

Continuous Mortality Investigation

Working Paper 15 – Projecting Future Mortality: Towards a proposal for a stochastic methodology

The CMI is pleased to announce the publication of Working Paper 15 which provides a summary of the CMI's proposed stochastic methodologies for projecting longevity and their key features. Feedback on the proposals should be sent to the address given at the end of this note.

Background to Working Paper 15

The CMI's Working Paper 3, published in March 2004, gave a summary of the different types of projection methodologies and their key features and summarised the discussion at the CMI/GAD seminar of 6 October 2003 on "Projecting Future Mortality". This paper explained the key sources of uncertainty in projections and their measurement, discussed the difficulties faced by the Working Party in selecting projection methodologies and asked eight specific questions as well as setting out the further research needed.

Working Paper 11, published in January 2005, provided the CMI's response to feedback received on Working Paper 3, both at a seminar hosted by the CMI on 4 June 2004 and subsequently in writing. All the feedback received by the CMI supported the continued projection of cohort mortality improvements. Feedback was also unanimous on the need for a measure of the uncertainty associated with the projections and there was general agreement on the need for quantitative measures of this uncertainty. However, the feedback indicated that most respondents had no preference for any particular projection methodology.

Summary of Working Paper 15

The CMI's Mortality Projections Working Party strongly feels that all users of mortality projections should increasingly focus on the uncertainty surrounding the projections. As well as providing a summary of the proposed stochastic methodologies and their key features, the paper sets out the types of uncertainty covered by the methodologies and provides a comparison of the two proposed methodologies highlighting the key considerations in making a choice between them. It also gives summary outputs and provides example results based on these approaches. The paper notes that CMI projection methodologies are, in future, unlikely to stay unchanged for long periods of time and emphasizes that this paper is not the last word on the subject. Projection methodologies will be developed as further research is carried out and the paper lists several topics for future research.

A word of warning: The cost of risk capital given in the examples in section 4 relates to hypothetical calculations that could have been done in 1992, based on population data from 1961 to 1990, and assumes that offices held no margins in their reserves. However,

the statutory reserves of life offices did and do include margins for prudence and thus comparisons with those reserves cannot be made with the examples given in the paper. Further, the strengthening of reserves by offices since 1992 and the impact of mortality experience observed since 1990 on the projections and their uncertainty means that the 1992 example calculations cannot be compared with current realistic reserves as disclosed by offices

Recognising that the proposed changes to the CMI's methodology for projecting longevity are radical, the CMI appreciate that users need time to absorb and reflect upon them as well as get a feel for the output produced by the models. Therefore, later in the summer, the CMI will provide software and information that will allow actuaries and others to experiment with the models and to comment on the proposals.

Providing feedback

If you have any written comments about the proposed methodologies, please send them by 31 August 2005 to the address below. Alternatively, you may wish to delay commenting until after the software has been released. Please note that this deadline has been extended from the original deadline stated in Working Paper 15 of 31 July 2005.

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We look forward to receiving your comments.

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Chairman of the CMI Mortality Committee

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