

# Understanding, Modeling and Managing Longevity Risk: Key Issues and Main Challenges\*

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In this article we investigate the latest developments on longevity risk modeling. We first introduce longevity risk and some key actuarial definitions as to allow for a better understanding of the related challenges in term of risk management from both a financial and insurance point of view. The article also provides a global view on the practical issues on longevity-linked insurance and pension funds products that arise mainly from the steady increase in life expectancy since 1960s. Those issues are leading the industry to adopt more effective regulations to better assess and efficiently manage the inherited risks. Simultaneously, the development on the longevity has enhanced the need of capital markets as to manage and transfer the risk throughout the so-called insurance-linked securities (ILS). Therefore, we also highlight future developments on longevity risk management from a financial point of view, bringing up practices from the banking industry in terms of modeling and pricing.

*Key words:* Longevity Risk, securitization, risk transfer, incomplete market, life insurance, stochastic mortality, pensions, long term interest rate, regulation, population dynamics.

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