



267 | 39 | 1
Views | CrossRef citations to date | Altmetric

Original Articles

The Valuation of Guaranteed Lifelong Withdrawal Benefit Options in Variable Annuity Contracts and the Impact of Mortality Risk

Gabriella Piscopo Ph.D. & Steven Haberman

Pages 59-76 | Published online: 27 Dec 2012

Cite this article <https://doi.org/10.1080/10920277.2011.10597609>

Sample our Economics, Finance, Business & Industry journals, sign in here to start your access, latest two full volumes FREE to you for 14 days

References

Citations

Metrics

Reprints & Permissions

Read this article

Share

We Care About Your Privacy

We and our 912 partners store and access personal data, like browsing data or unique identifiers, on your device. Selecting I Accept enables tracking technologies to support the purposes shown under we and our partners process data to provide. Selecting Reject All or withdrawing your consent will disable them. If trackers are disabled, some content and ads you see may not be as relevant to you. You can resurface this menu to change your choices or withdraw consent at any time by clicking the Show Purposes link on the bottom of the webpage. Your choices will have effect within our Website. For more details, refer to our Privacy Policy. [Here](#)

We and our partners process data to provide:

Use precise geolocation data. Actively scan device

I Accept

Reject All

Show Purpose



Scholes framework to insurance contracts, assuming the fund follows a geometric Brownian motion and the insurance fee is paid, on an ongoing basis, as a proportion of the assets. We develop a sensitivity analysis, which shows how the value of the product varies with the key parameters, including the age of the policyholder at the inception of the contract, the guaranteed rate, the risk-free rate, and the fund volatility. We calculate the fair fee, using Monte Carlo simulations under different scenarios. We give special attention to the impact of mortality risk on the value of the option, using a flexible model of mortality dynamics, which allows for the possible perturbations by mortality shock of the standard mortality tables used by practitioners. Moreover, we evaluate the introduction of roll-up and step-up options and the effect of the decision to delay withdrawing. Empirical analyses are performed, and numerical results are provided.

Related Research Data

Variable Annuities

Source: British Actuarial Journal

Mortality derivatives and the option to annuitise

Source

Surviv

Source

Unce

Source

The f

environ

So

T

Source

The T

Annu

Source

Finan

Source

Valua

Source: Insurance Mathematics and Economics



Hedging guarantees in variable annuities under both equity and interest rate risks

Source: Insurance Mathematics and Economics

Valuation of guaranteed annuity conversion options

Source: Insurance Mathematics and Economics

Risk-Neutral Valuation

Source: Unknown Repository

Securitization of Mortality Risks in Life Annuities

Source: Journal of Risk & Insurance

Equilibrium Prices of Guarantees under Equity-Linked Contracts

Source: Journal of Risk & Insurance

A numerical scheme for the impulse control formulation for pricing variable annuities with a guaranteed minimum withdrawal benefit (GMWB)

Source: Numerische Mathematik

Pricing Perpetual Fund Protection with Withdrawal Option

Source: North American Actuarial Journal

Author's Reply: Market Value Of Insurance Liabilities: Reconciling the Actuarial Appraisal and Option Pricing Methods - Discussion by Thomas S. Y. Ho; Joe Koltisko; Thomas J. Merfeld; Marsha Wallace

Source: North American Actuarial Journal

Modelling Longevity Dynamics for Pensions and Annuity Business

Source: Unknown Repository

Modelling the Fair Value of Annuities Contracts: The Impact of Interest Rate Risk and Mortality Risk

Source:

A Unified Approach to Pricing Life Annuities

Source:

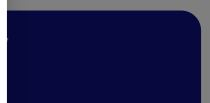
Pricing

Source:

Linkin



Related



Information for

Authors

R&D professionals

Editors

Librarians

Societies

Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

Help and information

Help and contact

Newsroom

All journals

Books

Keep up to date



Sign me up



Copyright ©

Accessibi

Registered
5 Howick Pl

or & Francis Group
orma business

