Taylor & Francis
Online

Scandinavian Actuarial Journal ›
Volume 2008, 2008 - Issue 2-3

407 Views | 77 CrossRef citations to date | 0 Altmetric

ORIGINAL ARTICLES

On systematic mortality risk and risk-minimization with survivor swaps

Mikkel Dahl, Martin Melchior & Thomas Møller

Pages 114-146 | Published online: 12 Dec 2008

Cite this article https://doi.org/10.1080/03461230701795873

Sample our
Economics, Finance,
Business & Industry Journals
>> Sign in here to start your access
to the latest two volumes for 14 days

Full Article | Figures & data | References | Citations | Metrics
Reprints & Permissions | Read this article | Share

Abstract

A new market for so-called mortality derivatives is now appearing with survivor swaps (also called mortality swaps), longevity bonds and other specialized solutions. The development of these new financial instruments is triggered by the increased focus on the systematic mortality risk inherent in life insurance contracts, and their main focus is thus to allow the life insurance companies to hedge their systematic mortality risk. At the same time, this new class of financial contract is interesting from an investor's point of view, since it increases the possibility for an investor to diversify the investment portfolio. The systematic mortality risk stems from the uncertainty related to the future development of the mortality intensities. Mathematically, this uncertainty is described by modeling the underlying mortality intensities via stochastic processes. We consider two different portfolios of insured lives, where the underlying mortality intensities are correlated, and study the combined financial and mortality risk inherent in a portfolio of

general life insurance contracts. In order to hedge this risk, we allow for investments in survivor swaps and derive risk-minimizing strategies in markets where such contracts are available. The strategies are evaluated numerically.

Keywords:

Stochastic mortality | Affine mortality structure | Risk-minimization | Survivor swap

Related Research Data

A Guided Tour through Quadratic Hedging Approaches
Source: Unknown Repository
Stochastic mortality in life insurance: market reserves and mortality-linked insurance contracts
Source: Insurance Mathematics and Economics
Valuation and hedging of life insurance liabilities with systematic mortality risk
Source: Insurance Mathematics and Economics
Survivor Swaps
Source: Journal of Risk & Insurance
Affine Stochastic Mortality
Source: SSRN Electronic Journal
Living with Mortality: Longevity Bonds and Other Mortality-Linked Securities
Source: British Actuarial Journal
Pricing Death: Frameworks for the Valuation and Securitization of Mortality Risk
Source: Astin Bulletin

Related research

People also read | Recommended articles | Cited by 77

Information for

Authors

R&D professionals

Editors

Librarians

Societies

Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

Help and information

Help and contact

Newsroom

All journals

Books

Keep up to date

Register to receive personalised research and resources by email

Sign me up

Copyright © 2026 Informa UK Limited Privacy policy

Cookies Terms & conditions Accessibility

Registered in England & Wales No. 01072954
5 Howick Place | London | SW1P 1WG

Taylor & Francis by informa