



Government
Actuary's
Department

Local Government Pension Scheme (Scotland)

Actuarial valuation as at 31 March 2017
Report on membership data

24 June 2022

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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.

1 Introduction

- 1.1 This report is addressed to the Scottish Public Pensions Agency (SPPA). It is also being made available to the Local Government Pension Scheme in Scotland ('LGPS S' or 'the Scheme') Scheme Advisory Board (SAB) as part of the consultation process relating to the actuarial valuation of LGPS S which is being carried out as at 31 March 2017.
- 1.2 Pension scheme membership data for LGPS S is required for the actuarial valuation of the Scheme as at 31 March 2017, carried out in accordance with HM Treasury's Public Service Pensions (Valuations and Employer Cost Cap) Directions 2014 as amended ('HMT Directions').
- 1.3 The membership data is used for the following:
- > To calculate valuation results¹ (all valuation data)
 - > To assess the initial cost cap fund (active member data as at 31 March 2015)
 - > To assess elements of the Scheme's demographic experience in order to recommend assumptions for the valuation (movements data 31 March 2014 to 31 March 2017)
- 1.4 The results of the valuation critically depend on the quality and correctness of the data used. The data provided was not fully correct and complete for all members and approximations have been made to enable valuation calculations to be undertaken.
- 1.5 The purposes of this report are:
- > to discuss and summarise the membership data provided, and any checks and adjustments made to the data;
 - > to enable users of the valuation report to understand the underlying membership data used in the valuation and any issues relating to it; particularly those issues that may impact on the valuation results; and
 - > to discuss and summarise the movements data provided and to be used to inform decisions around scheme specific assumptions to be used for the valuation.

¹ Actual employer contributions will be paid in accordance with each administering authority's rates and adjustments certificate issued under Regulation 60 of the 2018 Regulations.

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- 1.6 Following the Court of Appeal judgement that found the transitional protections provided to firefighters and members of the Judiciary give rise to unlawful age discrimination, the government has confirmed that the difference in treatment will also need to be remedied for LGPS, and other public service pension schemes, and the increased value of schemes to members as a result of the McCloud remedy will be taken into account in the completion of the 2016 valuations². SPPA consulted on its proposals to implement the remedy by amending the LGPS S statutory underpin³. As at the date of this report, the consultation response is yet to be published.
- 1.7 In her written ministerial statement⁴ ('WMS') made on 30 January 2019 following the McCloud Court of Appeal 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 published⁵ on 7 October 2021. These amending directions include requirements for responsible authorities to consider whether the data provided is sufficient for the cost cap elements of the valuation.
- 1.8 All member data and supplementary accounting information provided and discussed in this report were supplied by the administering authorities and their actuarial advisors. The data requested by GAD was intended to be not materially different from the data that the respective local authority funds would be using for their own local funding actuarial valuations as at 31 March 2017. GAD is grateful to the administering authorities and their actuarial advisors for the prompt provision of data, and their responses to follow-up queries.
- 1.9 In preparing this report, GAD has relied on the completeness and accuracy of the data and other information supplied by or on behalf of administering authorities as described in the report. Our checks on this data and information are limited to those described in the report, including any checks on the overall reasonableness and consistency of the data. These checks do not represent a full independent audit of the data supplied and do not by themselves confirm or guarantee the overall quality or correctness of the data. In particular, GAD has relied on the general completeness and accuracy of the information supplied without independent verification.
- 1.10 Summaries of the membership and movements data used for the valuation are provided in Section 2 of this report with further information in Appendices A and B of this report respectively.

² <https://questions-statements.parliament.uk/written-statements/detail/2021-02-04/hcws757>

³ <https://pensions.gov.scot/sites/default/files/2020-07/LGPS%20Consultation%20-%20Addressing%20discrimination%20-%20amendments%20to%20the%20statutory%20underpin.pdf>

⁴ <https://questions-statements.parliament.uk/written-statements/detail/2019-01-30/hcws1286>

⁵ <https://www.gov.uk/government/publications/public-service-pensions-completion-of-2016-valuations>

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- 1.11 We have concluded the data provided is adequate for the purposes set out in 1.3 above, after consultation with SPPA. However, there are some risks and uncertainties resulting from some missing data, which we have set out in this report. This report does not consider whether the data provided is sufficient for calculating the impact of the McCloud remedy on the cost cap elements of the valuation. This point is covered in our separate advice for valuing remedy *Local Government Pension Scheme (Scotland) Cost-cap valuation as at 31 March 2017 assumptions, methodology and data* dated 24 June 2022.
- 1.12 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.

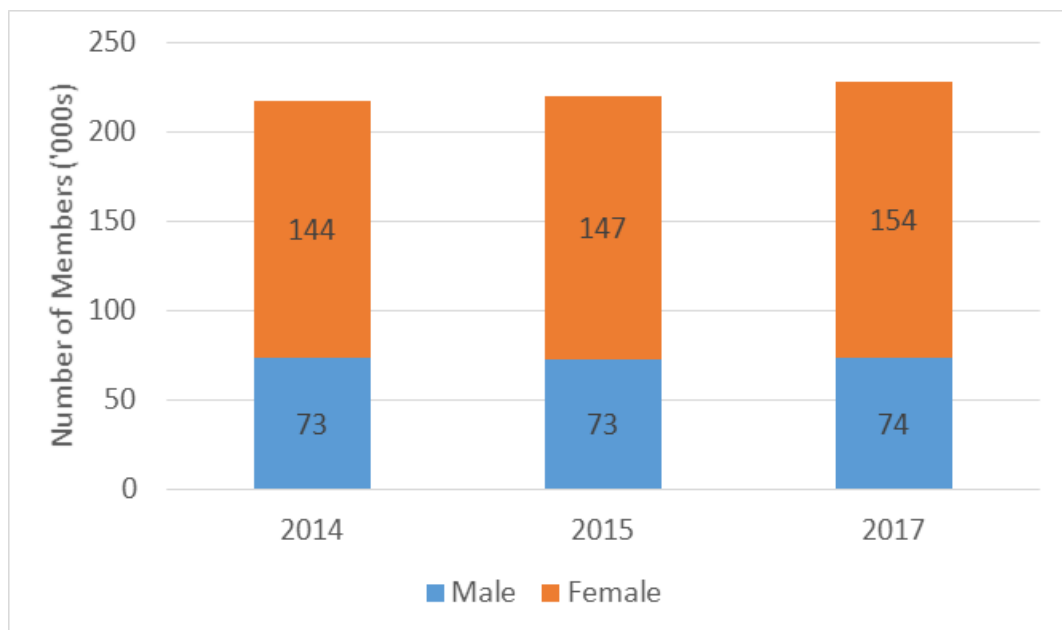
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- 1.13 We are content for SPPA to release this report to third parties, provided that:
- > it is released in full;
 - > the advice is not quoted selectively or partially;
 - > GAD is identified as the source of the report, and;
 - > GAD is notified of such release.
- 1.14 Third parties whose interests may differ from those of the Scottish Ministers 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.
- 1.15 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.

