



The Actuarial Profession

making financial sense of the future

Mortality & Longevity Seminar Gordon Sharp

CMI Update

12 June 2012

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Agenda

- 2007-2011 Life Office Data Collection Exercise
- EU Gender Directive & Test-Achats
- SAPS Investigation
- CMI Mortality Projections Model

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CMI Life Office Data Submissions: Current Position

- Considerable concern over data collection:
 - Slow progress in transition to Per Policy data;
 - All-office results out of date; and
 - Fall in market coverage for Life Office Mortality
- Compounded by limited resources in offices (Solvency II etc)
- Recognition that Per Policy data requirements were ambitious
- Have learnt from the process and listened to insurers

CMI Life Office Data Submissions: 2007-2011 Data Collection Exercise

- Seeks to avoid areas that have proved problematical
- Flexible data requirements – what data can you provide?
- Intended to make data submission as easy as possible for offices but still providing valuable aggregated results
- Dialogue with offices now underway
- Ambitious timetable:
 - 30 Sept Collect data
 - 30 Nov Individual office results
 - 31 Dec 2007-2010 All-office results

CMI Life Office Data Submissions: 2013 and beyond

- Additional analyses of 2007-2010 data
- Possible production of “08” Series Life Office Mortality tables
- Full “Per Policy” data remains an aspiration but ...
- Intend to review success of 2007-2011 exercise; may “repeat” more flexible data requirements for 2012 data
- Produce 2011 All-office results

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EU Gender Directive & Test-Achats

- 2004 Directive allowed use of gender in premium rates subject to publication of justifying data
- CMI worked with HMT and ABI - and published justifying data for mortality, critical illness and income protection
- Test-Achats case successfully challenged the use of gender for pricing insurance – banned from 21 Dec 2012
- EU guidance suggests gender can still be collected and used for (eg) reserving
- Gender-specific tables still appropriate – unisex also?
- What rating factors will be used? What should CMI collect?

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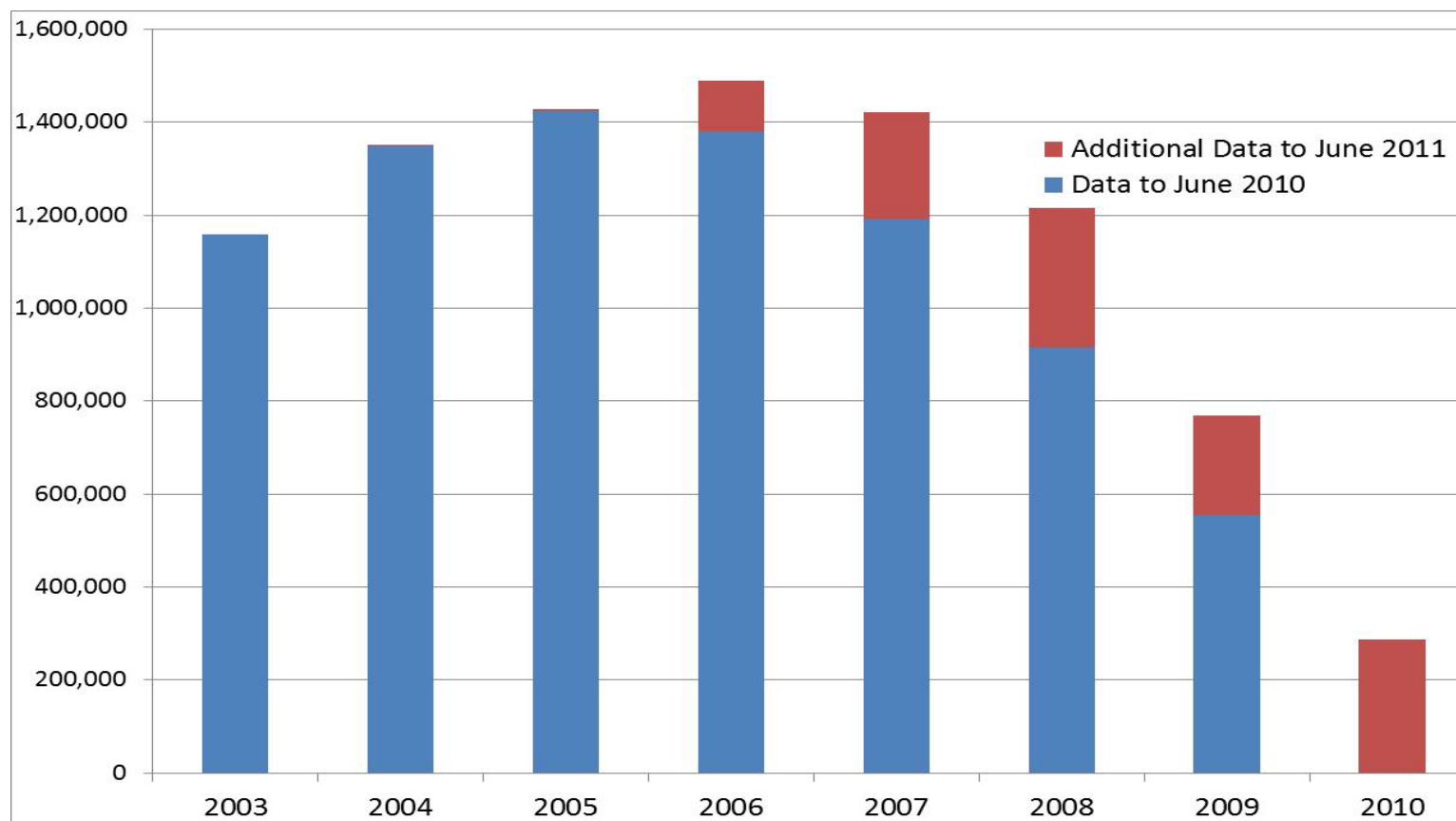
- 2007-2011 Life Office Data Collection Exercise
- EU Gender Directive & Test-Achats
- **SAPS Investigation**
- CMI Mortality Projections Model

