Self-administered Pension Schemes Mortality Committee

Summary of Working Paper 95: "Mortality experience of pensioners for the period 2008 to 2015"

February 2017

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Introduction

This document provides a brief synopsis of Working Paper 95, which is one of a series of annual reports setting out the results of the CMI SAPS Mortality investigation. Data is submitted throughout each year but, for these annual reports, a cut-off date of 30 June is used; this paper analyses the experience of data submitted up to 30 June 2016. Working Paper 88 presented the previous analysis of experience of data collected by 30 June 2015.

For more detailed analysis and full results, readers are encouraged to refer to the full Working Paper[1].

The data

The CMI SAPS investigation collects data from actuarial consultancies and the Pension Protection Fund (PPF) in respect of self-administered pension schemes – the requirement for data submissions is that schemes have 500 or more current pensioners.

The analysis in Working Paper 95 includes members of pension schemes who were in receipt of a pension from the scheme during the eight years from 1 January 2008 to 31 December 2015; in total, 458 distinct schemes (excluding those submitted by the PPF) have data in this period. A rolling eight-year period is analysed so the overall change in the members "exposed to risk" is a combination of the volume of data for the year that is lost relative to the data that is gained for the common years and the year that is introduced. The size of the dataset reviewed in this Working Paper is not materially different from the dataset analysed in Working Paper 88.

Compared with the data we used to produce the "S2" Series tables, the total lives exposed to risk has fallen by around 14% for male Pensioners and 18% for female Pensioners (as shown in Table 1 below). 19% of the exposed to risk in the data analysed for Working Paper 95 relates to 2008, and will fall out of the dataset next year. The Committee would like to encourage firms to submit data for all schemes with 500 or more pensioners to prevent further falls in the size of the SAPS dataset and ensure the usefulness of future analyses. In particular, the Committee intends to use the dataset to 30 June 2017 as the dataset underlying "S3" Series tables.

The "S2" Series tables were based on the mortality experience in the period 2004 to 2011. The weighted mid-point of the data used in the latest analysis is around 4 years later than the midpoint of the dataset used for the "S2" Series tables.

The PPF currently accounts for around 1.9% of the total exposure analysed on a lives basis.

[1] Most of the CMI's research is only available to employees of subscribers and to researchers, for non-commercial use. Details of how to access the full paper and the CMI's other research can be found on the CMI's web pages.

Table 1: Summary of dataset for Working Paper 95 compared with Working Paper 65

	Pensioners Lives	Pensioners Amounts (£'000)	Average Amounts (Pensioners) (£ pa)	Dependants Lives	Dependants Amounts (£'000)	Average Amounts (Dependants) (£ pa)
Males						
WP 95 Exposure	8,610,722	83,009,695	9,640	266,983	579,792	2,172
WP 95 Deaths	299,774	2,133,581	7,117	12,622	21,535	1,706
WP 65 Exposure*	9,962,733	83,400,916	8,371	275,847	485,052	1,758
WP 65 Deaths*	353,709	2,220,839	6,279	11,901	17,059	1,433
Females						
WP 95 Exposure	4,772,661	19,597,306	4,106	3,175,599	14,067,199	4,430
WP 95 Deaths	110,837	369,587	3,335	181,793	713,479	3,925
WP 65 Exposure*	5,796,201	20,025,051	3,455	3,680,509	13,670,286	3,714
WP 65 Deaths*	144,613	440,497	3,046	194,591	644,306	3,311

*These figures relate to the dataset underlying the "S2" Series tables.

Analysis

Tables 2 and 3 show the experience for males and females respectively over the period analysed. The experience has been compared with the unadjusted "S2" Series tables and the "S2" Series tables with CMI_2015 [0.0%] projections. With the latter we are effectively comparing how mortality experience has changed in the SAPS dataset relative to the England and Wales (E&W) general population. This comparison is against actual annual improvements for 2008-2012 in E&W, "smoothed" using a mathematical formula, and CMI_2015 projected mortality for the final three years 2013, 2014 and 2015. CMI Working Paper 83 provides analysis of the actual improvements in E&W population mortality for these three years – close to nil for 2013, slightly higher than the average improvement in the recent past for 2014 and negative for 2015. In applying CMI_2015 we assume the long term rate of improvement will be 0% per annum, since this assumption has little impact on the results.

