

**Continuous Mortality Investigation
Technical Support and Research Committee
of the Pensions Board**

Working Paper 17

**Report on the preliminary results of an analysis into the
mortality experience of pensioners of self-administered
pension schemes for the period 2000 to 2003**

October 2005

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Introduction

In 2002 the Actuarial Profession commissioned the CMI to begin an investigation into the mortality experience of self-administered pension schemes and to report to the Technical Support and Research Committee of the Pensions Board. This followed on from the pilot investigation conducted in the period 1998-2000 and reported on in *C.M.I.R.* **20**, 109-140 (2001).

Data collection started in early 2003. Working Paper 4, published in March 2004, gave broad details of the mortality experience of submissions made to February 2004. This report provides an update to that report and is based on submissions made to May 2005. The reader may also be interested in Working Paper 9, which provided a more detailed analysis of the results in Working Paper 4.

Data

The larger actuarial consultancies and the GAD were asked to contribute data to the investigation. Out of 15 who intimated they would be willing and able to contribute, 10 have so far made submissions.

The agreed requirement for submissions was schemes with more than 500 current pensioners. It was anticipated that this would equate to approximately 600 schemes; with valuations being performed triennially this may give rise to up to 200 submissions each year.

Currently submissions have been received for approximately 200 schemes, which is roughly double the number analysed for Working Paper 4. Whilst the figure is not quite in line with initial expectations, the rate of data submissions has increased and now appears to be steady.

The data received to date covers periods from 1996 to 2003, with the great majority covering the years 2000 to 2003. This report concentrates on the provisional results for these four years only. Summary details are shown in Tables A to G. Fuller analyses into 5 year age bands and by single ages are given in the two Excel files published with this paper. The Working Party hopes that this form of presentation of the data will enable users of the report more readily to carry out their own analyses.

The data is further subdivided by type of pensioner and by industry sector. The types of pensioner groupings are normal retirements, ill-health retirements, a combined group (where the health of the pensioner at retirement was not known), dependants of deceased pensioners, and by unknown (where the data could not be split between retired scheme member and dependants). The industry sector categories broadly relate to those of the FTSE indices. In this report, no analysis is provided by industry sector.

In Working Paper 9 we showed the male lives data broken down in amounts bands. We have updated the results to 2003 and these are shown in pages 41 to 64 of the 5 year age band summary file.

Exposure and Deaths

For the analyses shown below and in the Excel files, initial exposed to risk has been calculated.

In the four years, from 2000 to 2003, the total exposure for the lives based investigation (all retirement types) was over 2,657k and 2,055k years for males and females respectively. The corresponding figures for the amounts investigation were £16,212m for males and £5,317m for females.

For the lives investigation, the number of deaths was 101k for males and 73k for females. By amounts the number of deaths was £443m for males and £165m for females.

Data volumes in all sections are broadly double those from the equivalent sections in the three year period 2000 to 2002 analysed in the previous report.

Comparison Bases

In Working Paper 4, the actual deaths in each analysis were compared against the expected deaths from a population taken from standard tables. The data was compared against two base tables.

1. the relevant "92" Series tables projected to the calendar year of submission (using the original "92" Series projections as described in *C.M.I.R.* 17, 89-108) for both lives and amounts; and
2. a(90) less 2 years for the lives analysis or, for the amounts analysis, PA(90) less 2 years, which is the MFR basis.

Feedback received has indicated that a comparison with a more commonly used table would be more informative. We have, therefore, as for Working Paper 9, used the relevant "92" series table with the short cohort projection as the basis for comparison. Comparison of the first year results summarised in Working Paper 4 with those shown in this paper can, therefore, be made by looking at the first year summary results shown in Working Paper 9.

The Working Party is also of the view that comparison on a year by year basis against a fixed standard basis would be valuable in assessing the absolute changes in

mortality from year to year. We have, therefore, compared the results with the relevant “92” series table with the short cohort projection to the year 2000 for each year.

The following tables summarise the data over the four year period 2000 to 2003, and include a comparison with the total 2000-2002 data analysed in the previous report.

Table A

	Males Lives	Males Amounts (£'000)	Average Amounts (Males)	Females Lives	Females Amounts (£'000)	Average Amounts (Females)
Exposure						
2000	636,884	£3,738,271	£5,870	460,959	£1,168,092	£2,534
2001	887,550	£5,232,701	£5,896	670,719	£1,687,969	£2,517
2002	804,489	£5,264,742	£6,544	630,217	£1,709,487	£2,713
2003	328,568	£1,976,878	£6,017	293,774	£752,095	£2,560
All	2,657,490	£16,212,592	£6,101	2,055,669	£5,317,644	£2,587
2000-02	1,395,957	£9,254,181	£6,629	959,788	£2,633,313	£2,744
Deaths						
2000	24,854	£105,261	£4,235	16,843	£36,469	£2,165
2001	34,430	£145,595	£4,229	23,801	£51,739	£2,174
2002	29,866	£138,782	£4,647	22,655	£54,154	£2,390
2003	12,292	£53,810	£4,378	10,111	£23,456	£2,320
All	101,442	£443,448	£4,371	73,410	£165,817	£2,259
2000-02	50,951	£231,935	£4,552	34,565	£80,099	£2,317

Table B

100A/E based on "92" Series with short cohort (C = year of exposure)						
	Males Lives	Males Amounts		Females Lives	Females Amounts	
100A/E						
2000	121	131		118	128	
2001	123	133		120	130	
2002	123	132		125	134	
2003	124	131		127	136	
All	123	132		122	132	
2000-02	118	126		120	129	

Table C

100A/E based on "92" Series with short cohort (C = 2000)						
	Males Lives	Males Amounts		Females Lives	Females Amounts	
100A/E						
2000	121	131		118	128	
2001	119	128		117	126	
2002	115	123		118	127	
2003	111	119		116	125	
All	117	126		117	127	

The following two tables show the same data summarised by pensioner type for the four year period 2000 to 2003.

