

Modelling Lifetime Dependence for Older Ages using a Multivariate Pareto Distribution

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Abstract

In order to isolate the longevity component in life-benefit products, we focus our attention on deferred annuities. These products are driven by older age mortality, where little is known about potential dependence structures. We propose to investigate a multivariate Pareto distribution, which will allow us to explore a variety of applications, from large portfolios of standard annuities to joint-last survivor annuity products for couples. In past work, it has been shown that even a little dependence between lives can lead to much higher uncertainty. Therefore, the ability to assess and incorporate the appropriate dependence structure will significantly improve the pricing and risk management of deferred annuity products.

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