Local Government Pension Scheme (Scotland)

Actuarial valuation as at 31 March 2014

Report on methodology

Date: 4 January 2016

Authors: Michael Scanlon FIA
John Bayliss FIA

Contents

1 Introduction

1.1 This report has been prepared by the Government Actuary's Department (GAD) in its capacity as actuarial advisor to the Scottish Public Pensions Agency (SPPA) in connection with the Local Government Pension Scheme Scotland (LGPS (Scotland)).

1.2 The purpose of this report is to summarise certain miscellaneous assumptions and methodologies adopted for aspects of the valuation calculations. It also explains why the approaches taken are necessary and their financial impact on the valuation results.

1.3 Data and demographic assumptions to be used for the valuation are the subject of separate reports.

1.4 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.

1.5 HM Treasury (HMT) Directions ("the HMT Directions"), made under the Public Service Pensions Act 2013, provide the legal framework for carrying out the valuation. References to the 'Directions' in this report are in respect of these Directions, specifically 'The Public Service Pensions (Valuations and Employer Cost Cap) Directions 2014 as amended[1].

1.6 This report is intended solely for the use of SPPA. We are content for SPPA to release this report to third parties, provided that:

> it is released in full

> the advice is not quoted selectively or partially

> GAD is identified as the source of the report, and

> GAD is notified of such release.

1.7 Third parties whose interests may differ from those of SPPA should be encouraged to seek their own actuarial advice where appropriate. GAD has no liability to any person or third party for any act or omission taken, either in whole or in part, on the basis of this report.

[1] Amendments include all those made up to and including The Public Service Pensions (Valuations and Employer Cost Cap) (Amendment) (No. 2) Directions 2015

2 Active membership projections

2.1 The Directions require the actuary to calculate the cost of benefits accruing over the period 1 April 2017 to 31 March 2020.

2.2 The cost of benefits is a function of age and salary so the profile of the active membership over the period affects the expected cost of the benefits.

2.3 The Directions therefore implicitly require the actuary to determine the expected active membership up to 31 March 2020 in order to determine the valuation results. However, for a practical application of the methodology we have focussed on the membership of the Scheme as at 31 March 2017 and 31 March 2020.

Projecting the active membership of LGPS (Scotland) to 31 March 2020

2.4 It is necessary to separately project the membership at the valuation date to the start and end of the implementation period (31 March 2017 and 31 March 2020) to enable the valuation results to be calculated.

2.5 There are two main alternative approaches which could be used to determine the active membership at future dates:

(i) Assume the active population remains relatively stable by total salary roll at each age.

(ii) Project forward the 31 March 2014 data, and allow for expected new members joining at future dates using the valuation demographic assumptions. Naturally this will tend to alter the profile over time in terms of age and salary.

2.6 The active membership at 31 March 2014 is broadly unchanged from 31 March 2011. The number of active members in the LGPS (Scotland) in future depends on many factors, including the decisions of local authorities and other participating employers, and the impact of policies such as new Fair Deal. SPPA do not perform projections of the future number of members of LGPS (Scotland).

2.7 This is a workforce issue and we have sought input from SPPA. SPPA have advised us to assume that the payroll of LGPS (Scotland) active members remains constant (in 2014 earning terms) in the period to 2020.

2.8 Consequently option (i) above is most appropriate. This assumption means that the overall profile of the membership in terms of distribution of pay by age and gender will remain stable over the period from the effective date to the end of the implementation period (31 March 2020). Option (ii) would require an explicit assumption about the number of redundancies in each year from 1 April 2014 to 31 March 2020.

2.9 If an alternative assumption were adopted the employer cost cap determined as part of the valuation would be likely to differ. In general any assumption which results in an ageing of the workforce will result in a higher employer cost cap being calculated and vice versa: increase the average age of the members by 1 year would increase the employer cost cap by about ½% of pay.

2.10 In conjunction with overriding assumption above we also allow for a proportion of the existing membership to leave each year, and be replaced by new entrants, in accordance with the assumptions recommended for the valuation. Although these run off projections affect the employer contribution rate (because some existing members are assumed to have different retirement patterns than those for new entrants), they do not have any impact on the employer cost cap.

