

# 2024 JOINT COLLOQUIUM



## RECONNECTING ACTUARIES

**SEPTEMBER 22-25 | BRUSSELS**

- Reconnecting actuaries after a pandemic period that changed the ways they work and meet.
- Reconnecting actuaries from interconnected areas of interest to the current and future challenges of the profession.
- Reconnecting actuaries around the same objectives: meet, exchange, learn, discover ... and enjoy!

[www.joCo2024.org](http://www.joCo2024.org)

[#JoCo2024](https://twitter.com/JoCo2024)

# *ASTIN Bulletin: The Journal of the International Actuarial Association*

## NOTES FOR CONTRIBUTORS

### AIMS AND SCOPE

*ASTIN Bulletin* was founded in 1958 as a journal providing an outlet for actuarial studies in non-life insurance. In the late 1980s the journal extended its scope to encompass the study of financial risk in insurance (AFIR). In 2007 the journal was established as the journal of the International Actuarial Association (IAA) and encompasses all of the scientific sections of the IAA.

*ASTIN Bulletin* publishes papers that are relevant to any branch of actuarial science and insurance mathematics. Papers should be quantitative and scientific in nature, and might draw on theory and methods developed in any branch of the mathematical sciences including actuarial mathematics, statistics, probability, financial mathematics and econometrics.

The journal welcomes papers that present significant and original theoretical developments and papers that present significant and original applications of mathematical, statistical or econometric theory to problems arising in insurance, pensions and finance. We especially welcome papers opening up new areas of interest to the international actuarial profession as well as papers that describe open problems that have arisen in practice.

### SUBMISSIONS

Papers for possible publication in *ASTIN Bulletin* should be submitted online at: <http://mc.manuscript-central.com/astin>. Authors are encouraged to provide their data and code during the review process which will allow the handling editor to replicate the results. The preferred code for statistical analysis is either R or Python. For accepted papers data and code should be made available as supplementary material. Please review the *ASTIN Bulletin*'s Transparency and Openness Policy. Submission of a paper is held to imply that it contains original unpublished work and is not being submitted for publication elsewhere. Receipt of the paper will be confirmed and followed by a refereeing process which will be handled by one of the editors. The editors aim to complete the refereeing of a submission in around three months. The role of a referee is to assess the quality of the academic content of the paper. If a paper is sufficiently badly written to an extent that prevents a referee from forming a proper view of the paper's scientific content, then the paper will be returned to the author unrefereed.

### TEXT AND MANUSCRIPT PREPARATION REFERENCING

Before a manuscript can be published it must conform to the style of *ASTIN Bulletin*, a summary of the key points of which is listed below. The comprehensive Notes of Contributors document can be obtained from <http://journals.cambridge.org/asb/contributors>.

- The basic elements of the journal's style have been agreed by the Editors and the publisher and should be clear from checking a recent issue of *ASTIN Bulletin*. If variations are felt necessary, this should be discussed with the editor handling the paper.
- Papers should be written in English. It is not the job of the editors, the referees or the publisher to improve the use of English in the paper; it is up to the authors to ensure that the language, spelling and grammar are of a high quality prior to submission.
- Authors intending to submit longer papers (e.g. exceeding 30 pages) are advised to consider splitting their contribution into two or more shorter contributions.
- The first page of each paper should start with the title, the name(s) of the author(s), an abstract and a list of keywords. An institutional affiliation can be placed between the name(s) of the author(s) and the abstract.
- Footnotes should be avoided as far as possible.

### AUTHOR AND CONTACT INFORMATION

On the title page, please provide the full name, affiliation, email and postal address of at least one author. Where the family name may be ambiguous (e.g. a double name), please indicate this clearly. For joint authored papers, please indicate the lead corresponding author and provide a contact telephone number.

### REFERENCING

References should be arranged alphabetically, and for the same author chronologically. Use a, b, c etc. to separate publications of the same author in the same year. For journal references give author(s), year, title, journal (in italics), volume (in boldface), and pages. For book references give author(s), year, title (in italics), publisher, and city.

# ASTIN Bulletin

Volume 54

Issue 1

## CONTENTS

### Articles

- Microscopic traffic models, accidents, and insurance losses  
SOJUNG KIM, MARCEL KLEIBER AND STEFAN WEBER 1
- Construction of rating systems using global sensitivity analysis: A numerical investigation  
ARIANNA VALLARINO, GIOVANNI RABITTI AND AMIR KHORRAMI CHOKAMI 25
- Multi-population mortality modelling: a Bayesian hierarchical approach  
JIANJIE SHI, YANLIN SHI, PENGJIE WANG AND DAN ZHU 46
- Optimal VIX-linked structure for the target benefit pension plan  
LV CHEN, DANPING LI, YUMIN WANG AND XIAOBAI ZHU 75
- Optimal performance of a tontine overlay subject to withdrawal constraints  
PETER A. FORSYTH, KENNETH R. VETZAL AND GRAHAM WESTMACOTT 94
- Risk sharing in equity-linked insurance products: Stackelberg equilibrium between an insurer and a reinsurer  
YEVHEN HAVRYLENKO, MARIA HINKEN AND RUDI ZAGST 129
- Pricing and hedging of longevity basis risk through securitisation  
FADOUA ZEDDOUK AND PIERRE DEVOLDER 159
- Taxation and policyholder behavior: the case of guaranteed minimum accumulation benefits  
JENNIFER ALONSO-GARCÍA, MICHAEL SHERRIS, SAMUEL THIRURAJAH AND JONATHAN ZIVEYI 185

Cambridge Core

For further information about this journal please  
go to the journal web site at:

[cambridge.org/asb](https://www.cambridge.org/asb)

CAMBRIDGE  
UNIVERSITY PRESS