Special Issue "Actuarial and Financial Risks in Life Insurance, Pensions and Household Finance"

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The aim of the Special Issue is to address some of the main challenges individuals and companies face in managing financial and actuarial risks, when dealing with their investment/retirement or business-related decisions. We have received a large number of submissions, and ultimately published the nine high quality contributions that compose this issue. The papers address a variety of important issues, ranging from mortality modeling to risk management.

The paper by Kevin Dowd, David Blake and Andrew Cairns (Dowd et al. 2016), introduces mortality fan charts as a novel instrument to visualize the most likely forecasts of human mortality rates, together with their uncertainty. Their application to UK mortality data suggests that there are clear limits to mortality improvements: living as long as Methusalah, who according to the Bible reached the age of 969, is pure utopia.

Pierre Devolder and Adrièn Lebegue (Devolder and Lebègue 2016), in their contribution, study compositions of time-consistent dynamic risk measures, a crucial issue insurance companies have to tackle when computing their economic capital.

Yuguang Fan, Philip S. Griffin, Ross Maller, Alexander Szimayer and Tiandong Wang (Fan et al. 2017) carry out an extensive simulation-based study of the effects of two reinsurance policies, namely the Largest Claim and the Excess of Loss, on the ruin probability, ruin time and value of an insurance company under the classical compound Poisson risk model. Their exercise should help guide insurers in the design of their most appropriate reinsurance strategy.

The contribution by Pierre Devolder and Sébastien de Valeriola (Devolder and de Valeriola 2017) examines the two options that a new Belgian law offers to employers about the types of guarantees that the pension plans they offer to their employers should embed. Two different methodologies compare the alternatives. The paper highlights that the reform will most likely have the effect of changing the investment choices of pension plan funding vehicles.

Thomas Koch (Koch 2017) addresses theoretically the issue of adverse selection in insurance markets, and applies the theoretical framework to better understand the equilibrium in the market for insurance against medical risks in the U.S. The paper suggests that changes in insurance prices were the most important determinant of the changes in the demand for medical insurance.

The article by Catherine Donnelly (Donnelly 2017) deals with risk-sharing pension plans, that adjust the investment strategy and benefits to stabilize the funding ratio. The paper compares the theoretical performance of this type of plan vis-à-vis defined contribution plans, comparing the degrees of stability of the benefits provided to plan members.

The paper by Jan Natolski and Ralf Werner (Natolski and Werner 2017) gives a proper mathematical formulation to the replicating portfolio approach that insurance companies commonly utilize to compute risk capital under the Solvency II framework.

Gabriella Piscopo and Marina Resta (Piscopo and Resta 2017) propose an application of spectral bi-clustering to human mortality datasets. This technique can be a useful tool to guide mortality model selection, because, for instance, it may help identify the presence of cohort effects.

Finally, the paper by Carlo Maccheroni and Samuel Nocito (Maccheroni and Nocito 2017) provides a backtesting analysis of the performance of the two most known stochastic mortality

models, the Lee-Carter and the Cairns-Blake and Dowd models, to Italian male and female mortality rates. The paper identifies when the use of one of the two models should be preferable.

All the papers went through the refereeing process subject to the high standard of Risks.

I am deeply thankful to all the referees who collaborated. Their contribution was invaluable. I would also like to express my gratitude to the editor of Risks, Mogens Steffensen, to the Assistant Editors, Shelly Liu and Jamie Li, and to MDPI for their support in the editorial process.

Finally, I would like to thank all of the authors who contributed; it is thanks to their excellent articles that I am particularly proud of the quality of this Special Issue.

Conflicts of Interest: The author declares no conflict of interest.

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