CMI SAPS Investigation, 2003-2010 Mortality experience: Overview

- Experience for 2003-2010 based on data received by 30 June 2011
- Draft working paper issued to members in November 2011
- WP62 published in May 2012
- Underlying data files made available
- PPF data was again included

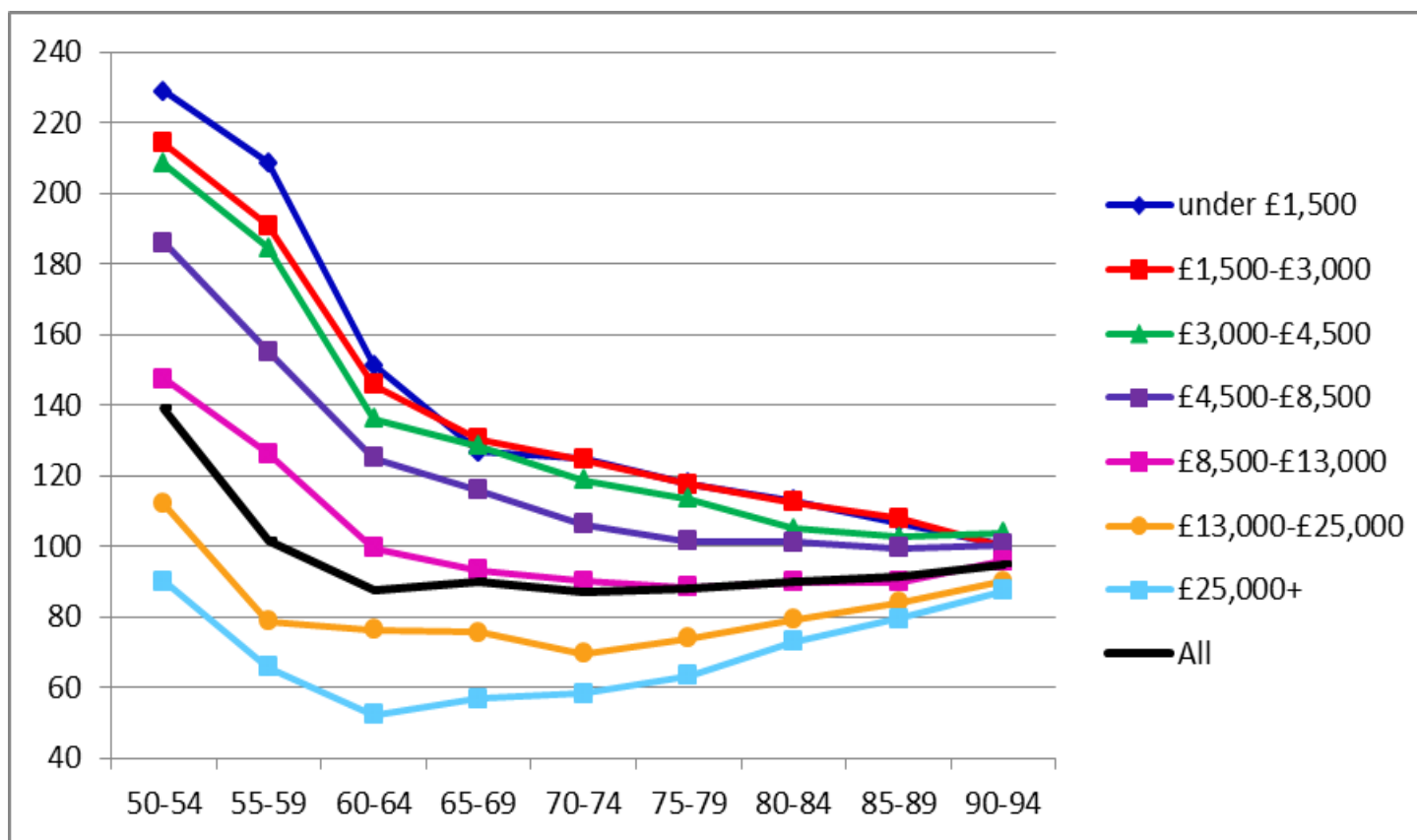
CMI SAPS Investigation, 2003-2010 Mortality experience: Data by year

