VALUATION REPORT

London Pensions Fund Authority Pension Fund

Actuarial valuation as at 31 March 2019

31 March 2020

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Introduction

We have been asked by London Pensions Fund Authority, the administering authority for the London Pensions Fund Authority Pension Fund (the Fund), to carry out an actuarial valuation of the Fund as at 31 March 2019.

The Fund is part of the Local Government Pension Scheme (LGPS), a defined benefit statutory scheme administered in accordance with the Local Government Pension Scheme Regulations 2013 (the Regulations) as amended.

The purpose of the valuation is to review the financial position of the Fund and to set appropriate contribution rates for each employer in the Fund for the period from 1 April 2020 to 31 March 2023 as required under Regulation 62 of the Regulations. Contributions are set to cover any shortfall between the assumed cost of providing benefits built up by members at the valuation date and the assets held by the Fund and also to cover the cost of benefits that active members will build up in the future.

This report is provided further to the proposed assumptions document dated 9 September 2019 and initial results advice dated 17 October 2019 which set out the background to the valuation and explained the underlying methods and assumptions derivation.

The administering authority applies a funding strategy which differs by employer depending on the nature of each. This report contains results on both the "**Fund-level**" basis (i.e. ignoring the individual employer funding targets) and on the "**individual employer**" basis (i.e. assuming that individual employers' funding targets are applied).

This report summarises the results of the valuation and is addressed to the administering authority of the Fund. It is not intended to assist any user other than the administering authority in making decisions or for any other purpose and neither we nor Barnett Waddingham LLP accept liability to third parties in relation to this advice.

This advice complies with Technical Actuarial Standards (TASs) issued by the Financial Reporting Council – in particular TAS 100: Principles for Technical Actuarial Work and TAS 300: Pensions.

We would be pleased to discuss any aspect of this report in more detail.

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Executive summary

Some of the key results contained within this report are set out below:

1. Funding position

Since 2016, the funding level has increased from 96% to 109% on the Fund-level basis and from 93% to 106% on the individual employer basis.

2. Contributions

The average primary rate has increased from 11.9% to 14.0% of pay since the 2016 valuation on the Fund-level basis and from 14.0% to 15.2% of pay on the individual employer basis. Secondary rates have typically decreased due to the improved funding level. Individual employer contributions are set out in individual Rates and Adjustments Certificates.

3. Method and assumptions

No fundamental changes have been made to the existing overall approach to setting contributions. We have used a smoothed approach to calculate a Fund-level discount rate of 5.3% p.a. based on a weighted average of estimates of long-term asset returns with an allowance for prudence.

4. Individual employers

Based on the final employer categories, we estimate the weighted average discount rate used to set individual contribution rates is 5.1% p.a.

5. Drivers

The main reasons for the improvement in funding level since 2016 are strong investment returns and payment of deficit contributions. This has been partially offset by the reduction in the discount rate.
The main reason for the increase in primary rate since 2016 is the reduction in the discount rate although this has been partially offset by a reduction in projected life expectancies.

Background to valuation approach

The purpose of the 2019 actuarial valuation is to set appropriate contribution rates for each employer in the Fund for the period from 1 April 2020 to 31 March 2023, as required under Regulation 62 of the LGPS Regulations. This is done by undertaking a formal valuation of the assets and liabilities of the Fund as at 31 March 2019.

The contribution rates consist of two elements, the primary rate and the secondary rate:

- The **primary rate** for each employer is the employer's future service contribution rate (i.e. the rate required to meet the cost of future accrual of benefits) expressed as a percentage of pay.
- The **secondary rate** is an adjustment to the primary rate to arrive at the total rate each employer is required to pay (for example, to allow for deficit recovery). The secondary rate may be expressed as a percentage of pay or a monetary amount.

Regulation 62 specifies four requirements that the actuary "must have regard" to and these are detailed below:

1. The existing and prospective liabilities arising from circumstances common to all those bodies
2. The desirability of maintaining as nearly a constant a primary rate as possible
3. The current version of the administering authority's Funding Strategy Statement (FSS)
4. The requirement to secure the "solvency" of the pension fund and the "long-term cost efficiency" of the Scheme, so far as relating to the pension fund

The wording of the second objective is not ideal in that it appears to be aimed towards the primary rate rather than taking into account the surplus or deficit of the employer. We believe that if we achieve reasonably stable total individual employer rates (which seems like a preferable objective) then we will also meet the regulatory aim.

Definitions for "solvency" and "long-term cost efficiency" are included in CIPFA's Funding Strategy Statement guidance. These can be briefly summarised as:

- ensuring that employers are paying in contributions that cover the cost of benefit accrual and target a fully funded position over an appropriate time period using appropriate actuarial assumptions, and
- that employers have the financial capacity to increase contributions (or there is an alternative plan in place) should contributions need to be increased in future.

We have considered these four requirements when providing our advice and choosing the method and assumptions used.

A number of reports and discussions have taken place with the administering authority before agreeing the final assumptions to calculate the results and set contribution rates. In particular:

- The proposed assumptions document dated 9 September 2019 and discussions held at the LPFA Board meeting on 23 July 2019.
- The initial results report dated 17 October 2019 which provides information and results on a whole fund basis as well as more detailed background to the method and a summary of the assumptions. These results were presented at the LPFA Board meeting on 24 October 2019.
- The Funding Strategy Statement which was approved by the Board on 11 December 2019 and is available on the administering authority's website.

