On the failure (success) of the market for longevity bonds

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Abstract

Renewed interest in the notion of a survivor or longevity bond was initiated by Blake and Burrows (2001). The literature on longevity risk and capital market instruments designed to hedge that risk has grown significantly since then. In 2003 Swiss Re successfully introduced a mortality-based security designed to hedge excessive mortality changes for its life book of business. The concern was mortality risk, i.e., the risk of premature death. Since then mortality bonds have become common instruments for the transfer of mortality risk to the capital markets. In 2004 the European Investment Bank introduced a longevity bond designed to hedge longevity risk; with such a financial instrument pension and annuity providers would be able to hedge the risk of excessive mortality improvements. The EIB longevity bond was ultimately not issued due to insufficient demand. Several reasons have been proposed, *e.g.*, see Chen and Cummins (2010), for the failure of the issue including an excessive capital cost imposed on the hedgers, the longevity risk was transferred to a reinsurer rather than the capital markets, and the credit risk that would rest with the hedgers. In 2009 the World Bank introduced a longevity bond in Chile which also failed due to insufficient demand. In 2010, however, Swiss Re was successful in issuing a longevity bond through its special purpose vehicle Kortis Capital Ltd. In 2012, Aegon N. V. successfully issued a longevity bond arranged by Deutsche Bank. We provide a financial market model that allows us to provide a theoretically sound explanation first for the failure of some longevity bond issues and so also for a possible explanation of the success of others.

References:

Blake, David, and William Burrows. 2001. "Survivor Bonds: Helping to Hedge Mortality Risk." *Journal of Risk and Insurance* 68 (2):339-48.

Chen, Hua, and J. David Cummins. 2010. "Longevity Bond Premiums: the Extreme Value Approach and Risk Cubic Pricing." *Insurance: Mathematics and Economics* 46 (1):150-161.