Male pensioners



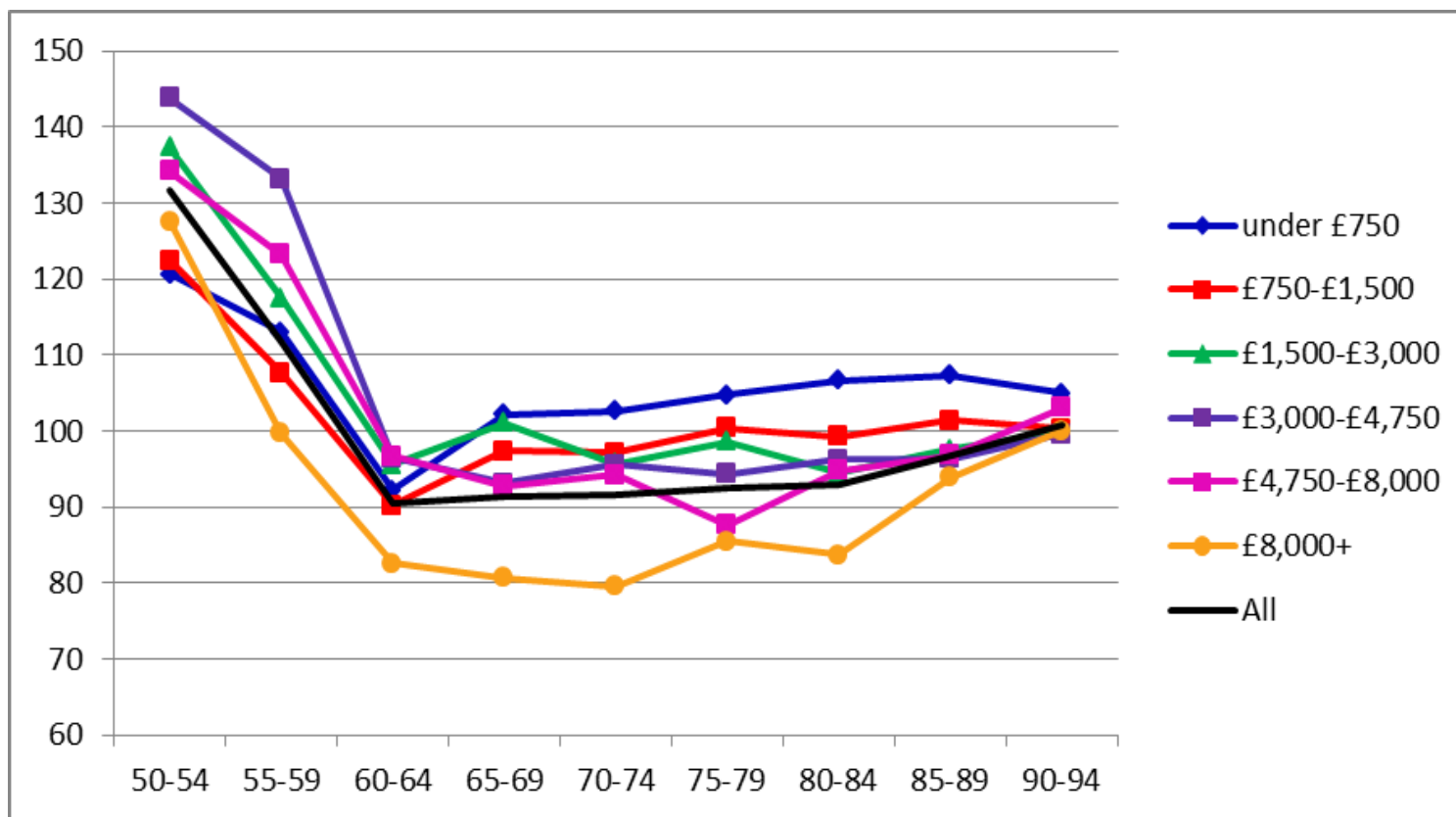
CMI SAPS Investigation, 2003-2010 Mortality experience: Amounts bands