Care should be taken when interpreting the annual results in this paper due to low volumes of data in the latest years and heterogeneity in the data (as different schemes feature in different years).

Observations based on the experience of the latest dataset are that:

- Overall the mortality rates experienced by the more recent dataset are lower than that expected using the unadjusted "S2" Series tables. This is to be expected if mortality rates are improving since the midpoint of the latest dataset is about 4 years more recent than that underlying the "S2" Series tables.
- The results indicate that the mortality rates appear to have gradually improved from year to year for male Pensioners. However, the rates experienced in 2015 were significantly higher than in preceding years, although the amount of data in 2015 is considerably smaller than in previous years and weighted towards the winter months (January to March), which might be expected to lead to higher deaths relative to a full years' worth of data so the results may be less reliable.
- For female Pensioners, mortality experience also appears to have improved over the investigation period but more volatility is observed year to year compared with male Pensioners for the same period. Mortality rates in 2015 were considerably higher than in the immediately preceding years, but care should be applied when interpreting this result due to the size of the dataset and weighting towards the earlier months of the year.
- Experience for both male and female Pensioners appears to have moved broadly in line with the CMI Mortality Projections Model, CMI_2015, on a lives-weighted basis, with the exception of 2015 where mortality rates were significantly higher. On an amounts-weighted basis, mortality experience appears to have been lower for both male and female Pensioners than the "S2" Series "All Pensioner" tables projected with CMI_2015, for most years although, again, 2015 is an outlier.
- The experience for the female Dependants is more volatile from year to year than for Pensioners, regardless of whether or not the CMI Model is applied to the data. Again, 2015 experience was higher than in earlier years.
- Underlying reasons for the relatively higher mortality rates experienced in 2015 are not known. It may be explained in part by the weighting of data towards the earlier months of the year, although this has not been observed to the same degree in previous datasets, which also showed data weighted towards the earlier months of the year in their final year of data. It appears that the high number of 2015 deaths in this year's dataset might also be partly driven by more deaths than expected at older ages for both males and females. Care should be taken in interpreting the results for 2015, since the low data volumes could result in greater volatility in experience.
- Fewer of the recent data submissions have distinguished between Normal and Ill health members in retirement, resulting in a fall in the volume of ill health data, in particular, compared with the dataset used to produce the CMI's "S2" Series tables.
- Mortality experience by different pension amount bands, illustrated in in Figures A and B, exhibit similar patterns to those seen in earlier datasets, including the "S2" Series dataset, i.e. observed mortality rates are generally lower in higher pension amount bands, with differentials between the bands reducing at higher ages.
- As shown in Table 1, the exposed to risk for female Pensioners is materially less than that available for male Pensioners. In particular when the data is analysed in smaller subsets (for example, the analysis by amounts bands) this gives rise to more volatile outcomes.

Table 2: 100A/E for Males compared with "S2" Series, with and without CMI_2015 projections

Year	Male Pensioner Lives S2PML		Male Pensioner Amounts S2PMA	
	No Projection	CMI_2015 [0.0%]	No Projection	CMI_2015 [0.0%]
2008	98.7	101.6	99.0	101.8
2009	94.6	99.8	93.4	98.5
2010	93.4	101.0	91.9	99.4
2011	89.7	99.1	85.2	94.2
2012	90.0	101.2	85.5	96.2
2013	89.7	102.6	85.6	98.0
2014	85.9	99.9	84.9	98.8
2015	93.6	110.3	96.5	113.8
All	**92.5**	**101.0**	**90.1**	**98.6**

Table 3: 100A/E for Females compared with "S2" Series, with and without CMI_2015 projections

