







Q

Home ► All Journals ► Economics, Finance & Business ► Scandinavian Actuarial Journal ► List of Issues ► Volume 1994, Issue 1 ► Pricing of Unit-linked Life Insurance Po ....

## Scandinavian Actuarial Journal >

Volume 1994, 1994 - Issue 1

222 97 3

Views CrossRef citations to date Altmetric

Original Article

# Pricing of Unit-linked Life Insurance Policies

## Knut K. Aase & Svein-Arne Persson

Pages 26-52 | Published online: 22 Dec 2011

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









Read this article

Share

## Abstract

The key feature of unit-linked or equity-linked life insurance policies is the uncertain value of the future insurance benefit. By issuing unit-linked insurances that guarantees the policy-holder a minimum benefit, the insurance company is exposed to financial risk. The value of the insurance benefit is assumed to be a function of a particular stochastic process. We use the financial theory of arbitrage pricing and martingale theory to derive single premiums for different policies. We derive risk-minimizing trading strategies describing how the issuing company can reduce financial risk. We derive a partial differential equation for the market value of the premium reserve which we compare to Thiele's equation of the actuarial sciences. Our equation contains some new terms stemming from our economic model. The interpretation of the principle of equivalence may be revisited in this framework; the principle still holds but under a new risk adjusted probability measure, equivalent to—but different from—the originally given probability measure.

Key words:

Unit-linked insurance equity-linked insurance arbitrage pricing theory

Thiele's differential equation

principle of equivalence

### Related Research Data

Martingales and stochastic integrals in the theory of continuous trading

Source: Stochastic Processes and their Applications

Martingales and arbitrage in multiperiod securities markets

Source: Journal of Economic Theory

Reserves for maturity guarantees under unit-linked policies

Source: Journal of the Institute of Actuaries

The pricing of equity-linked life insurance policies with an asset value guarantee

Source: Journal of Financial Economics

Contingent claims valuation when the security price is a combination of an Ito process

and a random point process

Source: Stochastic Processes and their Applications

Dynamic Equilibrium and the Structure of Premiums in a Reinsurance Market

Source: The Geneva Papers on Risk and Insurance Theory

Valuation of a multistate life insurance contract with random benefits

Source: Scandinavian Journal of Management

Related research 1

People also read

Recommended articles

Cited by 97

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

Register to receive personalised research and resources by email



Sign me up











Accessibility



Copyright © 2025 Informa UK Limited Privacy policy Cookies Terms & conditions



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