

Modelling Mortality Trend under Modern Solvency Regimes

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Abstract

New solvency regimes in Europe, Solvency II and the Swiss Solvency Test, necessitate the stochastic modelling of mortality/longevity trend risk. In this paper, we propose a mortality model which fulfills all requirements imposed by these regimes. We show how the model can be calibrated and applied to the simultaneous modelling of mortality and longevity risk for several populations.

To account for the one-year time horizon of the solvency regimes, we propose a specification of the model parameters which implies stochasticity in the long-term mortality trend. This approach spares the common re-estimation of the mortality model at the end of the one-year time horizon and, at the same time, provides highly plausible run-o_ scenarios. Finally, we explain how expert judgment in form of mortality/longevity threat scenarios can be used to test and enrich a mortality model.