

## CMI Annual Review 2010-2011

### A summary of work undertaken by the CMI over the past year and our future plans

#### *Background*

The Continuous Mortality Investigation (CMI) is the largest single research project organised by the Actuarial Profession. It has been accumulating and analysing data on mortality and morbidity risks arising under life assurance, annuity and pension business for over 80 years.

#### *The future of the CMI*

The Actuarial Profession launched its consultation on the future of the CMI via a web-based survey in the summer of 2009. The results were extremely supportive of the CMI's work. The main themes were then discussed in greater depth with key stakeholders.

Following that consultation a review was launched, and I am pleased to report that it is now progressing well under a steering committee, chaired by Nigel Masters. The principles agreed with the Management Board of the Profession, to strengthen the support for the CMI, are:

- to keep the CMI close to the Profession
- to establish a fair commercial model, whilst still not-for-profit
- to ensure effective professional management
- to focus on the production of standard tables.

Work is underway under four workstreams, of which the most critical currently are "Structure and legal" and "Funding". The latter has been a concern for some time and the steering committee is examining ways of improving the sustainability of the CMI's funding, against the background of fairness to all our stakeholders.

The review continues with the full support and encouragement of the CMI and we hope it will result in valuable input into our future strategy and operations. All stakeholders in the CMI will be kept updated as further progress is made but anyone is welcome to contact either me or Nigel Masters with any questions.

#### *Mortality Projections*

The CMI Mortality Projections Model is now, we believe, becoming widely adopted as a valuable tool for benchmarking projections of improvements in mortality rates.

During the year, an updated version of the Model, CMI\_2010, was released and supported by Open Forum events at Staple Inn in December and in Edinburgh in January. The Model was also presented to the Society of Actuaries in Ireland in March. One particular question we posed to attendees at the Open Forums was whether it is appropriate for the CMI to update the Model to incorporate new data every year. The overwhelming consensus was that we should; although users may obviously decide to use any particular version for more than one year. Consequently our current assumption is that we will issue CMI\_2011 later this year.

We are conscious that both versions of the final Model to date have been issued in late November, which is far from ideal for life offices, in particular. This timing has been driven by the release date for the full England & Wales population dataset by the ONS, used to derive the default assumptions for initial rates of mortality improvements. Work is currently underway to test the feasibility of using the partial dataset, released by the ONS earlier in the year, in order to accelerate the release of CMI\_2011.

### *Differentiation by gender... and other factors*

The European Court of Justice ruling on the “Test Achats” case will clearly have far-reaching implications for the UK insurance industry. The CMI has published data to demonstrate the differences that exist between men and women in response to Article 5(2) of the EU Gender Directive, but it is less obvious how the CMI should react to the latest development. Our current understanding is that it is likely that insurers will be able to continue to collect gender data and hence will continue to use this for reserving and financial reporting. We therefore expect gender-specific analyses and tables to remain relevant. We will monitor closely the implementation of the judgment into UK legislation to assess whether there is also a role for unisex analyses and tables and would welcome views.

We are also very conscious of the potential threat to the use of age and disability in pricing insurance which could emerge from Europe. CMI data clearly demonstrates the correlations between age and the risks of mortality and morbidity, but the Test Achats case illustrated that – for gender – statistical data alone may not provide sufficient justification for differentiation. The CMI Executive Committee will consider how best the CMI can support the Profession in ensuring that the implications of any changes to legislation in these areas are fully understood.

### *New Morbidity Tables*

The more traditional role of the CMI is to produce formal tables of rates, based on data collected by the CMI. During the year, new tables were published for both our two morbidity investigations.

The graduation of Individual Income Protection experience for 1991-1998, the IPM 1991-98 tables, was completed with the publication of Working Papers 46 and 47 in July 2010. These papers focussed on the sickness inception rates, following the much earlier publication of the graduations of termination experience.

Income Protection is a complex product to analyse, which in part explains the lengthy time taken to produce these tables. To assist practitioners, the Income Protection Committee published Working Paper 48 at the same time; this summarises the methodology and key features of the graduations and experience. Clearly the new tables do not necessarily represent “current” experience and work is now well progressed on a further Working Paper comparing the 1999-2002 and 2003-2006 experience with the new graduations.

The Critical Illness Committee completed its long-term objective of producing tables of UK insured critical illness rates with the publication, in January, of Working Paper 50. This presents all-causes claim diagnosis rates for accelerated business using data for claims settled in 2003 to 2006, christened the “AC04 Series” rates.

Whilst Working Paper 50 contains the rates themselves, the Committee is undertaking further analyses to assist practitioners in using the rates. These analyses are likely to be published in

two separate Working Papers – the first, covering illustrative cause-specific rates for the major causes of claim, is expected to be published later this month. It is hoped that the subsequent paper, containing analyses of the experience of various subsets of the data, including product type and distribution channel, will be published in the summer.

### *Individual data records*

A key component of the CMI's future development is the move to "Per Policy" data for the Life Office Mortality and Critical Illness investigations. We have to admit that progress on this initiative has been somewhat painful both for the offices submitting data and the CMI in processing the data.

