

Perspectives on Mortality Modelling

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Abstract

This presentation will discuss and analyse national level demographics that have led to recent developments in new statistical modelling approaches to mortality forecasting and life-table estimation. This is important to actuarial science as such quantities often act as critical components of decision making on pension provision and planning, mortality linked financial securities and life insurance products.

In particular, I will discuss aspects of some recent research papers covering time-series regression modelling that incorporates key population modelling components such as, temporal graduation, period effects, cohort effects and persistence (long memory) in order to enhance national level, age and gender stratified mortality forecasting. These may be considered as important extensions to the classical GLM regression structures and Lee-Carter stochastic mortality models often used by actuaries in practice to undertake mortality projection.

The improvements introduced are demonstrated to help to tackle a key concern raised by the IMF and some national demographic and national statistics agencies that in recent years the classical actuarial mortality projections using standard Lee-Carter or GLM frameworks are beginning to produce under estimation of mortality projections. This can have profound ramifications for governments and private pension providers and life-insurance providers.

References

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