



Government
Actuary's
Department

Local Government Pension Scheme (Scotland)

Cost-cap valuation as at 31 March 2017
Assumptions, methodology and data

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At GAD, we seek to achieve a high standard in all our work. We are accredited under the Institute and Faculty of Actuaries' Quality Assurance Scheme. Our website describes [the standards](#) we apply.



Purpose

This report was commissioned by the Scottish Public Pension Agency (SPPA) and is addressed to them. We understand it will be made available to the Scheme Advisory Board.

The purpose of this report is to set out our proposed approach to the cost cap valuation as at 31 March 2017 and assist SPPA with their decision making. It is important that SPPA test the assumptions and methodology adopted for the 2017 valuation in light of the transitional protection remedy. SPPA will also need to ensure it is content with the approach we have taken in respect of eligibility of members for the transitional protection remedy.

The report provides advice to SPPA on these matters, as required by Direction 55.

We would be pleased to provide advice on any alternative approaches which SPPA would like to consider in relation to any of the proposals in this report.

SPPA should consult with stakeholders as required on the contents of this report and confirm to GAD that it is content with the assumptions, methodology and approach to data that SPPA will adopt for the 2017 cost cap valuation.

Next steps

SPPA should consider the following recommendations and either confirm that they are content or instruct us to adopt alternative approaches:

- 1 No changes from the 2017 valuation assumptions
- 2 The calculation methodology we recommend, as set out in section 2
- 3 Derivation of member eligibility from available data, as set out in section 3



1. Assumptions



2017 assumptions

The assumptions set by SPPA used in the 2017 cost cap valuation report must be the same as those adopted by SPPA for the 2017 valuation (see GAD's 24 March 2020 Advice on assumptions), **unless those assumptions are not best estimates or are insufficient for the purpose as a direct result of the impact of the transitional protection remedy.** This may apply because the original 2017 assumptions:

1. May be insufficient for the 'better-of' calculations we need to perform to value the remedy
2. May not be best estimate because member behaviour may change in light of the remedy

SPPA should consider the following recommendation and either confirm that they are content or instruct us to adopt alternative assumptions:

Recommendation

We recommend no changes from the 2017 valuation assumptions.

We set out further details in Appendix 1A to 1F.



2. Methodology



Calculation methodology

SPPA should consider the following recommendations on calculation methodology and either confirm that they are content or instruct us to adopt alternative approaches:

Recommendations

- A materiality limit of 0.25% pay (SPPA may propose an alternative)
- The LGPS transitional protection remedy, the amended statutory underpin, applies at the underpin date as set out in the SPPA consultation Local Government Pension Scheme (Scotland) Addressing discrimination – amendments to the statutory underpin
- Transitional protection remedy costs are assessed for the period 2015-2022, with annual costs in respect of 2015-17 assumed to be equal to the costs in 2017-18
- There is no allowance for the cost of reinstating members who opted out of the pension scheme
- Tax and other impacts are excluded from the calculations

We set out further details in Appendices 2A to 2G.



Remedy cost - components

The Directions list five components of the transitional protection remedy costs. The following table sets out a summary of the calculation of each of these components, based on the methodologies above.

Remedy cost component	Calculation
Change in liabilities for the remedy period	Based on amended statutory underpin (see Appendix 2B)
Change in liabilities pre remedy period	Nil: no changes to assumptions
Change in liabilities post remedy period	Not applicable (see Appendix 2F)
Change in member contributions during the remedy period	Not applicable (see Appendix 2D)
Change in member contributions post remedy period	Not applicable (see Appendix 2D and 2F)



3. Data: Member eligibility for the transitional protection remedy



Determining members in scope for remedy

Summary of methodology

It is critical to identify members in the 2017 valuation data who are in scope for the transitional protection remedy. Broadly, as set out in the SPPA consultation, members in service before 1 April 2012 and on or after 1 April 2015 are in scope of the amended statutory underpin. We have identified the following member records as being in scope of the amended statutory underpin (i.e. transitional protection remedy):

- Date joined Fund prior to 1 April 2012, and
- Post-2015 CARE benefit accrual present

However, this will not always accurately identify members in scope, for the reasons set out on the next slide.

