Government Actuary's Department

Local Government Pension Scheme (Northern Ireland)

Actuarial valuation as at 31 March 2016
Valuation Report (before allowance for McCloud)
by the Scheme Actuary

Date: 24 June 2022

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Contents

1 Executive summary

*This **valuation report** (before allowance for McCloud) is addressed to the Department for Communities and provides a key intermediate result required for the cost control mechanism of the Local Government Pension Scheme (Northern Ireland) ('LGPS NI').*

*The final 2016 **cost cap valuation results** are stated in the 2016 **cost cap valuation report**. No action is required on the basis of this pre-McCloud **valuation report**.*

Background

1.1 The Government established a cost control mechanism for public service pension schemes to ensure a fair balance of risks between scheme members and the taxpayer.

1.2 The ***employer cost cap*** for LGPS NI was set at 17.0% of pay, following the 2013 valuation. If at subsequent valuations the cost of the scheme is outside a corridor above / below the ***employer cost cap***, the Public Service Pensions Act (Northern Ireland) 2014 requires action to be taken to bring costs back to the target cost.

1.3 The cost of the scheme is tested against the ***employer cost cap*** for the first time at the 2016 valuation. The final 2016 ***cost cap cost of the scheme*** is calculated as the sum of two intermediate results in accordance with Department of Finance Directions:

> ***Employer contribution correction cost***, which is set out in this pre-McCloud ***valuation report***

> ***Transitional protection remedy cost***, which arises following the McCloud judgment, and is set out in the ***cost cap valuation report***

Purpose of this pre-McCloud valuation report

1.4 This separate pre-McCloud ***valuation report*** reflects that the cost control process was paused following the McCloud judgment. The purpose of this pre-McCloud ***valuation report*** is to set out the intermediate value in the first bullet above: the ***employer contribution correction cost***. The ***cost cap valuation report*** sets out the final result of the valuation after the consideration of the remedy of the McCloud discrimination. Both reports have been prepared in accordance with the Department of Finance Directions of 22 November 2021.

1.5 The Department for Communities ('DfC') have instructed us to complete this pre-McCloud ***valuation report*** on the basis of scheme benefits before any adjustments as part of the ***transitional protection remedy***, and disregarding new information which emerged after 1 April 2019 (the ***implementation date***).

1.6 This is consistent with the Department of Finance Directions which require the difference in costs between ***pre-remedy benefits*** and ***post-remedy benefits*** to be captured by the ***transitional protection remedy cost***, and therefore excluded from the ***employer contribution correction cost***. It is also consistent with the approach required by the Department of Finance Directions to disregard pension increases after the ***implementation date***.

1.7 This approach will also ensure the 2016 LGPS NI ***employer contribution correction cost*** can be straightforwardly compared against those for the unfunded public service pension schemes. These were set out in valuations prepared to inform the employer contribution rates payable in those schemes and signed during spring 2019. No LGPS NI valuation report was needed at that time, because employer contributions in the LGPS NI are paid in accordance with rates and adjustments certificates issued by each administering authority under Regulation 68 of the Local Government Pension Scheme Regulations (Northern Ireland) 2014, not by the actuarial valuation under Department of Finance Directions.

1.8 This pre-McCloud ***valuation report*** also presents the other information required by the latest Department of Finance Directions.

Conclusions and next steps

1.9 The ***employer contribution correction cost*** has been determined as 13.8% of pensionable pay.

1.10 The ***employer contribution correction cost*** is combined with the ***transitional protection remedy cost*** in the ***cost cap valuation report*** in order to determine the ***cost cap cost of the scheme***. If the ***cost cap cost of the scheme*** set out in the ***cost cap valuation report*** lies within the ±2% corridor above / below the ***employer cost cap,*** then no changes to benefits or member contributions are required.

1.11 This pre-McCloud ***valuation report*** and ***cost cap valuation report*** supersede the ***valuation report*** dated 18 December 2018. Under clause 93 (7) of the *Public Service Pensions and Judicial Offices Act 2022* the latter is of no effect.

1.12 No action is required on the basis of this pre-McCloud ***valuation report*.**

2 Key points from the valuation

*This chapter provides the **valuation results** required by the Directions, along with some commentary about the background, data and assumptions used and the changes from the previous valuation.*

Introduction

2.1 This pre-McCloud ***valuation report*** sets out a key intermediate result of the actuarial valuation of the combination of the 2015 Scheme established by the Local Government Pension Scheme (Northern Ireland) Regulations 2014[1] ('the Regulations'), and the Earlier Schemes[2] (collectively referred to as the Local Government Pension Scheme (Northern Ireland) or 'the Scheme'). The Scheme provides pensions and other benefits to employees who have worked in local government or for other Scheme employers, and to their dependants. The Scheme is managed and administered locally by NILGOSC[3]. Member contributions are payable in accordance with Regulation 11 of the Regulations for membership after 1 April 2015. Employer contributions are payable in accordance with the rates and adjustments certificates issued under Regulation 68 of the Regulations.

2.2 GAD has been appointed as ***scheme actuary*** by DfC to carry out an actuarial valuation of the Local Government Pension Scheme (Northern Ireland) as at 31 March 2016 (the ***effective date***), as required by Regulation 123 of the Regulations. This pre-McCloud ***valuation report*** is addressed to DfC.

2.3 The valuation has been undertaken in accordance with *The Public Service Pensions (Valuations and Employer Cost Cap) Directions (Northern Ireland) 2014 (as amended)* ('the Directions'). Terms defined in the Directions are shown in ***bold italics*** when used in this report.

2.4 We signed an actuarial valuation of the Local Government Pension Scheme (Northern Ireland) as at 31 March 2016 on 18 December 2018. This was before the Court of Appeal judgment was made and cost control valuations were paused. Section 93 (7) of the *Public Service Pensions and Judicial Offices Act 2022* clarifies that the report signed on 18 December 2018 is of no effect. This is in line with the Government decisions taken following the McCloud judgment and consistent with other public service pension schemes.

2.5 The DfC have instructed us to complete this pre-McCloud ***valuation report*** on the basis of scheme benefits before any adjustments as part of the ***transitional protection remedy*** and disregarding new information which emerged after 1 April 2019 (the ***implementation date***).

[1] The scheme established and governed by SR 2014 No 188
[2] As defined in the Local Government Pension Scheme (Northern Ireland) (Amendment and Transitional Provisions) Regulations 2014 (SR 2014 No 189)
[3] As established by under section 1 of the Local Government (Superannuation) Act (Northern Ireland) 1950 and subject to the requirements of Schedule 3 of the Regulations.

2.6 This is consistent with approach taken for unfunded public service pension schemes, which calculated the ***employer contribution correction cost*** in valuations signed during spring 2019. It is also consistent with the approach required by the Department of Finance Directions to disregard pension increases after the ***implementation date***.

2.7 The unfunded public service pension schemes valuations were signed in spring 2019 to inform employer contribution rates payable to those schemes from April 2019. No LGPS NI valuation report was needed at that time, because employer contributions in the LGPS NI are paid in accordance with rates and adjustments certificates issued under Regulation 68 of the Regulations, not by the actuarial valuation under Department of Finance Directions.

2.8 In her written ministerial statement[4] ('WMS') made on 30 January 2019 following the McCloud judgment, the then Chief Secretary to the Treasury announced that there would be a pause to the cost cap process until there was certainty about the value of pensions to employees from April 2015 onwards. That pause has now been lifted and amending directions to allow all public service schemes to conclude their valuations by setting out how schemes must carry out the cost control element of those valuations were published[5] on 22 November 2021.

2.9 The Directions specify a number of assumptions to be used for the valuation, of which the use of the ***SCAPE discount rate*** is the most important, to be used for the valuation. In our opinion, the directed assumptions are reasonable to use for the valuation as they meet the Government's policy objectives. The Government Actuary has separately been consulted on the directed assumptions by Department of Finance. The consultation materials can be found online alongside the amending directions[5].

2.10 The main purposes of the valuation are set out in the Directions. For LGPS NI this primarily is to assess the cost of the Scheme within the cost control mechanism by calculating the ***cost cap cost of the scheme*** as at 31 March 2016 and then comparing this against the ***employer cost cap*** set at the actuarial valuation as at 31 March 2013. The ***cost cap cost of the scheme*** is calculated as the sum of:

> ***Employer contribution correction cost***

> ***Transitional protection remedy cost***

2.11 This pre-McCloud report presents the ***employer contribution correction cost*** determined at this valuation. The ***initial cost cap fund***, set equal to liabilities for contributing members at 31 March 2015, is also set at this valuation and is explained here as it is required to determine the ***employer contribution correction cost***.

[4] https://questions-statements.parliament.uk/written-statements/detail/2019-01-30/hcws1286
[5] https://www.finance-ni.gov.uk/publications/public-service-pensions-valuations-and-employer-cost-cap-amendment-directions-northern-ireland-2021-0

2.12 A final ***cost cap valuation report*** covers the calculation of the ***transitional protection remedy cost*** and the comparison of the ***cost cap cost of the scheme*** to the ***employer cost cap***.

