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Cira Perna  
Claudio Pizzi  
Marilena Sibillo  
*Editors*

# Mathematical and Statistical Methods for Actuarial Sciences and Finance

MAF  
2022

 Springer

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*Editors*

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# Preface

This volume is a collection of papers selected and peer reviewed from the more than 100 presented at the International Conference on Mathematical and Statistical Methods for Actuarial Sciences and Finance–MAF2022, held at the University of Salerno from 20 to 22 April 2022.

In its organizational phase, the course of the COVID-19 pandemic was still unpredictable, and the MAF2022 steering committee made the decision to hold the event in a hybrid form, online or in-person, leaving each participant free to choose the most appropriate mode of participation. Nevertheless, we have always hoped to have the widest possible participation in presence, both as a desired sign of normality and as a return to the tradition of the conference, always characterized by cultural and human exchanges that only in presence can be fully realized.

This year's conference, organized by the Department of Economics and Statistics of the University of Salerno with the collaboration of the Department of Economics of the University of Venice Cà Foscari, is the tenth in a two-year series that began in 2004.

It was in fact in 2003 that the mathematicians and statisticians of the Department of Economics and Statistics of the University of Salerno, colleagues and friends among them, conceived and grew the purpose of developing through scientific meetings the cooperation and exchange of ideas among those who, like them, were engaged in research in actuarial science and finance. The enthusiasm about the initiative was always based on the deep conviction that this interaction would surely bear good fruit.

And so, the initiative has followed regularly, availing since 2008 of the valuable collaboration of the Department of Economics of the University of Venice Cà Foscari.

The first six editions were held in Italy, namely in 2004 and 2006 in Salerno, in 2008 in Venice, in 2010 in Ravello (Salerno), in 2012 again in Venice and in 2014 in Vietri sul Mare (Salerno). The international dimension of the conference has grown over time, attracting a wider and wider audience. Thus, in 2016 the MAF was held in Paris and in 2018 in Madrid. The 2020 edition, already suffering from the COVID-19 pandemic, was held in a fully online version from Venice.

This tenth edition confirms the growing interest of the international scientific community towards the initiative, with about 200 participants, more than 170 scientific contributions proposed in the form of abstracts or papers and four prestigious plenary speakers, namely

Prof. Elsa Fornero, Honorary Professor, University of Turin, who presents an invited talk entitled: “Reform, Inform, Educate”: a new paradigm for the sustainability of pension system;

Prof. Massimiliano Caporin, University of Padua, who presents an invited talk entitled: Realized Covariance Modelling, Forecast Error Variance Decompositions and a Model-Based Diebold-Yilmaz Index;

Prof. Marcello Galeotti, University of Florence, who presents an invited talk entitled: Applications of Game Theory to Risk Models: Evolutionary and Cooperative Approaches;

Dr. Michel Dacorogna, Prime Re Solutions, Zug, Switzerland, who presents an invited talk entitled: Pro-CyclicalitY Beyond Business Cycles: The Case of Traditional Risk Measurements.

Since 2006, all editions of the conference have been accompanied by a book published by Springer, a product that has often been counted among the most downloaded on the platform. Also, this tenth edition proposes the associated book, with the aim of offering the selected scientific contributions in a concise form of maximum 6 pages, in which the authors present their idea and the methodology behind its development, providing, when possible, an illustrative application.

The goal is to create a forum for comparison of ideas, topics and research perspectives, which embodies and represents at best the soul of MAF as a place of meeting and scientific exchange.

Several are the research areas to which the papers are dedicated with a focus on applicability and/or applications of the results:

Actuarial models, analysis of high-frequency financial data, behavioural finance, carbon and green finance, credit risk methods and models, dynamic optimization in finance, financial econometrics, forecasting of dynamical actuarial and financial phenomena, fund performance evaluation, insurance portfolio risk analysis, interest rate models, longevity risk, machine learning and soft computing in finance, management in insurance business, models and methods for financial time series analysis, models for financial derivatives, multivariate techniques for financial markets analysis, neural networks in insurance, optimization in insurance, pricing, probability in actuarial sciences, insurance and finance, real-world finance, risk management, solvency analysis, sovereign risk, static and dynamic portfolio selection and management, trading systems.

In its almost twenty years, the initiative has always availed itself of the support of the Departments of Economics and Statistics of the University of Salerno (Italy) and of the Department of Economics of the University Ca’ Foscari of Venice (Italy) and nonetheless of the scientific associations:

- AMASES—Association for Mathematics Applied to Social and Economic Sciences
- SIS—Italian Statistical Society.

Further, we would also like to express our deep gratitude to the members of the scientific and organizing committees and to all the people whose collaboration contributed to the success of the MAF2022 conference. In particular, our heartfelt thanks go to Giovanna Bimonte and Antonio Naimoli, who have worked unstintingly with great enthusiasm and efficiency, continually showing with their work the sharing of the aims of the initiative. We would also like to thank all the participants for their precious and indispensable contribution.

Finally, we are pleased to inform you that the organizational machine is already at work, looking forward to the MAF2024 edition.

April 2022

Marco Corazza  
Cira Perna  
Claudio Pizzi  
Marilena Sibillo

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