the benefit structure of the LGPS as at 31 March 2016.

The following Technical Actuarial Standards are applicable to this report and have been complied with where material:

- TAS R – Reporting;
- TAS D – Data;
- TAS M – Modelling; and
- Pensions TAS

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For and on behalf of Hymans Robertson LLP

22 February 2017

Appendix A – Derivation of assumptions

The derivation of the assumptions is set out below.

Discount rate

In order to place a value on the Fund's liabilities, we first estimate all of the benefits that we expect to be paid from the Fund in the future. We then convert these to a value in today's money by working back (or "discounting") to the valuation date. This process requires the use of a discount rate. All other things being equal, a higher discount rate results in lower liabilities and vice versa. This is akin to the operation of a bank account – the higher the interest rate, the less we have to set aside now to reach our savings target in the future.

For the purposes of this valuation, the discount rate should reflect the returns that the Fund expects to earn on its investments over the long term. This is done by considering the expected return on the lowest risk investments held (government bonds) and applying a margin to allow for the greater returns that are expected to be generated by the equity-type investments held (equities, property etc). We refer to this additional margin as the Asset Outperformance Assumption (AOA).

For this valuation, we believe that an AOA of 1.6% pa is a prudent and appropriate assumption to adopt.

The table below details the composition of the discount rate at 31 March 2016:

	31 March 2016	
Discount rate	**Nominal**	**Real**
"Gilt-based" discount rate	2.2%	0.1%
Asset Outperformance Assumption	1.6%	-
Funding basis discount rate	3.8%	1.7%

Price inflation / pension increases

Due to emerging evidence of an increased gap between Retail Prices Inflation (RPI) and Consumer Prices Inflation (CPI), we expect the average long term difference between RPI and CPI to be 1.0% p.a. (compared to 0.8% p.a. at 2013).

The table below confirms our assumption for CPI/pension increases at this valuation:

Assumed pension increases	**31 March 2016**
Market-derived RPI	3.2%
RPI to CPI adjustment	1.0%
CPI / pension increases*	2.1%

* constructed via a geometric reduction

Salary increases

The Government announced during the 2015 Summer Budget that it would only fund pay increases in the public sector of 1% p.a. for 4 years from 2016-17 (which we take to mean until the 2019/20 financial year). Beyond then, there is a general belief that economic growth, and hence pay growth, is likely to be at a lower level than historically experienced. In addition, our analysis suggest that around half of the Fund's pre-2014 pay linked liabilities will have run-off by the time we reach 2020.

Our proposed salary increase assumption at 2016 is a "blended" rate that is based on 1% p.a. until 2020, followed by RPI pa thereafter. This compares to RPI + 0.5% pa at 2013.

The table below summarises our proposed salary increase assumption:

Assumed salary increases	31 March 2016
Market-derived RPI	3.2%
Salary increase in excess of inflation	(0.7%)
Total salary increase*	2.4%

* constructed via a geometric reduction

Note that this assumption is made in respect the general level of salary increases (e.g. as a result of inflation and other macroeconomic factors). We also make a separate allowance for expected pay rises granted in the future as a result of promotion. This assumption takes the form of a set of tables which model the expected promotional pay awards based on each member's age and class. Further details on this are available on request.

Mortality assumptions

Baseline longevity - VitaCurves

As a member of Club Vita, the longevity assumptions that have been adopted at this valuation are a bespoke set of VitaCurves that are specifically tailored to fit the membership profile of the Fund.

We have used a longevity improvement assumption based on the latest industry standard and combined information from our longevity experts in Club Vita. The start point for the improvements has been based on observed death rates in the Club Vita data bank.

In the short term we have assumed that the 'cohort effect' of strong improvements in life expectancy currently being observed amongst a generation born around the early and mid 1930s will start to tail off, resulting in life expectancy increasing less rapidly than has been seen over the last decade or two. This is known as 'peaked'.

In the long term (post age 70) we have assumed that increases in life expectancy will stabilise at a rate of increase of 1 year per decade for men and women. This is equivalent to assuming that longer term mortality rates will fall at a rate of 1.25% p.a. for men and women.

However, we have assumed that post age 90 improvements in mortality are hard to achieve, declining between ages 90 and 120 so that no improvements are seen at ages 120 and over. The initial rate of mortality is assumed to decline steadily above age 98.

Withdrawals (early leavers)

There were fewer withdrawals than expected between 2013 and 2016 across out LGPS data bank. We have adjusted the likelihood of withdrawals at each age so our assumption better reflects recent experience for 2016.

The rate of withdrawals will not have an impact of the future service rate calculated for your scheme, which will be calculated on the CARE benefit basis at the 2016 valuation.

Ill-health early retirements

The evidence from 2013 to 2016 shows that at a national level:

- There are fewer ill health retirements occurring than was assumed at the 2013 valuation; and
- The ages at which members take ill health early retirement are generally increasing.

We have used ill health early retirement assumptions at 2016 that reflect this experience.

Retirement age

We have adopted the retirement age pattern assumption as specified by the Scheme Advisory Board for preparing Key Performance Indicators.

50:50 option

From 1 April 2014, members have been able to elect to pay half the standard level of contributions for half the accrued benefit (i.e. an accrual rate of 1/98ths). This option affects future service only (past service is protected) and the employer's cost will fall as a result of members choosing this option.

As contribution rates are set once at each actuarial valuation, we need to make an assumption about the likely incidence of members taking the 50:50 option. At the 2013 valuation, accurately predicting take-up of the 50:50 option was challenging without any objective evidence. In evaluating the cost savings from pension reform, the Government Actuary's Department (GAD) assumed that 10% of scheme members would take up the 50:50 option. In the absence of any other information, we believed that this was a reasonable assumption to make at 2013.

However, the take up of the 50:50 option since 2014 has been much lower than expected with only around 0.2% of members participating in the 50:50 scheme. Therefore, we have reduced the assumption at the 2016 valuation to assume that 5% of members (uniformly distributed across the age, service and salary range) will choose the 50:50 option.

Other demographic assumptions

Our assumption for pay growth has been split into general inflationary pay increases and promotional pay growth. We carry out analysis on membership to set this level of assumed promotional pay growth at the 2016 valuation.

Our recommended commutation assumption for this valuation is 50% of HMRC limits for service to 1 April 2008 and 75% of HMRC limits for service from 1 April 2008.