Male Pensioners Amounts compared against S1PMA



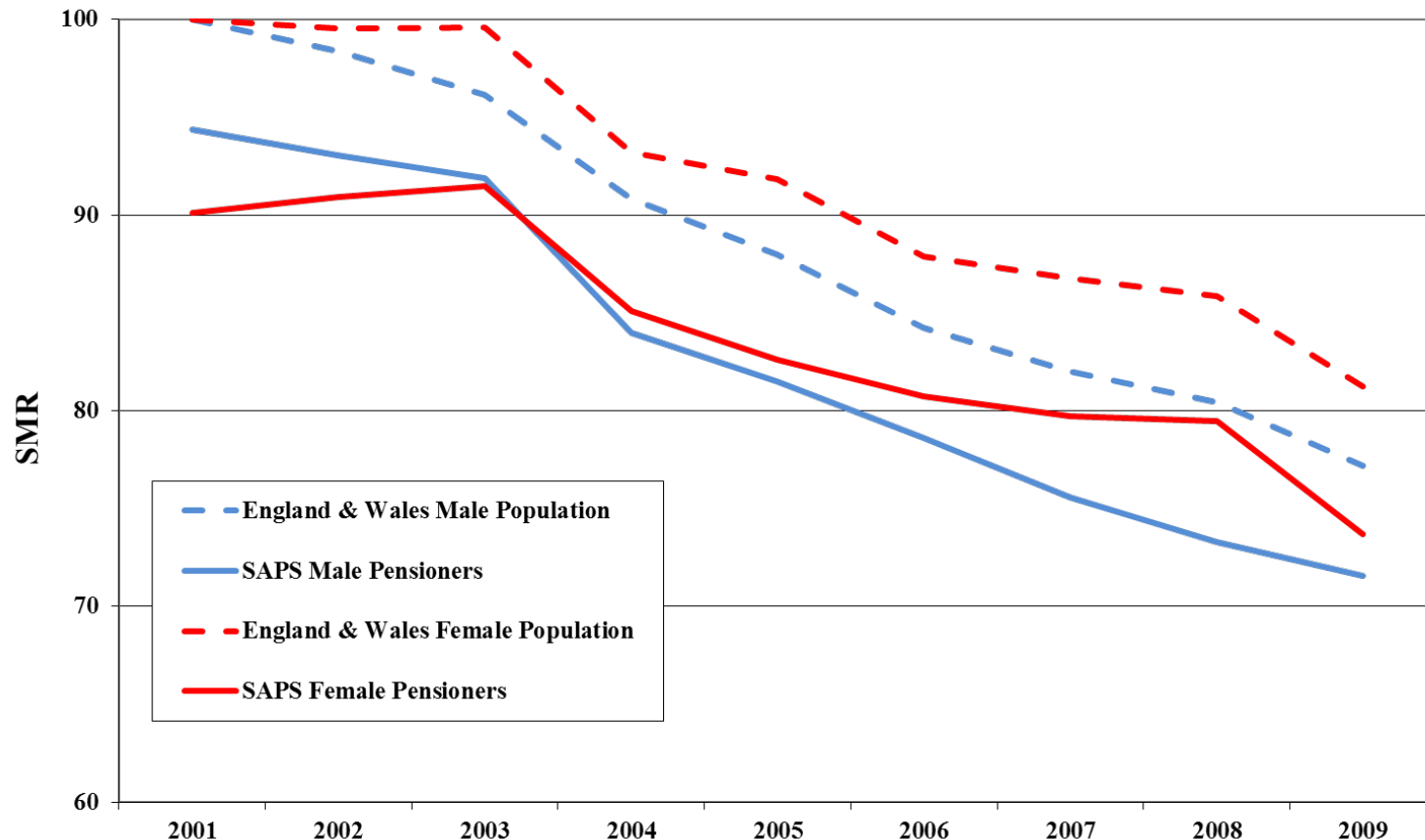
CMI SAPS Investigation, 2003-2010 Mortality experience: Amounts bands

