

London Borough of Merton Pension Fund

Actuarial valuation as at 31 March 2019

Indicative assumptions

Draft

Barnett Waddingham LLP

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Introduction

We have been asked by London Borough of Merton, the administering authority to the London Borough of Merton 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 statutory scheme administered in accordance with the Local Government Pension Scheme Regulations 2013, as amended (the Regulations). The actuarial valuation is required under Regulation 62.

The purpose of this paper is to provide detail on our anticipated approach to the 2019 valuation and to provide an indication of the assumptions that will be adopted. A further version of this paper may be produced following initial discussions with the Fund

The final assumptions used will be agreed with the administering authority and will be consistent with the Fund's Funding Strategy Statement.

This report is addressed to London Borough of Merton as administering authority to the Fund. It is not intended to assist any user other than London Borough of Merton in making decisions and we do not accept any liability to third parties in respect of this report. The administering authority must provide us with sufficient and up to date information relating to matters relevant to our advice. We will only be able to accept responsibility for the advice based on the information provided.

This advice is subject to and complies with Technical Actuarial Standard 100: Principles for Technical Actuarial Work (TAS 100) and Technical Actuarial Standard 300: Pensions (TAS 300) as issued by the Financial Reporting Council (FRC).

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Fund Actuaryy

Executive summary

Methodology

We do not propose any fundamental changes to the existing overall approach to setting contributions. In particular, we will continue to use a smoothed approach and the discount rate will be based on a weighted average of estimates of long-term investment returns with an allowance for prudence.

Discount rate

The discount rate is a prudent assessment of the future expected investment return. We derive the expected return from each asset class and the discount rate is then a weighted average of each return, based on the long term asset allocation of the Fund, less an adjustment for expenses and prudence.

At this valuation we have proposed a change in the underlying equity model so that it incorporates global indicators rather than UK indicators. We believe this change is appropriate as we were concerned that the UK indicators were overestimating longer-term dividend streams. This results in a lower assumed return from equities than under the previous model.

The asset allocation strategy has also changed since the 2016 valuation and our discount rate assumption will reflect this. The table below summarises the long-term asset strategy used for the indicative assumptions in this report (based on the Fund's March 2017 Investment Strategy Statement), and the comparative strategy used for the Fund's discount rate at the 2016 valuation.

Long-term strategic allocation	Indicative for 2019 valuation	2016 valuation
Gilts	10%	23%
Other bonds	0%	2%
Cash	0%	0%
Equities	65%	70%
Property and infrastructure	12.5%	5%
Multi asset credit	12.5%	0%
Total	100%	100%

Longevity assumptions

The administering authority have asked the specialist longevity team at Barnett Waddingham to carry out an analysis of recent mortality experience of members of the Fund to feed into the assumption for the post-retirement mortality tables to be used. As part of this analysis we also expect there to be some suggested changes to the allowance made for future improvements in life expectancies in order to reflect current trends. Initial expectations are that these changes should reduce the value of the liabilities compared to the assumptions used at the previous valuation and thus provide some offset to the increase in liabilities resulting from the change in discount rate.

Changes to assumptions

The assumptions that we provide in this paper are our central assumptions for the 2019 valuation, based on market conditions and information received up to 30 June 2019. The market statistics that we will use in the agreed assumptions will be 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. As part of the 2019 valuation, there is likely to be a range of assumptions that are acceptable both to the Fund and to us as the Fund actuary. Once we have finalised the 2019 valuation membership data, we can carry out further testing of the suitability of the proposed assumptions and discuss the implications with the Fund. We can then agree the final assumptions following that process.

Regulatory uncertainties

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

- McCloud/Cost cap and the effect on the future and historic LGPS benefits structure;
- Timing of future actuarial valuations moving away from a triennial cycle; and
- GMP equalisation.

More detail is contained in the report about each of these issues as well as the outcome of the 2016 Section 13 review. At this stage we have made no allowance in the proposed assumptions but as we go through the valuation process we will work closely with the administering authority to consider how to approach each of these issues when setting the contribution rates for employers.

Proposed assumptions

Our indicative principal assumptions are set out below:

Assumption	Proposed assumptions for 2019 valuation	Assumptions used for the 2016 valuation
Market date	31 March 2019 (as the assumptions are smoothed, we used market data between 1 January 2019 and 30 June 2019)	31 March 2016 (as the assumptions are smoothed, we used market data between 1 January 2016 and 30 June 2016)
CPI inflation	2.6% p.a.	2.4% p.a.
Salary increases	3.6% p.a.	3.9% p.a. with a short term overlay for salaries to increase in line with CPI to 31 March 2020
Discount rate	5.3% p.a.	5.5% p.a.
Post-retirement mortality		
Base tables	TBC BW longevity team currently undertaking analysis	S2PA tables with a multiplier of 80% for males and 85% for females 95% of the S2PMA tables for male dependants and 100% of the S2DFA tables for female dependants
Model	CMI 2018	CMI 2015
Long-term rate of improvement	1.25% p.a.	1.5% p.a.
Life expectancy of 65 year old:	Retiring today: Male: TBC Female: TBC	Retiring today: Male: 24.3 years Female: 25.9 years

Background

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. This three year period is currently being considered by the Ministry of Housing, Communities and Local Government (MHCLG) as there is a possibility of moving to a quadrennial valuation cycle in line with other public service schemes. This is likely to have a knock-on effect on the number of years of contributions certified as part of the 2019 valuation and there is more detail on this below.

The contribution rates comprise 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).

Regulation 62 specifies four requirements that the actuary "must have regard" to and 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
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.

The third clause simply means that we should be aware of and take account of your Funding Strategy Statement (FSS). It is the responsibility of the Fund to draft and maintain this statement although we are usually consulted on the drafting.

Definitions for "solvency" and "long-term cost efficiency" are included in CIPFA's FSS 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.

Section 13

Under Section 13 of the Public Service Pensions Act 2013, MHCLG is required to commission a report on the actuarial valuations of the LGPS funds, and this report is to be prepared by the Government Actuary's Department (GAD). The purpose of the "Section 13" report is to report on whether the following aims are achieved: compliance, consistency, solvency and long-term cost efficiency, and to identify any funds that cause concerns.

The report covering the 2016 valuations was published in September 2018 and made a number of general recommendations as well as recommendations specific to individual funds. The London Borough of Merton Pension Fund was highlighted in GAD's report as one of the Funds which had not reduced its deficit recovery period from that set at the 2013 valuation (despite the Fund already having one of the lowest recovery periods across the LGPS Funds).

One of the general recommendations stated that *"the Scheme Advisory Board should consider what steps should be taken to achieve greater clarity and consistency in actuarial assumptions, except where differences are justified by material local variations, with a view to making a recommendation to the MHCLG Minister in advance of the next valuation"*. If this recommendation is taken forward, this would clearly have a material impact on the ability of fund actuaries and administering authorities to set assumptions that they believe to be appropriate for their own fund.