The final assumptions have been agreed with the administering authority. We confirm that in our opinion the agreed assumptions are appropriate for the purpose of the valuation. Assumptions in full are set out in Appendix 2.

Regulatory uncertainties

There are currently a few important regulatory uncertainties surrounding the 2019 valuation as follows:

- Effect of the McCloud and Sargeant cases and the cost cap on the future and historic LGPS benefits structure
- Change in timing of future actuarial valuations from a triennial cycle
- Guaranteed Minimum Pensions (GMP) equalisation

Although it is unclear what impact these uncertainties will have on the future benefits of individual members, we have considered these issues in the assumptions used to set the contribution rates for employers. In particular, for the potential impact of the McCloud/Sargeant cases, we have considered that there are sufficient prudence margins within the assumptions to cover the uncertainty around the results and have therefore made no explicit adjustment to the valuation results for the impact of these cases.

Membership data

A summary of the membership data used for the valuation is set out in Appendix 1.

The membership data has been checked for reasonableness and we have compared the membership data with information in the Fund accounts. Any missing or inconsistent data has been estimated where necessary. While 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.

Benefits

Full details of the benefits being valued are set out in the Regulations as amended and summarised on the LGPS website and the Fund's membership booklet. We have made no allowance for discretionary benefits.

Valuation of liabilities

To calculate the value of the liabilities, we estimate the future cashflows which will be made to and from the Fund throughout the future lifetime of existing active members, deferred benefit members, pensioners and their dependants. We then discount these projected cashflows using the discount rate which is essentially a calculation of 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 membership before the valuation date (past service) and for membership after the valuation date (future service).

To produce the future cashflows or liabilities and their present value we need to formulate assumptions about the factors affecting the Fund's future finances such as inflation, salary increases, investment returns, rates of mortality, early retirement and staff turnover etc.

The assumptions used in projecting the future cashflows in respect of both past service and future service are summarised in Appendix 2.

Prudence

Where there is greater uncertainty in a particular assumption, the recommended assumption may include a margin for prudence. As the assumptions are being used to set contributions, this simply means that using a prudent assumption will give more potential scenarios where the calculated contributions are sufficient than those where they are not.

Our approach to prudence is to make an explicit allowance for prudence in the discount rate but to set all other assumptions without any explicit margin.

Assets

We have been provided with audited Fund accounts for each of the three years to 31 March 2019. The market asset valuation as at 31 March 2019 was £6,053m.

For the purposes of the valuation, we use a smoothed value of the assets rather than the market value. The financial assumptions that we use in valuing the liabilities are smoothed around the valuation date so that the market conditions used are the average of the daily observations over the period 1 January 2019 to 30 June 2019. We value the assets in a consistent way by applying a similar smoothing adjustment to the market value of the assets. The smoothing approach means that contribution rates over the next three years are not singularly dependent on the market value of assets and market conditions on one particular day.

The smoothed asset valuation as at 31 March 2019 was £6,035m. This was based on a smoothing adjustment of 99.7%.

The Fund's long-term investment strategy has been taken into consideration in the derivation of the discount rate assumption The investment strategy is set out in the Fund's Investment Strategy Statement (ISS) dated May 2019.

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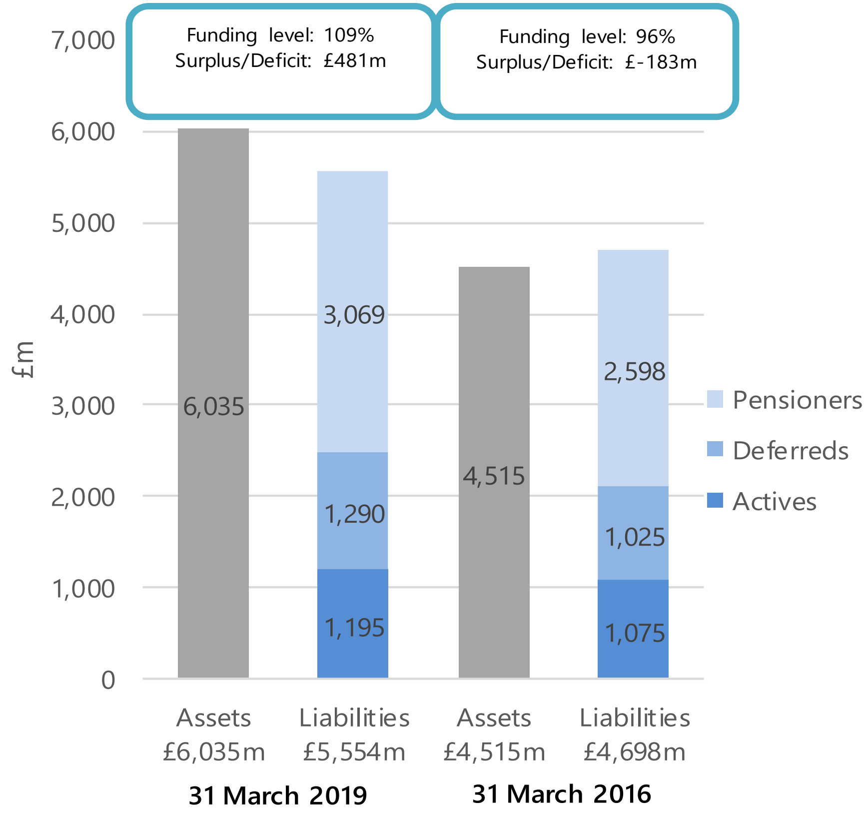
Results