During the year, we have been reappraising the processing of Per Policy data. In particular, trying to reconcile individual data records across investigation years was identified as one area causing considerable difficulties for offices and the CMI. As a result, a twin-track approach is now being pursued. Tolerances are being introduced to allow datasets to be processed where a small proportion of records fall outside the expected boundaries and some checks on the accuracy of data across years may be relaxed to allow speedier processing of the data and production of results.

As a consequence, the first results that we produce using Per Policy data will be similar to those that the CMI has previously issued. The Life Office Mortality Committee has agreed an initial format for results using Per Policy data. This will be set out in a Working Paper shortly, together with a discussion and consultation on how this may be developed in future. The paper will also finalise the initial methodology, following the consultation in Working Paper 45.

The Committee will then be in a position to release individual office results to those offices that have submitted Per Policy data. The timeframe for producing 'All Office' results is, unfortunately, less clear. Although it is clearly possible to aggregate individual offices' results, subject of course to ensuring there is no infringement of confidentiality, results for a single year will be of little intrinsic value until the dataset has some degree of consistency of data by office. Many of the data submissions where processing is complete are from smaller offices, often newer organisations that have not previously submitted data to CMI investigations.

### *Understanding SAPS Mortality*

What has become the regular annual update on the SAPS investigation – this year analysing SAPS mortality experience for the period 2002 to 2009 based on data collected by 30 June 2010 – was issued in draft form to SAPS members in November 2010 and the final version has recently been published as Working Paper 51.

In addition to issuing the regular report, the SAPS Mortality Committee has been progressing two other principal areas of analysis during the year – mortality improvements and industry analysis. In recent years, the Committee has often received enquiries about the rates of improvement within the SAPS dataset. Trends in the mortality experience have been presented in the regular updates but these were heavily caveated. In particular, the use of mortality improvements based on ONS data in CMI\_2009 highlighted the question of whether SAPS mortality improvements experience differs from that of the E&W population.

Initial analysis of the improvements experience within the SAPS dataset attempted to demonstrate the statistical significance of the results but it was agreed that the conclusions from this were not sufficiently robust to be published. Whilst further work to develop more sophisticated statistical techniques that are sufficiently rigorous to draw conclusions are being explored, the Committee has produced a high level analysis of the improvements in mortality within the SAPS dataset over the period 2001-2009. This paper was sent to SAPS members in draft form in April, and the final form is expected to be published as a Working Paper in July 2011.

The analysis of experience by industry type also uses the dataset collected by 30 June 2010. Work is well-advanced and a draft paper is expected to be sent to members within the next month, to be published as a Working Paper 3 months later.

The Committee is also starting to give consideration to whether the SAPS dataset has developed sufficiently to justify producing the “S2” Series morality tables. The earliest possible timescale for such production would be well into 2012.

### *Feedback*

Feedback is vital to many organisations, and not least to the CMI. We are grateful to all those who have taken the time to respond to our various consultations over the year. Further feedback on our activities, including any of the items listed in this Review, is most welcome. Please send any comments to [info@cmib.org.uk](mailto:info@cmib.org.uk).

### *And finally...*

The Actuarial Profession and its users benefit greatly from the time and expertise donated by the many actuaries who participate in the CMI’s research committees and working parties. I would like to thank, on behalf of the CMI Executive Committee, all volunteer members and the secretariat for their commitment and support.

Considerable thanks are also due to the life offices, reinsurers and actuarial consultancies that not only provide financial support but also, in many cases, provide data too. Without your continued support our work could not even begin.

**Gordon Sharp, Chairman**

**May 2011**

## Appendix

### *CMI Publications during 2010-11*

- Working Paper 46: Background papers on the analysis of CMI individual income protection claim records (July 2010)
- Working Paper 47: The graduation of sickness rates for the CMI individual income protection experience for males 1991-98 of males, occupational class 1 (July 2010)
- Working Paper 48: An overview of the sickness inception and termination rate graduations (July 2010)
- Working Paper 49: The CMI mortality projections model, 'CMI\_2010' (November 2010)
- User guide for the CMI mortality projections model, 'CMI\_2010' (November 2010)
- Working Paper 50: CMI critical illness diagnosis rates for accelerated business 2003-2006 (January 2011)
- Working Paper 51: Report on the preliminary results of an analysis into the mortality experience of pensioners of self-administered pension schemes for the period 2002-2009 based on data collected by 30 June 2010 (May 2011)

### *CMI results released to members during 2010-11*

#### **Income Protection**

- 2007 'All Office' results for Individual business (February 2011)

### *CMI seminar presentations during 2010-11*

- Presentation on CMI\_2010 and a discussion of current practice in London (December 2010) and Edinburgh (January 2011)
- Presentation on recent progress in the CMI Critical illness investigation at the Life conference (November 2010)
- Presentation on recent mortality-related activity at the Mortality & Longevity seminar (March 2011)
- Presentation on the key features of Working Paper 50, and the results of subsequent work on 2003-2006 Critical Illness data at the Health & Care conference (May 2011)

Copies of the slides can be found on the CMI's pages of the UK Actuarial Profession's website (<http://www.actuaries.org.uk/research-and-resources/pages/continuous-mortality-investigation-presentations>).