2.13 Appendix G sets out where all information as required by the Directions is provided in this pre-McCloud ***valuation report*** (or related advice listed in paragraph 2.15).

2.14 Note that this pre-McCloud ***valuation report*** does not provide information on the actual required rate of employer contributions. LGPS NI employer contributions are payable in accordance with the rates and adjustments certificates issued under Regulation 68 of the Regulations as part of an actuarial valuations carried out by an actuary appointed by NILGOSC.

2.15 We have separately provided advice and information on data and assumptions to be used for the results presented in this pre-McCloud ***valuation report***. The following documents should be read in conjunction with this report.

> Local Government Pension Scheme (Northern Ireland): Actuarial valuation as at 31 March 2016: Report on data as at 31 March 2016 dated 18 December 2018 ('the Data report')

> Local Government Pension Scheme (Northern Ireland): Actuarial valuation as at 31 March 2016: Advice on assumptions dated 18 December 2018 ('the Assumptions report')

2.16 Please see Appendix H for the limitations of this report.

Data and assumptions

2.17 Data was received from NILGOSC for the 2016 valuation. This was generally adequate for the purposes of the valuation calculations. However, some aspects of the data were incomplete and/or unreliable for certain elements of our valuation calculations. Appendix D of the Data report sets out the uncertainty in valuation results arising from known deficiencies in the data, primarily those associated with incomplete data as at 31 March 2015 used to calculate the ***initial cost cap fund***.

2.18 To accurately calculate the **cost cap net leavers liability** ('CCNLL') in accordance with the Directions requires full movement data for all members who were active in 2015 and are no longer active at the 2016 valuation. The data available was not suitable for calculating the CCNLL and it was not possible to make assumptions to adjust the data available to provide for a reasonable estimate of the CCNLL to be calculated. There have been some difficulties for all schemes in using the valuation data to determine the CCNLL, and these difficulties are particularly acute for the LGPS NI where members may have multiple employments, and re-joining and aggregation of benefits occur.

2.19 It has not been possible to fully resolve these data issues. Therefore, calculating results for the 2016 valuation of the Scheme requires assumptions in respect of incomplete and/or unreliable individual member records and movements data. In particular, for the purposes of determining the 2016 valuation results, the approach adopted implicitly assumes that there is no unidentified experience gain or loss arising over the period 2015 to 2016. Appendix C of the Assumptions report contains full details of the approaches taken in respect of missing and unreliable data.

2.20 We expect that the uncertainty introduced by the approach above is not more than 0.5% of pay. We would not expect significant unidentified experience gains or losses to arise over the one-year period 2015 to 2016; and although some uncertainty remains, we would not expect any item as large as 0.5% of pay.

2.21 For the 2016 valuation, the CCNLL calculation period is only one year, rather than a full four-year ***inter-valuation period***. Given the short period over which any gain or loss may have arisen it might reasonably be concluded that the lack of data for the CCNLL calculation is not critical for this valuation. The cost control mechanism reforms to be introduced ahead of the next valuation in 2020 are expected to mean that no ***cost cap net leavers liability*** will need to be calculated as part of that valuation.

Employer contribution correction cost

2.22 The cost control mechanism was introduced via the Public Service Pensions Act (Northern Ireland) 2014 and relevant Directions with the aim of ensuring that the risks associated with pension provision are shared with scheme members and the costs remain sustainable in the future.

2.23 The results in this report have been prepared under the approach specified in the Directions, as they apply at the date of signing, and DfC's instructions to complete this valuation on the basis of scheme benefits before any adjustments as part of the ***transitional protection remedy***, and disregarding new information which emerged after 1 April 2019 (the ***implementation date***).

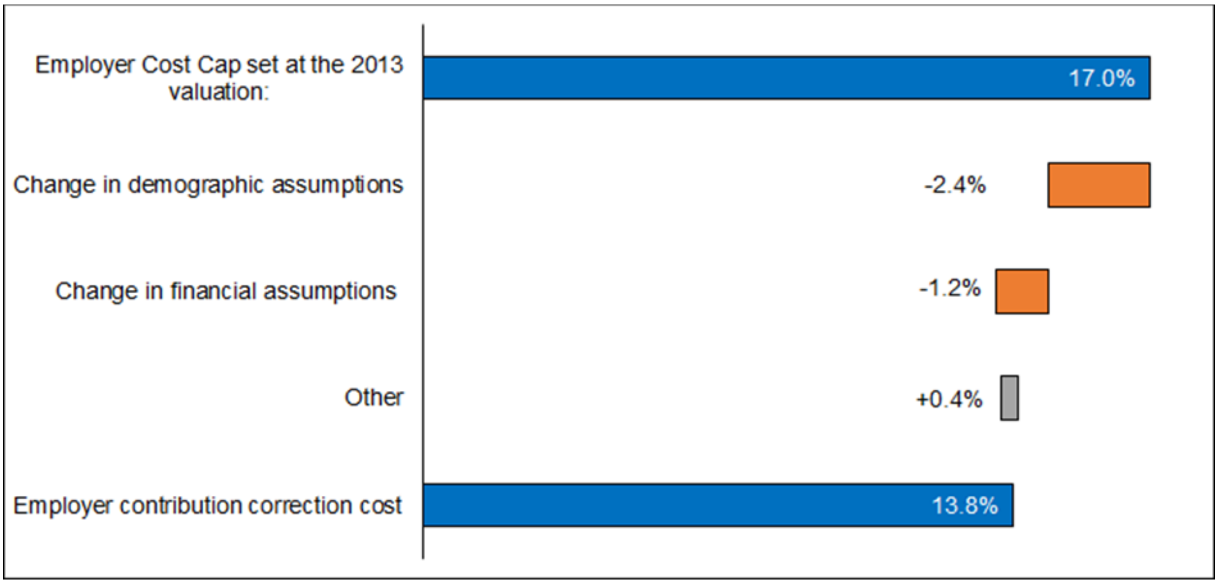
2.24 The ***initial cost cap fund*** is a notional pot of assets equal to the liabilities of contributing members as at 31 March 2015 and includes all benefits prospectively payable from the Scheme to those members in respect of service completed to that date. Liabilities arising from future pay inflation, or in-service benefit revaluation, to the assumed future date of cessation of pensionable service are included.

2.25 The ***initial cost cap fund*** has been calculated as part of this valuation as £3.2 billion.

2.26 The ***employer contribution correction cost*** is a measure of the cost to employers of providing benefits under the 2015 Scheme to all currently contributing members, with an allowance for past service effects for members who were contributing to the Scheme as at 31 March 2015. Based on the scheme benefits before any adjustments arising as an outcome of the McCloud judgment, the ***employer contribution correction cost*** for the ***implementation period*** (1 April 2019 to 31 March 2023) is 13.8% of pensionable pay. This compares to the ***proposed employer cost cap*** of 17.0% set following the 2013 valuation.

2.27 Chart 2.1 summarises the key reasons for the change in the ***employer contribution correction cost*** compared with the ***proposed employer cost cap*** which was calculated in the 2013 valuation. Further explanation of the change is provided in section 3.

