



Government Actuary's Department

Local Government Pension Schemes (Scotland)

Actuarial valuation as at 31 March 2014

Report on data used for experience analysis

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1 Introduction

- 1.1 This report has been prepared by the Government Actuary's Department (GAD) in its capacity as actuarial advisor to the Scottish Public Pensions Agency (SPPA).
- 1.2 The purposes of this report are:
- > to discuss and summarise the member experience data provided and to be used for the purposes of analysing the Scheme's experience over the 3 years inter-valuation period from 1 April 2011 to 31 March 2014
 - > to ensure that users of the valuation report understand the issues relating to the data used and in particular those issues that may have a material impact on the valuation results.
- 1.3 Membership data used for the actuarial valuation calculations are the subject of a separate report.
- 1.4 Membership data were requested from the administering authorities representing the 11 funds (see Appendix A). A data specification was provided together with a template in the form of a spreadsheet, for the data submission. This indicated the form in which GAD wished to receive the data, and the precise information to be included.
- 1.5 Analysis was undertaken in 2013 as part of the discussions on a reformed benefit design for LGPS (Scotland). All references to assumptions and calculations, etc., in 2013 in this report are references to this reform analysis ("the 2013 Analysis").
- 1.6 We suggest further investigation into
- a) the apparent spike in mortality in January 2013
 - b) the recording of cessation of pensions for dependent men
- may be warranted to improve the experience analysis for future valuations.
- 1.7 In preparing this report, GAD has relied on data and other information supplied by or on behalf of the administering authorities as described in this report. Any checks that GAD has made on this information are limited to those described in this 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. In particular, GAD has relied on the general completeness and accuracy of the information supplied without independent verification.
- 1.8 This report is intended solely for the use of SPPA. We are content for SPPA to release this report to third parties, provided that:



- > it is released in full
- > the advice is not quoted selectively or partially
- > GAD is identified as the source of the report, and
- > GAD is notified of such release.

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



2 Summary of data provided

Movement data

- 2.1 All of the 11 funds in Scotland provided individual member records data for those leaving each membership category of the Schemes over the inter-valuation period.
- 2.2 Table 2.1 summarises the information provided, before any adjustments made. The data items provided for each member are set out in Appendices A to D.

Table 2.1: Summary of original movement data provided

Membership category	Movement	Number
Active	Retirement due to age	8,875
	Withdrawal	31,485
	Retirement due to ill-health	1,835
	Death	757
	Other ¹	16,645
	Total	59,597
Deferred	Retirement due to age	7,713
	Transfer out of scheme	4,182
	Retirement due to ill-health	483
	Death	516
	Re-entered active membership	910
	Other ¹	2,151
Total	15,955	
Pensioner	Death	12,035
	Other ¹	470
	Total	12,505
Dependant	Death	3,646
	Other ¹	579
	Total	4,225

Year-end data

- 2.3 We were provided with active members' individual pensionable salaries and full time equivalent (FTE) as at 31 March 2014. FTE was used for the analysis of the promotional salary scale.

¹ Includes movements that were not used in the analysis of experience, for example where members are no longer being eligible for benefits, redundancies, remarriage, trivial commutations and unknown movements.



3 Adjustments to active movements data

3.1 A summary of the active exit data supplied to us is set out in the table below.

Table 3.1: Summary of active experience data

Membership category	Movement	Number
Active	Retirement due to age	8,875
	Withdrawal	31,485
	Retirement due to ill-health	1,835
	Death	757
	Other	16,645
	Total	59,597

3.2 Exclusions

We needed to exclude a significant portion of exit data provided for active members for a range of reasons. The main reasons for exclusion are set out in 3.3 below. The majority are not the result of poor data, but are not relevant to our analysis. For example, redundancies and bulk transfers are excluded because they are not voluntary. Overall data movement quality was good. The exclusions are summarised in table 3.2 below.

Table 3.2: Summary of exclusions for active experience analysis

Membership category	Movement	Number
Active	Retirement due to age	2,015
	Withdrawal	14,927
	Retirement due to ill-health	16
	Death	38
	Other	16,645
	Total	33,641

3.3 The main reasons for the exclusions were:

- Data movements referred to as “Other” (including interfund and bulk transfers (4% of the total active movement data), redundancies (14%) and unspecified reason of leaving (10%)).