Table D – Males

		Number or amount of deaths	100A/E		Table Ref. in spread -sheet
			“92” Series short cohort (C = year of exposure)	“92” Series short cohort (C = 2000)	
			2000-03	2000-03	
Lives	Normal	43,841	118	113	9/10
	Ill-health	6,503	205	194	13/14
	Combined	48,335	121	115	17/18
	Dependant	2,166	126	120	21/22
	Unknown	597	-	-	-
	All	101,442	123	117	1/2
Amounts (£'000)	Normal	£202,588	126	120	11/12
	Ill-health	£26,326	262	247	15/16
	Combined	£210,740	130	124	19/20
	Dependant	£2,542	136	129	23/24
	Unknown	£1,253	-	-	-
	All	£443,448	132	126	3/4

Table E – Females

		Number or amount of deaths	100A/E		Table Ref. in spread -sheet
			“92” Series short cohort (C = year of exposure)	“92” Series short cohort (C = 2000)	
			2000-03	2000-03	
Lives	Normal	12,779	114	108	25/26
	Ill-health	1,995	193	181	29/30
	Combined	13,438	119	114	33/34
	Dependant	44,832	124	119	37/38
	Unknown	346	-	-	-
	All	73,410	122	117	5/6
Amounts (£'000)	Normal	£30,964	124	118	27/28
	Ill-health	£5,412	229	214	31/32
	Combined	£32,939	131	126	35/36
	Dependant	£96,087	132	127	39/40
	Unknown	£413	-	-	-
	All	£165,817	132	127	7/8

The above results for 100A/E are shown below in the order in which they appear in the Excel file:

Table F

Page Number	Sex	Lives or Amounts	Pensioner Type	100 A/E	
				“92” Series short cohort (C = year of exposure)	“92” Series short cohort (C = 2000)
2	M	Lives	All	123	117
4	M	Amounts	All	132	126
6	F	Lives	All	122	117
8	F	Amounts	All	132	127
10	M	Lives	Normal	118	113
12	M	Amounts	Normal	126	120
14	M	Lives	Ill Health	205	194
16	M	Amounts	Ill Health	262	247
18	M	Lives	Combined	121	115
20	M	Amounts	Combined	130	124
22	M	Lives	Dependants	126	120
24	M	Amounts	Dependants	136	129
26	F	Lives	Normal	114	108
28	F	Amounts	Normal	124	118
30	F	Lives	Ill Health	193	181
32	F	Amounts	Ill Health	229	214
34	F	Lives	Combined	119	114
36	F	Amounts	Combined	131	126
38	F	Lives	Dependants	124	119
40	F	Amounts	Dependants	132	127

For some of the above groupings, the results shown come from a relatively small number of schemes and so care is needed when interpreting the results.

In the previous report it was noted that some anomalies were apparent. For instance, the 100A/E for normal retirements was lower than for combined retirements for the male data. However, now that the volume of data is building up, the relative experience of the different groupings appears to be moving more into line with expectations. This is encouraging, though it may still be injudicious to put too much weight on some of the sub-divided groups until larger volumes of data have been received and analysed or until any bias has been removed by combining groups.

Male data divided by amount bands

Table G shows the results of analysing the male data into the four age bands adopted for Working Paper 9.

Table G

Male lives with pension under £4,500 pa				
Age group	Exposed to risk	Actual deaths	100 A/E PML92sc	100 A/E PML92sc (2000–2002) from Working Paper 9
60-64	173,917	2,324	151	145
65-69	291,148	5,996	138	132
70-74	311,522	11,652	147	137
75-79	272,631	16,867	135	127
80-84	164,331	15,711	122	114
85-89	71,988	10,900	115	114

Male lives with pension £4,501 pa - £8,500 pa				
Age group	Exposed to risk	Actual deaths	100 A/E PML92sc	100 A/E PML92sc (2000–2002) from Working Paper 9
60-64	114,809	1,603	158	154
65-69	126,433	2,397	129	130
70-74	96,395	2,879	119	123
75-79	68,428	3,544	114	116
80-84	41,525	3,552	109	111
85-89	18,279	2,576	107	106

Male lives with pension £8,501 pa - £13,000 pa				
Age group	Exposed to risk	Actual deaths	100 A/E PML92sc	100 A/E PML92sc (2000–2002) from Working Paper 9
60-64	65,890	664	116	118
65-69	57,531	849	101	94
70-74	43,189	1,145	105	94
75-79	31,280	1,379	97	86
80-84	18,075	1,315	93	96
85-89	7,460	905	92	89

Male lives with pension over £13,000 pa				
Age group	Exposed to risk	Actual deaths	100 A/E PML92sc	100 A/E PML92sc (2000–2002) from Working Paper 9
60-64	61,876	398	74	73
65-69	49,777	530	73	71
70-74	37,351	702	75	73
75-79	25,963	932	80	80
80-84	13,902	843	78	78
85-89	5,964	688	87	85

The breakdown by amount of pension for males strengthens the conclusions on the significant difference in mortality for members with pensions of different size in Working Paper 9.

Further investigations

The Working Party intends to carry out more in depth analyses of these results for publication later in 2005 or early in 2006.

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