Female Pensioners Amounts compared against S1PFA



CMI SAPS Investigation, Mortality improvements: ONS vs SAPS

Standardised Mortality Ratios standardised on Population of England & Wales 2001



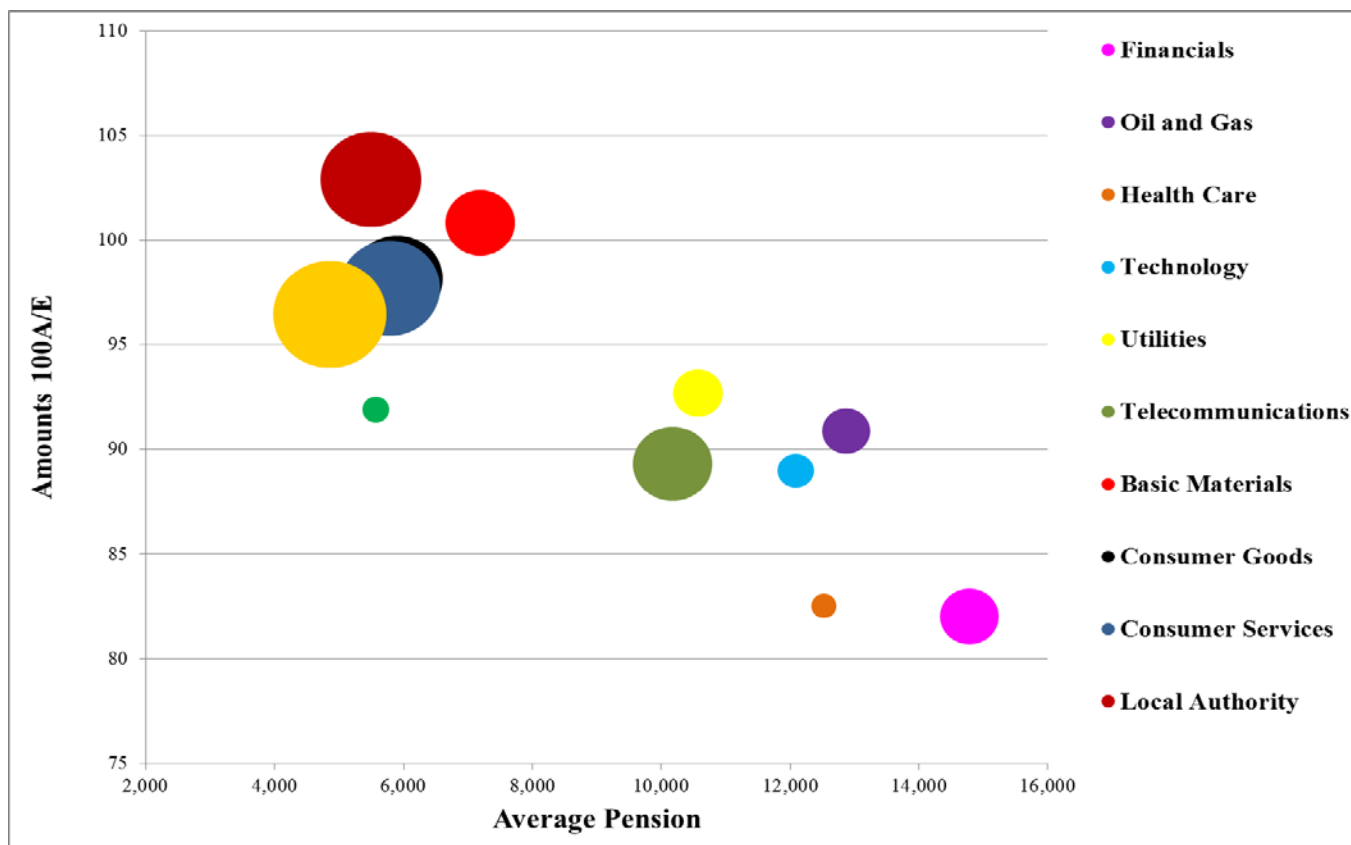
CMI SAPS Investigation, Industry analysis: Overview

- Previous analysis of experience by industry in WP29 (Oct 2007)
- Issued to SAPS members in Feb 2012
- Published as Working Paper 61 in May 2012
- Updated previous analysis and provided additional information about variation within industry categories; based on much larger dataset

CMI SAPS Investigation, Industry analysis: Overall mortality by industry

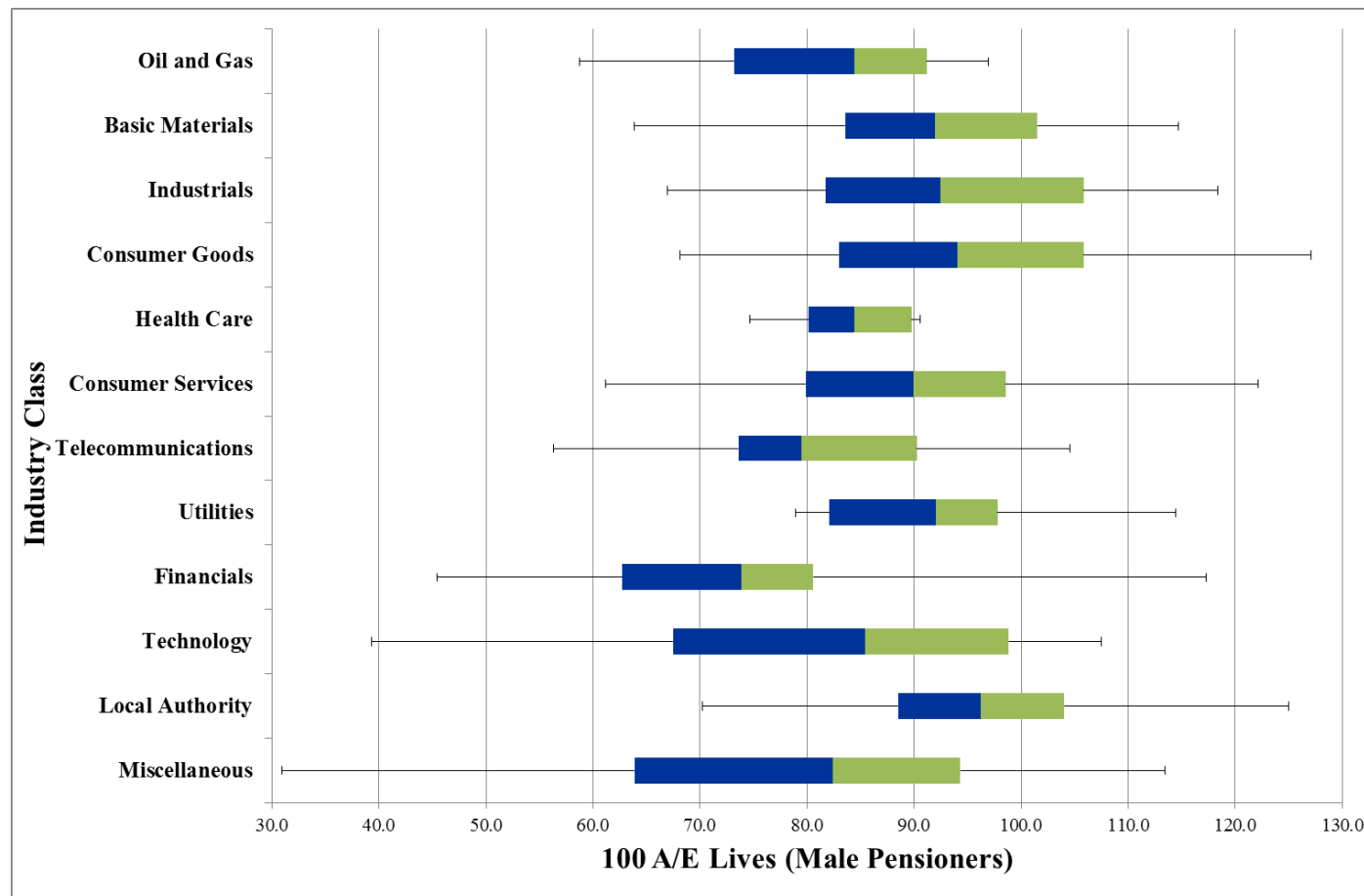
Relative mortality experience by industry classification and average pension