- Members with less than two years' service (therefore ineligible to retire on grounds of age and service) were excluded from our withdrawal analysis. These members represented around 22% of the total active movement data.
- We excluded movements that fell outside the investigation period (prior to April 2011 and after April 2014).
- Where the focus is around specific age ranges, we excluded data outside these ranges.
- The movement data contains items such as cessation of children's pensions, remarriage etc. We do not need to set assumptions at this level, so have not carried out any experience analysis.

3.4 For valuation purposes, we grouped members by Critical Retirement Age (CRA). Members were categorised as either CRA 60 or CRA 61-65.

3.5 Following the exclusions described above, we excluding approximately 56% of the total original active membership data from our analysis. The finalised movements data used for the analysis of experience of active members is set out in the table below:

Table 3.3: Summary of movement data used in analysis of experience of active members

Movement	Number
Retirement due to age	6,860
Withdrawal	16,558
Retirement due to ill-health	1,819
Death	719
Total	25,956

3.6 We were not provided with any information in the dataset for the percentage of pension that members have commuted and hence we cannot perform any analysis with regard to cash commutation. The commutation assumption is specified in HMT Directions for all but the pre 2009 service, so we consider this to be immaterial.

3.7 The data items provided for each active member are set out in Appendix B.



4 Adjustments to pensioner and dependant movements data

Pensioners

- 4.1 The analysis of experience was carried out for men and women who retired under normal health and ill-health separately.
- 4.2 Our analysis indicated that there were a higher number of deaths in the year 2012/13 than in other years. Further investigation showed that there was an aggregation of deaths recorded in January 2013 across all the individual authorities.
- 4.3 We compared the mortality rates with the population data for both Scotland and England and Wales separately in that month and the rates observed for the Scheme appeared to be significantly higher. The mortality assumption is a major driver in the cost cap rate calculation, so we considered that further investigation into the cause of this spike was warranted.
- 4.4 We advised our findings to the data providers to see if it could have been caused by a system update, a change in the way data were recorded, a system error or a catch up in data processing.
- 4.5 The data providers indicated that there weren't any such data management issues. We concluded that there is no evidence of systematic error in the mortality data and hence there are no grounds for GAD to make any adjustment to the data supplied to us in arriving at our proposed assumptions in respect of mortality tables that will apply in retirement.
- 4.6 However, we suggest the cause of this spike be investigated further by SPPA and the data providers.
- 4.7 We carried out validation checks on the amount of pension ceased on death by reconciling the data supplied to us against the data used for the 2013 analysis and concluded that the data were reasonable for the purpose of this analysis.

Exclusions

- 4.8 Data that fell outside the investigation period (prior to April 2011 and after April 2014) were excluded. This accounted for approximately 6% of the total pensioners' movement data. Data where it was not clear to which category records belong (normal health pensioners, ill-health pensioners or dependants) were also excluded.
- 4.9 The final number of pensioner movements analysed is detailed in table 4.1 below:



Table 4.1: Summary of movement data used in experience analysis of member pensioner mortality

Movement	Number
Total deaths provided by authorities	12,035
Total deaths used	11,330

Dependants

- 4.10 We analysed the dependants movement data split by men and women.
- 4.11 Around 90% of the death data for dependants related to women. The volume of experience data for women permitted a credible analysis on which to advise the Scheme on the appropriate table to use for this membership group.
- 4.12 For dependent men, the volume of data was smaller than for women. The result of the analysis suggested a significantly higher mortality rate than we would expect for this membership group which we considered unlikely to be correct, in the context of the investigations into other categories of members.
- 4.13 We believe that the high number of reported deaths for this group may have been an overstatement. This could relate, for example, to temporary pensions being incorrectly coded as deaths rather than cessations for other reasons. Due to these concerns about the data for male dependants, we discarded the results of this analysis in setting the assumption for mortality for dependent men in favour of an adjustment to normal health pensioner mortality, derived from experience in LGPS (England and Wales).
- 4.14 We suggest the data providers investigate whether there is an issue that can be resolved in the future.
- 4.15 The final number of dependants movements analysed is detailed in table 4.2 below:

Table 4.2: Summary of movement data used in experience analysis of dependants mortality

Movement	Number
Deaths of dependent women	3,132
Deaths of dependent men ¹	514

The data items provided for each pensioner and dependant are set out in Appendix C.