Funding position

Fund-level basis

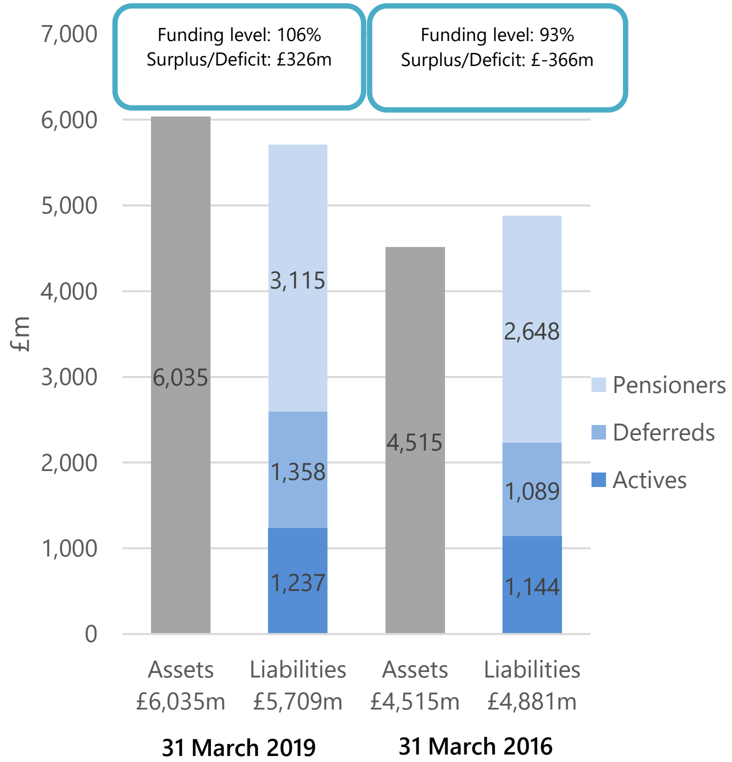
A comparison is made of the value of the existing assets with the value of the accrued liabilities. If there is an excess of assets over the liabilities then there is a surplus. If the converse applies there is a deficit.   Using the assumptions and the Fund-level discount rate summarised in Appendix 2, the results of the valuation in terms of funding level at Fund level are set out below.



There was a surplus of £481m at Fund level at 31 March 2019, corresponding to a funding level of 109%. This compares to a deficit of £183m at 31 March 2016, corresponding to a funding level of 96%.

Individual employer strategies

Using the assumptions and the discount rate based on individual employer strategies, the funding levels are set out in the graph below.



There was a surplus of £326m on the employer-specific assumptions at 31 March 2019, corresponding to a funding level of 106%. This compares to a deficit of £366m at 31 March 2016, corresponding to a funding level of 93%.

Difference between Fund-level and individual employer strategies' results

The Fund-level results are provided on a single discount rate of 5.3% p.a. for all employers. If we vary the discount rate at employer level according to the LPFA funding framework, then the average weighted discount rate is 5.1% p.a., which leads to a higher value of liabilities. There is a decrease in the surplus of £155m from using the employer-specific assumptions.

Contribution rates

The total contribution rate payable by employers consists of two elements: the primary rate and the secondary rate. Active members pay contributions to the Fund as a condition of membership in line with the rates required under the Regulations. Please note that expenses are dealt with in the derivation of the discount rate and therefore we make no explicit allowance in the primary rate for expenses.

Primary rate - Fund-level discount rate

Using the assumptions summarised in Appendix 2, the resulting average primary rate across the whole Fund, on the Fund-level discount rate, is set out in the table below after allowing for member contributions. We have also provided the results from the previous valuation.

Primary rate on the employer-specific basis	Valuation basis 31 March 2019 % of pay p.a.	Previous valuation 31 March 2016 % of pay p.a.
Total future service rate	21.2%	19.2%
Less average member rate	-7.2%	-7.3%
Fund primary rate	**14.0%**	**11.9%**

Therefore, the Fund-level primary rate has increased by 2.1% of payroll since the 31 March 2016 valuation.

Primary rate – Employer-level discount rate

On the employer-specific discount rate, the resulting average primary rate across the whole Fund is set out in the table below.

Primary rate	Valuation basis 31 March 2019 % of pay p.a.	Previous valuation 31 March 2016 % of pay p.a.
Total future service rate	22.4%	21.3%
Less total member rate	-7.2%	-7.3%
Fund primary rate	**15.2%**	**14.0%**

The employer-specific primary rate has increased by 1.2% of payroll since the 31 March 2016 valuation.

It is less than the increase in the primary rate at the Fund level because some employers have improved their covenant category since the 2016 valuation which has offset some of the increase due to the reductions in discount rates.

As the Fund-level primary rate at 31 March 2019 is 14.0% of payroll, the primary rate is 1.2% p.a. of payroll higher on the agreed assumptions as a result of applying the employer-specific strategy.

Secondary rate

The secondary rate is an adjustment to the primary rate to arrive at the total rate each employer is required to pay (for example, to allow for deficit recovery). Where there is a deficit, contributions should be set to restore the funding positions to 100% over an agreed "recovery period".

At 31 March 2016, there was a deficit in the Fund and the secondary contributions were agreed with individual employers in order to restore the Fund to a full funding by 31 March 2030 (although each individual employer was subject to their own recovery period in line with the LPFA's funding strategy). The average secondary rate (on the individual employer discount rate basis) as a percentage of payroll was 6.0% of payroll at 31 March 2016.