Following discussions with SPPA, we do not expect these limitations to have a material impact on the results and we do not require any additional data to prepare the cost cap valuation report.



Determining members in scope for remedy

Limitations of methodology

We have identified the following potential sources of inaccuracy:

- a. The Date of Joining Fund is after 1 April 2012 and reflects the date joined current employment but the member may have had previous qualifying employments which commenced prior to 1 April 2012.
- b. The Date of Joining item is recorded differently by different administrators (for some it is date joined LGPS, for others date joined the specific fund).
- c. Date of Joining is before 1 April 2012 but the member may have had a disqualifying breaking service (for example, five years or more) or was not an active member of the scheme as at 31 March 2012 or 31 March 2015.
- d. The Date of Joining is after 1 April 2012 and reflects the date first joined scheme but the member may have had previous service in a different scheme which brings them in scope for the transitional protection remedy.



Summary

Summary of active data as at 2017

228,000
Active LGPS member records as at 31 March 2017

£4.5 billion
Active salary roll as at 31 March 2017

Determining members in scope for remedy

 Date joined Fund prior to 1 April 2012, and Post-2015 CARE benefit accrual present

Members in scope for remedy

135,000
Active LGPS member records in scope for remedy

68%
Of the active membership as at 31 March 2017 is in scope for remedy (based on actual pay)

Data uncertainty

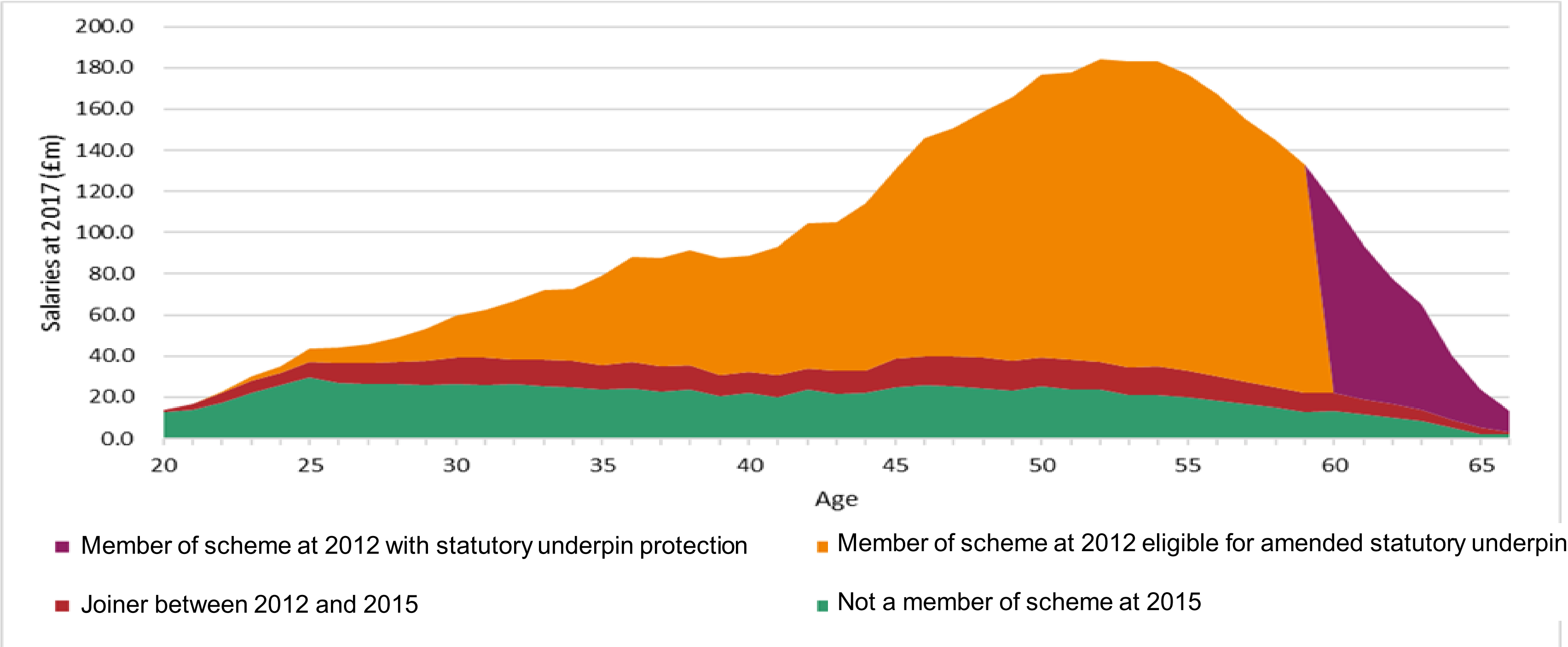
There is **residual data uncertainty** in relation to members in scope for transitional protection remedy which could affect the valuation results.