(Male Pensioners Amounts compared against S1PMA)



CMI SAPS Investigation, Industry analysis: Variation – box & whisker plots

Variation of experience within industry classifications (Distribution of scheme 100A/Es – Males)



CMI SAPS Investigation: plans for S2 tables

- S1 tables published in Oct 2008, based on data collected by 30 June 2007, covering period 2000-2006
- Preparatory work is underway on S2 tables, probably based on data collected by 30 June 2011
- Approach will largely mirror that of S1 tables but:
 - Male dependents might be graduated this time
 - Uncertain whether some S1 tables are used
 - May graduate data between light and heavy
- Aim to produce draft tables this summer and final tables by early 2013

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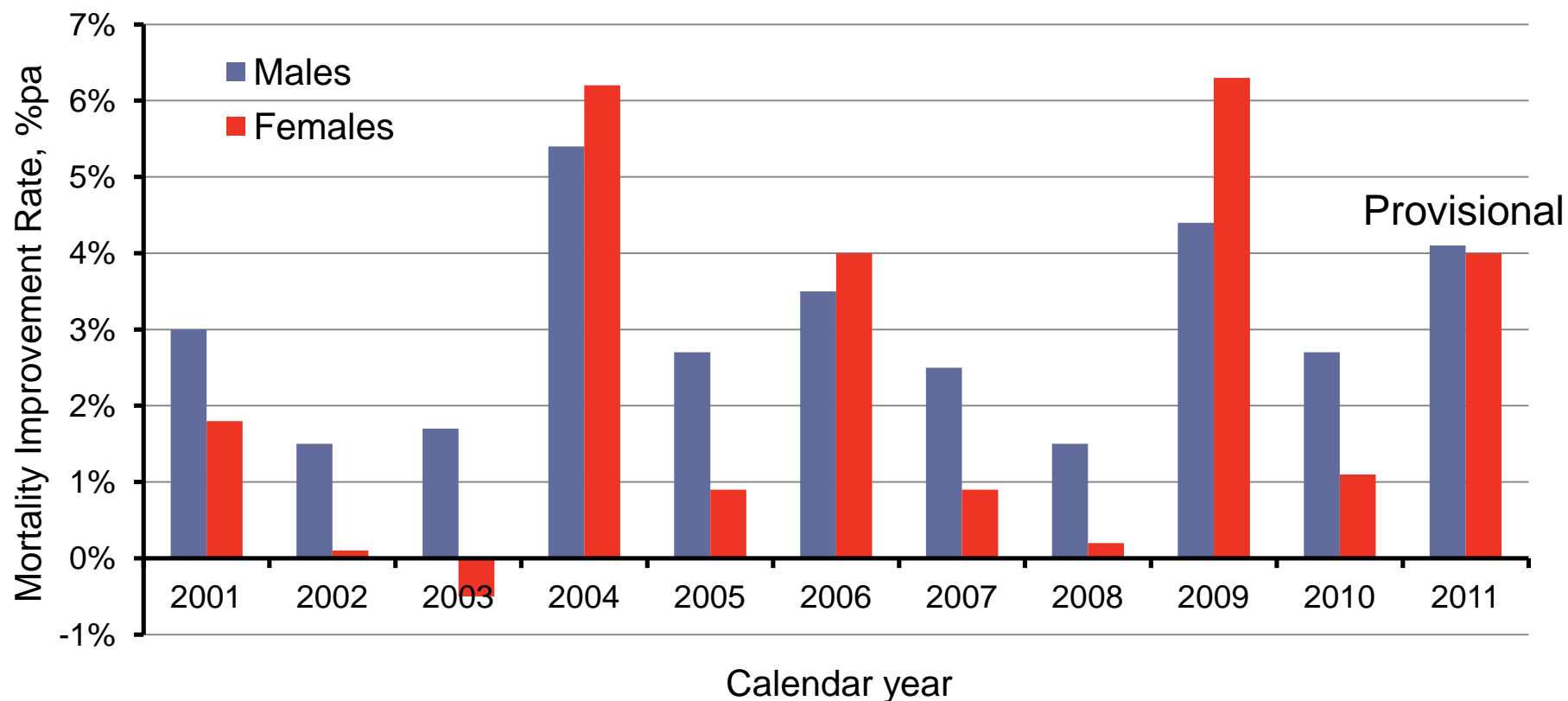
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- **CMI Mortality Projections Model**

