Biometric risks assessment and management in annuities with Long Term Care benefits

(Topic: 1. Biometric risks and their securitisation)

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Abstract

The paper aims to develop a model for risk assessment and management for a portfolio of life annuities with Long Term Care benefits. These products are usually represented by a Markovian Multi-State model. We estimate the transition intensities underlying disability process using disability prevalence rates contained in the 2005 Italian National Statistics Institute (ISTAT) Survey on health conditions and use of health care services. Long Term Care insurance is affected by longevity and disability risks. Then, we propose a stochastic projection model in order to represent the future evolution of mortality and disability. Best estimate projections are used to calculate premiums and reserves for a standard Long Term Care contract. The stochastic model allows to assess the biometric risks (both process and parameter risk) affecting the annuity provider. Further, we investigate how to manage such risks by retaining, diversifying or transferring them. To deal with this issue we calculate the risk-based capital requirements and investigate how they can be reduced by reinsurance.

Keywords: Markovian Multi-State Model, Biometric Risks, Long Term Care Insurance, Risk-Based Capital Requirements, Reinsurance Cover.