An impact of between **-0.2% and +0.2%** on the cost cap contribution rate.

The sensitivity to the left shows the impact on the cost cap contribution rate if 5% more or less active members are eligible for remedy than assumed.



Membership in scope for amended underpin

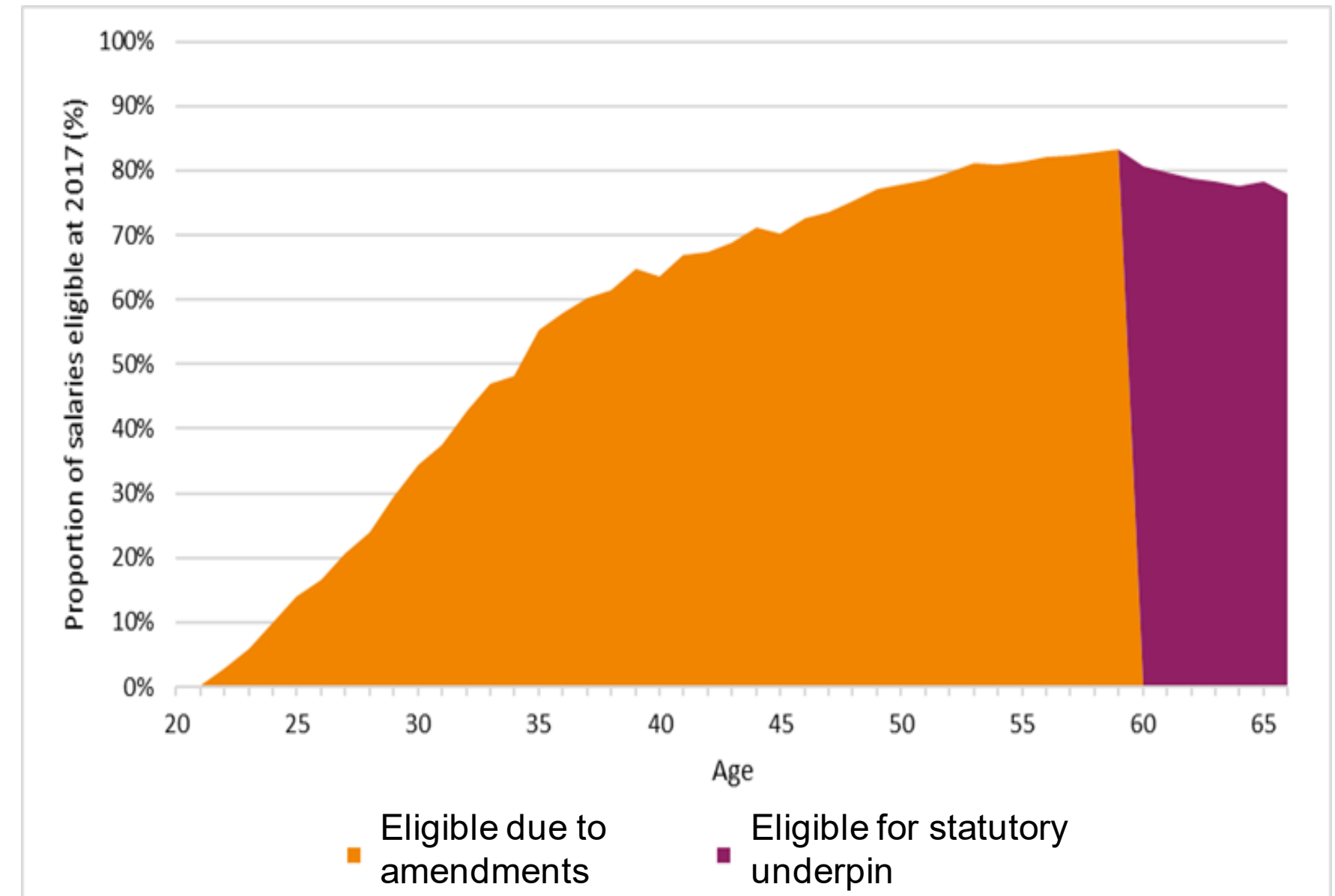


Summary statistics at 31 March 2017 – Actives

Protection status as at 31 March 2017

Section	Number of records (000s)	Salary (£bn)
Member of the scheme on 1 April 2012 – statutory underpin protection	18	0.4
Eligible for statutory underpin due to proposed amendments	117	2.7
Ineligible and joined between 2012-2015	45	0.8
Ineligible and joined after 1 April 2015	48	0.7
Total	228	4.5