CMI Mortality Projections Model: Evolution of the model

Crude annual mortality improvement rates

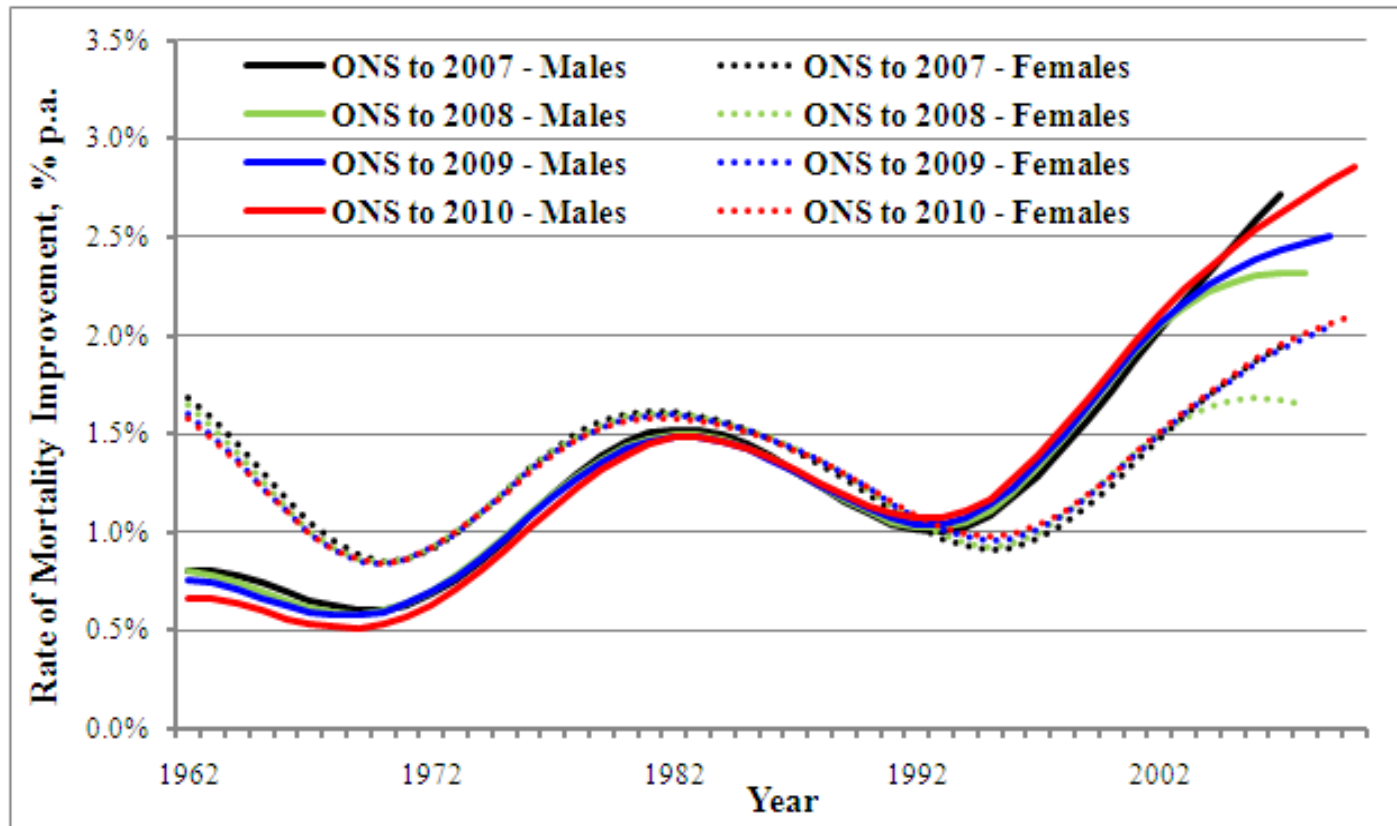
Population of England & Wales; age 18-102; age standardised