There are good reasons why assumptions vary across funds. In particular, different investment strategies lead to different expected future returns, a fund's geographical region and membership profile has a significant impact on longevity assumptions and the fund's attitude to risk is factored into the discount rate through a transparent and bespoke level of prudence. Changes in assumptions will also only be made if considered appropriate in light of experience and other factors emerging since the previous valuation. We do not have a house view on assumptions. However, the external push towards consistency is another factor that we may need to consider in setting appropriate assumptions for the Fund and we will discuss consistency at various points in this document.

One "consistent" set of assumptions may be the set of assumptions that we are required to provide 2019 valuation results on to the LGPS Scheme Advisory Board (SAB) in order to aid comparison between funds. The assumptions used are a mixture of standardised and local demographic assumptions. We do not believe that these assumptions as a whole are appropriate for the funding of the Fund but they are a useful reference point.

Current regulatory uncertainties

There are currently a few important regulatory uncertainties surrounding the 2019 valuation which we have set out below. At this stage we have made no allowance for any of these issues in the proposed assumptions advice as we are awaiting further guidance. However, we are keen to engage with the administering authority at an early stage to consider the approach to each of these issues as we go through the 2019 valuation process.

McCloud/Cost cap

Cost cap background

The 2016 national Scheme valuation was used to determine the results of HM Treasury's (HMT) employer cost cap mechanism for the first time. The HMT cost cap mechanism was brought in after Lord Hutton's review of public service pensions with the aim of providing protection to taxpayers and employees against unexpected changes (expected to be increases) in pension costs. The cost control mechanism only considers "member costs". These are the costs relating to changes in assumptions made to carry out valuations relating to the profile of the Scheme members; e.g. costs relating to how long members are expected to live for and draw their pension.

Therefore, assumptions such as future expected levels of investment returns and levels of inflation are not included in the calculation, so have no impact on the cost management outcome.

The 2016 HMT cost cap valuation revealed a fall in these costs and therefore a requirement to enhance Scheme benefits from 1 April 2019. However, as a funded Scheme, the LGPS also had a cost cap mechanism controlled by the SAB in place and HMT allowed SAB to put together a package of proposed benefit changes in order for the LGPS to no longer breach the HMT cost cap. These benefit changes were due to be consulted on with all stakeholders earlier this year and implemented from 1 April 2019.

McCloud judgement

On 20 December 2018 there was a judgement made by the Court of Appeal which resulted in the Government announcing their decision to pause the cost cap process across all public service schemes. The delay is a consequence of the McCloud judgement, which could result in all public service schemes having to unravel the transitional protections built into the new schemes, post Hutton's review.

The McCloud judgement was in relation to a legal challenge by members of the New Judicial Pension Scheme (NJPS) against the age-based transitional provisions put into place when the new judicial pension arrangements were introduced in 2015. The members argued that these transitional provisions were directly discriminatory on grounds of age and indirectly discriminatory on grounds of sex and race, based on the correlation between these two factors reflected in the judicial membership. The Tribunal ruled against the Government, deeming the transitional provisions as not a proportionate means of achieving a legitimate aim.

The Government applied to the Supreme Court to appeal the McCloud ruling, however, it was announced on 27 June 2019 that the Government's application was denied.

It is therefore unclear what this means for the LGPS. On 14 February 2019 the SAB released a series of Q&As and a question for administering authorities to consider how they should approach the 2019 valuation. There was an overwhelming majority of funds who wanted SAB to provide guidance in order to promote a consistent approach between the funds.

On 14 May 2019, the SAB published an advice note covering the implications of McCloud and the cost cap in relation to the 2019 fund valuations. The note recommended that should there be no finalised outcome by 31 August 2019 then no changes should be made to the Scheme benefit design for valuation purposes. However each administering authority should consider how they approach the additional risks that these potential extra costs may pose. This would involve making employers aware of the potential for extra costs to arise, for example via the Fund's FSS. Once the outcome is known, it may be possible to revisit contributions through an interim valuation, subject to the outcome of a current consultation regarding changes to the local valuation cycle.

McCloud impact analysis

The Scheme Advisory Board, with the consent of the Ministry of Housing, Communities and Local Government (MHCLG), commissioned GAD to report on the possible impact of the McCloud/Sargeant judgement on LGPS liabilities, and in particular, those liabilities to be included in local authorities' accounts under IAS26 as at 31 March 2019. This followed an April 2019 CIPFA briefing note which said that local authorities should consider the materiality of the impact. This analysis was to be carried out on a "worst-case" basis, (i.e. what potential remedy would incur the highest increase in costs/liabilities). The results of this analysis are set out in GAD's report dated 10 June 2019.

Timing of future actuarial valuations

LGPS valuations currently take place on a triennial basis which results in employer contributions being reviewed every three years. In September 2018 it was announced by the Chief Secretary to HMT, Elizabeth Truss, that the national Scheme valuation would take place on a quadrennial basis (i.e. every four years) along with the other public sector pension schemes. The results of the national Scheme valuation are used to test the cost control cap mechanism and HMT believed that all public sector schemes should have the cost cap test happen at the same time with the next quadrennial valuation in 2020 and then 2024.

Although this has no immediate effect on the local fund triennial valuation process, and the 2019 valuation is going ahead as planned, we understand that MHCLG are considering the implications of also moving the local fund valuations to a quadrennial basis. There is an ongoing consultation regarding this and, until the outcome of this is known, it is unclear how many years of contributions we will need to certify as part of the 2019 valuation, as the next valuation could be delayed until 2024. As part of the consultation, there is a proposal enabling interim valuations which would allow funds to reassess funding positions and contribution rates prior to 2024.

Allowance for GMP equalisation

On 26 October 2018 the judgement was published for the Lloyd's Banking Group Pensions Trustees Ltd vs Lloyds Bank Plc & Others on how their Guaranteed Minimum Pensions (GMPs) should be equalised. However, 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:

<https://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 protect the GMP element of individuals' public service pension would be extended to those individuals reaching 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 2016 valuation was 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 State Pension Age 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.

Therefore we are not anticipating any change in our approach to valuing GMP in the 2019 valuation unless there is further guidance released for public service schemes.

Summary of position as at 31 March 2016

The previous valuations of the London Borough of Merton Pension Fund was carried out as at 31 March 2016 by us and the results are set out in our report dated 31 March 2017. The funding position is summarised below:

2016 valuation results	London Borough of Merton Fund
Funding level	94%
Surplus (deficit)	(£32.7m)

The primary rate (future service contribution rate) calculated to cover the cost of benefits that would be built up over the year after the valuation was 15.2% p.a. of pensionable pay.

