

Society of Actuaries in Ireland

Pensioner Mortality Investigation

4th December 2007



Mortality Sub-Committee

Padraic O'Malley

Ciaran McGrath

Maura Doherty

Shane O'Farrell

John Armstrong



Contents

- Background – previous study
- Current study
- Data
- Initial Results
- Further work



Background

- Previous study in 2004
- Data submitted covered 1998 to 2003
- 51,100 lives at end of investigation
- Produced crude mortality rates for five year age bands
- Results as a % of PMA92C2001



Previous Study Results

Age	PMA92C2001
62	123%
67	120%
72	115%
77	107%
82	122%
87	133%
92	120%
All	120%



Current study

- Aim - update and enlarge the previous study
- Scheme data 1/1/2003 to 1/7/2007
- Sources - pension consultancies and public servants
- Data
 - Male & Female
 - Lives & Amounts
 - 3-year period for most
- Constraints
 - Ill-health retirements
 - Dependant data
 - Date of death
 - Incurred but not reported



Data Received

	Male	Female	Total
Lives	59,000	34,400	93,400
Deaths	5,263	2,883	8,146

- Number of lives is as at end of investigation



Actual Deaths by Age Group

	Male Amounts	Female Amounts	Male Lives	Female Lives
Ages 60-69	12.4m	4.1m	887	282
Ages 70-79	26.3m	8.2m	1,885	663
Ages 80-89	30.5m	15.2m	1,775	1,127
Ages 90+	8.8m	8.4m	400	598
Age 60+	78m	35.9m	4,947	2,670



Source of Data

Source	Number of Schemes	Number of lives (end of investigation)
Consultancies	45	55,400
Public Servants	4	38,000
Total	49	93,400

- 40% public servants
- 20% in previous study
- Impact upon results



Methodology

- Compiled actual deaths by age
- Compiled exposure by age
- Calculated expected deaths
- Compared actual versus expected
- Rates below 60 very high; presumably due to ill-health retirements



Initial Results

- Actual versus PMF92C01
- Previous study 120% PMA92C01

Age Range	Male Amounts PMA92C01	Female Amounts PFA92C01	Male Lives PML92C01	Female Lives PFL92C01
60-69	105%	94%	93%	107%
70-79	89%	76%	91%	85%
80-89	98%	106%	104%	100%
90+	113%	121%	116%	106%
Age 60+	97%	99%	98%	98%