¹ Ultimately excluded from analysis.



5 Deferred movements data

- 5.1 No experience analysis is carried out for this category of member. This is because deferreds do not affect the Cost Cap, and represent a relatively small proportion of the past service liability, which is largely unaffected by movements other than mortality.
- 5.2 The data items provided for each deferred member are set out in Appendix D.



6 Limitations of analysis based on data

- 6.1 The data described in this report is to be used to inform the process of setting assumptions for the valuation to be undertaken as at 31 March 2014. Past experience over a particular period does not necessarily correlate to an exact expectation for a particular future period. Therefore the weight that is attached to the precise outcome of the inter-valuation experience analysis depends on the analysis itself and an assessment of the extent to which recent experience can be considered to be a guide to the future.
- 6.2 Where other information is considered as part of the process of agreeing assumptions for the valuation such information will be discussed within the report providing our advice on those assumptions.



Appendix A: List of funds

The funds from which data was requested are listed below:

1. Dumfries and Galloway Council Pension Fund
2. Falkirk Council Pension Fund
3. Fife Council Pension Fund
4. The Highland Council Pension Fund
5. Lothian Pension Funds
 - a. Lothian Pension Fund,
 - b. Lothian Buses Pension Fund,
 - c. Scottish Homes Pension Fund
6. North East Scotland Pension Fund
7. Orkney Islands Council Pension Fund
8. Scottish Borders Council Pension Fund
9. Shetland Islands Council Pension Fund
10. Strathclyde Pension Fund
11. Tayside Pension Funds
 - a. Tayside Pension Fund,
 - b. Tayside Transport Pension Fund

Notes on missing data

Data were provided in relation to 11 authorities. Unfortunately data for two small funds, Strathclyde Pension Fund No 3 Fund and Aberdeen City Council Transport Fund were not provided in time to be included in this analysis. The omission of these data sets had no material impact on the calculation of the cost cap.



Appendix B: Actives movement data

The following data was requested for the inter-valuation period. These are the items where a valid and reasonable data item is required to enable experience analysis to be carried out:

Statement on the data

B.1 Along with the data please provide the following:

- > A brief statement of any adjustments made by the Fund Actuary to the data (along the lines of that included in local valuation reports)
- > A statement that the Fund Actuary believes this data to be fit for the purpose of valuing the Fund they advise (along the lines of that included in local valuation reports).
- > A commitment to tell GAD if any material change is made to the data (including post-hoc adjustments to results due to data issues).

Active members at 31 March 2014 and active movements from 31 March 2011

B.2 Data is required for all members active in the Scheme on 31 March 2014 ('current active data').

- > Data is also required for all members who were active members of the Scheme at some time during the period 31 March 2011 to 31 March 2014 but have since left active membership ('active movement data').
- > The active movement data should include members who have left and then rejoined the scheme in the inter-valuation period. Please let us know if it does not.
- > For current actives and active leavers, the following data is required:

General member data

- a. Fund name
- b. Unique identifier
- c. Sex (M or F)
- d. Date of birth
- e. Is the member a councillor (Y/N)?
- f. Employees contribution rate (as a percentage of pay) at 31 March 2014