Proportion of members eligible for the transitional protection remedy

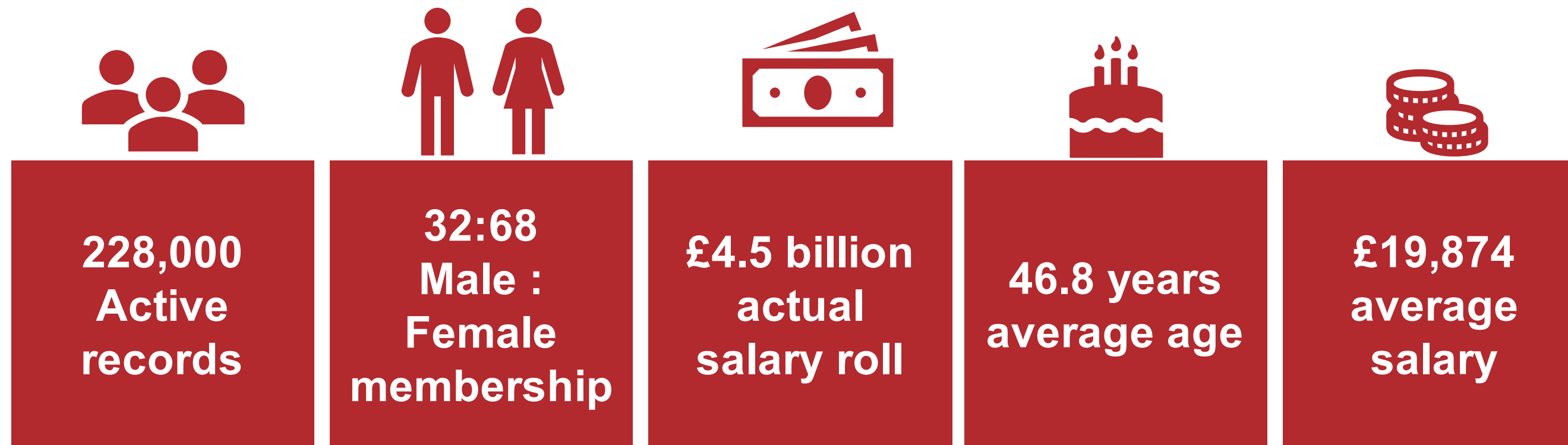


4. 2017 data: quality and uncertainties



Active data as at 31 March 2017

Summary statistics



Data quality

2017 valuation data adjustments

Data was received from administering authorities and their actuarial advisors for the 2017 valuation. This was generally reasonable for the purposes of the valuation calculations. However, some aspects of the data were incomplete and/or unreliable for certain elements of our calculations. The results of this valuation therefore rely on assumptions and adjustments in respect of incomplete and/or unreliable data. As stated in our Pre-McCloud report dated 24 June 2022, in GAD's opinion these adjustments are reasonable and appropriate for the purpose of this actuarial valuation. However, it should be noted that the results in the 2017 valuation reports might have been different if more reliable data had been available. GAD have subsequently received data for the valuation as at 31 March 2020, and the process of checking that data and reconciling it with the data as at 31 March 2017 is ongoing.

Where can I find out more?

Details of the 2017 valuation data provided including any checks and adjustments made to the data are set out in the 2017 valuation data report. Appendix F of that report gives an indication of the scale of uncertainty introduced into the valuation results as a result of missing data.



5. Reliance and limitations



Limitations

Data

As set out in the 2017 data report issued on 24 June 2022, GAD has relied on data and other information supplied by or on behalf of administering authorities, as described in the report. GAD has not sought independent verification around its general completeness and accuracy.

Any checks that GAD has made are limited to those described in the report, including those relating to the overall reasonableness and consistency of the data. These checks do not represent a full independent audit of the data supplied.

Throughout this report the totals given for summed data may not be exactly the same as the sum of the components shown due to rounding effects.

Macro level risks

The Directions permit changes to the 2017 valuation data and assumptions only as a direct result of the impact of the transitional protection remedy. In preparing this advice, we have therefore not made any adjustments for material macro-level risks or uncertainties, such as climate-related risk.