Rate of Improvements

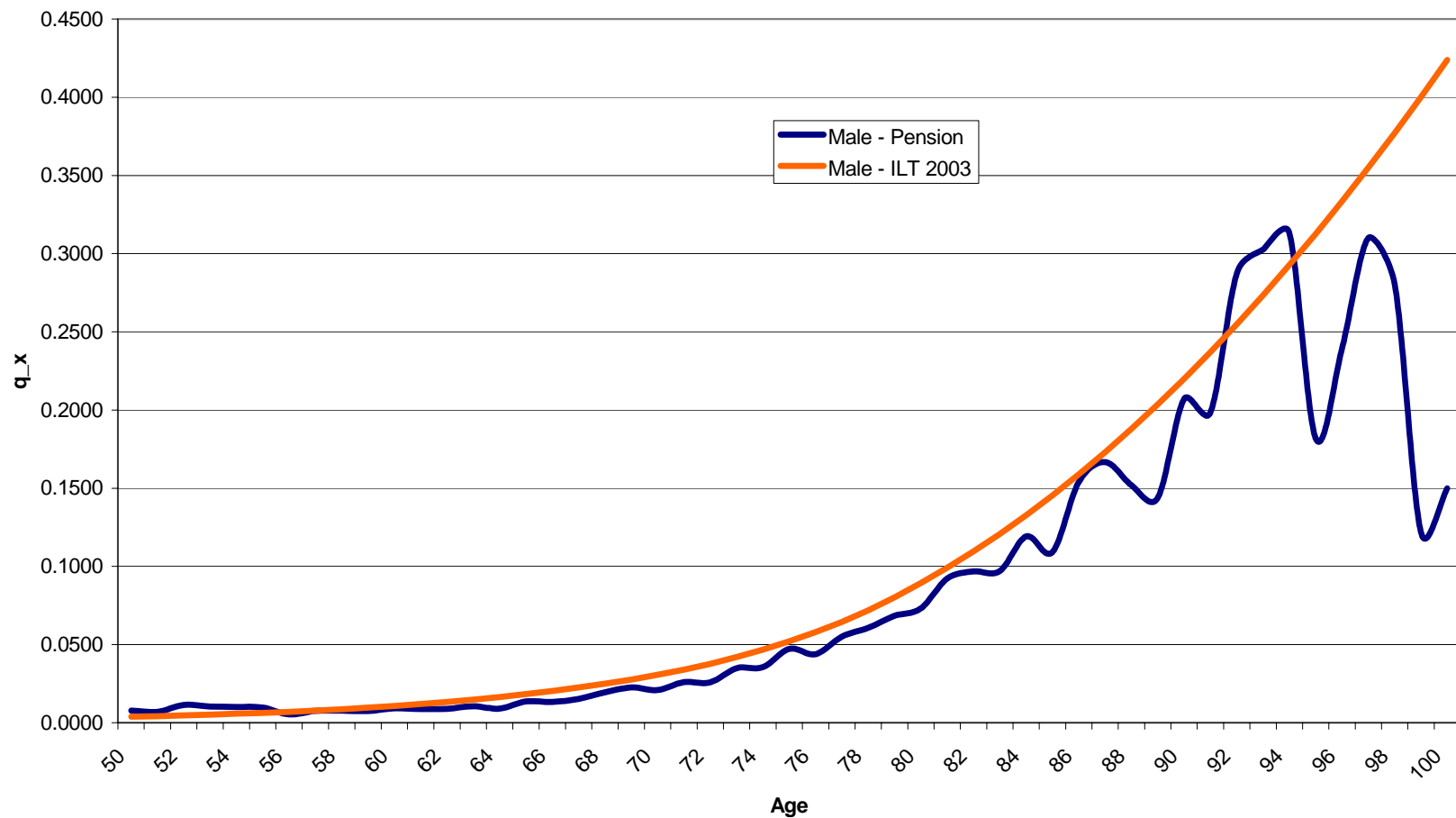
- General population mortality improvements
- Source demographic sub-committee June 2007

Period (Change from)	Females	Males
1982-1984 to 1985-1987	0.9%	0.2%
1985-1987 to 1988-1990	1.9%	2.5%
1988-1990 to 1991-1993	1.7%	1.5%
1991-1993 to 1994-1996	1.0%	1.1%
1994-1996 to 1997-1999	1.2%	1.6%
1997-1999 to 2000-2002	3.0%	3.6%
2000-2002 to 2003-2005	3.4%	4.4%