2 Summary of data used for the valuation

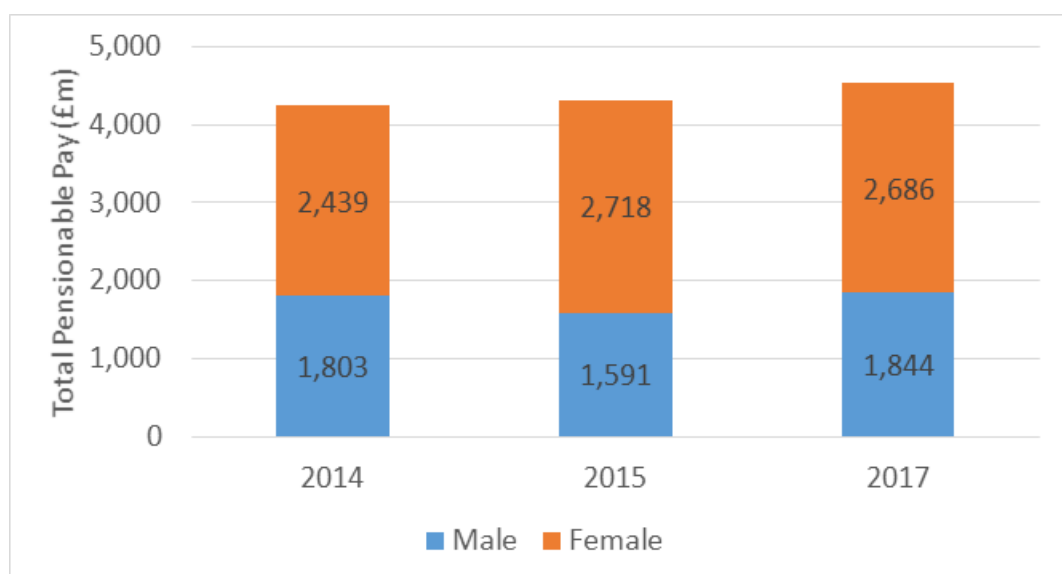
Membership data as at 31 March 2017

- 2.1 The membership data to be used for the purposes of the 2017 valuation is summarised below together with comparative data as used for the 2014 valuation. The summaries below reflect the membership allowed for in the valuation calculations which is based on the data supplied with adjustments as explained further in this report. Detailed tables are set out in Appendix A.

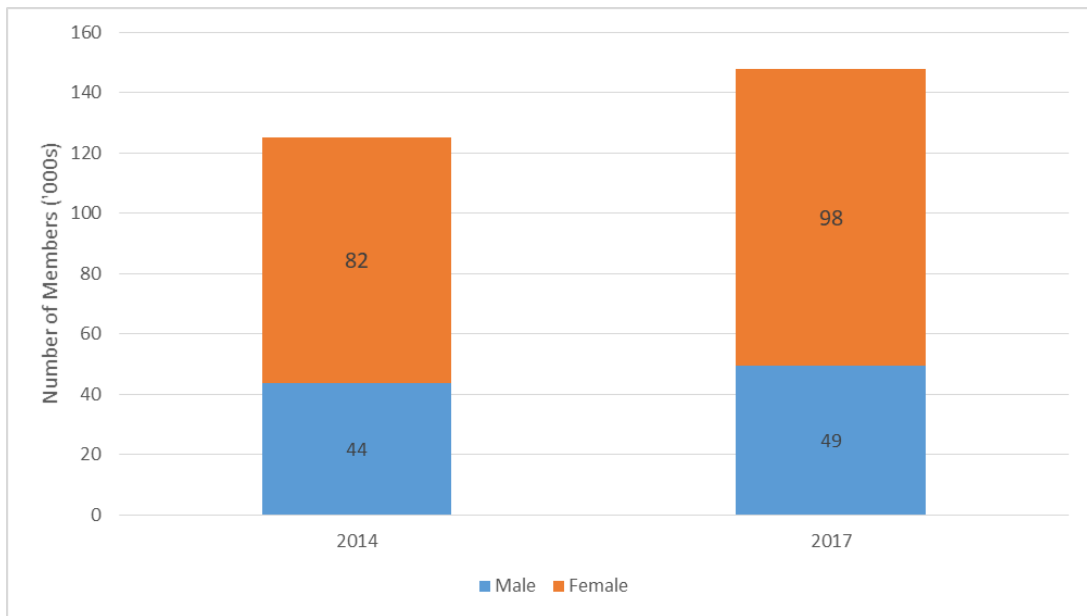
Graph 2.1: Number of active members



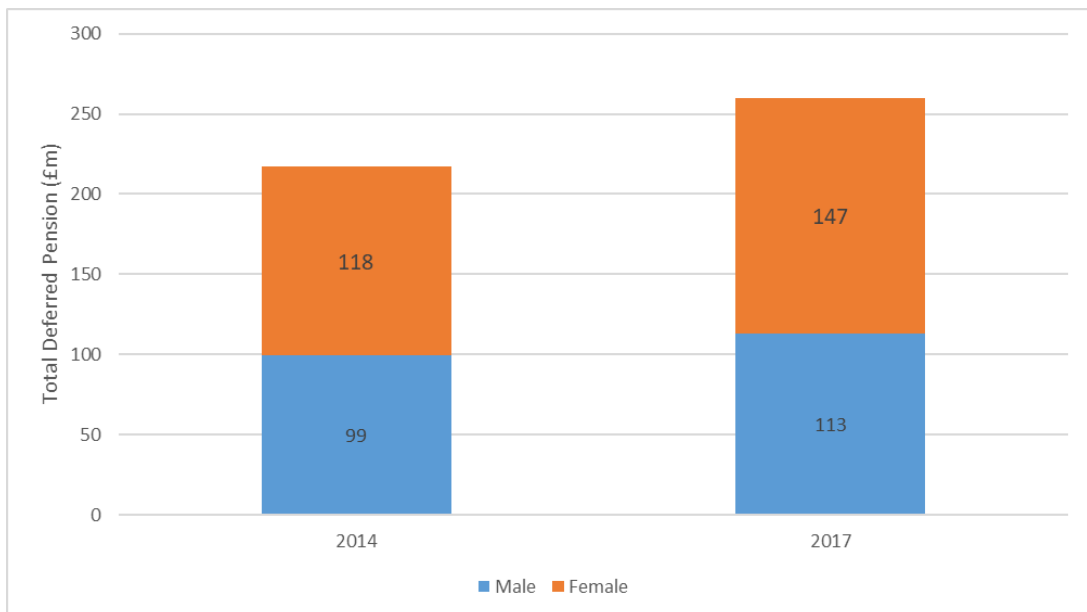
Graph 2.2: Active total pensionable pay (actual pay)



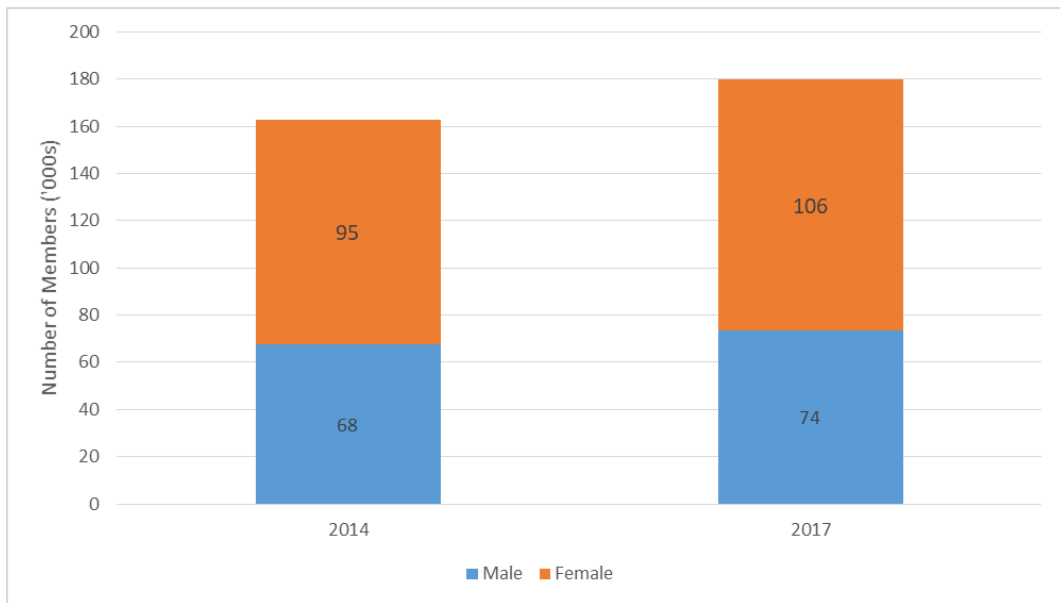
Graph 2.3: Number of deferred pensioners