In practice, employers are assessed individually in setting the minimum contributions due from them over the inter-valuation period.

Proposed central assumptions – financial assumptions

To produce the future cashflow or liabilities and their present value we need to formulate assumptions about the factors affecting the Fund's future finances. We can consider these assumptions as:

- The statistical assumptions which generally provide estimates of the likelihood of benefits and contributions being paid. This includes the rates of mortality, early retirement and staff turnover; and
- The financial assumptions which determine the estimates of the amount of benefits and contributions payable as well as their current or present value. This includes inflation, salary increases and investment returns (also referred to as the discount rate).

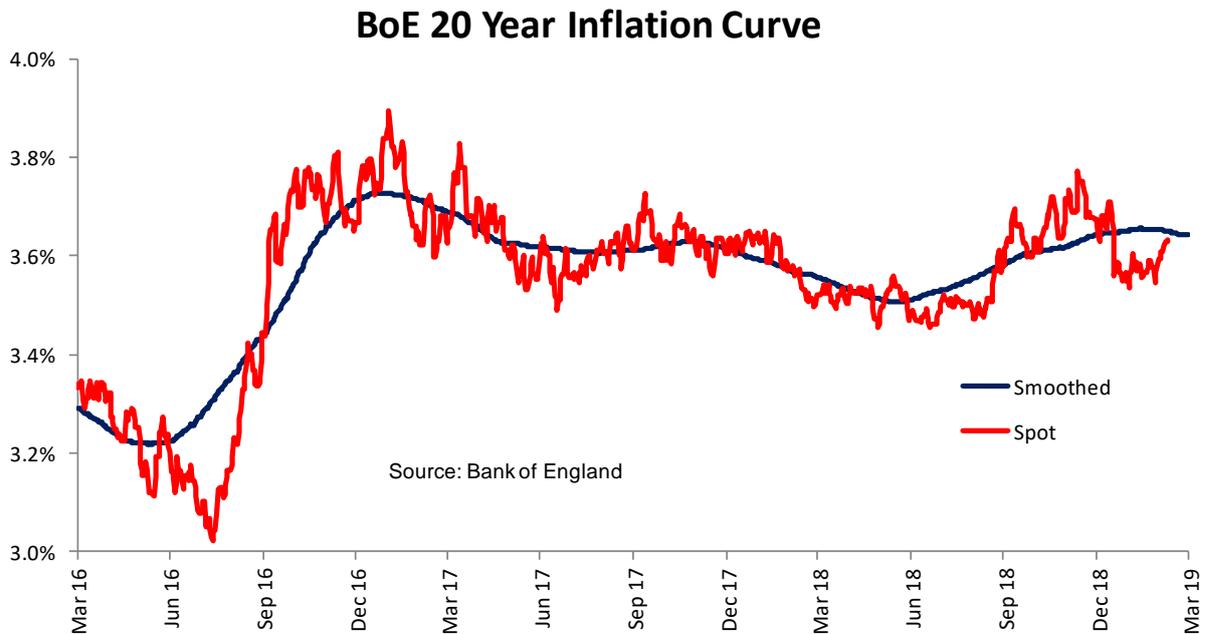
The assumptions that we use as part of our approach are a combination of market-related statistics, historical averages and judgement (e.g. future salary increases). In addition, the base market statistics that we use are smoothed around the valuation date so that the market conditions used are the average of the daily observations over the period 1 January 2019 to 30 June 2019. Assets are also smoothed in a consistent way. The smoothing mechanism is used to help with the objective of setting reasonably stable contribution rates.

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. We suggest that an overall prudence adjustment is made to the discount rate only and so we derive neutral assumptions for all other assumptions.

When looking at a market yield curve we generally take the 20 year point on that curve for all funds as this helps produce consistent assumptions for our funds as we have estimated that 20 years is consistent with the duration of an average LGPS fund's liabilities.

Price inflation (RPI)

Our starting assumption for inflation is the (smoothed) 20 year point on the Bank of England implied Retail Price Index (RPI) inflation curve which is 3.6% p.a. as at 31 March 2019 (allowing for market information up to and including 30 June 2019).



This statistic is based on the difference between fixed-interest and index-linked gilts and there are reasonable theoretical reasons for this to overstate inflation, for example due to the preference of investors to purchase inflation-linked products to provide protection against unexpected inflation. This difference may be referred to as an inflation risk premium.

There is a significant degree of subjectivity at present in coming to a view on the existence of an inflation risk premium and we are not strongly persuaded that it should be included. Hence we propose that there should be no inflation risk premium.

Therefore, our illustrative (neutral) assumption for RPI inflation is 3.6% p.a.

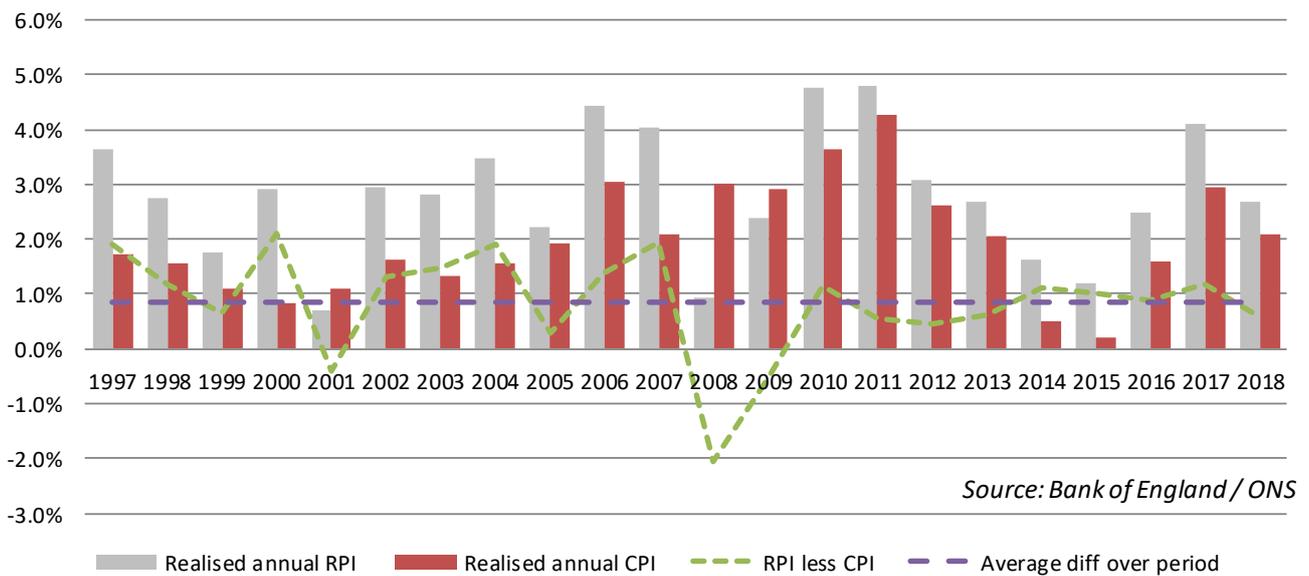
The approach to setting the RPI inflation assumption is consistent with that taken for the 2016 valuation.