Male crude rates versus population

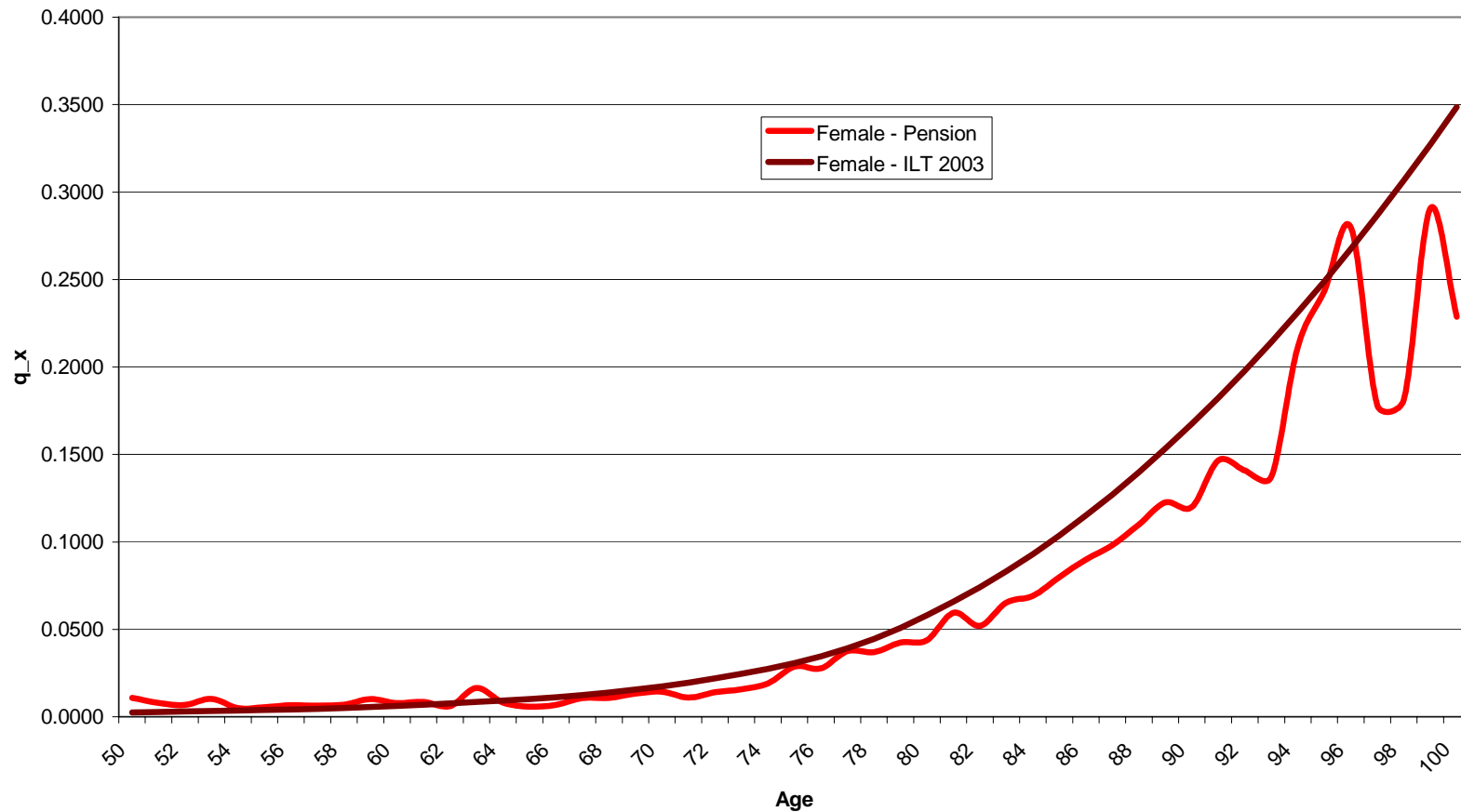
q_x ILT15 versus Actual experience





Female crude rates versus population

q_x ILT versus Actual experience - Females





Initial Results

- Actual versus 2000 series tables

Age Range	Male Amounts PNMA00	Female Amounts PNFA00	Male Lives PNML00	Female Lives PNFL00
60-69	100%	104%	105%	122%
70-79	100%	84%	103%	94%
80-89	103%	103%	111%	102%
90+	113%	101%	120%	97%
Age 60+	103%	97%	107%	100%



Results versus UK experience

- Results compared to Working Paper 29 of CMI
- WP29 Covered period 2000 to 2004
- Results expressed as percentage of 2000 series
- Not directly comparable
 - Our investigation centres on 2005
 - Different mix by industry

	Male Amounts	Female Amounts	Male Lives	Female Lives
Irish investigation	103%	97%	107%	100%
Working Paper 29	116%	112%	115%	110%



Results versus annuitant study

- First Irish Annuitant Mortality Study was recently published (2006 experience)
- Results expressed as a percentage of 2000 series Amounts Table
- Comparability? Issues such as IBNR, ill-health etc?

	Annuitant	Pensioner
Males	80%	103%
Females	86%	97%



Initial Conclusions

- Improvements since previous study
- Experience varies between industries
- Results not dissimilar to CMI study, when adjusted for time periods covered
- Difference in mortality between annuitants and pensioners



Further Work

- Results are initial
- Further analysis examining shape
- Analyse industry specific results
- Intend to produce mortality rates by 5 year age bands
- Full report in first quarter 2008