Reliance, sharing and compliance

Reliance and sharing

This report has been prepared for the use of SPPA and will be made available to the Scheme Advisory Board.

No other person or third party is entitled to place any reliance on the contents of this report, except to any extent explicitly stated herein. GAD has no liability to any person or third party for any action taken or for any failure to act, either in whole or in part, on the basis of this report.

Compliance statement

This report has been prepared in accordance with the applicable Technical Actuarial Standards: TAS 100 and TAS 300 issued by the Financial Reporting Council (FRC). The FRC sets technical standards for actuarial work in the UK.



Appendix 1: Assumptions



Appendix 1A: Direction requirements

The Directions require that assumptions set by SPPA used in the 2017 cost cap valuation report must be the same as those adopted by SPPA for the 2017 valuation (see GAD's 24 March 2020 Advice on assumptions), **unless those assumptions are not best estimates or are insufficient for the purpose as a direct result of the impact of the transitional protection remedy** [Direction 55]. Where this applies, SPPA must determine new assumptions:

- having obtained advice from GAD
- following such consultation of such persons (or representatives of such persons) as SPPA considers appropriate
- that are best estimates, and do not include margins for prudence or optimism
- that have regard to:
 - previous valuation assumptions
 - the analysis of demographic experience in the 2017 valuation report
 - relevant data from any other source
 - any emerging evidence about historic long-term trends or long-term trends expected in the future

Appendix 1B: Assumptions not affected by remedy

The following summarises assumptions set by SPPA which we have not considered further as part of this work on the basis that we see no reason why they would be inappropriate as a direct result of the transitional protection remedy:

- Mortality before and after retirement
- Ill-health retirement
- Proportion married / partnered
- Age differences between spouses / partners
- Commutation of pension for a lump sum in excess of any defined lump sums



Appendix 1C: Age retirement

The 2017 age retirement assumptions make no explicit allowance for whether or not members are eligible for the statutory underpin. This reflects that in practice, very few of the members originally eligible for the underpin were expected to receive an uplift.