2.11 Charts 2 and 3 below illustrate the assumed pattern of new entrants.

Summary of the Scheme membership as at 31 March 2017 and 31 March 2020

2.12 We have projected the expected membership of the scheme as at 31 March 2017 and 31 March 2020 in line with the method described above. This maintains the average age (weighted by salary[2]) of active members at 46.6 years throughout the projection period.

2.13 The charts below summarise the active membership projected to these dates. For valuation purposes, we grouped members by Critical Retirement Age (CRA), which represents the age at which members are able to take benefits unreduced. Members were categorised as either CRA 60 or CRA 61-65 because our analysis showed little difference in retirement patterns between those members with CRA greater than 60.

Chart 1: 2014 membership profile by pay

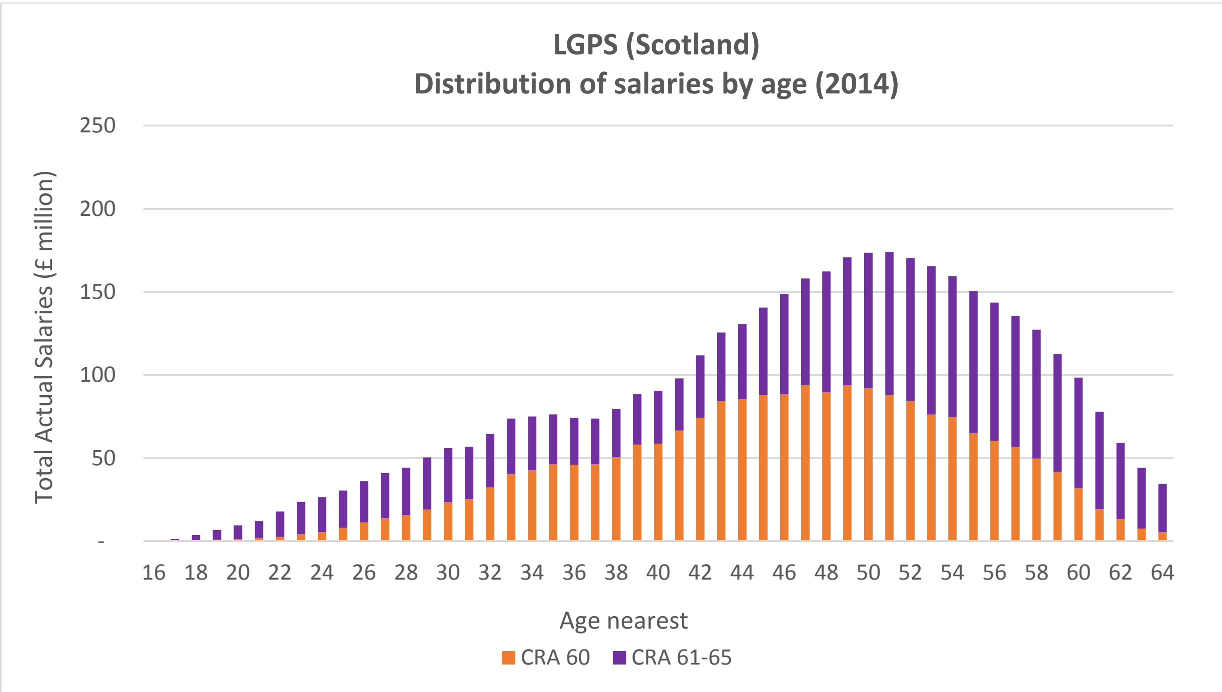


Chart 2: 2017 membership profile by pay

[2] Weighting by salary gives a more relevant average age for the purposes of calculating liabilities.