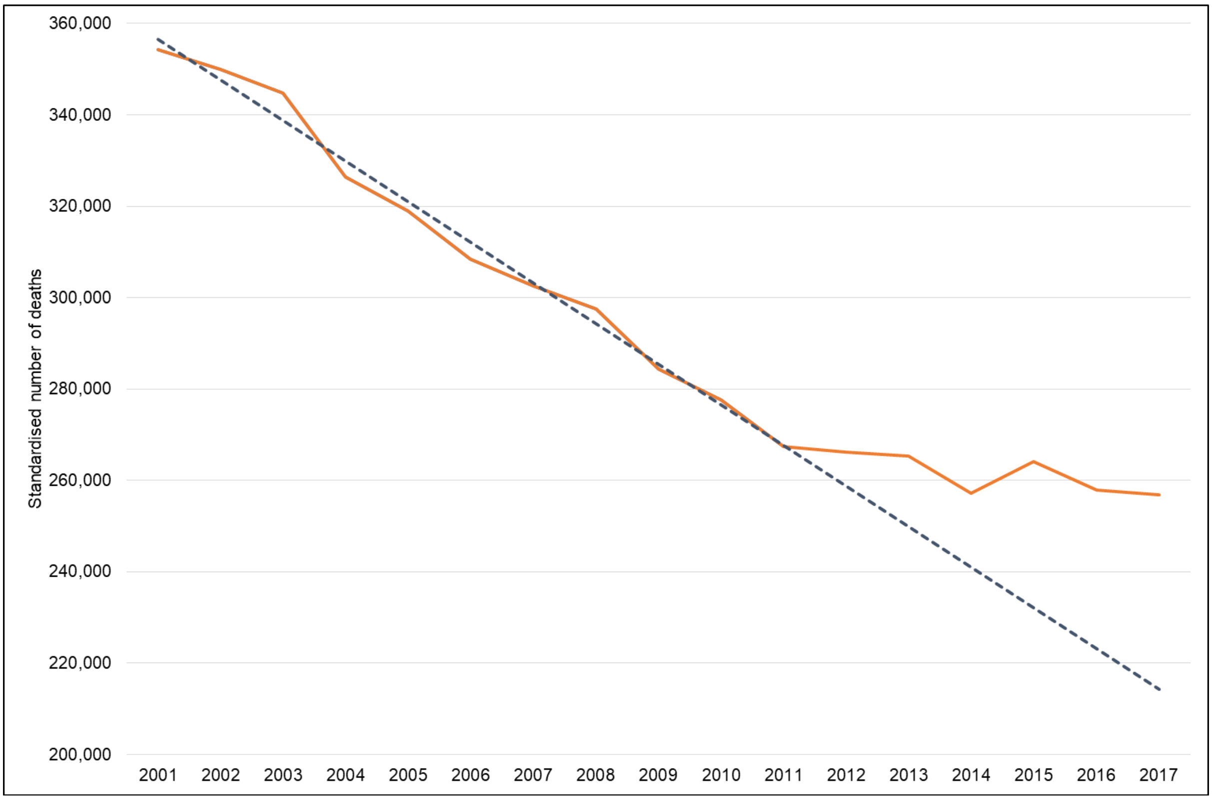
Chart 2.1: Employer contribution correction cost compared with the proposed employer cost cap



2.28 The change in demographic assumptions item in Chart 2.1 reflects the impact of a number of items including changes in scheme specific assumptions. However, the main driver behind this reduction of costs is a reduction in assumed future improvements in life expectancy under the ONS-2016 projections when compared with the ONS-2012 projections which were used in the 2013 valuation. The use of these projections is set out in the Directions.

2.29 Chart 2.2 shows the UK population experience which resulted in the revision of ONS projections of future life expectancy between the 2012 and 2016 projections. The number of standardised[6] deaths over time is shown by the solid orange line. The dotted line is the trend that was observed up until 2012. This shows that in the intervening years the number of deaths increased above the trend that was seen before 2012. This experience resulted in a downwards revision of future improvements in life expectancy with Scheme members being assumed to receive benefits for a shorter period of time than assumed at the previous valuation.

Chart 2.2: Age standardised number of deaths per calendar year, Males, UK

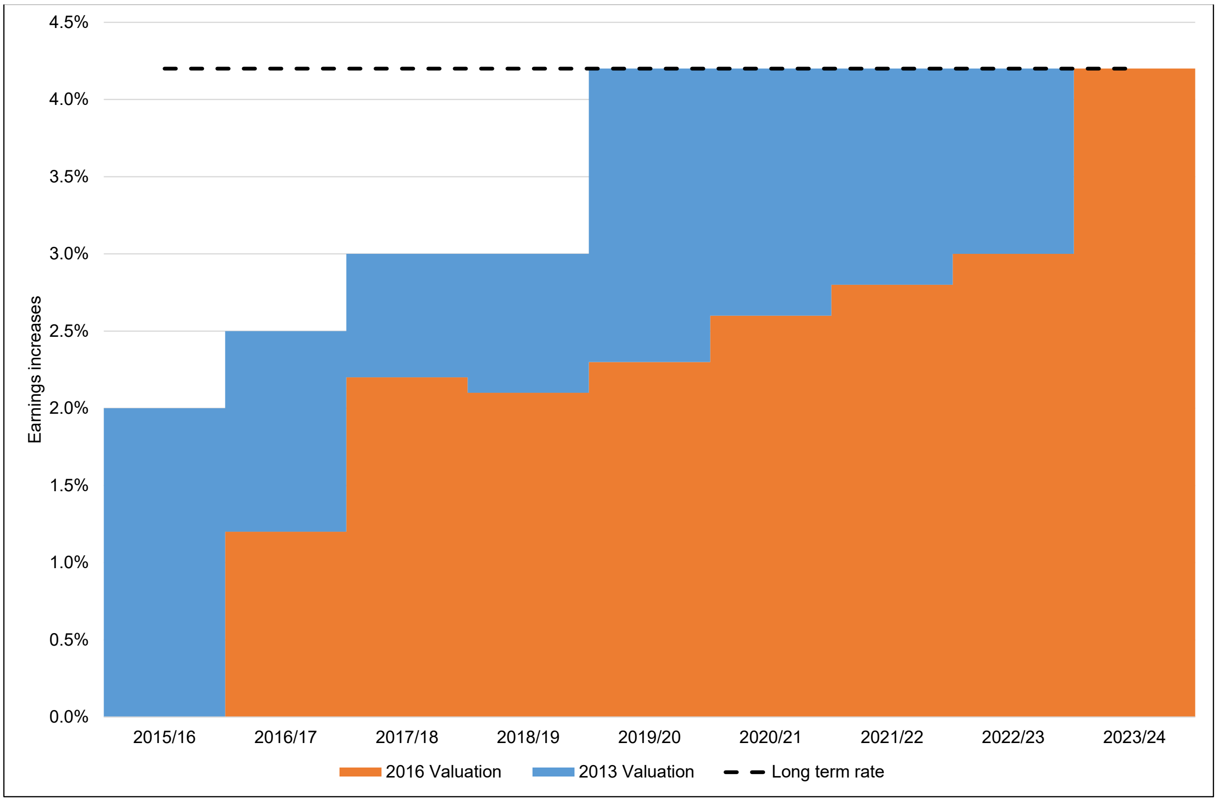


2.30 The change in financial assumptions item in Chart 2.1 is primarily due to the change in directed earnings assumptions, which were based on OBR forecasts. The ***cost cap fund*** is currently primarily made up of final salary benefits and therefore the level of future earnings increases has a significant impact on the expected future size of those benefits. The ***initial cost cap fund*** was set using the 2013 valuation earnings assumptions which are shown in blue in Chart 2.3. These assumptions anticipated some short-term pay restraint in the public service before reversion to a long-term rate of increase.

[6] This is the number of deaths each year adjusted to remove the impact due to the population having different ages

2.31 The 2016 valuation Directions anticipated public sector pay restraint continuing for a longer period than was assumed for the 2013 valuation. The 2016 valuation earnings assumptions are shown in orange in Chart 2.3. The value of the ***cost cap liabilities*** as at 31 March 2016 takes account of this longer period of pay restraint. This has the effect of assigning a lower value to the ***cost cap liabilities*** for this valuation compared to that based on the 2013 valuation assumptions.

Chart 2.3: Short-term earnings increase assumptions



2.32 The change in the rate of assumed earnings growth between the current and previous valuations means that the value of the ***cost cap liabilities*** as at 31 March 2016 is lower than the ***cost cap fund*** at the same date which results in a cost cap surplus. This leads to a reduction in the ***employer contribution correction cost*** compared to a balanced position.

2.33 The change in ***SCAPE discount rate*** and long-term earnings assumptions described in paragraph 2.34**.** does not have a significant impact on the ***employer contribution correction cost*** because the Directions operate to largely remove the impact of the change.

2.34 The ***SCAPE discount rate*** is the rate used to discount future payments from the Scheme. A lower rate leads to a higher assessment of the value of the payments. The ***SCAPE discount rate*** is based on the OBR's forecast for long-term GDP growth and so aims to reflect the cost of the pension scheme obligations being made relative to the future size of the economy. The OBR has reduced the long-term forecast since the 2013 valuation. Accordingly, the ***SCAPE discount rate*** has been updated to reflect these changes and was reduced from 3.0% pa above CPI to 2.4% pa above CPI. This affects the value placed on the liabilities for both benefits that have been accrued in the past and benefits that will accrue in the future. The reduction in the ***SCAPE discount rate*** results in a higher cost of accruing benefits. However, this change in ***SCAPE discount rate*** does not have a significant impact on the cost cap mechanism because the cost cap policy[7] classes changes in the discount rate as an 'employer cost'. The Directions operate to largely remove the impact of the change.

2.35 Further details regarding the calculations are provided in section 3.

Future valuations

2.36 Our final ***cost cap valuation report*** provides comments on the main uncertainties which could result in some variations in the ***valuation results*** at subsequent valuations.

[7] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/289366/public_service_pensions_actuarial_valuations_130314.pdf

3 Analysis of results

*This chapter provides further details on the **valuation results** and how these have changed since the previous valuation.*

Employer contribution correction cost

A(i) Cost cap fund balance sheet – past service position

3.1 The ***initial cost cap fund*** is determined in accordance with direction 30 and represents a notional pot of assets equal to the liabilities of contributing members as at 31 March 2015 and includes all benefits prospectively payable from the Scheme to those members in respect of service completed to that date. Liabilities arising from future pay inflation, or in-service benefit revaluation, to the assumed future date of cessation of pensionable service are included. The ***initial cost cap fund*** has been calculated as part of this valuation as £3.2 billion.

