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Preface

Recent advances in actuarial and financial mathematics

Prefacio
Avances recientes en matemática actuarial y financiera

This special issue deals with several major topics in Actuarial and Financial Mathematics. Both Finance and Insurance are fields that link sciences to businesses, laying their foundations in complex mathematical developments. This is generating a growing interest among pure and applied mathematicians, as well as mathematical journals, for research in Actuarial and Financial Mathematics.

There is no fundamental distinction between actuarial and financial problems, as these are often closely related. However, in order to assist the reader we classify the papers of this issue in the two categories.

Regarding Actuarial Mathematics this special issue presents five survey papers focusing on different recent developments that provide the reader with up-to-date information about the state of the art. The paper by Albrecher and Thonhauser revisits the classical optimal dividend problem, providing an excellent account of recent progresses. Badescu and Landriault provide an in depth review of Ruin Theory from the alternative perspective of matrix analytic methods. Boucher and Guillén deal with more statistical topics, presenting applications of panel count data in insurance, which generalize the classical compound sum model. Centeno and Simoes review the classical optimal reinsurance problem with a particular emphasis on recent advances. Finally, Li, Lu and Garrido present a thorough survey of Risk Theory with discrete time models, giving special emphasis to ruin results including Gerber-Shiu functions. Together, all these topics constitute a quite comprehensive excursion through some main fields of Actuarial Mathematics.

With respect to Mathematical Finance this issue features also five interesting papers covering the main areas of this science. Balbás and Jiménez-Guerra focus on the first fundamental theorem of Asset Pricing that characterizes the absence of arbitrage by means of martingale price processes. Escobar, Kiechle, Seco and Zagst deal with imperfections, very important in real markets, so as to price liquidity in constant leverage strategies. Falcó, Navarro and Nave focus on calibration issues of interest rate linked pricing models, another major field in Finance. González and Novales use Financial Econometrics so as to analyze whether volatility indices of international stock markets are forward looking. Finally, Moreno, Navas and Todeschini also deal with valuation and pricing issues, but their focus is on real assets (land), that they price by using the important Real Option approach, another recent line of research.

Two more articles, by Balbás and Balbás and by Zalinescu, respectively, may be considered both Actuarial and Financial, in the sense that they touch aspects interesting to both, the financial and the insurance industries. Balbás and Balbás deal with the risk measurement problem and introduce a new risk measure, the Compatible Conditional Value at Risk. Zalinescu uses locally convex spaces to state some duality results that may apply to Equilibrium and Pricing Models, among many other classical problems.

We would like to thank the people that have made the publication of this special issue possible. First of all we thank the Spanish Academy of Sciences, for giving us this opportunity. Second, but not less important, thanks go to the authors for their high quality papers and interesting contributions.

The invited editors,

Alejandro Balbás
José Garrido
Pedro Jiménez-Guerra