The primary and secondary rate of the individual employer contributions payable for each employer are set out in individual Rates and Adjustments Certificates. These will differ from the primary rate set out above as well as varying from each other as they are either based on the employer's own membership and experience or they are the employer's share of the contributions payable within a pool of employers.

The average secondary rate adjustment (on the individual employer discount rate basis) as a percentage of payroll is 2.4% p.a. in the year to 31 March 2021.

The secondary rate has decreased as a significant number of employers who were in deficit at the last valuation will now be in surplus, meaning that they move from paying a secondary rate to not paying one.

Standardised basis

As part of our calculations we have considered the results on a standardised basis as set by the Scheme Advisory Board (SAB). We are required to provide the Scheme Advisory Board with the results for the Fund for comparison purposes.

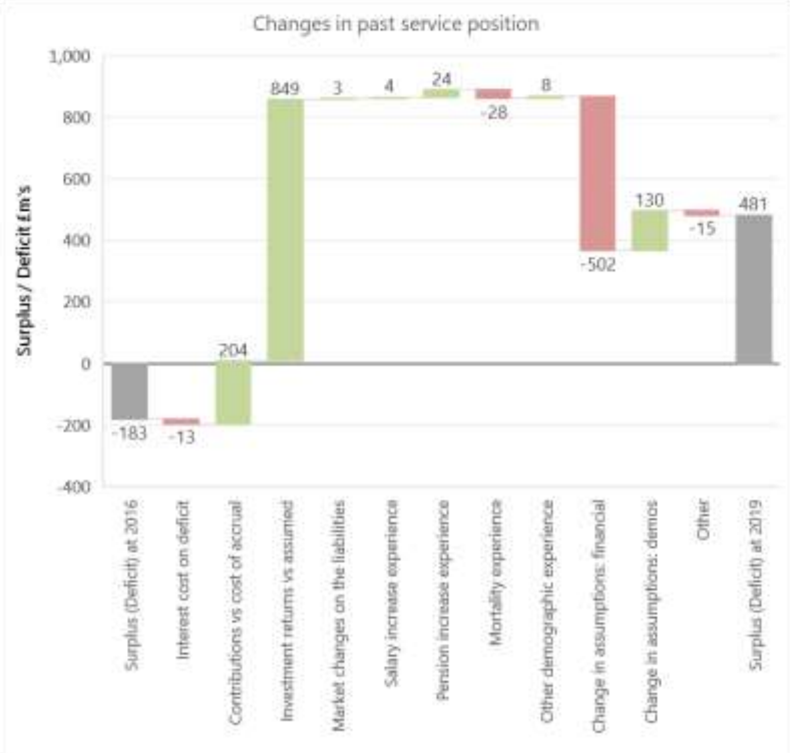
The standardised basis is set by the Government Actuary's Department (GAD) with some of the assumptions used being set locally (such as mortality) and some are set at Scheme level (including all the financial assumptions). It is not used to set contributions as it does not reflect the Fund's investment strategy or the administering authority's attitude to risk; contributions are set using the funding basis.

The results on the standardised basis as at 31 March 2019 are set out in the dashboard in Appendix 3. The dashboard has been introduced since the previous valuation to assist readers to compare LGPS valuation reports and the information will be used by GAD in their Section 13 review of the LGPS funds.

Reconciliation to the previous valuation

Funding position

The previous valuation revealed a deficit of £183m. The key factors that have influenced the funding level of the whole Fund over the period are illustrated in the chart below.



Asset returns and other experience

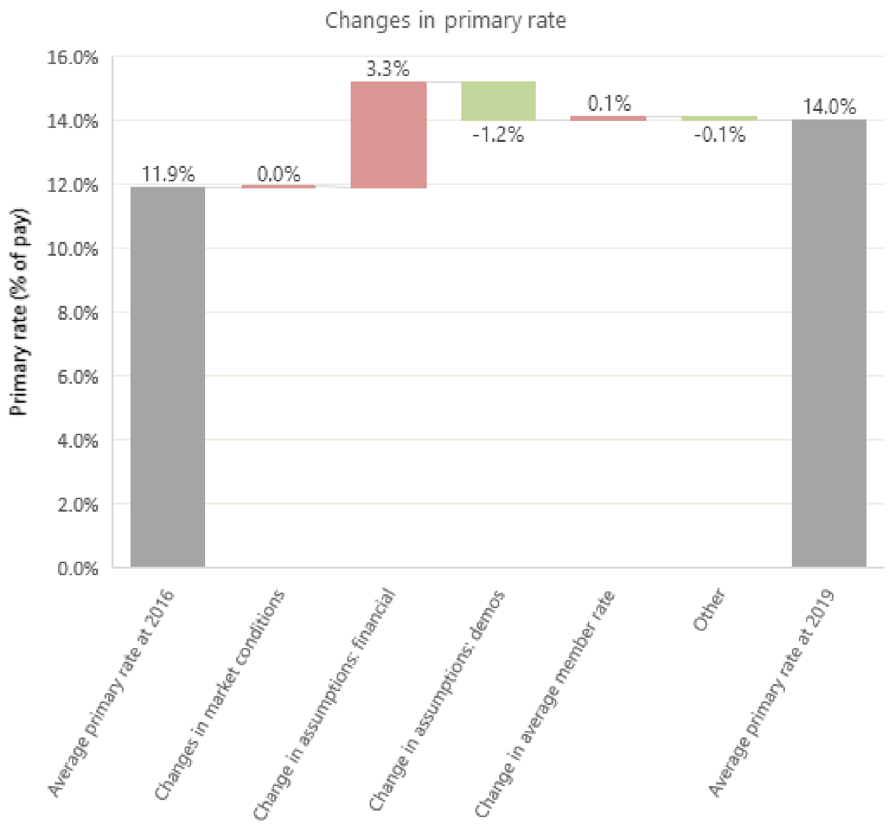
- Investment returns have been strong since 2016 leading to an estimated improvement in the position of £849m. The Fund has returned over 11.1% p.a. compared to the assumed return of 5.7% p.a. over the three year period.
- Contributions paid were higher than the cost of benefits accrued on the Fund-level basis as the employers made primary contributions on their own funding basis and secondary contributions resulting in an estimated improvement in the funding position of £204m.