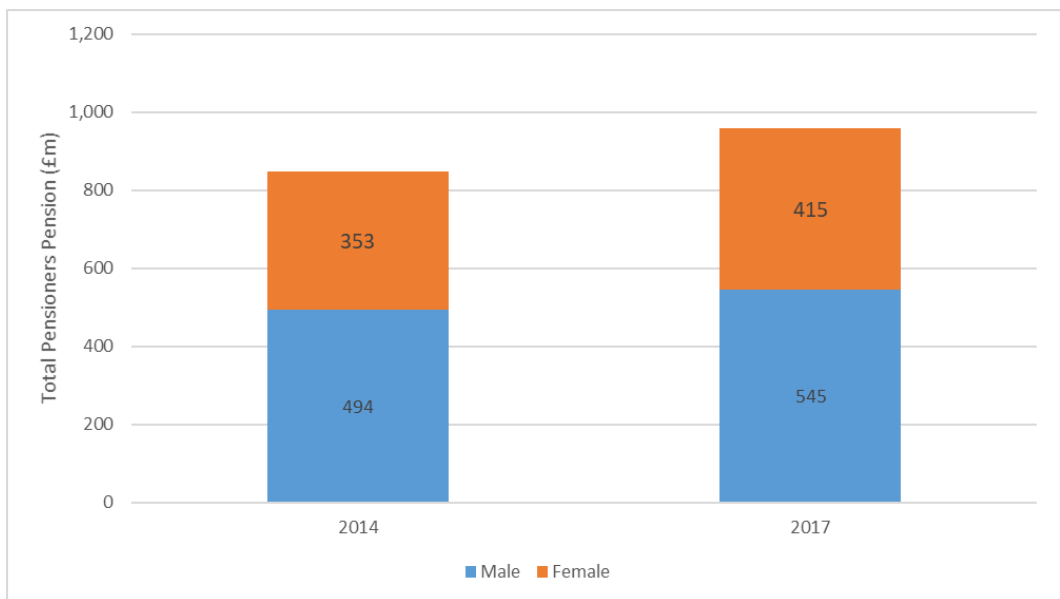
Graph 2.4: Total deferred pension



Graph 2.5: Number of pensioners and dependants



Graph 2.6: Total pension in payment (pensioners and dependants)



2.2 The graphs above show an increase between 2014 and 2017 in active, deferred, pensioner and dependant membership by both headcount and total salary/pension roll.

- 2.3 In aggregate LGPS Scotland funds provided around 570,000 records to GAD across all three membership categories (active, deferred and pensioner) in respect of the scheme membership as at 31 March 2017. Around 220,000 data records were provided in respect of the scheme membership as at 31 March 2015. One LGPS Scotland fund did not provide 2015 data. Checks were applied to all data records to ensure all key data items were provided and reliable for valuation purposes.
- 2.4 Records with key data items either missing or unreliable were excluded and remaining data uprated. This approach implicitly assumes that the records with missing/unreliable data have the same average profile as the complete/reliable records. The derivation of the uprating factors and the checks and adjustments applied to the data are explained further in the next section of this report. The overall uprating factors applied to each type of data are shown below.

Table 2.1: Uprating factors

31 March 2017	Uprating factor excluded data
Active members	1.02
Deferred members	1.01
Pensioner members	1.00
Total membership	1.01

Note: no uprating for missing funds was required for the 2017 data.

31 March 2015	Uprating factor excluded data (A)	Uprating factor missing funds (B)	Uprating factor aggregate (AxB)
Actives	1.015	1.008	1.023

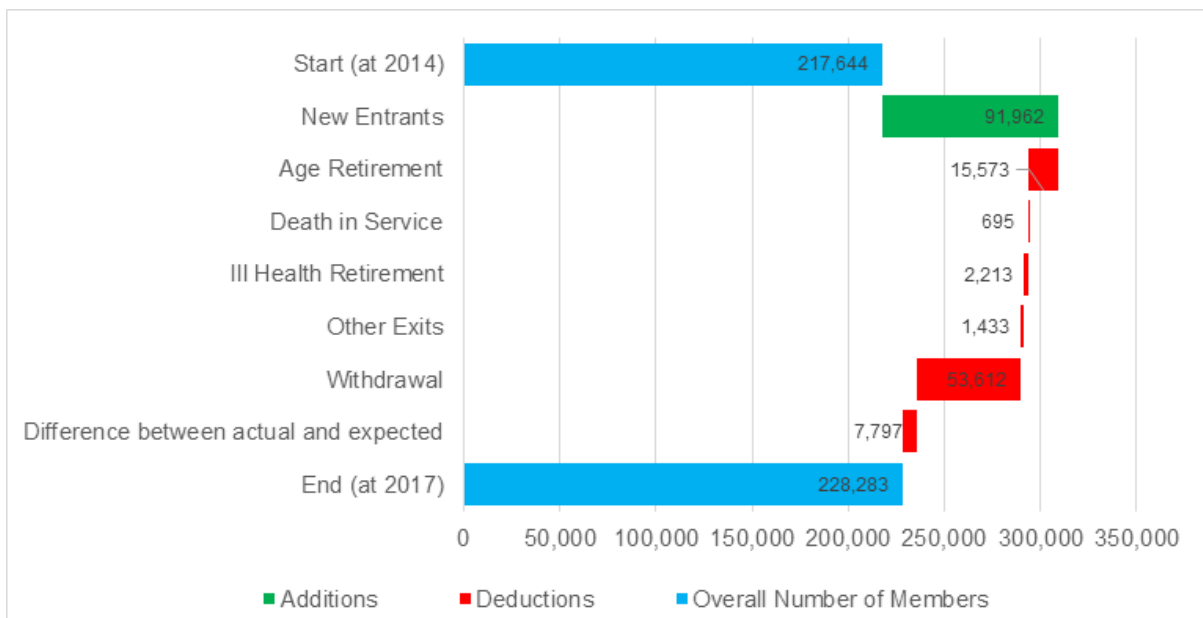
- 2.5 Actual pay (pensionable pay for the 2015 scheme) was only provided for a few active members in the 2015 data. We estimated actual pay from the full-time equivalent salary data provided using the average part-time proportion for the 2017 active data. This is an approximate approach; it can be seen in chart 2.2 above that the share of pay between males and females as at 2015 appears to be out of line with that as at 2014 and 2017. However, as this data is not needed to calculate the starting value of the cost cap fund, we are comfortable with the approach taken.

2.6 Making assumptions about missing data and allowing for known members with unusable data by uprating introduces uncertainty into the valuation results. Appendix F gives an indication of the potential level of uncertainty introduced.

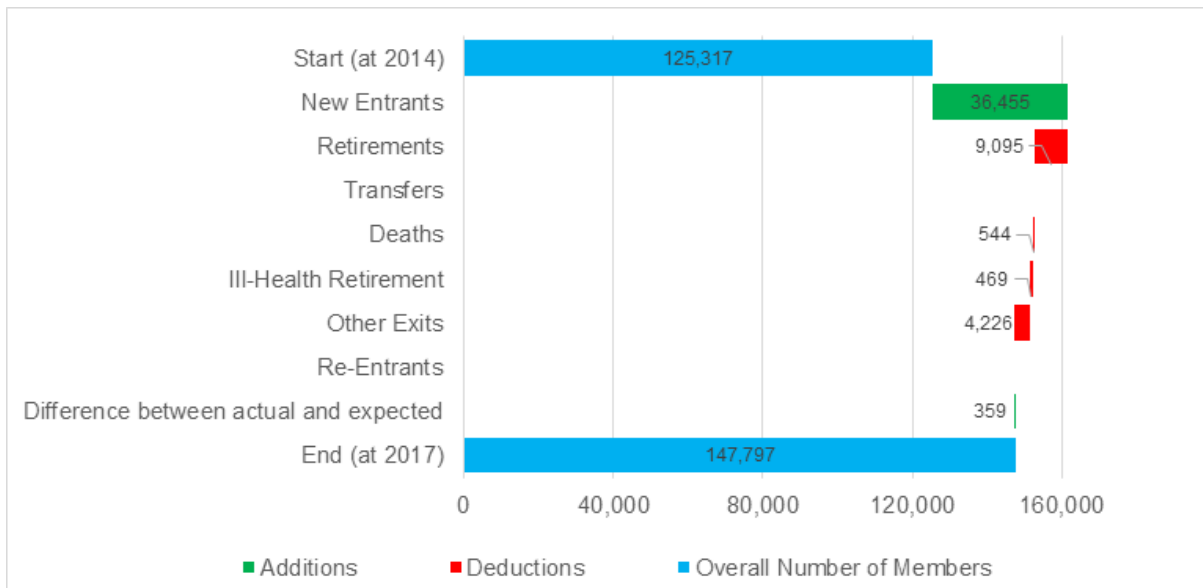
Movements data 31 March 2014 to 31 March 2017

2.7 The movements data provided is used for the purposes of informing the demographic assumptions to be used for the 2017 valuation. The graphs below show a reconciliation of the movements between 2014 and 2017. Further detail is given in Appendix B. Appendix F gives an indication of the potential level of uncertainty introduced into the valuation results owing to missing or unreliable movements data.