- g. Date of joining (This should be date joined the LGPS, rather than the date joined fund)
 - h. Critical retirement date (the date the member will attain their Rule of 85 age)
 - i. Service in the scheme
 - j. Pre 08 pensionable service (up to and including 31 March 2008)
 - k. 08 to 09 pensionable service (from 31 March 2008 to 31 March 2009) (*)
 - l. Post 09 pensionable service (from 31 March 2009) (*)
 - m. The accrued pension at the valuation date (for councillors only)
- B.3 Additional service/pension
- n. Pre 08 additional service accrued to the member at the valuation date including transfers-in. (For councillors, pre-08 accrued pension)
 - o. 08 to 09 additional service accrued to the member at the valuation date including transfers-in (For councillors, 08 to 09 accrued pension) (*)
 - p. Post- 09 additional service accrued to the member at the valuation date including transfers-in. (For councillors, post-09 accrued pension)
 - q. Additional Pension Contracts accrued to the member at the valuation date where the election occurred before 1 April 2012 (*)
 - r. Additional Pension Contracts accrued to the member at the valuation date where the election occurred on or after 1 April 2012 (*)
- B.4 Salary/benefit data
- s. Rate of full-time equivalent pensionable pay at 31 March 2014 (for councillors this will be the last twelve month's pensionable pay)
 - t. Rate of full-time equivalent pensionable pay at 31 March 2011 (for councillors this will be the last twelve month's pensionable pay)
 - u. Rate of actual pay at 31 March 2014
 - v. Current part-time percentage
 - w. Amount of pension in payment, revalued to 31 March 2014, due to the member taking flexible retirement
 - x. Amount of pension debit revalued to 31 March 2014
- B.5 GMP data
- y. Date GMP is revalued to
 - z. Annual GMP accrued up to 06/04/1988
 - aa. Annual GMP accrued from 06/04/1988
- B.6 The additional data items below are required only for the active movement data.
-



Additional data required for actives who left

- bb. Date of leaving active status
- cc. Reason for leaving active status (see decode 1)
- dd. Marital status of primary dependent (see decode 1) (*)
- ee. Sex of primary dependent (M or F) (*)
- ff. Primary dependant's date of birth
- gg. Percentage of pension commuted on retirement (*)



Appendix C: Pensioner movement data

- C.1 Data is further required in respect of all members who are in receipt of an LGPS pension on 31 March 2014 ('current pensioner data') and members who were in receipt of an LGPS pension at any time between 31 March 2011 and 31 March 2014 but are now not in receipt of that pension ('pensioner movement data').
- C.2 Each of these pensioners should be coded into exactly one of the following categories:

Former member who retired on age grounds (including actuarially reduced retirement, unreduced early retirement, compulsory early retirement and late retirement. Also includes preserved pension coming into payment.)	A
Retired on ill-health Tier 1 benefits	B
Retired on ill-health Tier 2 benefits	C
Retired on pre-1 April 2008 ill-health enhancements	D
Widow, widower, surviving civil partner or nominated cohabiting partner	E
Child	F
Pension credit member	G
Unknown status	U
Other reason not included above	O

- C.3 For both current pensioners and pensioner movements, the following data are required:

General member data

- a. Fund name
- b. Unique identifier
- c. Sex (M or F)
- d. Date of birth
- e. Pensioner group (A to H as above)
- f. Date of retirement
- g. Date left active status



Pension data

- h. Total annual pension in payment, net of pension debits, including pension increases up to (and including) April 2014
- i. Contingent annual spouse's pension including pension increases up to (and including) April 2014

GMP data

- j. The date GMP is revalued to
- k. Annual GMP accrued up to 06/04/1988
- l. Annual GMP accrued from 06/04/1988

C.4 The additional data items below are required only for the pensioner movement data

Additional details required for pensioner leavers

- m. Date pensioner status ceased
- n. Reason ceased (see decode 2)
- o. Marital status of primary dependent (see decode 2) (*)
- p. Sex of primary dependent (M or F) (*)
- q. Primary dependant's date of birth (*)



Appendix D: Deferred movement data

- D.1 Data is further required in respect of all members who are in receipt of an LGPS pension on 31 March 2014 ('current deferred data') and members who were entitled to a deferred LGPS pension at any time between 31 March 2011 and 31 March 2014 but now are not eligible for that pension ('deferred movement data').
- D.2 For current deferred pensioners and deferred movements the following data are required:

General member data

- a. Fund name
- b. Unique identifier
- c. Sex (M or F)
- d. Date of birth
- e. Pension credit member (Yes/No indicator)
- f. Date left active status
- g. Date that the member will attain critical retirement age

Pension data

- h. Total annual amount of pre- 08 preserved pension, net of pension debits, including increases up to and including April 2014
- i. Total amount of post-08 preserved pension, net of pension debits, including increases awarded up to and including April 2014
- j. Total annual amount of preserved accrued lump sum, including increases awarded up to and including April 2014