3.2 The ***employer contribution correction cost*** is a measure of the cost to employers of providing benefits under the 2015 scheme to all currently contributing members, with an allowance for past service effects for members who were contributing to the Scheme as at 31 March 2015. The ***employer contribution correction cost*** for the ***implementation period*** (1 April 2019 to 31 March 2023) is 13.8% of pensionable pay. This compares to the ***proposed employer cost cap*** of 17.0% set following the 2013 valuation.

3.3 The ***cost cap fund*** and ***cost cap liabilities*** at the ***effective date*** calculated in accordance with the Directions, and otherwise as specified in this report, are set out in Table 3.1. The initial (prior) value of the ***cost cap fund*** was set as part of this valuation (as the position as at 31 March 2015), so there are no comparative figures at the previous valuation date. The derivation of both the prior value of the ***cost cap fund*** and the ***cost cap fund*** at this valuation is set out in Appendix C.

Table 3.1: Cost cap fund valuation balance sheet

	31 March 2016 £ million	*Direction*
Cost cap liabilities	***2,909***	***39***
Relating to benefits accrued in the pre-2015 schemes and for members in service at the ***valuation date***	2,707	*39(2)(a)*
Relating to benefits accrued in the post-2015 scheme	202	*39(2)(b)*
Cost cap fund	***3,123***	***37***
Cost cap surplus (shortfall)	***214***	

3.4 The value of the ***cost cap liabilities*** includes the value of all liabilities for contributing members of the aggregate scheme as at 31 March 2016 and the value of all benefits currently or prospectively payable to pensioners and deferred pensioners from the 2015 Scheme only as at 31 March 2016. For currently contributing members the value of the liabilities comprises the value of all benefits prospectively payable from the aggregate scheme to those members in respect of service completed to that date, including the value of liabilities arising from future pay inflation, or in-service benefit revaluation, to the assumed future date of cessation of pensionable service.

A(ii) Employer contribution correction cost – past service impacts and accrual cost

3.5 Whilst the ***effective date*** of the actuarial valuation is 31 March 2016, the cost cap contribution rates determined are those (notionally) applicable in respect of the period 1 April 2019 to 31 March 2023 (the ***implementation period***).

3.6 The ***proposed employer cost cap*** (set at the 2013 valuation) and the ***employer contribution correction cost*** over the ***implementation period*** are set out in Table 3.2.

Table 3.2: Employer cost cap summary

	2016 % pa		Direction
Proposed employer cost cap	**17.0**	**A**	***Set in 2013***
Employer contribution correction cost	**13.8**	**B**	***42***
Difference	**3.2**	**A-B**	

3.1 The ***employer contribution correction cost*** over the ***implementation period*** is determined from several components, which are summarised in Table 3.3. The table also shows a comparison with the ***proposed employer cost cap***.

Table 3.3: Employer contribution correction cost

	% pa		Direction
Proposed employer cost cap set at 2013 valuation	**17.0**		***Set in 2013***
Cost cap future service cost (Contribution rate required to cover expected cost of benefits accruing between 1 April 2019 and 31 March 2023 by reference to assumptions in Direction 40)	25.7	A	*40*
Plus ***cost cap past service cost*** (Contribution rate required to be paid for 15 years from 1 April 2019 to correct cost cap shortfall as at 31 March 2016)	(1.8)	B	*41*
Less ***cost cap contribution yield*** (Contribution yield expected from members between 1 April 2019 and 31 March 2023)	6.3	C	*31*
Less ***cost cap difference***[8]	3.8	D	*42A*
Employer contribution correction cost	***13.8***	***A+B-C-D***	**42**
Difference between *target cost of the scheme* and *employer contribution correction cost*	***3.2***		

[8] This is the difference between the employer cost cap (after SCAPE adjustment) which is 20.8%, and the original ***proposed employer cost cap*** (set at the 2013 valuation) of 17.0%.

3.2 Table 3.4 shows how the ***employer contribution correction cost*** has changed from the ***proposed employer cost cap*** as determined in the previous valuation. The past service impacts and accrual cost impacts are shown separately and have been considered in the order listed. Using a different order could change the allocation between items shown.

Table 3.4: Employer contribution correction cost analysis

	Past service	**Accrual cost**	**Note**
Change in financials	(1.2)%	n/a	1.
Change in mortality assumptions	(0.4)%	(0.6)%	2.
Changes in demographic assumptions	(0.4)%	(1.0)%	3.
Change in average age	n/a	0.1%	4.
Change in average State Pension age (Spa)	n/a	(0.2)%	5.
Identified experience loss	0.2%	n/a	6.
Mortality improvements: improvement due to elapsed time	n/a	0.2%	7.
Change to PSTC allowance	n/a	(0.1)%	8.
Change in expected member contribution yield	n/a	0.1%	9.
Unexplained	0.0%	0.1%	10.
Total difference between ***employer contribution correction cost*** and ***target cost of the scheme*** (past service/accrual cost)	(1.8)%	(1.4)%	
Total difference between ***employer contribution correction cost*** and ***target cost of the scheme***	**(3.2)%**		
Employer contribution correction cost	**13.8%**		

3.3 Table 3.5 provides further information on the items identified.

Table 3.5: Cost cap - Explanation of analysis

Note	Explanation
1.	Whilst any change in long-term assumptions is outside the cost cap mechanism, this item reflects the impact of the changes in short-term assumptions between the 2013 and 2016 valuation directions.
2.	This relates primarily to the change in directed mortality improvements resulting from the change from ONS 2012 to 2016, which results in a reduction in expected future life expectancy. Assumed future life expectancy is also affected by the change to assumed LGPS NI specific current mortality rates.
3.	This is the impact of changes to demographic assumptions other than mortality. There are downward cost pressures due to changes to the directed commutation assumption and the ill health retirement, withdrawal and proportion married/partnered assumptions set by the Department for Communities.
4.	The average age increased since 2013, which increases the cost of accrual.
5.	Although there has been no change in the timetable of SPa used for the valuation, the passage of time means that current members (with similar average age as the 2013 membership), have, on average, later SPa than the previous membership set. The later SPa results in cost savings in the 2015 scheme.
6.	The experience loss shown relates mainly to pay.
7.	The passage of time and the nature of the directed assumption for mortality improvements means that a member now aged 45 will have a different future life expectancy to a member aged 45 at the 2013 valuation. The figures shown reflect the impact of the passage of time on future life expectancy between successive ***implementation periods***. The impact shown is after allowance for the change in improvement basis described in note 2.
8.	The expected cost to the scheme of the Public Sector Transfer Club has reduced since the previous valuation. This reflects a projected reduction of Club transfers into the Scheme.
9.	The Member contribution yield based on the current regulations (but assuming no members opt for the 50:50 scheme) over the period 1 April 2019 to 31 March 2023 is expected to be 6.3% of pay, compared with 6.4% of pay at the 2013 valuation.
10.	The unexplained item is nil in respect of past service because, due to data limitations, the net effect on the cost cap fund arising because of members holding pre-2015 benefits joining and leaving active service during the intervaluation period has been set to ensure there is no unexplained item.

4 Sensitivity of valuation results to assumptions

*This chapter illustrates how the **valuation results** would change if different assumptions were used.*

4.1 This section illustrates the sensitivities of the ***valuation results*** to the assumptions adopted[9].

4.2 Table 4.1 shows the sensitivities relative to the ***employer contribution correction cost***. The DfC determined assumptions are set as best estimate based on available evidence. The sensitivities illustrate how the valuation outcomes would change had different evidence been observed, leading to the DfC setting the different assumptions illustrated below. They are not intended to show the possible range of variation in assumptions which might be considered at future valuations and in light of future experience.

4.3 Our final ***cost cap valuation report*** provides comments on the main uncertainties which could result in some variations in the ***valuation results*** at subsequent valuations.

Table 4.1: Sensitivity of valuation results to assumptions

	Addition to employer contribution correction cost[10]	Note
A. Directed assumptions		
Discount rate in excess of CPI (-0.25% pa)	(0.2)%	1.
Pension increases as applicable to pensions in payment and deferred pensions (+0.25% pa)	(0.1)%	2.
Long term rate of public service earnings growth in excess of CPI (+0.25% pa)	(0.2)%	3.
Short term rate of public service earnings growth (+0.25% pa to each short-term rate)	0.3%	4.
CARE revaluation rate (+0.25% pa to price measure revaluation rates)	(0.1)%	5.
Allowance for future mortality improvements (reduction in mortality improvements such that (period) life expectancy is lower by around 1.25 years over 75 years)	(1.1)%	
State Pension age (SPa for 2015 scheme one year later than under current directions)	(0.8)%	6.
Allowance for commutation as directed (additional 2% of pension assumed to be commuted for cash)	(0.2)%	7.
Shortfall spreading period (spreading period increased by 5 years)	0.5%	8.