Assumptions

- A review of the approach when setting the financial assumptions (in particular, a reduction in the discount rate) resulting in an increase in the liabilities of £502m
- Updating the mortality assumptions to allow for a fall in future life expectancies resulted in a decrease in the liabilities of £130m.

Primary contribution rate – Fund level

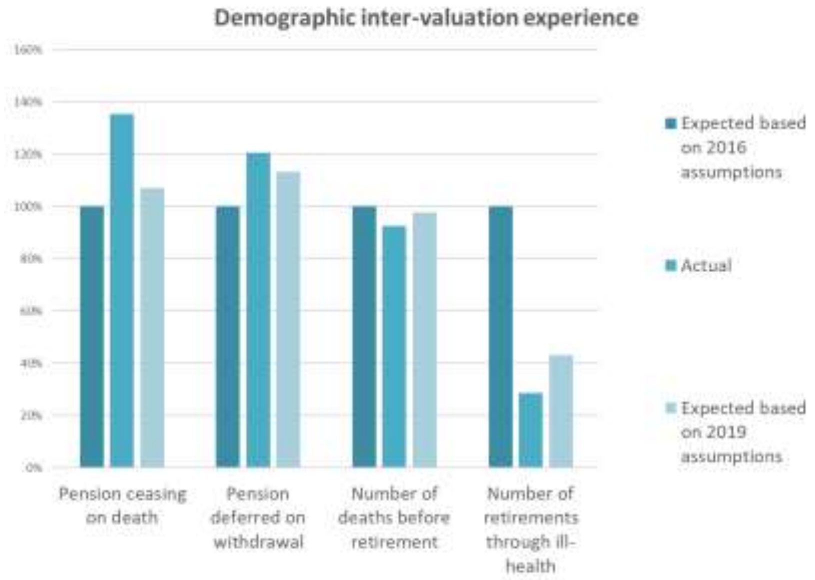
The previous valuation resulted in an average Fund-level primary rate of 11.9% of Pensionable Pay which has increased to 14.0%. The reasons for the change in the cost of future benefit accrual are set out in the reconciliation chart below.



The change in the financial assumptions (primarily the reduction in discount rate) has increased the primary rate by 3.3% of pay. The change in demographic assumptions (in particular, the change in mortality assumption) has decreased the primary rate by 1.2% of pay.

Comparing experience with assumptions

A comparison of the actual demographic experience of members of the Fund over the intervaluation period, with that assumed by the assumptions adopted at the last valuation in 2016 is shown in the graph below. The graph also shows how the assumptions adopted for this valuation would have compared with those adopted at 2016.



In particular, as a result of this analysis, it was decided to halve the allowance for future ill-health retirements assumed at the 2019 valuation (compared to the 2016 valuation).

Sensitivities to the liabilities

The results set out in this report are based on a particular set of assumptions. The actual cost of providing the benefits will depend on the actual experience, which could be significantly better or worse than assumed. The sensitivity of the results to some of the key assumptions is set out in the table below.

The figures in the table are shown relative to the surplus of £481m and funding level of 109% on the **Fund-level** funding basis.

Sensitivity analysis - Past service funding position

	Valuation basis	Decrease discount rate by 0.1% p.a.	Increase CPI inflation by 0.1%	Increase salary assumption by 0.5%	Increase initial addition to mortality improvement by 0.5%	Increase long-term rate of mortality improvement by 0.25%
	£m	£m	£m	£m	£m	£m
Smoothed asset value	6,035	6,035	6,035	6,035	6,035	6,035
Total past service liabilities	5,554	5,635	5,576	5,584	5,588	5,594
Surplus (Deficit)	**481**	**400**	**459**	**451**	**447**	**441**
Funding level	109%	107%	108%	108%	108%	108%

Sensitivities to the primary contribution rate

The calculated Fund-level primary contribution rate required to fund benefits as they are earned from year to year will also be affected by the particular set of assumptions chosen. The sensitivity of the primary rate to changes in some key assumptions on the **Fund-level** funding basis is shown below. Please note that the primary rate set out below does not include any adjustment via the secondary rate.

Sensitivity analysis - Past service funding position

	Valuation basis	Decrease discount rate by 0.1% p.a.	Increase CPI inflation by 0.1%	Increase salary assumption by 0.5%	Increase initial addition to mortality improvement by 0.5%	Increase long-term rate of mortality improvement by 0.25%
	% of pay	% of pay	% of pay	% of pay	% of pay	% of pay
Total future service rate	21.2%	21.7%	21.4%	21.2%	21.4%	21.3%
less employee contribution rate	-7.2%	-7.2%	-7.2%	-7.2%	-7.2%	-7.2%
Total primary rate	**14.0%**	**14.5%**	**14.2%**	**14.0%**	**14.2%**	**14.1%**

Final comments

Funding Strategy Statement (FSS)

The assumptions used for the valuation must be documented in a revised Funding Strategy Statement to be agreed between the Fund Actuary and the administering authority.