Price inflation (CPI)

There is currently no reliable market-derived measure for Consumer Price Index (CPI) inflation as there is no sufficiently deep and liquid market in CPI-linked instruments.

Historically, RPI inflation has exceeded CPI inflation but the difference has been fairly volatile from year to year. The graph below shows 1-year RPI increase figures and 1-year CPI increase figures since 1997 (with the year-on-year difference and average difference over the 21 year period also shown).

Realised annual RPI vs CPI



At the 2016 valuation, we assumed that future CPI inflation would be 0.9% p.a. less than future RPI inflation. This difference is primarily due to the “formula effect” which occurs as a result of the CPI being calculated using a predominantly different averaging method than RPI. The formula effect is theoretically proportionate to the level of inflation itself and so when implied inflation is higher, there is an argument for assuming a higher formula effect.

Given implied RPI inflation is currently around 0.3% higher than at 31 March 2016, we propose that the assumption for the difference between future RPI inflation and CPI inflation is increased from 0.9% p.a. to 1.0% p.a. We also recently moved to this as a standard assumption for IAS19 and FRS102 pensions accounting where this assumption is required to be best estimate.

Therefore, we would propose an illustrative (neutral) CPI assumption of 2.6% p.a. as at 31 March 2019.

The Bank of England has a CPI target of 2.0% p.a. Effectively, we are saying that the market suggests that the Bank will, on average, not make this target and CPI inflation will average higher than the target over the next 20 years.

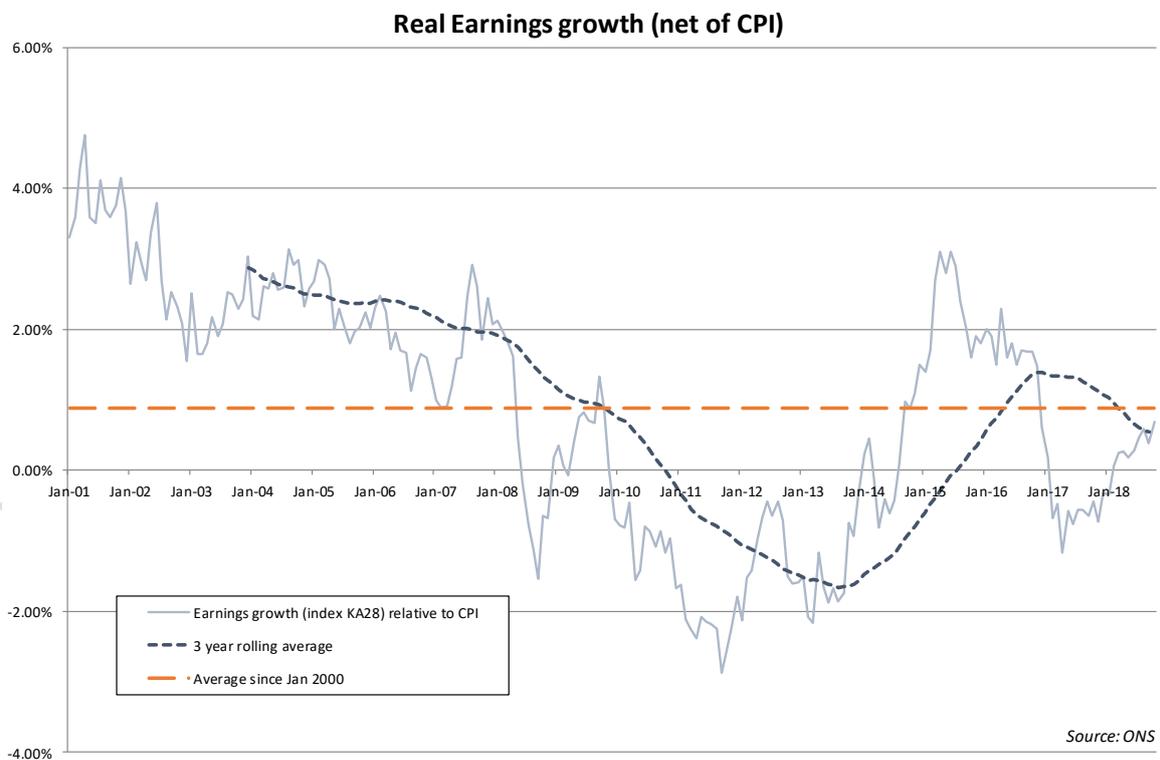
In the 29 October 2018 Budget, the Chancellor announced that “over time” pension increases would be in line with Consumer Prices Index Housing (CPIH). CPIH is CPI but with housing costs (the average change in residential rents) included in the basket of goods that are measured. As housing costs often increase quicker than other goods CPIH is generally higher than CPI (but not always). All else being equal this would increase liabilities slightly.

However, as Eurostat, the body which sets the statistical methodology on which CPI is based, had previously stated its intention to amend CPI to include housing costs, we had already factored this into our CPI assumption at the 2016 valuation. Eurostat have since revoked this intention but as we had already built in an allowance, the move to CPIH means that the existing difference remains appropriate and therefore we do not feel that any further adjustments are necessary at this stage.

Salary increases

While the LGPS was a final salary scheme for benefits earned prior to 1 April 2014, it is now a career average revalued earnings (CARE) scheme so that benefits earned after 1 April 2014 are increased in line with inflation rather than salary increases. Therefore, the overall effect of the salary increase assumption is less than it was previously and the primary rate is unaffected by the salary increase assumption.

The chart below shows past UK earnings growth reflected in the ONS's Average Weekly Earnings (AWE) statistics (which reflect both inflationary and promotional increases).



Earnings growth has typically been relatively volatile, especially over short time periods. It has historically been more stable in real terms although we can see from the graph above that there is still significant volatility over the last 18 years. Over the last 18 years the overall average rate has been around CPI plus 0.9%.

We would propose this as a reasonable starting point for estimating long-term future earnings growth (we have rounded up to CPI plus 1.0% p.a.). We propose that this assumption reflects both inflationary and promotional increases and therefore we would remove the salary scale assumption which previously applied in addition to the salary increase assumption. The removal of the promotional scale simplifies our overall allowance for salary increases.

At the last valuation, we included a short-term overlay to the salary increase assumption to reflect short-term restriction in public sector pay. We are proposing not to include a short-term overlay at this valuation, particularly as in the short-term we expect an upward pressure on earnings from the proposed increases to the national living wage to 2020.