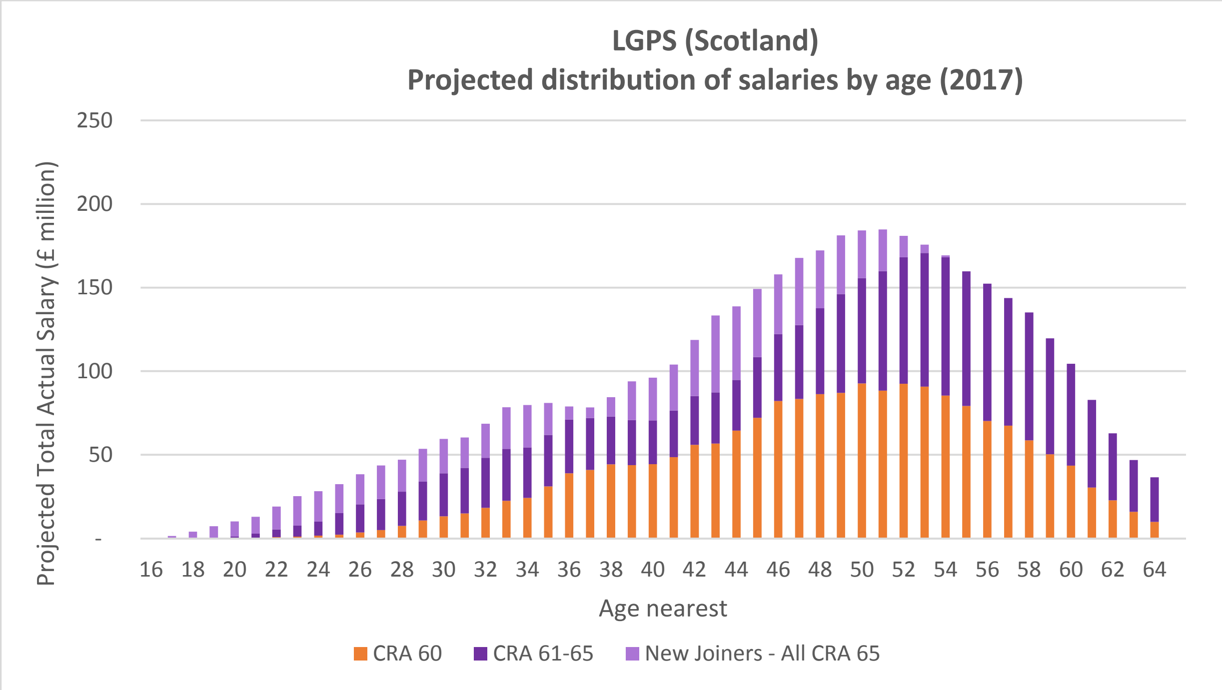
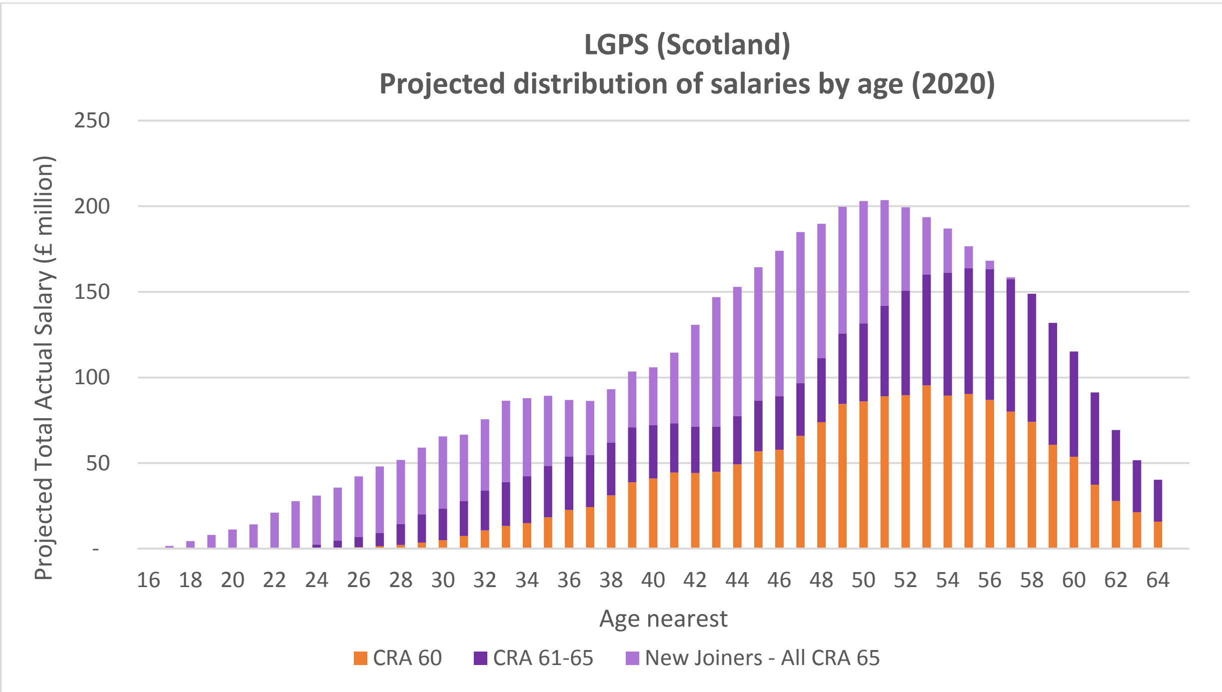


Chart 3: 2020 membership profile by pay



The charts above show that the overall “shape” of the membership profile remains stable under the projections, as younger new entrants come in to replace people aging and leaving.