[9] Including those set out in Directions and those set by the Department (as specified in direction 19(e)).
[10] The sensitivity of the employer contribution correction cost shown in the table allows for any offsetting expected from resulting changes to the cost cap difference, for items defined as 'employer costs' in HM Treasury's 2014 paper Public Service Pensions: actuarial valuations and the employer cost cap mechanism.

B. Department for Communities set assumptions		
Membership profile: 2 years older on average over implementation period	1.1%	9.
Mortality rates: 5%* heavier rates of pensioner mortality	(0.5)%	
Age retirement rates: active members retire (on average) one year later than currently assumed	0.0%	
Commutation (other than directed) Members commute 2% of pension more than assumed in respect of pre-2009 service, keep 17.5% assumption for post-2009 service	(0.3)%	
Ill-health retirement: 5%* increase to assumed rates	0.1%	
Ill-health retirement: 5%* increase in proportion assumed to receive higher tier benefits	0.0%	
Proportions partnered: 5%* more members assumed to have qualifying partners at death	0.1%	
Resignations and opt outs: 5%* higher numbers assumed to leave voluntarily before retirement (net of re-joiners)	0.0%	10.
Promotional pay increases: 0.5% higher promotional pay increases than assumed	0.5%	11.

* All these represent multiplicative increases to rates, i.e. 5% means rates 1.05 times higher.

Note: Opposite changes in the assumptions will produce approximately equal and opposite changes in the valuation results.

4.4 Table 4.2 provides further information on the sensitivity items.

Table 4.2: Sensitivity of valuation results to assumptions - Explanation of analysis

Note	Explanation
1.	This shows the impact of a 0.25% pa decrease in the ***SCAPE discount rate*** with all other financial assumptions remaining unchanged.
2.	This shows the impact of a 0.25% increase in the long-term assumption for the Pension Increase (Review) order to 2.25% with the gross ***SCAPE discount rate*** and earnings assumptions remaining unchanged. It reflects a reduction in the ***SCAPE discount rate*** to 2.15% above CPI.
3.	This shows the impact of a 0.25% pa increase in the assumed long-term rate of public service earnings increases of 4.2% pa with all other assumptions remaining unchanged.

Note	Explanation
4.	This shows the impact of a 0.25% pa increase in each of the assumed short-term rates of public service earnings with all other assumptions remaining unchanged. Combined with the long-term rate of public service earnings increases sensitivity, this shows the impact of a change in all earnings assumptions.
5.	This shows the impact of a 0.25% increase to the assumption for the Public Service Pensions Revaluation orders which determines the rate of in-service revaluation with the gross ***SCAPE discount rate*** and earnings assumptions remaining unchanged. Combined with the pension increase sensitivity, this shows the impact of a 0.25% increase in the assumption for CPI.
6.	This shows the impact of an increase in State Pension Age of 1 year for all members.
7.	This shows the impact of increasing the proportion of pension commuted for cash from 17.5% to 19.5% for post-2009 benefits (i.e. those benefits with no attaching automatic lump sum).
8.	This shows the impact of spreading any surplus / deficit over a period of 20 years (i.e. five years longer than the current spreading period).
9.	This shows the impact of a two-year increase in average ages caused by the age profile of new joiners.
10.	This shows the impact of an increase in the withdrawal assumption by 5%.
11.	This shows the impact of an increase in the promotional pay increase assumption by 0.5% pa.

4.5 In each item in Table 4.1 the sensitivity shown is in relation only to the change in the assumption described. The impact of a combination of assumption changes will not necessarily equate to the sum of the relevant rows above.

4.6 The sensitivities shown refer only to the results of this valuation. The sensitivity of the results to certain assumptions is expected to change materially over time. This is particularly the case for the ***employer contribution correction cost*** as the ***cost cap liabilities*** reflects only final salary liabilities for contributing members, but over time will reflect only liabilities accrued in the career average scheme and for all categories of member (that is, including deferred and pensioner members).

4.7 The main impact of certain financial assumptions, specifically the ***SCAPE discount rate*** and rate of long-term earnings growth, is explicitly removed from the ***employer contribution correction cost*** calculations as provided in Directions. There is some residual sensitivity as shown in rows 1 to 3 of Table 4.1 above; these relate to the past service liabilities included within the ***employer contribution correction cost*** calculations.

Martin Clarke
Government Actuary
24 June 2022

Michael Scanlon
Fellow of the Institute and Faculty of Actuaries
24 June 2022

Appendix A: Key inputs

This chapter summarises the calculations that were carried out, including the data, methodology and assumptions used, and the analysis performed on the results.

Data

A.1 At the ***effective date***, there were 52,691 contributors to the Scheme with a total payroll of £870 million and 26,445 pensions in payment with total annual pensions amounting to £144 million, plus 5,339 dependants with a total pension in payment of £12.5 million. There were a further 25,861 ex-contributors who had not yet started to receive their pension. Appendix B provides a summary of the membership data. Further details on the data, including the checks carried out on that data, the limitations of those checks and adjustments made, are provided in the Data report.

Benefits

A.2 The benefits provided to members of the Earlier Schemes and the 2015 Scheme are set out in regulations[11]. The 2015 Scheme was introduced from 1 April 2015 and all members transferred to the 2015 Scheme on 1 April 2015. Under transitional arrangements aimed at providing protection for those nearest retirement age, some older members have a final salary underpin to their benefits.

A.3 Full details on benefits and the membership of the Schemes are provided in the Data report.

Assumptions

A.4 The Directions specify certain assumptions to be used for the valuation whilst requiring certain other assumptions to be set as the Department for Communities' best estimates, after taking the advice of the ***scheme actuary***. Actuarial advice on the scheme specific assumptions (including variations appropriate for the purposes of determining the ***employer contributions correction cost***), and other relevant information is set out in the Assumptions report.

A.5 We have been instructed by the Department for Communities, following consultation with relevant stakeholders, to adopt the best estimate assumptions recommended in our advice. For the mortality assumptions, the Department wishes GAD to employ the approach recommended by the LGPS (NI) Scheme Advisory Board at its meeting on 28 September 2017, namely, the 50:50 approach which uses the average of the 2013 NILGOSC valuation assumptions and the 2016 NILGOSC valuation assumptions. Appendix E summarises the key assumptions made.

[11] SR 2014 No 188

Methodology and calculations

A.6 The Directions specify that the Projected Unit Methodology should be used. Application of this methodology to determine the ***valuation results*** as specified requires some assumptions to be made about the size and make-up of the workforce up to the end of the ***implementation period***[12].

A.7 For short-term workforce planning purposes the Department for Communities assumes that, overall, a largely stable population will be maintained. We have accordingly assumed that over the period from the ***effective date*** to the end of the ***implementation period*** the overall profile of the membership in terms of distribution of headcount and pay by age and gender will remain stable. Because we allow the existing membership to 'run off' in accordance with the assumptions set out in Appendix E over the projection period we are therefore making an implicit assumption about the profile of new joiners to the Scheme over that period. Full details of the membership projection are provided in the Assumptions report.

A.8 The Directions specify that benefits should be attributed to periods of service in accordance with the requirements of International Accounting Standard 19: Employee Benefits.

Scheme benefits

A.9 First, an estimate is made of the amount of benefit to be received by each Scheme member (and their dependants, where applicable) over each future year of the Scheme, from the ***effective date*** onwards. In order to do that, it is necessary to make some assumptions about the future service and salaries of the Scheme members, and the length of time over which they will receive benefits.

A.10 Having estimated the benefits as a stream of projected cashflows from the ***effective date*** onwards, the second step is to calculate the capital sum which would need to be held at the ***effective date*** in order to pay all of the benefits. This requires an assumption to be made as to the rate of return which would be earned by the capital sum if it were invested. The approach for this valuation is predicated on the premise that there is a notional fund with a notional investment return, rather than considering the scheme assets.

A.11 This capital sum is often referred to as the 'present value' of the benefits and is calculated by 'discounting' the future cashflows back to the ***effective date*** using the valuation discount rate (see Appendix E). The present value can alternatively be considered as the amount of money which would need to be invested at an assumed interest rate (equal to the discount rate) in order to pay all the benefits. The result of the calculation is, by its nature, a planning or budgeting estimate, not a 'valuation' as such.

[12] 1 April 2019 to 31 March 2023

Notional assets

A.12 The cost control mechanism uses a notional fund (the ***initial cost cap fund***) which is established as part of the current valuation and is set equal to the value of the liabilities of contributing members as at 31 March 2015 using the assumptions adopted for the 2013 valuation. An account of the notional ***cost cap fund*** will be maintained for future dates. The initial ***cost cap fund*** is increased by contributions (as determined for cost cap purposes) and a notional return, and reduced by benefit payments (relating to the 2015 Scheme only) and liability amounts (relating to the Earlier Schemes only) as members leave contributing service.