Risks

There are many factors that affect the Fund's funding position and could lead to the Fund's funding objectives not being met within the timescales expected. Some of the key risks that could have a material impact on the Fund are:

- Employer covenant risk
- Investment risk
- Inflation risk
- Mortality risk
- Member options risk
- Regulatory risk

Sensitivity to some of these risks were set out in the sensitivities section of this report. Please note that this is not an exhaustive list. Further information on these risks and more can be found in our initial results report and will be set out in greater detail in the Funding Strategy Statement.

This valuation only considers the position of the Fund at the valuation date, 31 March 2019, and does not consider the impact of any changes since the valuation date. The extent that actual experience following the valuation date is different to assumed, and the need for contributions to be adjusted in light of this, will be picked up at the next valuation.

Rates and Adjustments Certificate

The contributions payable in respect of benefit accrual and any deficit contributions under each employer's recovery period have been set out in individual Rates and Adjustments Certificates in accordance with Regulation 62 of the Regulations and cover the period from 1 April 2020 to 31 March 2023. In these certificates no allowance will be made for additional costs arising which need to be met by additional contributions by the employer such as non-ill health early retirements.

The contributions in the Rates and Adjustments Certificates are set so that each employer's assets (including future contributions) are projected to be sufficient to cover the benefit payments for their members, on the assumptions set out in this report. Where there is currently a deficit for an individual employer, recovery of this deficit is targeted in line with the Fund's FSS and all employers are projected to be fully funded after a recovery period length of no more than 11 years.

This document has been agreed between the administering authority and the Fund Actuary. Contributions have been set which in our opinion meet the regulatory requirements and the funding objectives set out in the Fund's Funding Strategy Statement.

This report must be made available to members on request.

Post valuation events

Since the valuation date there has been some very significant movements in investment markets and in particular over the three months to 31 March 2020, largely driven by the COVID-19 crisis. However, our funding model is designed to help withstand short-term volatility in markets as it is a longer term model and we also use smoothed assumptions over a six-month period with the ultimate aim of setting stable contributions for employers. Therefore, although the falls in equity and corporate bond markets have been significant, the ongoing funding position under our model will not have fallen to the same extent, as the model helps to mitigate some of the impact of extreme events.

Due to the timing of these movements in the valuation process, and to the anticipated effect on the ongoing funding position, please note that no adjustments have been made to the valuation results or to the employer contributions previously agreed. The results are based on the position as at 31 March 2019 and this information on "post valuation events" is provided for information only.

We will continue to monitor the Fund's funding position and raise any individual employer cases with the Fund that we consider need any special attention. The impact of the COVID-19 crisis will be fully considered as part of the 2022 valuation when we revisit employer contributions.

The next formal valuation is due to be carried out as at 31 March 2022 however we would recommend that the financial position of the Fund is monitored regularly during the period leading up to the next formal valuation. We would be happy to give more detail about the ways that this can be achieved.

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Appendices

Appendix 1 Summary of membership data and benefits

Membership data

The membership data has been provided to us by the administering authority on behalf of the Fund's administrators. We have relied on information supplied by the administering authority being accurate. A summary of the membership data is included below and data from the previous valuation is also shown.

The membership data has been checked for reasonableness and we have compared the membership data with information in the Fund's accounts. 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.

There are a number of members who appear on the list of members who were active at the valuation date who, we were informed, left active service before the valuation date. For these members, the process of paying a refund of contribution or converting their active record to a deferred record had not yet been finalised. We have therefore treated these individuals as deferred members by calculating deferred benefits in line with the information provided in their active record, assuming they continued to accrue pension benefits to the date that they left active service. These members are included in the 'Deferred members (including undecided)' summary table below. They were included as active members in the Fund's accounts, which is the reason for discrepancies in the total membership numbers between this report and the accounts.

Membership summary

A summary of the membership data used in the valuation is as follows. The membership data from the previous valuation is also shown for comparison. The 2019 average ages are weighted by liability calculated on the funding basis, while the 2016 average ages are unweighted.

Please note, this includes the members that transferred over from Essex Pension Fund in respect of Epping Forest College, who were not included in the Initial results advice report dated 17 October 2019. This information was provided by Essex County Council as administering authority to the Essex Pension Fund.

Active members	31 March 2019			31 March 2016		
	Number	Pensionable pay £ms	Average age	Number	Pensionable pay £ms	Average age
Males	7,168	241	53	6,790	224	45
Females	10,819	289	53	9,693	250	44
Total	17,987	530	53	16,483	473	44

Deferred members (including undecided)						
	31 March 2019			31 March 2016		
	Number	Current Pension £ms	Average age	Number	Current Pension £ms	Average age
Males	13,372	37	53	11,080	32	47
Females	22,021	48	52	17,823	40	46
Total	35,393	85	52	28,903	72	47

Pensioner and dependant members						
	31 March 2019			31 March 2016		
	Number	Current Pension £ms	Average age	Number	Current Pension £ms	Average age
Males	13,362	121	70	12,827	111	73
Females	16,753	92	70	15,271	79	73
Dependants	5,638	21	78	5,690	22	77
Total	35,753	234	70	33,788	212	74

Projected retirements

In the table below we have set out the number of members who are assumed to reach retirement age over the period from 1 April 2019 to 31 March 2023 as required under the Regulations.