Therefore, we would propose an illustrative (neutral) salary increase assumption equal to CPI plus 1.0% p.a.

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Proposed central assumptions - discount rate

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, and the approach that is most appropriate will depend on the purpose of the valuation, the overall funding objectives and the risk appetite of the administering authority.

As outlined earlier in this document, we believe that the most appropriate starting point for a valuation that sets employer contribution rates is to consider the expected returns on the long-term investment strategy. We do this by grouping the various assets into broad classes, deriving an assumed return for each asset class and then working out the average based on the asset allocation between the groups.

When deriving the neutral returns for the asset classes, we will mainly be considering the return that can be achieved from passive investing. The rationale behind this is that any outperformance will then come through as "profit" rather than being anticipated in advance and there is also a practical reason which is simply that there is more information with which to make a robust assumption about future returns from passive investment across the entire asset class. The active/passive distinction is not straightforward for all asset classes but the above is the general principle.

Our approach is to consider a neutral estimate of the assumed investment return for each asset class and then make an overall explicit adjustment for prudence to the discount rate assumption, which is in line with our approach for most other LGPS funds.

Our approach is what could be called a "best-estimate minus" approach.

Consistency and Section 13 considerations

The discount rate is certainly an assumption where there is justification for variance between funds due to different investment strategies or different attitudes to risk leading to different levels of prudence in the assumption.

The discount rate used to provide results to the SAB on a standardised set of assumptions has not been confirmed, but we suspect it will be equal to the "SCAPE" rate used for unfunded schemes which was recently revised from CPI plus 2.8% p.a. to CPI plus 2.4% p.a. In theory this should have no impact on the discount rates used in the funded LGPS. However, the lower SCAPE rate is likely to have some bearing on the assumptions used by GAD for carrying out the Section 13 analysis for the 2019 valuation (i.e. they are likely to use lower discount rates in their analysis) and so is arguably another factor to consider when choosing a discount rate for the funding valuation.

This is considered in more detail later in this section.

Asset types

For the purposes of the 2019 valuation, we have considered the Fund's Investment Strategy Statement dated March 2017. We propose grouping the assets into the following types:

- Gilts
- Other bonds
- Cash
- Equities
- Property and infrastructure
- Multi asset credit

Where the assets do not have a widely-published objective market-based indicator of future returns, then we consider the characteristics and benchmark of each fund's investment in these asset classes to derive an assumption that we believe is appropriate and this is usually based on building up from the returns derived for simpler asset classes.

Our proposed neutral returns for these asset classes are set out below. We are aiming to propose consistent derivation methods between funds to help with the consistency objective but we are happy to consider changes to these, particularly if they can be locally justified.

Gilts

Redemption yields from gilts give an indication of the future rates of return and most funds typically invest in long-dated gilts so we can use these published rates. We propose to use the smoothed 20 year point of the Bank of England nominal gilt yield curve, consistent with the duration of an average LGPS fund's liabilities. **This gives an illustrative (neutral) assumption of 1.7% p.a. at 31 March 2019.**

For our index-linked gilt return assumption, we would propose to use the fixed-interest gilt assumption less any inflation risk premium. As we are proposing an inflation risk premium of zero, the assumption is the same as the fixed-interest gilt return assumption, i.e. 1.7% p.a.

This is consistent with the approach at the 2016 valuation.

Other bonds and fixed income

This asset class would generally be considered to consist of corporate bonds and other investable non-government debt. The yield on these can, in theory, be accessed directly from the market. Our starting point is to allow for 90% of the spread between the Merrill Lynch Non-Gilts AAA-A Over 15 year yield and the FTSE Gilts Over 15 year yield. **This would give a neutral assumption of 2.6% p.a. at 31 March 2019.**

This is consistent with the approach at the 2016 valuation.

Cash

The Fund always needs to hold cash in order to pay benefits although it might also hold it for tactical reasons. At the 2016 valuation, we used the smoothed Merrill Lynch 20 year LIBOR swap curve point. It can be argued that a 20 year time horizon is too long for short-term holdings in cash. In addition, LIBOR is to be discontinued by the FRC from 2021 and SONIA will replace it as the reference rate for swap transactions.

We would propose to use the current Bank of England base rate of 0.75% p.a. for simplicity.

However, as we understand, from the current ISS, that the Fund does not currently intend to hold a significant proportion of its assets as cash at any time; no weighting is being given to the assumed return on cash when calculating the discount rate.

Equities

Model

Unlike the previous asset classes, there is no direct market indicator of future equity returns and so some degree of judgement is required.

Given the extra risk and volatility from investing in equities compared to most other asset classes, it is reasonable to assume that long-term expected returns for equities will be higher than the other asset classes.

When setting this assumption, we take a cashflow-based approach and consider the return on a portfolio of equities as being equal to the dividends paid on these shares plus the growth in the value of the shares.

We also assume that the growth in the value of the equities will, over the long-term, be in excess of and linked to inflation i.e. if we assume that prices are going to increase at a faster/slower rate, we assume that there will be a corresponding change to equity values.

This means that our assumption is:



Finally, we compare the equity return assumption suggested by this model to other asset returns and to independent forecasts.

Region

We understand that a significant proportion of the Fund's equity holdings are global equities. Ideally, the model would therefore incorporate global factors (appropriately weighted between the different markets and allowing for any currency hedging). Previously we effectively used the UK model as a proxy for global equities and this gave similar long-term returns at 31 March 2016. However, the proportion of corporate earnings paid as dividends in the FTSE All-Share is currently at its highest level since 1993 and so we are concerned that this might be overstating longer-term dividend streams. Therefore, as discussed below, we propose to use global indicators. In our opinion, this should give a more appropriate view for the Fund's future equity performance.

We are conscious of the current and potential volatility in UK markets due to Brexit and as a result, we will be carrying out further regular reviews to check whether we believe that the model is still appropriate for future use or whether any adjustments are needed. This will be for the purpose of monitoring funding levels and future valuations rather than directly affecting the 2019 valuation.

Dividend yield

One of the effects of including the dividend yield in the equity return assumption is when equity values fall (so that the asset value falls) the dividend yield increases so the overall equity return and discount rate assumptions increase. Effectively, we assume that at least some of the fall in the asset value will be recovered in future i.e. the value of the assets that we need now to pay the accrued benefits (the liabilities) in future also falls. This also works the other way too (i.e. if there is an asset bubble, future assumed returns fall under our model) so this approach gives some automatic stabilisation when there are market shocks. This does mean that in a climate where equity values have fallen, which was the case towards the end of 2018, our equity return model gives higher assumptions than might be obtained from other models.