Calculations

A.13 For the valuation, it is necessary to separate the capital sum into two parts: (i) the sum needed to pay out benefits which relate to service *prior to* the ***effective date*** ('past service'), and (ii) the sum needed to pay out those benefits which relate to service *after* the ***effective date*** ('future service').

A.14 For both parts of the calculation we adopt the same assumptions regarding the future progression of salaries of the Scheme members and the rate of return which would be earned by the capital sum if it were invested. Different member behaviour assumptions are made for past and future components as outlined below.

Past service position

A.15 In relation to the past service element, we compare the capital sum (or present value) relating to past service with the ***notional assets*** at the ***effective date***. If all the assumptions made during previous reviews had been borne out exactly, and assuming no errors in previous data sets are revealed, the ***notional assets*** would exactly equal the capital sum now needed to pay for those past service benefits. But, if actual events have differed from the assumptions made, then the ***notional assets*** will exceed, or fall short of, the capital sum now estimated to be needed.

A.16 To the extent that the ***notional assets*** are *less* than the capital sum needed to pay out all the benefits relating to past service, the fund is said to be in *deficit*. This deficit needs to be met by additional contributions. If the ***notional assets*** *exceed* the capital sum required for past service benefits, it is said to be in *surplus* and there would be a reduction in the contributions that would otherwise be paid for future service.

Future contributions

A.17 To calculate the future service elements, we have calculated the percentage of total pensionable pay that would need to be paid to meet the benefits accrued over the four-year ***implementation period***, and then deducted the member contributions. The calculations are based on all members being in the 2015 Scheme with assumptions reflecting members' likely behaviour had they never been members of the Earlier Schemes.

Employer contribution correction cost

A.18 The ***proposed employer cost cap*** is a measure of the cost of the 2015 Scheme.

A.19 The ***employer contribution correction cost*** is intended to capture cost risks associated with both the 2015 Scheme and the operation of the Earlier Schemes for members still in contributing service at the time the 2015 Scheme was introduced. The ***employer contribution correction cost*** is a measure of these costs and is compared to the ***target cost of the scheme***. It is calculated as a combination of the past and future service elements described above.

Appendix B: Summary of membership data and comparison with data at previous valuation

Table B1: Summary of Actives data as at 31 March 2016

Category	Number of members	Actual pensionable salary £m	FTE pensionable salary £m	Average actual pensionable salary (not weighted) £	Average age weighted by actual pensionable salary	Average reckonable service (not weighted)	CARE pension £m
CRA 60	15,974 [1]	382.8	399.9	23,964	48.5	19.0	7.8
CRA 62	4,741 [1]	74.0	91.0	15,606	54.9	10.4	1.5
CRA 65	31,976 [1]	412.9	585.2	12,913	43.9	2.7	7.7
Total	**52,691** [1]	**869.7**	**1,076.1**	**16,506**	**46.5**	**8.3**	**17.0**
AH [2]	**52,817** [3]	**850.7**	**Not available**	**16,100**	**46.2**	**8.3**	**16.7** [4]

1 Excludes councillors
2 This row shows figures from the Aon Hewitt actuarial valuation report
3 Includes 421 councillor members
4 Implied from £317 average CARE pension and the number of members

Table B2: Summary of Deferred pensioner data as at 31 March 2016

Category	Number of members	Total deferred pension[1] £m	Average pension[1] £	Average age
CRA 60[2]	8,192[3]	21.6	2,640	48.7[4]
CRA 62[2]	2,448[3]	2.9	1,188	54.4[4]
CRA 65[2]	15,221[3]	11.6	764	50.1[4]
Total	**25,861[3]**	**36.2**	**1,398**	**49.6[4]**
Data used by Aon Hewitt	**30,227 [5]**	**36.2**	**1,200**	**46.0[6]**

1 Includes pension increase payable in April 2016
2 Critical retirement Age calculated based on Critical Retirement Date field in data, if CRD was blank CRA is set to be 65th birthday
3 Excludes councillors, 'undecided' and 'frozen' members
4 Weighted by deferred pension
5 Includes 4,787 members who at the valuation date were yet to decide whether to take a refund of contributions or whose records were in the process of being converted from active to deferred or pensioner status ['undecided' members] and 288 deferred councillor members
6 Report does not specify whether average age is weighted or not

Table B3: Summary of Pensioner data as at 31 March 2016

Category	Number of members	Total pension[1] (£m)	Average pension[1] (£)	Average age (years)
Age Retirement	18,764	106.3	5,663	70.1[2]
Ill-Health Retirement	7,681	37.3	4,861	66.3[2]
Total	**26,445**	**143.6**	**5,430**	**69.2[2]**
Data used by Aon Hewitt	**26,471**	**143.5**	**5,421**	**70[3]**

1 Includes pension increase payable in April 2016
2 Weighted by current pension in payment
3 Report does not specify whether average age is weighted or not

Table B4: Summary of Dependant data as at 2016

	Number of members	Total pension[1] £m	Average pension[1] £	Average age
Spouse	4,961	12.0	2,413	74.8[2]
Children	378	0.5	1,401	18.7[2]
Total	**5,339**	**12.5**	**2,341**	**72.4[2]**
Data used by Aon Hewitt	**5,345**	**12.5**	**2,300**	**71.7[3]**

1 Includes pension increase awarded in April 2016
2 Weighted by current pension in payment
3 Report does not specify whether average age is weighted or not

Appendix C: Notional assets and cashflows

D.1 The calculation of the ***notional assets*** for ***employer contribution correction cost*** purposes, referred to as the ***cost cap fund***, is based on the prior value of the ***cost cap fund*** as specified in the Directions. For this valuation an initial value of the ***cost cap fund*** has to first be determined. This has been calculated as the value of the liability for contributing members as at 31 March 2015 using the assumptions set for the 2013 valuation (including those specified in the Directions issued for that valuation). The ***cost cap fund*** for this valuation is calculated by making adjustments to this initial value for income and benefit payments and a notional return is credited each year. A further adjustment, the ***cost cap net leavers liabilities***, is applied to allow for members leaving or re-joining contributory membership during the ***inter-valuation period***. These adjustments are made in a similar way to those for the whole Scheme ***notional assets*** but adapted to encompass only those payments which relate to the liabilities within the cost cap. The figures are set out in Table C1. Income and expenditure are assumed to occur mid-year for the purposes of crediting the notional return.

Table C1: Cost cap fund

	£ million	***Direction***
Initial cost cap fund as at 31 March 2015	3,214	***30***
Plus ***cost cap income***	260	*33*
Less ***cost cap benefits paid***	(13)	*34*
Less ***cost cap net leavers liability***	(428)	*35*
Plus ***cost cap notional investment return***	90.0	*36*
Cost cap fund as at 31 March 2016	3,123	***37***

Cost cap income

D.2 Under the directions, the cost cap income in respect of employer contributions is the amount that would have been received had all employers contributed at the ***cost cap fund contribution rate*** during 2015-16. The calculation of the ***cost cap fund contribution rate*** is set out in Table C2 below.

Table C2: Cost cap fund contribution rate

	% pa		*Direction*
Expected cost of benefits accruing between 1 April 2015 and 31 March 2016 by reference to Direction 32	26.9	**A**	
Less normal[13] member contributions paid between 1 April 2015 and 31 March 2016	6.4	**B**	
Cost cap fund contribution rate	**20.5**	**A-B**	***32***

Notional investment returns

D.3 The actual ***notional investment returns*** used to roll up the ***notional assets*** and the ***cost cap fund*** from the prior value to the ***effective date*** of the valuation are set out in Table C3 below.

Table C3 Notional investment returns

	Cost cap fund*
2015/16	2.30%

*To note the rate of roll up for the ***cost cap fund***, is set as specified in the Directions.

D.4 Under the Directions, the operation of the cost cap mechanism[14] is not affected by the actual assets held by LGPS NI.

[13] Excluding additional voluntary contributions (past added years, additional pension, money purchase AVCs) and contributions for any other options exercised
[14] Including the ***SCAPE discount rate***, the ***cost cap fund,*** and the ***notional investment returns***.

Appendix D: Events since the 2013 actuarial valuation

Introduction of new scheme from 1 April 2015

D.1 A reformed Scheme, the 2015 Scheme, was introduced from 1 April 2015. The main differences compared to the previous arrangements were to provide benefits on a career average basis with normal pension age linked to State Pension age. Transitional arrangements were made under which some older members have a final salary underpin to their benefits. The benefits provided from the Schemes, together with a summary of the transitional provisions, are summarised in the Data report.

Member contributions

D.2 Changes to member contribution rates were introduced at the same time as the 2015 scheme. The revised rates were earnings-related and are shown in Table D1.