Section 5 of the 2017 valuation Advice on assumptions provides more detail on how the age retirement assumptions adopted were derived.

As a result of the transitional protection remedy, those newly eligible for amended statutory underpin protection could receive higher benefits, which could change retirement patterns influencing the cost of remedy.

Analysis

Our analysis has shown the results of the 2017 valuation was relatively insensitive to small changes in the retirement assumption. We therefore recommend that the existing age retirement assumptions continue to be adopted.



Appendix 1D: Salary scales

For the purposes of an actuarial valuation, it can be appropriate to set a long-term assumption that reflects the 'average' expected experience of scheme members. However, this does not take account of more granular variations in pay growth, which may impact on the valuation of an underpin.

Analysis

The original 2017 valuation assumptions do not differentiate between members. We have therefore investigated whether adopting three alternative salary scales (low/medium/high) and applying these to the population in-scope of the transitional protection remedy of a typical scheme would materially impact on the transitional protection remedy cost.

Our analysis has shown the impact of such a change in the salary assumption would be immaterial to the results of this valuation. We therefore recommend retaining the original salary scale assumptions.



Appendix 1E: Withdrawal

Like salary scales, different groups of members may have withdrawal rates that are higher or lower than the average adopted at the 2017 valuation. In theory, this could affect the cost of the transitional protection remedy.

Analysis

Although it would be possible to further refine the withdrawal assumption by splitting the population into groups (low withdrawal rates, medium withdrawal rates, high withdrawal rates), we would not suggest further work in this area because:

- The analysis we have carried out on salary scales indicates the impacts of changes to salary scale are immaterial. Sensitivity analysis indicates that the transitional protection remedy cost is less sensitive to withdrawals than salary scales.
- The existing withdrawal assumption provides for a probability distribution of withdrawals at each future age, which is more refined than the existing salary scale assumptions and therefore should already better reflect differences between members than the salary scale assumptions.



Appendix 1F: Turnover

‘Turnover’ is a collective term for the set of assumptions we use to project a population of active members. As part of this valuation, we will project the number of members who are eligible for the transitional protection remedy from the data as at 31 March 2017 out to 31 March 2022. The original valuation assumptions are long-term assumptions set with the purpose of valuing the accrued liabilities at 31 March 2017, and allowed for decrements over all future service, not just for the period to 2022. It is therefore appropriate to consider whether the 2017 valuation assumptions are appropriate for projections over the period to 2022.



Analysis

We have considered the appropriateness of the projection of the 2017 data using our valuation assumptions for typical schemes, by comparing the projected run off after the valuation date with the known run off before the valuation date. Projected future run offs are generally below the known past run offs, but we think this outcome is reasonable because:

- Past run offs would have included a high number of recent joiners leaving the scheme, we would expect lower turnover in the transitional protection remedy group after 2017 because (by definition) this group will have at least 5 years' qualifying service.
- We were unable to analyse age and duration rates of withdrawals over 2014-17 due to data limitations. However, the number of withdrawals and age retirement in 2014-17 were typically above 2011-14 experience. The 2017 assumptions reflected the pre-2014 experience, and so it was assumed that withdrawals would not remain at their higher 2014-17 rates. This is consistent with the outcome in the projections: run offs in 2017-20 are generally below the known run off from 2014-17.

We are therefore content that the original long-term projection assumptions remain appropriate for the population in scope of the transitional protection remedy.



Appendix 2: Methodology



Appendix 2A: Materiality limits

In preparing the valuation results, we may adopt specific simplifications provided they are not expected in aggregate to have a material impact on the valuation results. In this context, we propose that an estimated aggregate impact of less than 0.25% of pay would be regarded as immaterial. SPPA should let us know if they would like us to work to an alternative materiality limit; in particular it may be appropriate to work to a tighter limit if the valuation results are close to the cost cap ceiling or floor.

