Barrieu, Pauline; Bensusan, Harry; El Karoui, Nicole; Hillairet, Caroline; Loisel, Stéphane; Ravanelli, Claudia; Salhi, Yahia

Understanding, modelling and managing longevity risk: key issues and main challenges. (English) Zbl 1277.91073

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Summary: This article investigates the latest developments in longevity-risk modelling, and explores the key risk management challenges for both the financial and insurance industries. The article discusses key definitions that are crucial for the enhancement of the way longevity risk is understood, providing a global view of the practical issues for longevity-linked insurance and pension products that have evolved concurrently with the steady increase in life expectancy since 1960s. In addition, the article frames the recent and forthcoming developments that are expected to action industry-wide changes as more effective regulation, designed to better assess and efficiently manage inherited risks, is adopted. Simultaneously, the evolution of longevity is intensifying the need for capital markets to be used to manage and transfer the risk through what are known as insurance-linked securities (ILS). Thus, the article will examine the emerging scenarios, and will finally highlight some important potential developments for longevity-risk management from a financial perspective with reference to the most relevant modelling and pricing practices in the banking industry.

MSC:

91B30	Risk theory, insurance (MSC2010)
62P05	Applications of statistics to actuarial sciences and financial mathematics
91D20	Mathematical geography and demography
91G20	Derivative securities (option pricing, hedging, etc.)

Keywords:

longevity risk; stochastic mortality; pensions; life insurance; regulation; long-term interest rates; securitisation; risk transfer; incomplete market; population dynamics

Full Text: DOI

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