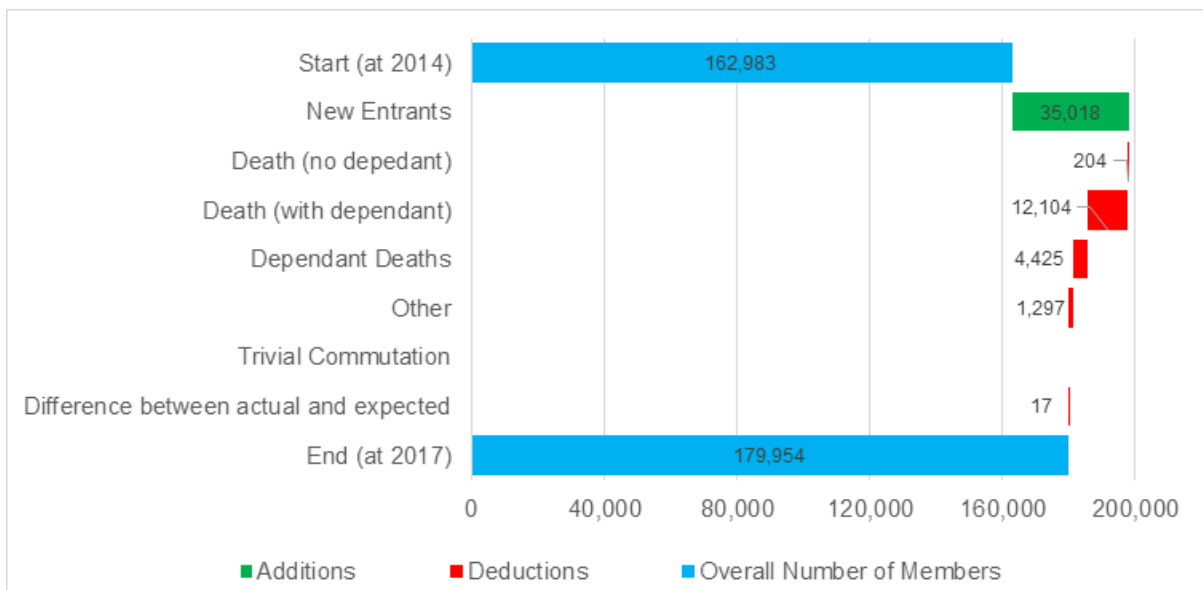
Graph 2.7: Active membership reconciliation



Graph 2.8 Deferred membership reconciliation



Graph 2.9: Pensioner and Dependants membership reconciliation

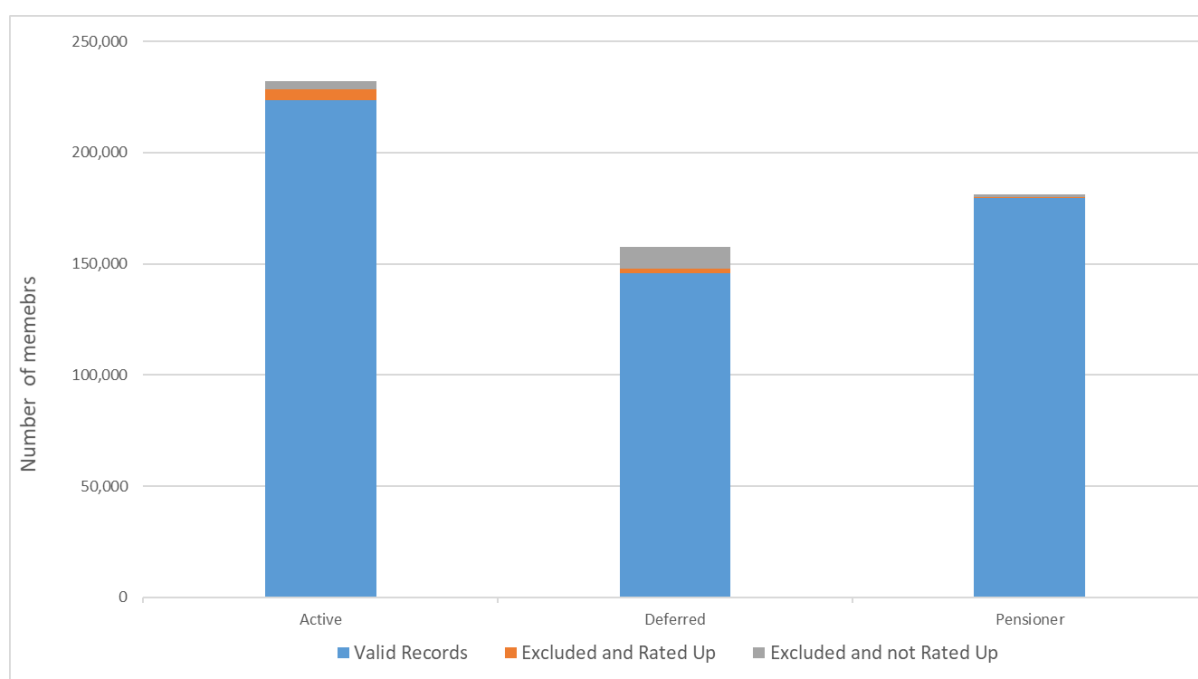


3 Data provided, checks and adjustments

Membership data as at 31 March 2015 and 2017

- 3.1 Individual member data was supplied for all current beneficiaries of the Scheme at the valuation date. Active member data as at 31 March 2015 was also supplied for the majority of the funds. The individual data items supplied which are critical to the valuation calculations are summarised in Appendix C.
- 3.2 The graph below shows, as at 31 March 2017, the total number of valid records (i.e. key data items are complete and appear to be reliable), the total number of records after exclusions and the total number of records after rating up. Undecided records are combined with deferred member data. Pensioners and dependants are combined in the graph. Further details are set out in Appendix E.

Graph 3.1: Summary of data provided and excluded



Checks made and adjustments applied

- 3.3 All key data items were checked against the specification requested for both completeness and consistency.
- 3.4 Checks were carried out to determine which records would need to be excluded by applying reasonableness tests. The checks and adjustments applied are summarised in Appendix E.

3.5 Based on the checks applied some records were excluded from the dataset for valuation purposes. Uprating factors were determined for each membership category equal to the ratio of known valid records and the number of records with adequate data. Implicitly this uprating approach assumes that excluded records have the same average profile (i.e. age, sex, pay, service) as included records. Tables 3.1 & 3.2 show the derivation of the uprating factors for excluded members.

Table 3.1: Derivation of uprating factors (31 March 2017)

31 March 2017	Number of records received	Number of valid records (A)	Number of exclusions [due to missing / poor data]	Number of members after exclusions (B)	Uprating factor (A/B)
Active members	232,159	228,283	4,794	223,489	1.02
Deferred members	157,711	147,797	1,848	145,949	1.01
Pensioners	152,552	151,565	104	151,461	1.00
Dependants	28,591	28,389	105	28,284	1.00
Total membership	571,013	556,034	6,851	549,183	1.01

Table 3.2: Derivation of uprating factors for stock data (31 March 2015)

31 March 2015	Number of records received	Number of valid records (A)	Number of exclusions	Number of members after exclusions (B)	Uprating factor (A/B)
Active members	220,080	218,199	3,175	215,024	1.015

To allow for data not being supplied for the Orkney fund a global uprating of 1.008 was applied giving a final number of members of 219,988.