Details

The impact of a simplification is the estimated difference between the valuation results (as calculated using the simplification) and the valuation results if calculated in full detail. Such simplifications may relate to the data requested, the form of assumptions adopted, or the calculations performed. For example, the liabilities in respect of historic added years contracts may be sufficiently small that it would be disproportionate to value them in the same level of details as other liabilities, so we may adopt simplifications.

Note that the data used and the assumptions adopted have a much greater impact on the valuation results. These impacts are discussed in our 2017 data report and in appendix C of the 2017 valuation advice on assumptions respectively.



Appendix 2B: Member underpin

Under the Directions, eligible members accrue benefits in the reformed 2015 CARE scheme, but benefit from the amended statutory underpin protection for the remedy period. We assume that the underpin is operated as set out in the SPPA consultation [Local Government Pension Scheme \(Scotland\) Addressing discrimination – amendments to the statutory underpin](#).

Details

We have valued the remedy benefits by projecting the member's benefits for the remedy period both according to the final salary underpin and in the 2015 CARE scheme. Benefits are valued in each contingency (generally date of leaving active service, or age 65), at each future date and for each eligible individual, using the same demographic assumptions (eg retirement ages) for both calculations. In line with the consultation proposals, members are assumed to retain their ongoing 'final salary link' after 31 March 2022. The higher resulting amount is used to determine the value of remedy benefits.



Appendix 2C: Remedy benefits accrual period

The costs of remedy are assessed for the remedy period between 1 April 2015 and 31 March 2022, calculated as follows:

- 1 April 2017 to 31 March 2022: Costs are calculated prospectively based on membership data as at 31 March 2017.
- 1 April 2015 to 31 March 2017: Annual cost assumed to be in line with cost for future service.

Details

The direct calculation of costs for the period 2015 to 2017 is challenging both in terms of data requirements and calculation methodology. Since the data we would require is unlikely to be available and the overall impact of this period is small compared with the overall uncertainty in the calculation, the approach appears the most reasonable and practical.



Appendix 2D: Member contributions

Unlike many other public service pension schemes, all LGPS members joined the reformed CARE scheme from 2015 and paid employee contributions determined using the same contribution tiers rates regardless of whether they were eligible for underpin protection.

Therefore, there are no changes in member contributions during or after the remedy period to include in the transitional protection remedy cost.



Appendix 2E: Opt-outs

Some individuals would have been eligible for the transitional protection remedy but opted out of the scheme. We understand that members who opted out due to the changes to the pension scheme may be eligible to apply to have their opt-out reversed and benefits reinstated. This may lead to an additional cost for accrual prior to 2017 and may also affect the cost of benefits accruing after 2017.

Analysis

Although there is a potential cost, we recommend making no allowance for these additional liabilities. This is on the basis that we have limited data on which to assess the number of members who would be eligible for this reinstatement, and what evidence we do have indicates costs are unlikely to be material.



Appendix 2F: Post-2022 benefits

Under the rules governing the existing underpin, no further underpin dates will arise beyond 31 March 2022, as this is the last date a protected member can reach their 2009 Scheme NPA.

Under SPPA proposals, all eligible members will be given underpin protection from 1st April 2015 to 31st March 2022 (or to the members' underpin date, where this is earlier). From 1st April 2022 it is proposed that all service in the LGPS will be on a career average basis, with no underpin.

Therefore, there are no changes in post-2022 benefit accrual to include in the transitional protection remedy cost.



Appendix 2G: Exclusions

The calculated costs of remedy make no allowance for the following:

- Any tax impact on members or HMRC, consistent with the treatment at the 2017 valuation
- Any impact of tax compensation schemes associated with the transitional protection remedy
- Members' additional voluntary contributions or transfers-in, the value of which are assumed to be unchanged as a result of transitional protection remedy
- Pension debits and credits on divorce, which are assumed to be cost neutral to the scheme
- Any adjustments made in respect of Public Sector Transfer Club transfers