Members may retire for a number of reasons including reaching normal retirement age, retiring through ill-health or redundancy. The amounts set out in the table below are the new retirement benefit amounts, as at the current valuation date that are assumed to come into payment in each of the intervaluation years.

Projected new benefits		
Year to	Number of members	Retirement benefits £ms
31/03/2020	1,378	24
31/03/2021	1,070	16
31/03/2022	1,192	18
31/03/2023	1,253	24

Allowance for GMP equalisation

On 26 October 2018 the judgement was published for the Lloyds Banking Group Pensions Trustees Ltd vs Lloyds Bank Plc & Ors on how their Guaranteed Minimum Pensions (GMPs) should be equalised. However, HM Treasury (HMT) have confirmed that the GMP judgement "does not impact on the current method used to achieve equalisation and indexation in public service pension schemes", which is set out here:

www.gov.uk/government/consultations/indexation-and-equalisation-of-gmp-in-public-service-pension-schemes/consultation-on-indexation-and-equalisation-of-gmp-in-public-service-pension-schemes

On 22 January 2018, the Government published the outcome to its indexation and equalisation of GMP in public service pension schemes consultation, concluding that the requirement for public service pension schemes to fully price protect the GMP element of individuals' public service pension would be extended to those individuals reaching State Pension Age (SPA) before 6 April 2021. HMT published a Ministerial Direction on 4 December 2018 to implement this outcome, with effect from 6 April 2016.

The assumption made at the 2019 valuation is that funds pay limited increases for members that have reached SPA by 6 April 2016, with the Government providing the remainder of the inflationary increase and that funds will be required to pay the full indexation on GMPs for those attaining SPA after 6 April 2016. This effectively assumes that the Government extends their current policy indefinitely and we believe this is a sensible approach to making an interim allowance for GMP equalisation.

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Appendix 2 Summary of assumptions

A summary of the assumptions adopted for the valuation at 31 March 2019 is set out below. The assumptions used in the previous valuation are also given below for comparison.

Summary of financial assumptions

Assumptions		Assumptions used for the 2019 valuation	Assumptions used for the 2016 valuation
Financial assumptions			
Market date		31 March 2019	31 March 2016
CPI inflation		2.6% p.a.	2.4% p.a.
Salary increases			
	Short-term	n/a	CPI to 31 March 2020
	Long-term	3.6% p.a.	3.9% p.a.
Discount rate			
	Fund-level	5.3% p.a.	5.7% p.a.
	Employer specific strategies	5.1% p.a.	5.5% p.a.
Pension increases on GMP		Funds will pay limited increases for members that have reached SPA by 6 April 2016, with the Government providing the remainder of the inflationary increases. For members that reach SPA after this date , we have assumed that Funds are required to pay the entire inflationary increases	

Employer-level discount rates

At the 2019 valuation, each active employer in the Fund was put into one of six categories, each with different funding strategies, as shown in the table below. The classification of each employer was determined by the Administering Authority.

Category	Types of employers	Discount rate at 31 March 2019	Discount rate at 31 March 2016
A-Open	Employers with tax raising powers Employers with a government guarantee Employers that provided substantial security above 70% of cessation deficit Schools/Academies Transferee admission bodies pre-2016 with a category A letting authority (at time of transfer)	5.3% p.a.	5.7% p.a.
B-Open	Employers that provide LPFA with significant security between 40% and 69% of cessation deficit Employers that provide a legally valid/credible parent company guarantee Employers that receive implicit support from the government with strong financial statements Further & Higher Education and Housing bodies with strong financial statements Transferee admission bodies pre-2016 with a category B letting authority (at time of transfer)	4.9% p.a.	5.4% p.a.
C1	Employers with no security/guarantees/assurances that are financially stable Transferee admission bodies pre-2016 with a category C1 letting authority (at time of transfer)	4.4% p.a.	4.8% p.a.
C2	Employers with no security/guarantees/assurances with identified risk	3.5% p.a.	4.0% p.a.
C3- Projected Cessation	As C1 but projected to exit the Fund with no support after exit	4.4% p.a. until projected exit date, 1.6% thereafter	4.8% p.a. until projected exit date, 2.2% thereafter
C4- Projected Cessation	As C2 but projected to exit the Fund with no support after exit	3.5% p.a. until projected exit date, 1.6% thereafter	4.0% p.a. until projected exit date, 2.2% thereafter

Summary of demographic assumptions

Assumptions	Assumptions used for the 2019 valuation	Assumptions used for the 2016 valuation
Demographic assumptions		
Post-retirement mortality	Male / Female	Male / Female
Member base tables	Club Vita	Club Vita
Member mortality multiplier	100%	100.0%
Dependant base tables	Club Vita	Club Vita
Dependant mortality multiplier	100%	100.0%
Projection model	CMI 2018	CMI 2015
Long-term rate of improvement	1.25% p.a.	1.5% p.a.
Smoothing parameter	7.0	n/a
Initial addition to improvements	0.5% p.a.	n/a
Life expectancy (in years) from age 65		
Retiring today (males)	21.2	21.5
Retiring today (females)	23.9	24.6
Retiring in 20 years (males)	22.6	23.9
Retiring in 20 years (females)	25.4	27.0
Retirement assumption	Weighted average of each tranche retirement age	
Pre-retirement decrements	GAD 2016 scheme valuation, with no salary scale and 50% multiplier to ill-health retirement rates	GAD 2013 scheme valuation
50:50 assumption	Member data	Member data
Commutation	50% of maximum	50% of maximum
% members with qualifying dependant	75% / 70%	75% / 70%
Age difference	Males are 3 years older	Males are 3 years older

Demographic assumptions – sample rates

The following tables set out some sample rates of the demographic assumptions used in the calculations. These sample rates are based on those set by the Government Actuary's Department (GAD) based on analysis of the Local Government Pension Scheme (LGPS) in England and Wales.