3.6 The main issue with the 2017 data was a high number of duplicate records in the deferred member in comparison with LGPS in England & Wales. The Scottish proportion of 36% is reduced by 6% by removing 'undecided/frozen' records which do not have 'current record status code' set to UND (undecided leaver) or FZN (frozen refund/other).

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- 3.7 After investigating further, we are comfortable with the level of duplicates. Members may have more than one employment. For example, a school canteen worker who also has a school crossing patrol job might have two different records – both with a low part time percentage. Workers in these kinds of roles may withdraw more often than others, causing relatively more duplicate deferred records. Actives and pensioners data had lower levels of duplicates that were consistent with LGPS in England & Wales.

Movements data – 31 March 2014 to 31 March 2017

- 3.8 Movement records were split out from the combined stock and movement data. The movements data is analysed and used to inform how assumptions of future members' behaviours should be set for the valuation. The key data items provided for member movements are set out in Appendix D.
- 3.9 Limited checks were applied to movements data and records were only excluded if key missing data materially impacted the analysis being undertaken. The checks and exclusions are summarised in Appendix G.
- 3.10 Some of the movements data provided was not considered sufficiently reliable to form a basis for setting assumptions, in particular for:
- Age retirement
 - Withdrawal
 - Proportion married or partnered

In these cases, we have proposed assumptions based on the assumptions set for previous valuations and/or relevant data from other sources.

Comparison with LFR24 Data

- 3.11 As a check on the final 2017 valuation data, we compared total pensionable pay and total pensions in payment from the adjusted valuation data with statistics provided to us by SPPA known as LFR24 data.
- 3.12 For active members, we compared total pensionable pay with estimated figures calculated from the employee contributions supplied in the LRF24 data and an estimated member contribution rate derived from a contribution yield model.
- 3.13 The LRF24 data implies total pensionable pay of £4,585m. This compares with the valuation pensionable pay of £4,537m. There are a number of reasons why we would expect these figures to differ, for example the valuation data shows the rate of actual pay as at 31 March 2017 for active members at that date, but the LRF24 data covers the pay received during 2016/17 by individuals who were active members between 1 April 2016 and 31 March 2017. The difference of 1.1% between the two pay figures offers reasonable assurance on the adjustments applied to the data supplied for the valuation.

3.14 For pensioners, the total pension outgo in 2016/17 (including dependant pensions) shown in LRF24 data was £957m (adjusted to include PI awarded in April 2017). This compares with total pensions in payment from the adjusted valuation data of £960m. The difference of around 0.3% offers reasonable assurance on the adjustments applied to the data supplied for the valuation.

3.15 For active members as at 31 March 2015, we compared total pensionable pay with estimated figures calculated from the employee contributions supplied in the LRF24 data and the difference was around 0.1%.

Benefit information

3.16 A summary of the benefits provided to members of the Scheme is given in Appendix H. The only benefit uncertainties GAD is aware of arise from:

- the requirement to equalise GMPs between males and females. No allowance has been made for this in the valuation calculations
- amendments to the statutory underpin to remedy age discrimination (The McCloud case judgement) currently under consultation

Appendix A: Summary of membership data

- A.1 Non-pensioner data is summarised by reference to a member's Critical Retirement Age (CRA) – the earliest age that a member can take unreduced benefits in relation to certain periods of service (including some future service for certain categories of membership).
- A.2 CRA has been taken as either 60 (where that is the nearest whole year of CRA), 62 (where CRA is between 61 and 64 to the nearest whole year) or 65 (where that is the nearest whole year of CRA, or where the member does not have a CRA).

Active data

Table A1: Active data as at 31 March 2017

	Number of records (000's)	Actual pensionable pay (£m)	FTE pensionable pay (£m)	Average actual pay (£)	Average age weighted by FTE pay	Average reckonable service ¹ (years)	CARE pension (£m)
CRA 60	66	1,745	1,902	26,283	48.6	19.0	72
CRA 62	23	444	522	19,608	55.4	11.7	18
CRA 65	139	2,349	3,042	16,862	44.2	2.6	81
Total	228	4,537	5,466	19,874	46.8	8.3	171

¹ Includes only pre-2015 service in the earlier final salary schemes

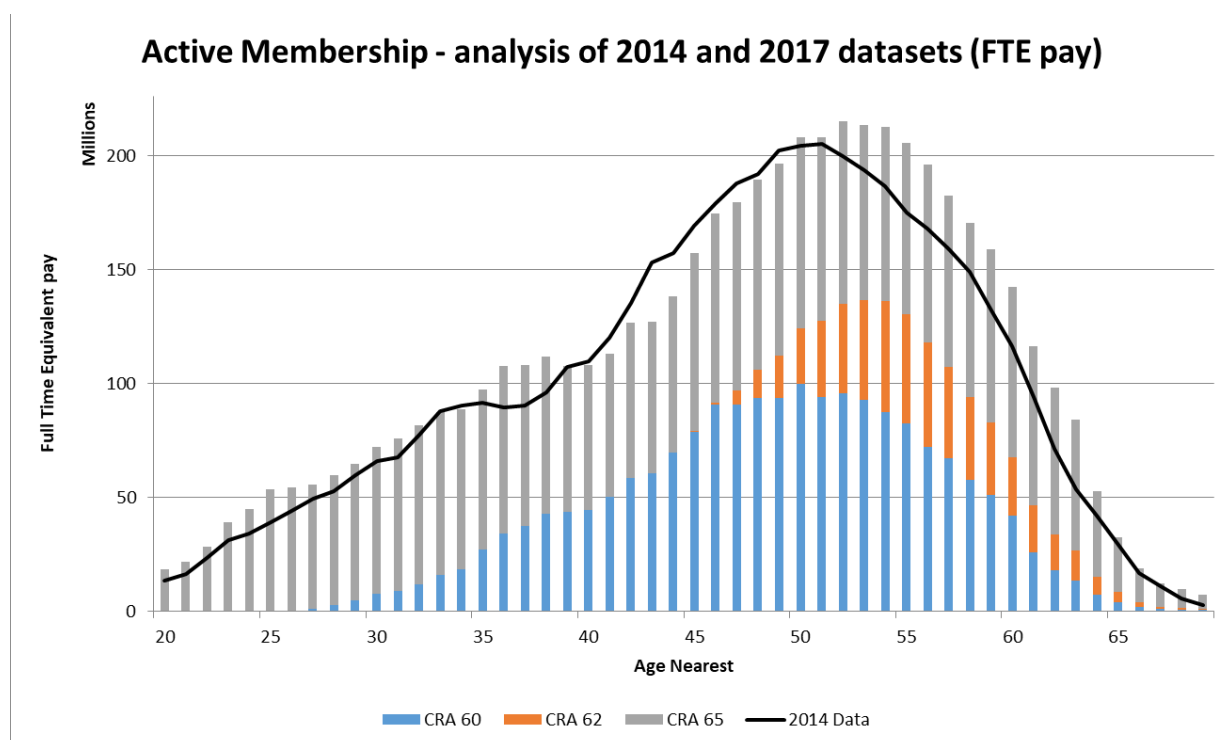
Table A2: Active data as at 31 March 2015

	Number of records (000's)	Actual pensionable pay (£m)	FTE pensionable pay (£m)	Average actual pay (£)	Average age weighted by FTE pay	Average reckonable service ¹ (years)	CARE pension (£m)
CRA 60	74	1,713	2,063	22,994	47.3	19.1	0
CRA 62	27	498	600	18,703	54.1	11.9	0
CRA 65	119	2,099	2,529	17,656	44.4	3.6	0
Total	220	4,310	5,192	19,590	46.7	9.9	0