When the dividend yield increases in this way, it triggers a review whereby we consider whether under current market conditions we believe our model is still sufficiently robust, i.e. does it still give long-term assumptions that we are comfortable with and that are reasonable for the purposes of setting employers' contribution rates. As discussed above, we are concerned the dividend yield on the FTSE-All Share may be overstating longer-term dividend streams.

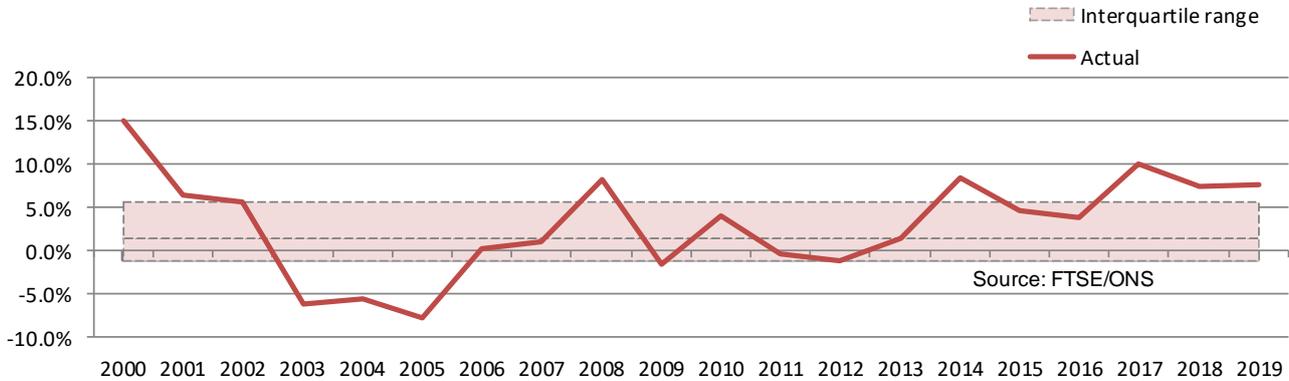
Therefore, as discussed above, we propose to use the FTSE All-World dividend yield which in our opinion should give a more balanced view of longer-term dividend streams, particularly given the Fund has a significant proportion of assets invested in global equities. We believe this provides a long-term assumption for equity returns that is reasonable for setting employers' contribution rates.

Real capital growth

The other building block for determining the equity assumption is the real capital growth assumption. At the last valuation, this was +1.2% for the neutral assessment of the real capital growth in relation to CPI i.e. the equity assumption was equal to the dividend yield plus the CPI assumption plus 1.2%.

As we have used a global dividend yield and a UK inflation assumption, it follows that our real capital growth assumption is global capital growth in relation to UK inflation. The next chart shows the capital growth from global equities based on the FTSE All-World index, relative to CPI, since the turn of the century, together with the inter-quartile range (i.e. the range of observations that account for 50% of all observations around the median).

Global equity returns from capital growth only, net of CPI - Rolling 5 Year Averages (% p.a.)



As we can see, equity capital returns are very volatile. The median value, observing the data since 2000, was around 1.5% p.a. above CPI, although there have been prolonged periods when the returns have been significantly different.

We believe therefore that a suitable neutral assumption for the capital growth assumption (in relation to CPI) is 1.5% p.a.

Equity assumption

Updating the dividend yield to be based on the FTSE All-World index and global real capital growth assumption of 1.5% p.a. would give a neutral equity assumption of 6.7% p.a. at 31 March 2019. This is summarised below:



Property and infrastructure

Intuitively, property would be expected to give long-term returns somewhere between those on gilts and equities. Further, the ability to review rents might mean there is some inflation linkage. At the 2016 valuation, our assumption was that property returns would be 3.5% p.a. above CPI with an upper limit of the equity return assumption. We propose to adopt the same assumption at the 2019 valuation.

We understand the Fund is also invested in infrastructure, for which we have adopted the same assumptions as our property assumption.

This gives a neutral property assumption of 6.1% p.a. at 31 March 2019.

Multi asset credit

The Fund is invested in a multi asset credit fund with a benchmark of LIBOR plus 4%-5% p.a. **We have therefore considered a neutral return equal to 4.75% p.a.** for this, equal to the current Bank of England base rate (as a proxy for short term interest rates) plus the outperformance of 4% p.a.

Expenses

At the 2016 valuation, we included a deduction of 0.1% to the discount rate assumption in order to allow for administration, oversight and governance expenses.

To allow for (passive) investment management expenses, we included a further deduction of 0.1% in the discount rate. In practice, this figure might be higher due to the use of active management but the aim is to more than cover these additional expenses by achieving excess returns.

The following table summarises the administrative expenses of the Fund over recent years (including oversight and governance costs), as disclosed in the Fund accounts:

Year	Fund assets at start of year (£000s)	Admin expenses over year (£000s)	% of Fund assets
2016/17	530,822	559	0.11%
2017/18	650,516	761	0.12%
2018/19	663,151	699	0.11%

Based on this, we propose to maintain a deduction to the discount rate of 0.1% in allowance for administrative expenses

Therefore our total expenses allowance, including an allowance for passive investment expenses, is proposed to be a deduction of 0.2% to the discount rate.

Allowance for prudence

Based on the methodology described above, the derivation of the above investment return assumptions would result in a neutral estimate – in other words assumptions that produce returns that are not overly pessimistic nor optimistic.

Where there is greater uncertainty in a particular assumption, such as the discount rate, the recommended assumption should include a margin for prudence. We feel that it is appropriate to include a prudence margin into the discount rate assumption to reflect this uncertainty.

Ultimately, the adjustment to allow for prudence is a subjective one, having considered:

- Views on the ability of employers to pay more later if required (the employer covenant)
- Attitude to risk and risk appetite of the administering authority
- Levels of volatility in the assumed asset returns
- Consistency of the prudence margin with the previous valuation.

The discount rate in real terms should also be considered in light of the SAB standardised comparative basis and estimate of the Section 13 basis that will be set by GAD.

The prudence allowance adopted at the 2016 valuation was 0.4%.

We would not recommend reducing the level of prudence from the previous valuation as we believe a deduction below 0.4% may not sufficiently improve the likelihood that returns on fund assets would exceed the assumed discount rate over the long term.

However, as discussed above, we have made a significant methodological change to our underlying equity model so that it incorporates global indicators rather than UK indicators. This results in a lower neutral assumption for returns on equities, and therefore a less optimistic discount rate compared to the methodology at the previous valuation.

Therefore, for the purposes of these illustrative assumptions, we have proposed to maintain a prudence allowance of 0.4%.

The final choice of prudence allowance will reflect discussions with the administering authority and investment advisers.

Combining returns

The principle behind setting the discount rate is that it reflects the actual investment strategy of the Fund so that we take the above base assumptions and combine them to get an overall discount rate. In doing this we can consider the current asset allocation or an allocation that reflects the long-term strategy. It is usually our preference to reflect the long-term strategy, where known.