GMP data

- k. Date GMP revalued to
- l. Annual GMP accrued before 06/04/1988
- m. Annual GMP accrued since 06/04/1988

- D.3 The additional data items below are required only for the deferred movement data

Additional details required for deferred members who have left



- n. Date deferred membership ceased
- o. Reason ceased (See decode 3)
- p. Marital status of dependent (see decode 3) (*)
- q. Sex of primary dependent (M or F) (*)
- r. Percentage of pension commuted on retirement (*)



Appendix E: Transfers-in

- E.1 Please provide data on all voluntary (ie not bulk) transfers of service into the scheme in the inter-valuation period

General member data

- a. Fund name
- b. Unique identifier
- c. Sex (M or F)
- d. Date of birth

Transfer in data

- e. Date of transfer
- f. Type of transfer ((C)lub, (I)nter-authority, Cash (E)quivalent)
- g. Monetary amount of transfer received
- h. Service credited



Appendix F: Decodes

Decode 1: Actives reason for exit

Reason for leaving		Code
Died in service	All deaths in service	D
Age retired	retired on age grounds between ages 60 and 65 (inclusive) with an entitlement to unreduced immediate benefits	A1
	took early retirement with actuarially reduced benefits	A2
	late retirements ie retirements after age 65	A3
	took compulsory early retirement (eg redundancy) with immediate benefits whether benefits recharged to the employer or not	A4
	took approved early retirement with unreduced immediate benefits	A5
Ill health retired	retired on grounds of Tier 1 ill-health	I1
	retired on grounds of Tier 2 ill-health	I2
	retired on grounds of ill-health with benefits based on enhancements applicable pre-1 April 2008	I3
Withdrew	resigned with deferred benefits	W1
	voluntary club transfer	W2
	voluntary CETV transfer	W3
	voluntary interfund transfer	W4
	Refund of contributions	W5
Other	left the Scheme for any other reason (eg bulk transfer)	O
Marital Status	Single	S
	Married	M
	Civil Partnership	C
	Nominated Cohabiting Partner	P



Decode 2: Pensioners reason for exit

Reason for leaving		Code
Died	All deaths	D
Commuted	on grounds of triviality	C1
	on grounds of serious ill health	C2
Other	Pension ceased for any other reason (eg remarriage, child ceasing education)	O
Marital Status	Single	S
	Married	M
	Civil Partnership	C
	Nominated Cohabiting Partner	P

Decode 3: Deferred reason for exit

Reason for leaving		Code
Died	All deaths	D
Age retired	retired on age grounds between ages 60 and 65 (inclusive) with an entitlement to unreduced immediate benefits	A1
	took early retirement with actuarially reduced benefits	A2
	late retirements ie retirements after age 65	A3
Ill health retired	from deferred status	I
Rejoined	opted to rejoin the scheme	R
Left	voluntary club transfer	W1
	voluntary CETV transfer	W2
	voluntary interfund transfer	W3
	refund of contributions	W4
Other	left the Scheme for any other reason (eg bulk transfer)	O
Marital Status	Single	S
	Married	M
	Civil Partnership	C
	Nominated Cohabiting Partner	P



Appendix G: Additional Data Items

- G.1 This section of the data specification sets out some specific responses from each authority that we require in respect of the 2014 valuation of the LGPS Scotland National Analysis.
- a. Please confirm whether the date of joining for active members refers to the date the member joined the fund or the date the member joined the LGPS.
 - b. Please confirm whether you were able to provide details of the split between pre-08 and post-08 benefits for deferred pensioners
 - c. Please could you confirm whether you have been able to provide data in respect of Councillors? Please could you also confirm the number of Councillors that are members of your LGPS fund?
 - d. Please could you confirm whether you have been able to provide data in respect of Additional Pension Contracts? Please could you also confirm the current number of Additional Pension Contracts in your fund?
 - e. Please could you confirm that the data includes the 2014 Pension Increase?
 - f. Please could you confirm whether or not you have provided GMP data in the required format, and if not, confirm what data you hold regarding this.