Table A3: Active data as at 31 March 2014

	Number of records (000's)	Actual pensionable pay (£m)	FTE pensionable pay (£m)	Average actual pay (£)	Average age weighted by FTE pay	Average reckonable service¹ (years)	CARE pension (£m)
CRA 60	86	2,096	2,306	24,369	45.4	17.1	0
CRA 62	34	612	744	18,070	52.2	12.1	0
CRA 65	98	1,534	2,020	15,688	45.7	4.4	0
Total	218	4,242	5,070	19,489	46.5	10.6	0

Chart A1: Active members full-time equivalent (FTE) pensionable pay by age



Deferred data

Table A4: Summary of Deferred pensioner data as at 31 March 2017

Category	Number of records (000's)	Total deferred pension ¹ (£m)	Average pension ¹ (£)	Average age ² (years)
CRA 60	76	191	2,514	49.7
CRA 62	18	25	1,372	55.2
CRA 65	53	44	816	45.0
Total	148	260	1,757	49.4

¹ Includes pension increase payable in April 2017

² Weighted by deferred pension

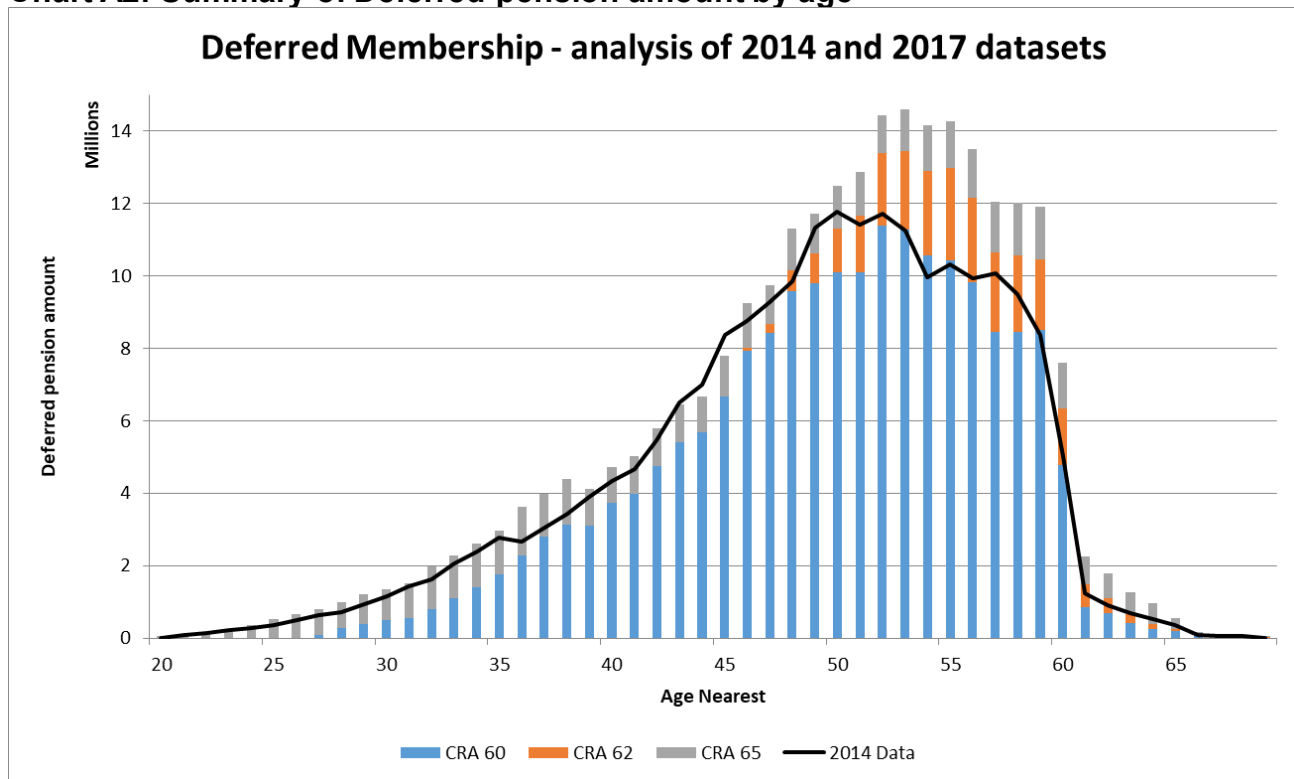
Table A5: Summary of Deferred pensioner data as at 31 March 2014

Category	Number of members (000')	Total deferred pension ¹ (£m)	Average pension ¹ (£)	Average age ² (years)
CRA 60	15	32	2,187	48.6
CRA 62	102	173	1,700	49.1
CRA 65	8	12	1,363	46.3
Total	125	217	1,735	48.8

¹ Includes pension increase payable in April 2014

² Weighted by deferred pension

Chart A2: Summary of Deferred pension amount by age



Pensioner data

Table A6: Summary of Pensioner data as at 31 March 2017

	Number of records (000's)	Total pension¹ (£m)	Average pension¹ (£)	Average age² (years)
Age Retirement	121	716	5,916	69.4
Ill-Health Retirement	31	162	5,296	68.5
Total	152	878	5,791	69.2

¹ Includes pension increase payable in April 2017

² Weighted by current pension in payment

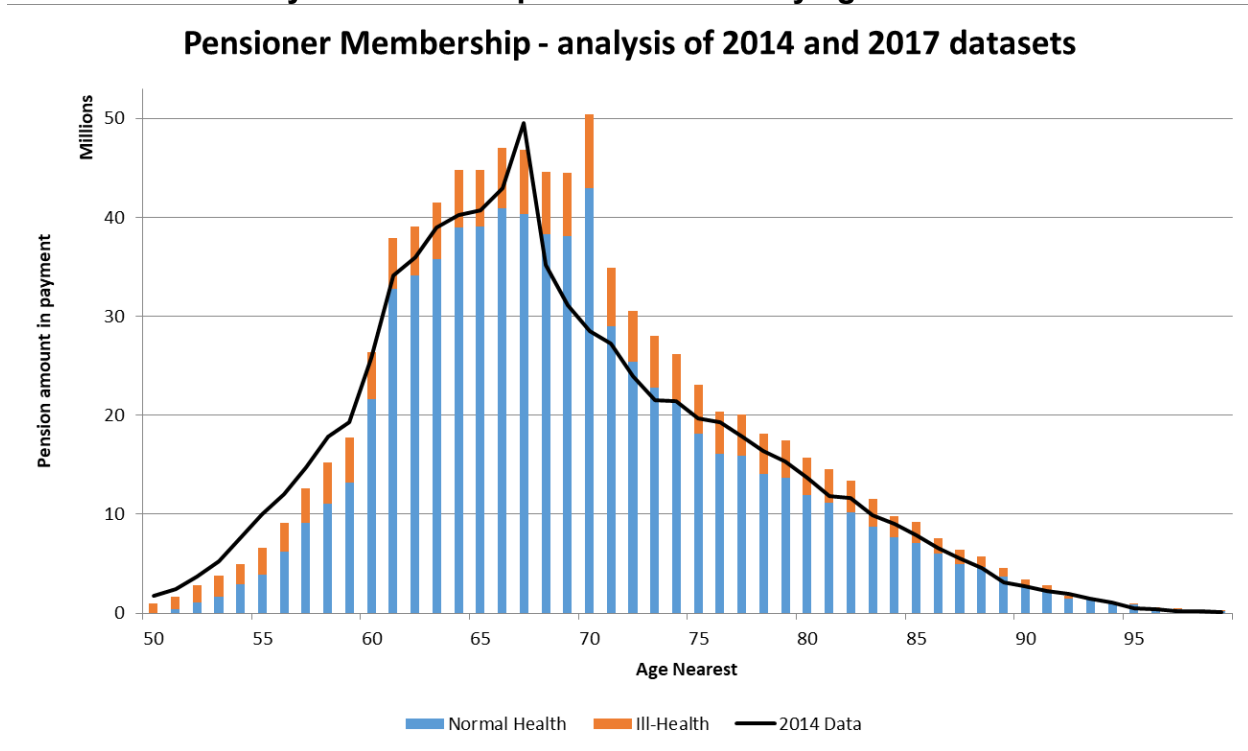
Table A7: Summary of Pensioner data as at 31 March 2014