CMI Mortality Projections Model: Evolution of the model

Period Component of the Rate of Mortality Improvement

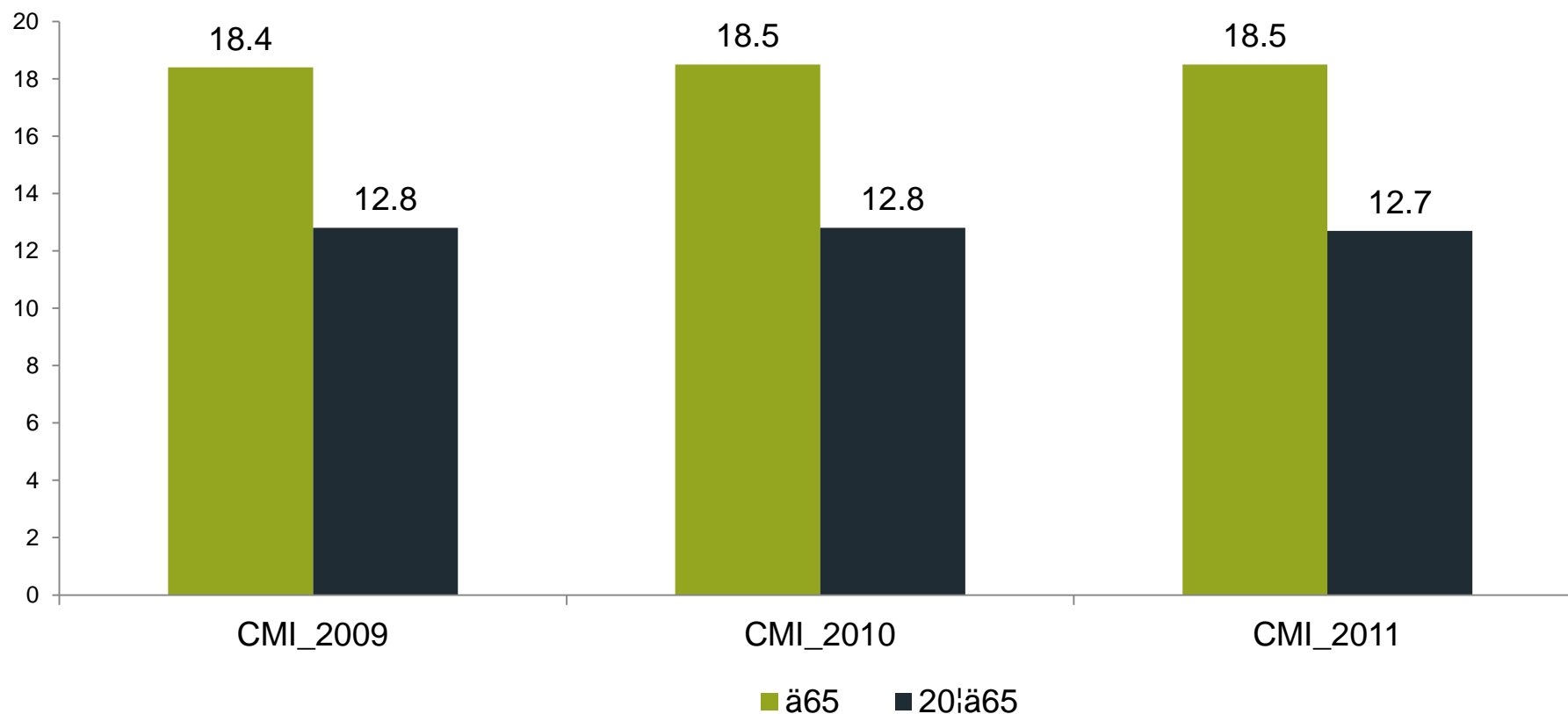
Population of England & Wales, estimates derived by fitting APC models to smoothed mortality improvement rates



CMI Mortality Projections Model: Evolution of the model

Annuity values (2%) males – S1PMA base table

As at 31/12/2011 Projections : CMI_20YY_M [2%]



CMI Mortality Projections Model:

Use of the model – pension schemes

- Majority of current funding exercises using CMI model
- Assumed long term rates of mortality improvement:
 - Male long term rates from 1% to 2% (median = 1.5%)
 - Minority using lower female rates than for males

Source: KPMG

CMI Mortality Projections Model:

Use of the model – insurance company reserving

- All major annuity companies likely to use a version of the CMI model for 2011 year-end reserving
- Most are using most of the default values
 - Some individualisation of taper and/or convergence rates
- Assumed long term rates of mortality improvement:
 - Long term rates from 1.25% to 3% p.a.
 - Majority using lower female rates than for males

Source: KPMG

CMI Mortality Projections Model: Timing of CMI_2012

- CMI_2009 and CMI_2010 released in November 2009 & 2010
- Not helpful so late in the year (year-end reserving)
- CMI_2011:
 - CMI estimated the high-age population estimates
 - CMI_2011 released in September 2011
- CMI_2012:
 - Later publication dates in 2012 for ONS data
 - CMI_2012 likely to be released in November 2012
- Consultation on future of Model and Library late this year

Questions?

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<http://www.actuaries.org.uk/research-and-resources/pages/continuous-mortality-investigation>