Table D1: Member contribution rates 2015/16

Actual pensionable pay	Member contribution rate 2015/16
≤ £14,000	5.5%
£14,001 - £21,300	5.8%
£21,301 - £35,600	6.5%
£35,601 - £43,000	6.8%
£43,001 - £85,000	8.5%
> £85,000	10.5%

Assumption changes

D.3 Future life expectancy and the ***SCAPE discount rate*** used have had a major impact on the results of the valuation. Further information on these assumptions and how they impact on the results of the valuation are set out in section 2.

Guaranteed Minimum Pension (GMP) increases

D.4 Members of public service schemes who reach State Pension age on or after 6 April 2016 and before 6 April 2021 will receive the same rate of increase on all scheme pensions including GMP. This was announced after completion of the 2013 valuation and the corresponding liability is included in this valuation for the first time.

D.5 The Department of Finance has subsequently announced further changes to the treatment of other GMP rights in the Scheme which will result in further liability being included in future valuations.

GMP overpayments

D.6 Continuing GMP reconciliation work may result in identifying over or underpayments to members. We assume such payments will in aggregate not be material to the valuation.

Legal cases

D.7 A number of legal challenges, summarised below, have been brought against public service (and other) pension schemes since the 2013 valuation. We have not made any allowance for these in the current valuation.

Brewster: nomination forms for survivor benefits

D.8 In February 2017, the Supreme Court ruled that a regulation requiring a signed nomination form from a member of the Northern Ireland Local Government Pension Scheme, in order to entitle an unmarried partner to survivor benefits in the scheme, was unlawful (the Brewster judgement). The Government has instructed all public service schemes to make appropriate amendments in light of this ruling. The impact of doing this has not been reflected in the data provided for the current valuation and no estimate of the impact has been included.

Walker: survivor's pension payable to a surviving civil partner or same-sex spouse

D.9 In July 2017, the Supreme Court handed down judgement in the case of Walker vs Innospec Ltd and others. The Supreme Court found that it is unlawful to restrict the survivor's pension payable to a surviving civil partner or same-sex spouse so that it reflects only the member's pensionable service since 5 December 2005 (the date on which the Civil Partnership Act 2004 came into force). The exact implications of the judgement remain unclear.

Lloyds Banking Group: GMP equalisation

D.10 In October 2018, the High Court published its judgement in a case, brought by the pension trustees at Lloyds Banking Group, on equalisation of GMPs. They found that pensions must be equalised for the effects of unequal GMPs and handed down guidance on how to do that in relation to the Lloyds Banking Group schemes. UK Government will consider the implications for the public service pension schemes, if any. No allowance has been made in the ***valuation results*** for any benefit changes required as a result of this ruling.

Pension increases and in-service revaluations

D.11 The actual rates of increase awarded to pensions in payment and to those in-service in the 2015 Scheme since the 2013 valuation are set out in Tables D2 and D3 respectively. The known rates of increase awarded since the ***effective date*** are also shown. These have been taken into account in the valuation.

Table D2: Pension increases since the previous valuation

Year	Pension Increase
April 2013	2.2%
April 2014	2.7%
April 2015	1.2%
April 2016	0.0%
April 2017	1.0%
April 2018	3.0%

Table D3: 2015 Scheme in-service revaluation since the previous valuation

Year	In-service revaluation
April 2016	(0.10)%
April 2017	1.00%
April 2018	3.00%

Appendix E: Summary of assumptions

E.1 The following tables show the financial assumptions and mortality assumptions. The financial assumptions and rate of future improvements in life expectancy are specified in the Directions. The baseline mortality assumption is set by the Department for Communities.

Table E1: Financial assumptions at current valuation and 2013 valuation

	31 March 2016				**31 March 2013**			
Discount rate								
For cost cap	2.4% pa real; 4.45% nominal				3% pa real; 5.06% pa nominal			
Pension increases	2% pa				2% pa			
Long term salary growth	4.2% pa, 2.2% pa in excess of assumed CPI				4.75% pa, 2.75% pa in excess of assumed CPI			
Short term variations in assumptions	Year	Gross discount rate	Pension increases[15]	Salary growth	Year	Gross discount rate	Pension increases[19]	Salary growth
	2016/17	3.42%	1.0%[16]	1.2%	2013/14	5.78%	2.7%	0.5%
	2017/18	5.47%	3.0%[17]	2.2%	2014/15	5.27%	2.2%	1.5%
	2018/19	4.65%	2.2%	2.1%	2015/16	5.16%	2.1%	2.0%
	2019/20	4.24%	1.8%	2.3%	2016/17	n/a	n/a	2.5%
	2020/21	n/a	n/a	2.6%	2017/18	n/a	n/a	3.0%
	2021/22	n/a	n/a	2.8%	2018/19	n/a	n/a	3.0%
	2022/23	n/a	n/a	3.0%				

[15] Relates to the Pension Increase made in the April following the year end
[16] Order made for 2016/17
[17] Order made for 2017/18

Table E2: Mortality assumptions

	2016 valuation		2013 valuation	
Baseline mortality	**Standard table[18]**	**Adjustment**	**Standard table**	**Adjustment**
Males				
Retirements in normal health	S2PMA	103%	S1NMA	110%
Ill-health pensioners	S2IMA	103%	S1IMA	100%
Dependants	S2PMA	103%	S1NMA	110%
Females				
Retirements in normal health	S2PFA	97%	S1NFA	110%
Ill-health pensioners	S2IFA	102%	S1IFA	100%
Dependants	S2PFA	97%	S1NFA	110%

E.2 Future mortality improvements are in line with the most recent ONS population projections at the date of each valuation: ONS-2016 projections for the 2016 valuation and ONS-2012 projections for the 2013 valuation.

Table E3: Other demographic assumptions

Assumption	**Summary of recommended assumptions**
Age retirement	
Rates apply for all service	Retirement ages depending on NPA/CRA[19] and protection status.
Ill-health retirement	
Incidence	Rates increasing by age: 0.04% at age 30, 0.15% at age 45, 1.85% at age 60
Upper/lower tier split	70% assumed to retire on tier 1 benefits and 30% on tier 2.

[18] SAPS (S2) tables are published by the Actuarial Profession and based on the experience of self-administered pension schemes over the period 2004 to 2011. The 'S2' series has separate standard tables based on experience of members retiring in normal health (S2NXA), in ill health (S2IXA) and for dependants (S2DXA). The S3 series of tables were released by CMI on 5 December 2018. These updated mortality tables cover experience between 2009 and 2016. The final tables are unchanged from the working paper issued during 2018, from which GAD concluded that moving to the S3 tables would likely have no material impact on the valuation results as a whole. It therefore remains appropriate to use the S2 tables for the current valuation.

[19] Under the rule of 85, some members can take unreduced benefits prior to normal pension age (NPA). The age at which this applies is known as Critical Retirement Age (CRA)

Assumption	Summary of recommended assumptions
Withdrawal	Rates decreasing by age: 8.3% at age 25, 3.0% at age 45, 1.2% at age 60
Death before retirement	50% x S2PXA (C=2016)
Promotional salary scale	Age dependent scale. Steeper at younger ages: 3.2% at age 25, nil at age 45, nil at age 60
Commutation	
Pension from pre-2009 Service	8.5% of pension commuted in addition to lump sum as of right (to provide total cash of 65% of HMRC maximum)
Family statistics	
Proportion married/partnered	80% of non-pensioners assumed married or have a partner at retirement or earlier death 80% of pensioners assumed to be married or have a partner at age 65
Age difference	Males 3 years older than female spouse/partners

E.3 The other demographic assumptions detailed in Table E3 are the same as used in the 2013 valuation except for the following:

> The age retirement assumptions have been added for members with service before 2015; these were not needed for the 2013 valuation

> The ill-heath retirement incidence assumption has been reduced

> The death in service assumption has been simplified

> The commutation assumption in respect of pre-2009 service has been added (it was not needed for the 2013 valuation)

> The Proportion married/partnered assumption has been reduced

E.4 Full details of the demographic assumptions are provided in the Assumptions report.

E.5 The Directions require us to provide the average expected future pensionable service of the Scheme members in service at the ***effective date***. This is shown below, along with the average duration of liabilities for active members and current pensioners (which gives an indication of the timing of future cashflows).

Table E4: Duration and average future working lifetime

Member Type	Average expected future pensionable service (years)	Duration of liabilities (years)
Active Member	9.0	24.3

Current Pensioner	n/a	11.9

F.4 The Directions require this report to provide the pensionable payroll for the Scheme at the ***effective date*** and that projected to the ***implementation date*** and the final day of the ***implementation period***. These are shown below.