Membership projections for the employer cost cap

2.14 The same membership projections are used for estimating the cost of accrual over 2017-20 (Direction 27(1)(d)) and for the proposed employer cost cap (Direction 53).

3 Accrual cost methodology

Projected unit methodology

3.1 Direction 11 requires use of the projected unit methodology (PUM) to determine the valuation results.

3.2 Under the PUM, the actuarial liability for active members as at the end of the Control Period is calculated taking into account all types of decrement. In such calculations each year's benefit accrual ("unit") is projected from the relevant date up to the assumed date of retirement or other benefit event.

2015 Scheme Benefits

3.3 Benefits in the 2015 Scheme are linked to Career Average Revalued Earnings (CARE) as opposed to final salary, which was the basis prior to 2015.

3.4 Under CARE, for a given year's accrual, the benefit is determined using pensionable salary at the time of accrual rather than projected final pensionable salary. Each year's benefit accrual is revalued to retirement in line with the consumer price index (CPI). The final pension is the sum of all the years' revalued benefits.

Determining costs of accrual for future period 2017-20

3.5 When determining the costs of accrual as required by Directions 27(1)(d) and 53(1) the cost has first been determined at 31 March 2017 and 31 March 2020 based on the (projected) membership of the Scheme and the applicable assumptions at those times. The overall cost of accrual for the period is then determined as the average of those costs.

Valuation of non-accruing benefits

3.6 Some benefits such as lump sums payable on death in service, or service enhancements on ill-health retirement or on death in service, do not accrue. That is, they are payable when relevant the event (in the examples, death or ill health early retirement) occurs, regardless of the amount of service completed by the member. Accordingly, our methodology values these benefits at the point they are expected to be paid.

4 Approximations and miscellaneous items

Guaranteed Minimum Pensions (GMPs)

4.1 The scheme is not liable for the full indexation of GMPs and so makes savings on GMPs compared to the cost of providing a fully indexed pension. The savings for the Scheme have been estimated in an approximate and appropriate manner which is intended to be unbiased.

4.2 The approximation is based on the ratio of GMP to total pension liability for pensioners who are old enough for GMP to be in payment. This provides an indication of the total GMP that will have been accrued in the Schemes. The approximation is intended to be unbiased but its accuracy will be affected by changes in scheme size and earnings profile over the period of GMP accrual (1978-1997).

4.3 The total estimated savings are a little over 1% of total liabilities.

4.4 Provided accurate GMP data is available as at 31 March 2015, the approximation will not affect the starting value of the cost cap fund and so will have no impact on the operation of the cost cap mechanism.

4.5 The estimation of the GMP savings has no direct impact on the calculation of the employer cost cap.

Earnings cap

4.6 For members who were subject to the Inland Revenue earnings cap, which affected members whose pensionable service commenced on or after 1 June 1989 and which ceased to apply at 6 April 2006, we have assumed pensionable service was adjusted in 2006 to reflect the limitation on pensionable pay over the relevant period. The earnings cap has no further impact on members' benefits or contributions, and does not impact on the employer cost cap.

Public Service Transfer Club (PSTC)

4.7 Costs arise on final salary PSTC transfers because the transfer value is usually less than the cost of providing the service credit granted. Most PSTC transfers over the 2017-20 period will be transfers of final salary benefits. Allowance has been made for the potential additional liabilities arising from inward transfers on PSTC terms by assuming that the level of transfers continues at recent levels and the cost of providing the service credit is about twice the transfer value received. Overall, we estimate the additional costs to be approximately 0.3% of pay. HMT has confirmed that these costs also apply to the calculation of the employer cost cap.