	Number of records (000's)	Total pension¹ (£m)	Average pension¹ (£)	Average age² (years)
Age Retirement	106	621	5,834	68.5
Ill-Health Retirement	32	159	4,991	68.2
Total	138	780	5,640	68.4

¹ Includes pension increase payable in April 2014

² Weighted by current pension in payment

Chart A3: Summary of Pensioner pension amount by age



Dependant data

Table A8: Summary of Dependant data as at 2017

	Number of members (000's)	Total pension ¹ (£m)	Average pension ¹ (£)	Average age ² (years)
Spouse	27	80	2,955	75.0
Children	1	3	1,882	19.4
Total	28	82	2,900	73.1

¹ Includes pension increase payable in April 2017

² Weighted by current pension in payment

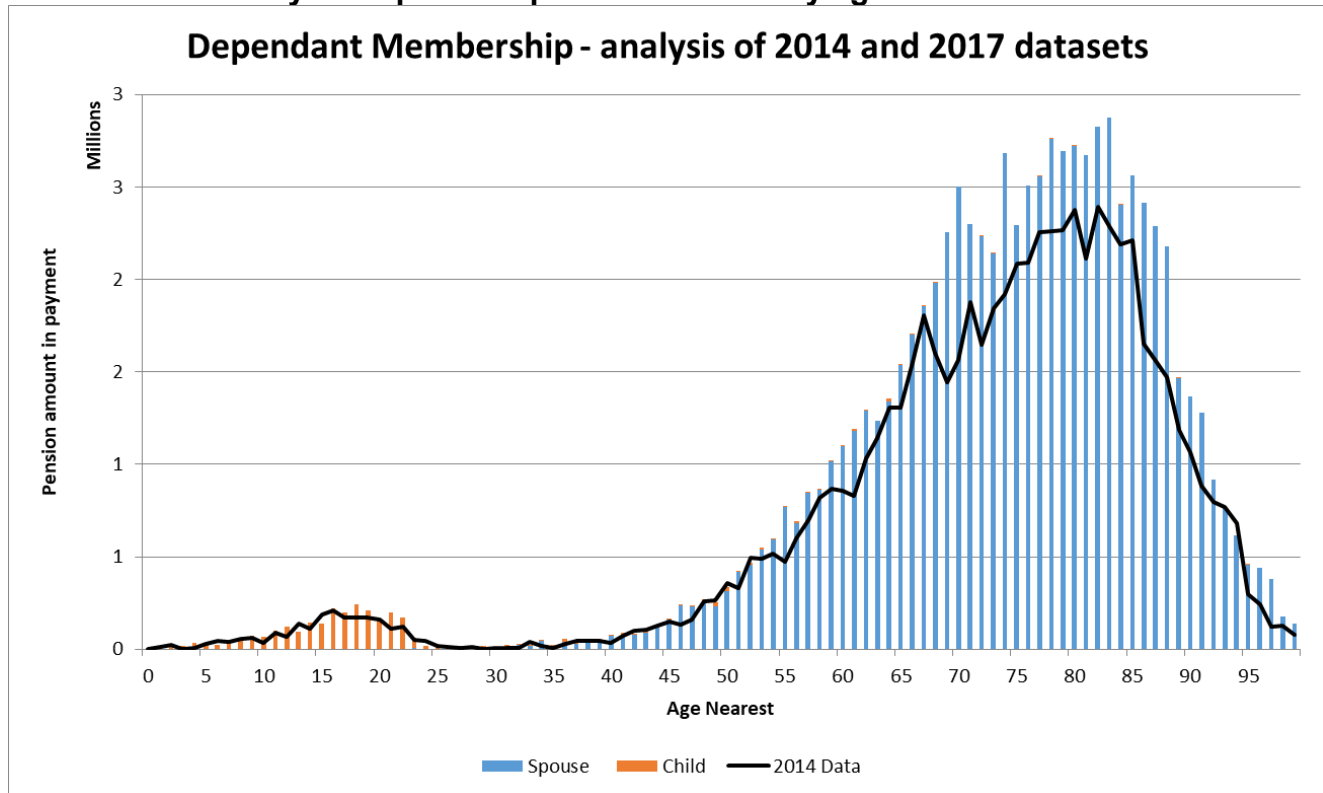
Table A9: Summary of Dependant data as at 2014

	Number of members (000's)	Total pension ¹ (£m)	Average pension ¹ (£)	Average age ² (years)
Spouse	23	65	2,777	74.4
Children	1	2	1,728	16.8
Total	24	67	2,727	72.7

¹ Includes pension increase payable in April 2014

² Weighted by current pension in payment

Chart A4: Summary of Dependant pension amount by age



Appendix B: Summary of movements data

Table B1: Reconciliation of membership over the inter-valuation period (2014-2017)

Reconciliation of membership over inter-valuation period 2014-2017 (000's)	
Active members	
Number at 31/3/14	218
Additions	
• New entrants	92
Deductions	
• Deaths	(1)
• Retirements	(18)
• Withdrawals	(54)
Number expected at 31/3/17	236
Valuation data at 2017	228
Deferred members	
Number at 31/3/14	125
Additions	
• New deferreds	36
Deductions	
• Deaths	(1)
• Age retirements	(9)
• Other exits	(5)
Number expected at 31/3/17	147
Valuation data at 2017	148
Pensioner members	
Number at 31/3/14	163
Additions	
• New pensioners including new dependants	35
Deductions	
• Deaths	(17)
• Other cessations	(1)
Number expected at 31/3/17	180
Valuation data at 2017	180

Appendix C: Data items – membership data

Actives

- > Identifier;
- > Date of birth;
- > Gender;
- > Date of joining LGPS ;
- > Date of Transfer to 2014 Scheme;
- > Pensionable Pay (LGPS CARE Definition);
- > Pensionable Pay 50:50 (LGPS CARE Definition);
- > Full Time Equivalent Pay (LGPS final salary Definition);
- > Critical retirement ("rule of 85") date. May be before age 60.
- > Calculation Service - 80ths (Years)
- > Calculation Service - 80ths (Days)
- > Calculation Service - 60ths (Years)
- > Calculation Service - 60ths (Days)
- > Revalued CRA Accrued main section CARE Pension Pot (£);
- > Revalued tapered Accrued main section CARE Pension Pot (£);
- > Revalued NPD Accrued main section CARE Pension Pot (£);
- > Revalued NPD Accrued 50:50 CARE Pension Pot (£);
- > Revalued Armed Forces' scheme CARE pension transferred in;
- > Revalued Civil Service scheme CARE pension transferred in;
- > Revalued Firefighters' scheme CARE pension transferred in;
- > Revalued NHS scheme CARE pension transferred in;
- > Revalued Police scheme CARE pension transferred in;
- > Revalued Teachers' scheme CARE pension transferred in;
- > Revalued CRA Accrued 50:50 CARE Pension Pot (£);
- > Revalued tapered Accrued 50:50 CARE Pension Pot (£).

Pensioners and Dependants

- > Identifier;
- > Date of birth;
- > Gender;
- > Pensioner type;
- > Main section Pension Amount (£ p.a.) at valuation date;
- > 50:50 Pension Amount (£ p.a.) at valuation date;
- > Date Pension Commenced;
- > Tax Free Cash as a Right (£);
- > Total Tax Free Cash Sum (£);
- > Pension Amount (£ p.a.) at valuation date;
- > Initial Pension Amount (final salary linked) (£ p.a.).