Table E5: Projected pensionable payroll

Date	Pensionable Payroll (£ million)
Effective date (31 March 2016)	870
First year of implementation period (2019/20)	924
Last year of implementation period (2022/23)	997

Appendix F: Location of material required by Directions

Direction	Description	Location
21 (1) (a) (i) and (ii)	Summary of membership data and checks carried out	Data report
21 (1) (a) (iii)	Adjustments made to data Projections made	Data report Assumptions report
21 (1) (b)	Average age of active members	Appendix B, Table B1
21 (1) (c)	Average expected future pensionable service of active members	Appendix E, Table E3
21 (1) (d)	Total projected pensionable payroll	Appendix E, Table E4
21 (1) (e)	Statement of compliance with Directions	Section 2, Paragraph 2.3
21 (1) (f)	Summary of regulations, Directions, and professional standards	Section 2, Paragraphs 2.1 and 2.5 Appendix G GAD website
21 (1) (g)	Summary of main provisions of the schemes	Data report
21 (1) (h)	Analysis of demographic experience	Assumptions report
21 (1) (i) (i) and (ii)	Statement of assumptions, including rationale	Section 2, Paragraph 2.4 Assumptions report See also Appendix E
21 (1) (i) (iii)	Illustration of sensitivity to assumptions set by the Department for Communities	Section 4, Table 4.1
21 (1) (j)	Other liabilities valued	None
21 (1) (k)	Any other matters scheme actuary feels relevant	None
21 (2)	Illustration of sensitivity to specific assumptions set in the Directions	Section 4, Table 4.1
22, 24-29	Employer contribution rates	Directions 22 and 24-29 do not apply to LGPS NI (see Direction 44)
22A (a) and 30 (1)	The prior value of the cost cap fund	Appendix C, Table C1
22A (b)	The cost cap contribution yield	Section 3, Table 3.3

22A (c)	The cost cap income	Appendix C, Table C1
22A (d)	The cost cap benefits paid	Appendix C, Table C1
22A (e)	The cost cap net leavers liabilities	Appendix C, Table C1
22A (f)	The cost cap notional investment returns	Appendix C, Table C1
22A (g)	The cost cap fund	Section 3, Table 3.1
22A (h)	The cost cap liabilities	Section 3, Table 3.1
22A (i)	The cost cap future service cost	Section 3, Table 3.3
22A (j)	The cost cap past service cost	Section 3, Table 3.3
22A (k)	The employer contribution correction cost	Section 3, Table 3.3
22A (l)	The cost cap difference	Section 3, Table 3.3
48 (h)	Cost cap analysis	Section 3, Table 3.4
31 (1)	Member contributions expected over the implementation period	Section 3, Table 3.3

Appendix G: Glossary

H.1 This report contains several terms with which you may not be familiar. Many of these terms come directly from the Directions or are specified in regulations, and paragraph 2 of the Directions gives some explanation of their meaning. This appendix is not intended to repeat the definitions of these terms from the Directions, rather to add further information to aid understanding of some of those terms and some other general pensions terms.

H.2 The ***valuation report*** is this pre-McCloud report, prepared by the scheme actuary in accordance with the Directions for the purpose of calculating the ***employer contribution correction cost***.

H.3 The ***cost cap valuation report*** is the report to be prepared by the scheme actuary in accordance with the Directions for the purpose of determining the ***cost cap cost of the scheme***.

Terms relating to the calculation of the employer contribution correction cost

H.4 The ***employer contribution correction cost*** means the contribution rate which is compared against the ***target cost of the scheme*** at the first and each subsequent valuation of a scheme. It is calculated in four parts:

> The cost in respect of future service over the ***implementation period*** (G.14), calculated as if all active members are in the 2015 Scheme and have no pre-2015 Scheme service; plus

> the cost in respect of past service, which is the difference between the ***cost cap fund*** (G.6) and the ***cost cap liabilities*** (G.7) converted to a contribution rate payable over 15 years; minus

> the ***cost cap contribution yield***, which is the expected average contribution rate payable by members over the implementation period; minus

> the ***cost cap difference***, which is the difference between the employer cost cap as set out in regulations and the ***proposed employer cost cap*** (G.5) which would have been calculated in 2013 had updated financial assumptions been assumed. It acts to remove the impacts of changing the discount rate and long-term earnings assumptions from the cost control mechanism (in accordance with the policy aim contained in HM Treasury's policy document *Public service pensions: actuarial valuations and the employer cost cap mechanism*).

H.5 The ***proposed employer cost cap*** is the contribution rate, that was determined at the 2013 valuation, to cover the cost of benefits accruing over the ***implementation period*** as if all active members were in the 2015 Scheme and had no pre-2015 Scheme service, minus the expected average contribution rate payable by members over the implementation period.

H.6 The ***cost cap fund*** is a notional amount of money, initially set as the value at 31 March 2015 of the active members' past service liabilities. It has been updated to 31 March 2016 to take account of ***cost cap income*** (G.8), ***cost cap benefits paid*** (G.10), ***cost cap net leavers liabilities*** (G.11) and ***cost cap notional investment returns*** (G.12).

H.7 The ***cost cap liabilities*** are the value of the past service liabilities for all active members of the Scheme and all deferred and pensioner members of the 2015 Scheme as at the valuation date.

H.8 The ***cost cap income*** represents money received by the Scheme for example through employee contributions and transfer values received to the scheme. Employer contributions are also included, but these are set as the amount that would have been received if employer contributions were paid at the ***cost cap fund contribution rate*** (G.9).

H.9 The ***cost cap fund contribution rate*** is the contribution rate required to cover the cost of benefits accruing to members of the Scheme from 1 April 2015 to 31 March 2016 less member contributions. It is calculated under the same updated assumptions that are used in the calculation to determine the ***cost cap difference***.

H.10 The ***cost cap benefits paid*** are the pension and lump sum benefits, and transfer and other sums paid out to members of the 2015 Scheme.

H.11 The ***cost cap net leavers liabilities*** are liabilities relating to benefits accrued in one of the pre-2015 schemes by members who have left, or re-joined, active service in the Scheme since the previous valuation. This item is needed because the cost control mechanism only captures costs relating to pre-2015 Scheme benefits while members are in active service and so such liabilities need to be removed from the ***cost cap fund*** (G.6) when pre-2015 Scheme members cease active service.

H.12 The ***cost cap notional investment returns*** are notional amounts added to ***the cost cap fund*** (G.6) which represent the returns that might have been received on the ***cost cap fund*** (G.6). The investment returns are set in line with the ***SCAPE discount rate*** (G.19).

General valuation terms

H.13 The ***employer contribution correction cost*** is a measure of how the cost of the scheme has changed relative to the ***target cost of the scheme***.

H.14 The ***implementation period*** for this valuation is 1 April 2019 to 31 March 2023.

H.15 The ***inter-valuation period*** is the three-year period 1 April 2013 to 31 March 2016.

H.16 The ***notional assets*** are a notional amount of money, initially set as the value of all members' past service liabilities at a specific date (as set out in Schedule 2 of the Directions). It is updated at each valuation to take account of all actual Scheme income and benefits paid, plus an allowance for notional investment returns which are set in line with the ***SCAPE discount rate*** (G.19).

H.17 Past service liabilities are the benefit promises (pensions, lump sums, survivor pensions, etc.) that have been made to members over their period of active membership of the Scheme prior to the ***effective date*** of the valuation. For active members, these liabilities include allowance for future salary inflation or in-service benefit revaluation until the assumed date of cessation of pensionable service.

H.18 ***Pensionable pay*** is the part of pay that is included for the purposes of determining contribution requirements and benefit payments.

H.19 The term SCAPE is short for the Superannuation Contributions Adjusted for Past Experience. The ***SCAPE discount rate*** is the Government's measure for determining the present value of future payments. It is currently set equal to the rate of expected long-term GDP growth. Further detail can be found in in the consultation documentation published by HM Treasury in December 2010 and April 2011[20].

[20] https://www.gov.uk/government/consultations/the-discount-rate-used-to-set-unfunded-public-service-pension-contributions

Appendix H: Limitations

H.1 This report is intended solely for the use of the Department for Communities, for the purpose of calculating the ***employer contribution correction cost***. The information and advice in this report should not be relied upon, or assumed to be appropriate, for any other purpose or by any other person. GAD does not accept any liability to third parties, whether or not GAD has agreed to the disclosure of its advice to the third party.

H.2 We are content for the Department for Communities 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
- GAD is notified of such release

H.3 Third parties whose interests may differ from those of the Department for Communities 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.

H.4 GAD is not responsible for any decision taken by the Department for Communities, except to the extent that the decision has been made in accordance with specific advice provided by GAD. Advice provided by GAD must be taken in context and is intended to be read and used as a whole, not in parts. GAD does not accept responsibility for advice that is altered or used selectively. No significant action should be taken based on oral advice alone. Clarification should be sought if there is any doubt about the intention or scope of advice provided by GAD.

H.5 GAD relies on the accuracy of data and information provided by NILGOSC. GAD does not accept responsibility for advice based on wrong or incomplete data or information provided by NILGOSC or the Department for Communities.

H.6 This work has been carried out 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.

H.7 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.