4.8 In the longer term, PSTC transfers will increasingly be transfers of career average benefits. The exact form of these transfers and distribution of the costs involved has yet to be determined. However, it is possible that PSTC costs to the Scheme will fall over time.

Expenses

4.9 No allowance has been made for expenses. Expenses are met separately outside the scheme's valuation framework.

Final pensionable pay

4.10 All liabilities have been based on pensionable pay at the valuation date as provided by the various actuarial firms which supplied data for the valuation. No explicit allowance has been made for the impact of prior years' earnings resulting in higher final pensionable pay for particular members since this effect is not expected to impact a material number of members. This simplification has no impact on the calculation of the employer cost cap.

Promotional pay awards

4.11 No allowance has been made for the impact of any freeze on promotional/progression salary increases.

Early and late retirements

4.12 Where members are assumed to retire before the date at which they may take all of their benefits unreduced, the current early retirement reduction factors are applied. These are a reasonable proxy for the actuarial neutral factors that would apply at the time based on the assumptions used for this valuation. The assumptions regarding retirement do not allow for members to retire after their Normal Pension Age, and in cases where parts of a member's benefits are subject to a late retirement adjustment for retirement at or before Normal Pension Age, it is assumed that the adjustment is on actuarially neutral terms.

Children's pensions

4.13 No allowance has been made for children's pensions (other than those already in payment), on grounds of immateriality.

State pension age

4.14 Under the 2015 Scheme a member's Normal Pension Age is set equal to their State pension age (SPA), or 65 if higher. Direction 18 sets out the SPA to be used in the valuation calculations, and for many members the SPA is not a whole year of age. For the purposes of the valuation we have taken SPA as being the nearest whole year of age to the actual SPA. If taken at an individual level, this approach would overstate the liability for some members and understate for others, but in aggregate should be neutral and therefore have no material impact on the valuation results.

Re-entry of members

4.15 Re-entry of members to pensionable service has been modelled by the use of a 'net' withdrawal assumption for active members. This explicitly allows for a proportion of those leaving active service to return within 5 years.

4.16 No explicit allowance has been made in the valuation for a proportion of those deferred at the valuation date to subsequently re-join. This simplification has no impact on the calculation of the employer cost cap.

Deferred members above NPA

4.17 Members above age 75 are assumed not to claim their benefits. If these members do claim their benefits then a slight deficit would emerge in the notional fund[3] over time; conversely if members aged less than 75 do not claim their benefits a slight surplus would emerge in the notional fund over time. This has no impact on the employer cost cap.

Member contribution yields

4.18 We have estimated the member contribution yield over the implementation period to be 6.3%. This is based on the current contribution scale set out in the Regulations, and assumes that the distribution of pay within the scheme is the same as that observed in the 2014 data. The calculations allow for increases to the contribution bands in line with CPI as required by the Regulations, and increases in earnings as set out in the directions.

4.19 In calculating the member contribution yield we have assumed no members make an election under Regulation 10 (the '50:50' option) as required by Direction 18. The calculations do not make any explicit allowance for the new pay definition for the 2015 scheme, because we have no information on the likely impact of the new pay definition.

[3] The notional Fund is a notional pool of assets, initially set to be equal to the past service liabilities.

Appendix

Grouping of membership data

Individual active members have been grouped together for the purposes of calculating past service liabilities and future service contribution rates. Grouping data in this way is appropriate where there is a high volume of data and where grouping should not in itself lead to a distortion in the results. The volume of data in this situation is more than sufficient to permit grouping without compromising the accuracy of the valuation results.

Active members have been grouped by gender, age (to nearest whole year), Normal Pension Age (to nearest whole year) and Critical Retirement Age (CRA)[4].

Our investigations showed that those with CRA 60 (where that is the nearest whole year of CRA), exhibited different retirement patterns to those with later CRAs. However, those with CRA between 61 and 64 did not differ significantly to those with CRA 65 (where that is the nearest whole year of CRA, or where the member does not have a CRA). Consequently we have two CRA groups: those with CRA 60 and those with CRA between 61 and 65.

Deferred pensions and pensions in payment have also been grouped for the purposes of calculating past service liabilities.

[4] CRA is generally earlier than NPA, and comes about as a consequence of the Rule of 85. This defines for an individual member when benefits can be taken without early retirement reduction, in respect of relevant service periods.