Year	Female Pensioner Lives S2PFL		Female Pensioner Amounts S2PFA		Female Dependant Lives S2DFL		Female Dependant Amounts S2DFA	
	No projection	CMI_2015 [0.0%]	No projection	CMI_2015 [0.0%]	No projection	CMI_2015 [0.0%]	No projection	CMI_2015 [0.0%]
2008	100.9	103.1	102.0	104.3	100.9	102.9	101.7	103.8
2009	93.6	97.7	94.6	98.7	93.1	96.8	93.4	97.1
2010	94.8	101.0	89.2	94.9	97.0	102.6	97.3	102.8
2011	90.1	97.6	80.6	87.3	94.5	101.4	92.7	99.3
2012	92.7	101.9	82.4	90.7	98.8	107.2	96.4	104.5
2013	89.2	99.3	86.4	96.2	100.1	109.8	97.1	106.5
2014	87.2	98.4	86.9	98.1	94.8	105.0	93.4	103.3
2015	94.1	107.9	96.9	111.0	105.5	117.7	106.5	118.7
All	**93.7**	**100.2**	**89.8**	**96.2**	**97.3**	**103.5**	**96.5**	**102.7**

Figure A: 100 A/E values for Male Pensioners amounts-weighted compared with S2PMA

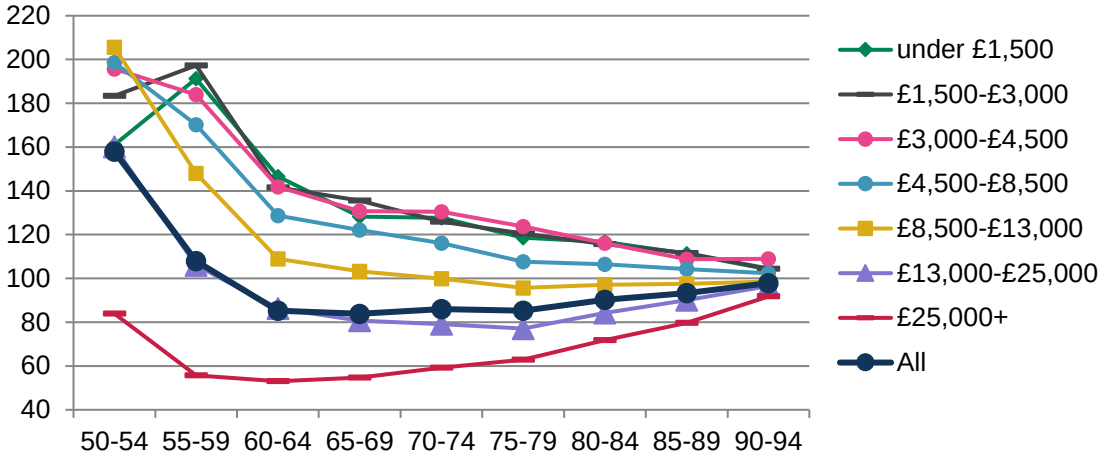
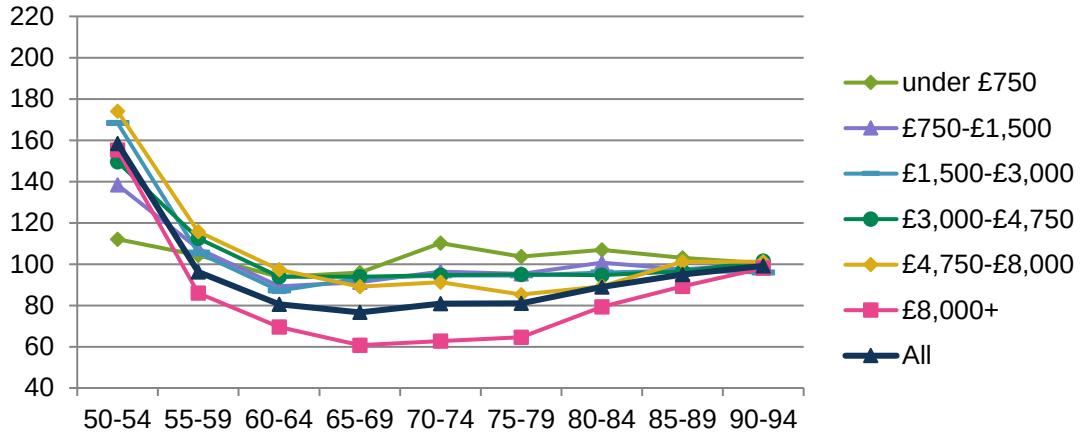


Figure B: 100A/E values for Female Pensioner amounts-weighted compared with S2PFA



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