

1,896 Views | 183 CrossRef citations to date | 0 Altmetric

ORIGINAL ARTICLES

Modelling and management of mortality risk: a review

Andrew J. G. Cairns ✉, David Blake & Kevin Dowd

Pages 79-113 | Published online: 12 Dec 2008

🗨️ Cite this article 🔗 <https://doi.org/10.1080/03461230802173608>

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

We Care About Your Privacy

We and our 865 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," whereas 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 ["privacy preferences"] link on the bottom of the webpage [or the floating icon on the bottom-left of the webpage, if applicable]. 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:

- I Accept ✕
- Reject All
- Show Purpose



Abstra
In the fir
mortality
models t
statistica
evaluat
that
review s
tend to k
hedging
and over
as morta
market.

stochastic
number of
the
els can be
et model
ns. We then
e models
for dynamic
s (traded
hese, such
nts in the

Notes

¹In our notation the subscript c in $m_c(t, x)$ distinguishes the crude or actual death rate from the underlying or expected death rate.

²To date, we are unaware of any studies that have explicitly attempted to model the exposures as unobserved variables.

³The discrete-time models described in Section 4 can all be described as short-rate models, with the exception of the market model in Section 4.7.

Related Research Data

Interest Rate Models Theory and Practice

Source

The C

Source

The f

Source

Evalu

Source

Using

So

F

Source

Affine

Source

Stoch

Source

Back

Dens

Source: Elsevier BV



Ahead-

The Role of Macroeconomic Fluctuations and Cause of Death Trends

Source: Informa UK Limited

On the optimal hedge ratio in index-based longevity risk hedging

Source: Springer Science and Business Media LLC

Smoothing and forecasting mortality rates

Source: SAGE Publications

Mortality modelling with Levy processes

Source: Elsevier BV

Longevity Risk

Source: Springer Nature

Pricing Longevity Bonds Under the Uncertainty Theory Framework

Source: World Scientific Pub Co Pte Lt

Natural Hedging of Life and Annuity Mortality Risks

Source: Informa UK Limited

Basis Risk in Index-Based Longevity Hedges: A Guide for Longevity Hedgers

Source: Informa UK Limited

A random forest algorithm to improve the Lee-Carter mortality forecasting: impact on q-forward

Source: Springer Science and Business Media LLC

Securitization of Life Insurance Assets and Liabilities

Source: Wiley

Evaluating the Goodness of Fit of Stochastic Mortality Models

Source

Facin

Source

Meth

Source

A Qu

and V

Source

M

So

Morta

Source

Secur

Source

A per

Source

The M

Source: Wiley



The Importance of Year of Birth in Two-Dimensional Mortality Data

Source: Cambridge University Press (CUP)

A cohort-based extension to the Lee-Carter model for mortality reduction factors

Source: Elsevier BV

Lee-Carter mortality forecasting with age-specific enhancement

Source: Elsevier BV

Valuation and hedging of life insurance liabilities with systematic mortality risk

Source: Elsevier BV

Living with Mortality: Longevity Bonds and Other Mortality-Linked Securities

Source: Cambridge University Press (CUP)

On systematic mortality risk and risk-minimization with survivor swaps

Source: Informa UK Limited

A comparative study of two population models for the assessment of basis risk in longevity hedges

Source: Cambridge University Press (CUP)

An Introduction

Source: Princeton University Press

Extending Lee-Carter Mortality Forecasting

Source: Informa UK Limited

Long term mortality trends behind low life expectancy of Danish women.

Source: BMJ

Application of the Model with a Non-Gaussian Linear Scalar Filters to Determine Life

Expe



Source

Stoch

rance

contr

Source

Varia

id

comp

Source

A

Ch

Source

BOND

METH

Source

Mode

Source

Unde

challenges



Source: Taylor & Francis

Pricing Death: Frameworks for the Valuation and Securitization of Mortality Risk


Source: Cambridge University Press (CUP)

SURVIVOR BONDS: HELPING To HEDGE MORTALITY RISK

Source: JSTOR

An equilibrium characterization of the term structure

Source: Elsevier BV

Linking provided by 

Related research

People also read

Recommended articles

Cited by
183



Information for

- Authors
- R&D professionals
- Editors
- Librarians
- Societies

Opportunities

- Reprints and e-prints
- Advertising solutions
- Accelerated publication
- Corporate access solutions

Keep up to date

Register to receive personalised research and resources by email

 Sign me up

- 
- 
- 
- 
- 

Open access

- Overview
- Open journals
- Open Select
- Dove Medical Press
- F1000Research

Help and information

- Help and contact
- Newsroom
- All journals
- Books



Copyright

Accessib

Registered
5 Howick Pl

or & Francis Group
orma business