Deferred

- > Identifier;
- > Date of birth;
- > Gender;
- > Critical retirement ("rule of 85") date. May be before age 60;
- > Total Revalued Deferred Lump Sum (£);
- > Date Joined Fund.
- > Revalued post 14 main section deferred pension (£ p.a.);
- > Revalued post 14 50:50 deferred pension (£ p.a.);
- > Revalued age 65 (final salary linked) deferred pension (£ p.a.);
- > Total Revalued Deferred Pension (£ p.a.);
- > Calculation Service - 80ths (Years);
- > Calculation Service - 80ths (Days);
- > Calculation Service - 60ths (Years);
- > Calculation Service - 60ths (Days).

Appendix D: Data items – movements data

Actives

- Identifier
- Gender
- Date of Birth
- Date of Exit
- Exit Mode

Deferred

- Identifier
- Gender
- Date of Birth
- Date left Deferred status
- Date of Deferment
- Deferred Exit Mode

Pensioners and Dependants

- Identifier
- Gender
- Date of Birth
- Date left Pensioner status
- Pensioner Exit Mode
- Survivor Beneficiary type (pensioner only)
- Pension Amount
- Date of Birth of Partner (pensioner only);
- Gender of Partner (pensioner only).

Appendix E: Checks and adjustments applied to the membership data

Summary of validation and review process applied to the data

- E.1 First, all data provided was reviewed against the data specification for both completeness and consistency. In a number of cases this led to requests for revised data sets to be submitted, especially where significant items of data were initially omitted.
- E.2 Detailed individual member checks were not undertaken. Our review focused on the presence and consistency of the specified data items and especially those that are most significant for the valuation exercise.
- E.3 Current membership and movement records were separated based on status data items. Records with unreliable or missing key data items were removed from the data with an uprating approach then applied to allow for an appropriate liability for the excluded records. This approach implicitly assumes those members with missing or unreliable data have the same average characteristics as members with reliable data.
- E.4 We compared the data received against data from Local Government Financial Returns (LRF24), which sets out Scheme cash flows and other details gathered for the 2016-17 financial year. This comparison did not raise any concerns about the data received.

Adjustments made to records

- E.5 For the Strathclyde and Tayside smaller funds, members' records were duplicated in the main fund data and one of the records was removed for actives and pensioners (the impact on deferred records for these two funds was not material to the outcome of the results).
- E.6 Just under 1.5% of the 2015 active data did not have 'current status' listed as active. These were removed as they appeared to be 'undecided members' (i.e. members who have left active membership but who have not yet decided whether to take a refund of contributions or a CETV) and almost all the records were also present in the deferred data.
- E.7 Where actual pay data was missing but full-time equivalent pay data was given we have substituted FTE pay multiplied by the average part-time working proportion for the whole membership. This was an issue for both the 2015 and 2017 active member datasets.
- E.8 Critical Retirement Age (CRA): CRA provided in the 2017 data appeared to be inconsistent with dates of joining for some members. We therefore derived CRA from the data provided.
- E.9 Dependants' pensions: The data provided for contingent spouse pension for pensioners was unreliable and therefore we've excluded all contingent spouse data and estimated the value using 40% of pension for all pensioners.
- E.10 Guaranteed minimum pensions (GMPs): GMP data was incomplete. An adjustment was applied to the overall liabilities to allow for GMPs on an approximate basis.
- E.11 Re-categorisation of pensioners: Around 0.5% of pension records were moved from a normal health category to an ill-health category based on age criteria.

Appendix F: Uncertainty in valuation results arising from data deficiencies

- F.1 As described elsewhere in this report, we applied checks to the membership data as provided for the purpose of the 2017 valuation to ensure all key data items were provided and reliable for valuation purposes. Following these checks, the following key adjustments were made:
- To remove records with incomplete or unreliable data and then apply a rating up factor to the remaining records to implicitly include the excluded members within the calculations as though they had the characteristics of an average member.
 - To apply a further rating factor to the resultant datasets to allow for the missing funds (again on the assumption the members of those funds had the characteristics of an average member).
- F.2 Implicitly this uprating approach assumes that the records with omissions or errors have the same average profile (age, sex, pay, service) as fully complete records. There is a risk that this assumption is not appropriate. The table below indicates the extent to which the valuation results might be incorrect if the approach in fact under/overstates the liability for the omitted members by 10%.

Table F1: Uncertainty in data at 31 March 2017

31 March 2017	Employer contribution correction cost
Active members (uprating applied: 2%)	+/-0.1%
Deferred members (uprating applied: 1%)	nil
Pensioner members (uprating applied: 0%)	nil

Table F2: Uncertainty in data at 31 March 2014

31 March 2014	Employer contribution correction cost
Active members (uprating applied: 2%)	+/-0.1%

Cost Cap Net Leavers Liabilities (CCNLL)

- F.3 The CCNLL is a component part of the cost cap calculation and is a quantification of the amount of pre-reformed liabilities which fall out of the cost cap fund at a valuation owing to members which have left service since the previous valuation (or since the initial cost cap fund was set in the case of the 2017 valuation), net of the additional liabilities in respect of members with pre-reformed service who re-joined active membership during 2015-17.
- F.4 To accurately calculate the 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 2017 valuation.
- F.5 There have been some difficulties for all schemes in using the valuation data to determine the CCNLL, and these difficulties are particularly acute for LGPS S where members may have multiple employments of re-joining and aggregation of benefits occur.
- F.6 For the purposes of determining the 2017 valuation results, we recommend an approach which implicitly makes an assumption that there is no unidentified experience gain or loss arising over the period 2015 to 2017. A risk of this approach is that any upward or downward cost pressure that has occurred over the period but has not been explicitly identified will not be reflected in the 2017 valuation results.
- F.7 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 two-year period 2015 to 2017; although some uncertainty remains we would not expect any item as large as 0.5% of pay.
- F.8 For the 2017 valuation, the CCNLL calculation period is only two years. 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, although it would become so in future valuations when a longer inter-valuation period is considered.

Appendix G: Checks and exclusions applied to the movements data

- G.1 Checks were undertaken to ensure all records with sufficient information to assign the movement to the correct category for analysis were taken into account. Minimal exclusions were made based on these checks. No further checks were undertaken other than to confirm the overall number of movements compared reasonably with the comparable figures shown in the LRF24 data.

Appendix H: Summary of benefits

- H.1 The Directions require the 2015 Scheme and the Earlier Schemes as defined in the Local Government Pension Scheme (Transitional Provisions, Savings and Amendment) (Scotland) Regulations 2014 (SSI 2014/233) to be taken into account in aggregate for the purposes of the current valuation.
- H.2 The main benefit provisions of the Scheme, for service from 1 April 2009 to 31 March 2015 and for service from 1 April 2015, are shown in Table H1.

Table H1: Main benefit provisions of LGPS Scotland

	From 1 April 2009 to 31 March 2015	From 1 April 2015
Basis of provision	Final salary	Career average with revaluation of CPI
Contracted out/in	Contracted out	Contracted out
Normal Pension Age (NPA)	65	State Pension Age, or 65 if higher
Early retirement	Transitional Rule of 85 for some members	Transitional Rule of 85 for some members
Pension accrual rate	1/60	1/49
Retirement lump sum accrual rate	By commutation (at 12:1)	By commutation (at 12:1)
Final pensionable pay	Pay in last 12 months prior to retirement or earlier exit, or in either of the previous two years if higher	N/A
Pay	Pay excluding non-contractual overtime and non-pensionable additional hours	Pay including non-contractual overtime and additional hours
Dependant benefits	1/160 (on death in service, full prospective service is included)	1/160 (on death in service, full prospective service is included)
Ill-health pension	2-Tier system with benefit tier depending on prospect of return to gainful employment. Tier 1: A member is entitled to Tier 1 benefits if that member is unlikely to be capable of undertaking gainful employment before age 65. Tier 2: A member is entitled to Tier 2 benefits if that member: a) is not entitled to Tier 1 benefits but b), is likely to be able to undertake gainful employment before reaching age 65.	
Pension increases	Governed by the Pensions (Increase) Act 1971	Governed by the Pensions (Increase) Act 1971
Statutory underpin		For members meeting age and service criteria, pension is at least as high as under the 2009 Scheme