Based on information provided by the Fund in a March 2017 Investment Strategy Statement, the long-term strategic benchmark allocation of the Fund is as follows:

Asset Class	Benchmark allocation
Gilts	10%
Other bonds	0%
Cash	0%
Equities	65%
Property and infrastructure	12.5%
Multi Asset Credit	12.5%
Total	100%

Therefore our discount rate assumption is calculated as follows:

Asset class	2019 allocation	Neutral assumption (p.a.)
Gilts	10%	1.7%
Other bonds	0%	2.6%
Cash	0%	0.8%
Equities	65	6.7%
Property and infrastructure	12.5%	6.1%
Multi asset credit	12.5%	4.8%
<i>Less expenses</i>		(0.2%)
Neutral return		5.7%
<i>Less prudence allowance</i>		(0.4%)
Prudent discount rate assumption		5.3%

At 31 March 2016, the discount rate was 5.5% p.a.

We can compare this discount rate to the "SCAPE" rate used for unfunded schemes which is likely to have some bearing on the discount rate used by GAD for carrying out the Section 13 analysis for the 2019 valuation. At the 2016 valuation, the Fund's discount rate was equal to CPI plus 3.1% p.a., which compared to a SCAPE rate of CPI plus 3.0% p.a. (the SCAPE rate was subsequently reduced to CPI plus 2.8%). The discount rate was therefore within acceptable bounds in GAD's analysis.

The SCAPE rate is now CPI plus 2.4% p.a. and we can reasonably expect that this will lead to a reduction in the acceptable discount rate bounds within GAD's analysis. Our proposed discount rate of 5.3% p.a. is equivalent to CPI plus 2.7% therefore maintains a similar gap between the SCAPE rate and the discount rate.

Proposed central assumptions – statistical

The key demographic assumption required for determining the pension liabilities is the post-retirement mortality assumption. However, we also need to consider the retirement age assumptions as well as pre-retirement assumptions such as withdrawals and transfers out. As previously mentioned, we propose to incorporate all margins for prudence in our financial assumptions and therefore the assumptions detailed in this section will be used in both our neutral and funding basis proposals.

Post-retirement mortality

The Fund should review their post-retirement mortality assumptions at each valuation, taking into account all available evidence, to ensure they remain appropriate for the Fund.

There are two aspects to consider in determining appropriate post-retirement mortality assumptions:

- Choosing an appropriate mortality assumption applicable today taking into account characteristics of the Fund members, and;
- Making an appropriate allowance for mortality to improve in future.

Base rates

The current funding basis adopts the S2PA mortality tables with a multiplier of 80% for males and 85% for females. For dependant members, the tables adopted were 95% of the S2PMA tables for males and 100% of the S2DFA tables for females.

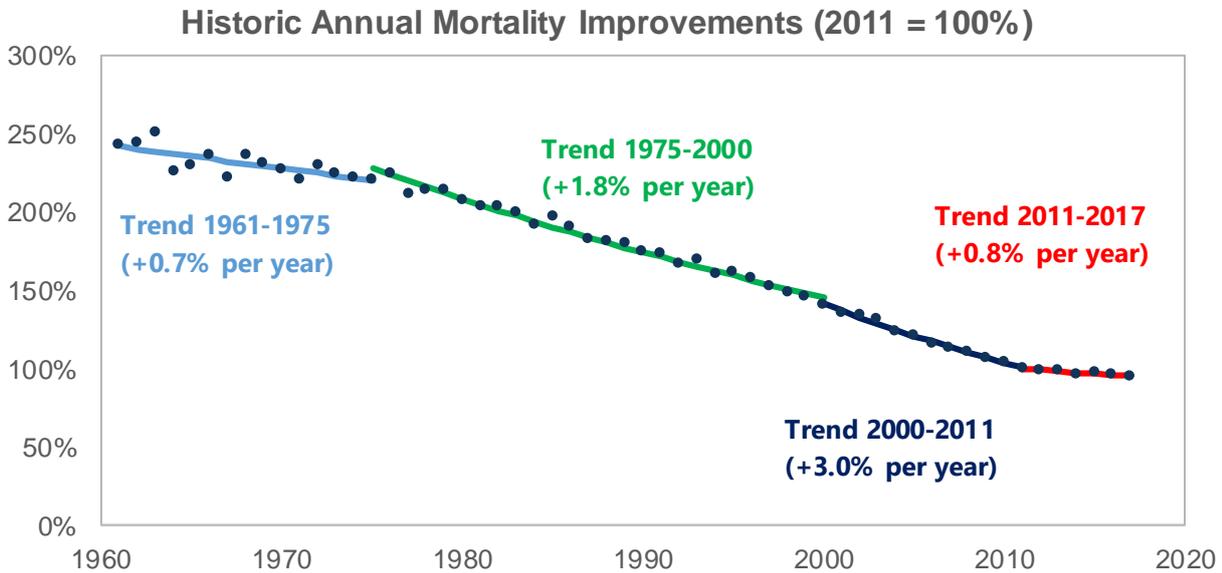
These tables were chosen based on a full analysis of longevity experience in the years leading up to the 2016 valuation, which was conducted by our specialist longevity team. At the 2019 valuation, a similar analysis will be carried out and so the precise base tables to be adopted will be confirmed at a later date.

Model

At the 2016 valuation, to project mortality into the future we used the CMI_2015 projections model, with a long-term improvement of 1.5% p.a. The model is updated annually by the CMI to take into account the latest available data.

The CMI_2018 model was released on 7 March 2019. The latest version continues the post-2011 trend of low improvements and subsequent falls in projected life expectancies – in particular, there were nil improvements in mortality over 2018.

The following chart shows the trend in annual mortality improvements, in particular, the levelling out of mortality improvements over the last 10 years.



Source: Barnett Waddingham calculations using Office for National Statistics data

In the 2016 model, the CMI introduced a “smoothing” parameter to the model, which allows the user to adjust how much weight is placed on recent mortality data. This was set at a core value of 7.5 in the 2016 model and this core value has been reduced to 7.0 in the 2018 model (thus placing more weight on recent data). We have no reason to suspect that 7.0 is an inappropriate choice as the trend for low improvements has been observed for a number of years now and so we would propose to use 7.0.

In the 2018 model, a further parameter was introduced to the model – “the initial addition to mortality improvements” with a core value of 0%. This parameter makes it easier for users to adjust the Model to better fit the population they are modelling, in particular if there is evidence that mortality improvements of pension scheme members have been higher than those of the general population (the CMI model is based on general population data). As this is a new parameter in the model, we propose to retain the core value of 0% for now but will assess the suitability of it further and advise if we believe an adjustment is justified.