Allowance for ill-health early retirements

A small proportion of members are assumed to retire early due to ill health. In the table below we set out an extract of some sample rates from the GAD tables used:

Age	Males	Females
25	0.01%	0.00%
30	0.01%	0.01%
35	0.02%	0.01%
40	0.04%	0.03%
45	0.09%	0.06%
50	0.18%	0.13%
55	0.36%	0.28%
60	0.74%	0.62%
65	1.51%	1.34%

Please note the above rates are the raw decrements as set by GAD. Our assumption is that there will be 50% of the number of ill-health retirements assumed by GAD.

The proportion of ill-health early retirements falling into each tier category has been assumed to be as follows for both males and females:

Tier 1	Tier 2	Tier 3
75%	15%	10%

Death before retirement

A small number of members are assumed to die before reaching retirement age. In the table below we set out an extract of some sample rates from the GAD tables used:

Age	Males	Females
25	0.02%	0.01%
30	0.03%	0.01%
35	0.05%	0.02%
40	0.06%	0.03%
45	0.09%	0.05%
50	0.13%	0.08%
55	0.21%	0.12%
60	0.32%	0.19%
65	0.50%	0.29%

Allowance for withdrawals

This assumption is regarding active members who leave service to move to deferred member status. Active members are assumed to leave service at the following sample rates:

Age	Males	Females
25	9.21%	10.17%
30	7.25%	8.07%
35	5.70%	6.40%
40	4.48%	5.07%
45	3.53%	4.03%
50	2.78%	3.19%
55	2.18%	2.53%
60	1.72%	2.01%
65	1.35%	1.59%

Appendix 3 Dashboard

Past service funding position - local funding basis

Funding level (assets/liabilities)	106%
Funding level (change since previous valuation)	10%
Asset value used at the valuation	£6,035,000,000
Value of liabilities	£5,709,000,000
Surplus (deficit)	£326,000,000
Discount rate (Fund average)	5.1% p.a.
Assumed pension increases (CPI)	2.6% p.a.
Method of derivation of discount rate, plus any changes since previous valuation	In line with page 7 of the Funding Strategy Statement
Assumed life expectancies at age 65:	
Average life expectancy for current pensioners - men currently age 65	21.2 years
Average life expectancy for current pensioners - women currently age 65	23.9 years
Average life expectancy for future pensioners - men currently age 45	22.6 years
Average life expectancy for future pensioners - women currently age 45	25.4 years

Past service funding position - SAB basis (for comparison purposes only)

Market value of assets	£6,053,254,000
Value of liabilities	£5,574,000,000
Funding level on SAB basis (assets/liabilities)	109%
Funding level on SAB basis (change since last valuation)	13%

Contribution rates payable

Primary contribution rate	15.2% of pay p.a.		
Secondary contribution rate (cash amounts in each year in line with CIPFA guidance)			
Secondary contribution rate 2020/21	£12,953,000		
Secondary contribution rate 2021/22	£13,932,000		
Secondary contribution rate 2022/23	£14,444,000		
Giving total expected contributions:			
Total expected contributions 2020/21 (£ figure based on assumed payroll)	£95,919,000	Based on assumed payroll of	£544,570,000
Total expected contributions 2021/22 (£ figure based on assumed payroll)	£99,923,000	Based on assumed payroll of	£564,424,000
Total expected contributions 2022/23 (£ figure based on assumed payroll)	£103,570,000	Based on assumed payroll of	£585,002,000
Average employee contribution rate (% of pay)	7.2% of pay		
Employee contribution rate (£ figure based on assumed payroll)	£39,209,000 p.a.	Based on assumed payroll of	£544,570,000 p.a.
Additional information			
Percentage of liabilities relating to employers with deficit recovery periods longer than 20 years	0%		
Percentage of total liabilities that are in respect of Tier 3 employers	48%		

Appendix 4 Contributions

The primary and secondary contributions payable for each employer are set out in separate Rates and Adjustments Certificates, which should be read in conjunction with this valuation report.

Primary and secondary rate summary

The primary rate for each employer is that employer's future service contribution rate, which is the contribution rate required to meet the cost of the future accrual of benefits, expressed as percentage of pensionable pay, ignoring any past service surplus or deficit, but allowing for any employer specific circumstances, such as the membership profile of that employer, the funding strategy adopted for that employer, the actuarial method chosen and/or the employer's covenant.

The primary rate for the whole Fund is the weighted average (by payroll) of the individual employers' primary rates, and for this valuation, is 15.2% of payroll.

The secondary rates across the entire Fund (as a percentage of projected Pensionable Pay and as a monetary amount) in each of the three years in the period 1 April 2020 to 31 March 2023 is set out in the table below.

Secondary Contributions			
Total as a % of payroll	2.4%	2.5%	2.5%
Equivalent to total monetary amounts of	£12,953,000	£13,932,000	£14,444,000

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