We therefore, currently, plan to adopt the 2018 version of the CMI model without any adjustments to the core values.

Long-term rate of mortality improvements

As well as choosing to use the CMI model, we need to specify the long-term rate of mortality improvements. The Fund used a long-term rate of improvement of 1.5% p.a. at the 2016 valuation, as did most LGPS funds. Although we are also aware that a significant number of LGPS funds used a long-term rate of improvement of 1.25% p.a.

It is a highly subjective assumption and hard to place a definitive value on as it depends on factors such as improvements in medical technology and societal behaviours so it crosses a range of disciplines. From survey information from the Pensions Regulator, we understand around 70% of private sector pension schemes adopt an assumption of 1.5% p.a. Most private sector pension schemes include an allowance for prudence in their long-term rate of mortality improvement assumption and therefore there is an argument that a best estimate assumption would be lower than this. As we aim to include prudence in the discount rate only, **we would propose to decrease the long-term rate of improvement used in the model to 1.25% p.a.**

Retirement ages

Members can be subject to multiple retirement age regimes in the LGPS. At the last valuation, we assumed that members would retire at the average age that their various tranches of benefit are payable from. For example, if a member has a large amount of pension payable from age 60, it is likely to be financially advantageous for them to take their benefits closer to age 60 than to age 65, or later. However, if most of their benefit is payable from their State Pension Age and they only have a small amount of pension available without reduction at earlier ages, they are likely to retire later.

We have performed an analysis of retirement patterns using data covering the two years to 31 March 2018 for the LGPS funds that we advise (where data was made available). The analysis revealed that the assumption was not materially different to the actual experience of retiring members, over all funds that we analysed.

Therefore, for the 2019 valuation, we propose an assumption that members retire at the average of each tranche retirement age, weighted by pension, which is the same method assumed in 2016.

Transfer out decrement

No allowance was made for transfers out at the 2016 valuation, as it was judged to be immaterial. **We will carry out an analysis of transfers out over the previous three years using data from our LGPS fund clients to determine whether this approach remains appropriate for the 2019 valuation.**

Pre-retirement decrements (withdrawals, ill-health retirement, death in service and salary scales)

At the 2016 valuation, we used assumptions that were equal to those assumed by GAD when they carried out their 2013 valuation of the LGPS for "dry-run" Section 13 purposes. The rationale for these was generally that it was in line with the most recent study of national LGPS experience that they had carried out.

GAD has since updated the experience analysis and tables used as part of their 2016 valuation of the LGPS for cost management purposes (currently draft at the time of writing).

Death in service

Analysis will be carried out as part of the mortality investigation to ensure the goodness of fit of GAD's pre-retirement mortality tables to the experience of the Fund.

Ill-health retirement

GAD's analysis of the overall LGPS experience in the three year period to 31 March 2016 also suggests a drop in numbers of ill-health retirements compared to the assumptions used for their 2013 valuation of the LGPS.

GAD's updated assumption takes into account the six years of experience from 2010 to 2016 (and therefore recent experience is smoothed out with earlier data).

Salary scale

As discussed in the "Salary Increase" section, we propose to remove our salary scale assumption and include promotional increases within our general salary increase assumption.

Therefore, we currently plan to adopt the updated GAD assumptions used as part of their 2016 valuation of the LGPS for cost management purposes, with the exception of the salary scale assumption, which we propose to remove.

50:50 membership

Some active members may elect to reduce their accrual rate in return for paying lower contributions. Actual take-up of this has been very low (initial analysis of our funds' data suggests around 0.5% of active members). We are aware of the work being undertaken by SAB to encourage take up of membership in the 50:50 scheme but at the moment we do not consider there to be enough evidence to change our assumption from that used in 2016.

We will assume that members will continue to participate in their current section and this is the same assumption that was used in 2016.

Commutation

At the 2016 valuation, we assumed that members would, on average, exchange pension to get 50% of the maximum available cash on retirement.

We have performed an analysis using the data for the two years to 31 March 2018 for the LGPS funds that we advise (where data was made available). **The analysis suggested that 50% continues to be an appropriate assumption for the LGPS funds we advise.** We will revisit this analysis later in the year when we have data from more funds available.

Family statistics

At the 2016 valuation, we assumed that 75% of males and 70% of females have an eligible dependant at retirement or earlier death. This was based on ONS projections to 2023 (published as at 2014). The ONS published a snapshot of population data in 2017 for married or cohabiting partners and this appears broadly in line with the assumption made at the 2016 valuation. **Therefore we propose to maintain this assumption for the 2019 valuation.**

We will also assume that male members are three years older than their partners and this is the same as at the 2016 valuation.

Summary of assumptions

In this paper we have summarised the assumptions at 31 March 2019 (based on market conditions up to and including 30 June 2019) that we would propose to use for the 2019 valuation. We have also considered in each case an appropriate neutral assumption. The assumptions used previously and discussed in this document are given overleaf.

The longevity analysis is still underway and the results of the analysis will be included alongside our final assumptions advice.

Draft

Assumption	2016 valuation	2019 valuation, neutral	2019 valuation, proposed
Market date	31 March 2016 (market conditions known to 30 June 2016)	31 March 2019 (market conditions known to 30 June 2019)	31 March 2019 (market conditions known to 30 June 2019)
CPI inflation	2.4% p.a.	2.6% p.a.	2.6% p.a.
Salary increases	3.9% p.a. with a short term overlay for salaries to increase in line with CPI until 31 March 2020	3.6% p.a.	3.6% p.a.
Discount rate	5.5% p.a.	5.7% p.a.	5.3% p.a.
Post-retirement mortality			
Base rate	80%/85% of S2 tables	TBC	TBC
Model	CMI_2015	CMI_2018	CMI_2018
Long-term rate	1.5% p.a.	1.25% p.a.	1.25% p.a.
Retirement assumption	Weighted average	Weighted average	Weighted average
Transfer out assumption	None	TBC	TBC
Pre-retirement decrements (excl ill-health)	GAD 2013 scheme val	GAD 2016 scheme val (no salary scale)	GAD 2016 scheme val (no salary scale)
50:50 assumption	Member data	Member data	Member data
Commutation	50% of Max	50% of Max	50% of Max
Family statistics			
% with qualifying dependant	75% (M), 70% (F)	75% (M), 70% (F)	75% (M), 70% (F)
Age difference	3 years	3 years	3 years

Final comments

This document has been provided as background information to the triennial valuation of the Fund and detailed information regarding the funding model and the assumptions proposed.

The assumptions are subject to change following further discussions with the administering authority and the Fund's investment advisers, where appropriate. The demographic assumptions will be tested for suitability against experience in the Fund once the longevity analysis is complete and the financial assumptions will be based on market statistics to 30 June 2019.