Stochastic Claims Reserving Methods in Insurance
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DESCRIPTION

Claims reserving is central to the insurance industry. Insurance liabilities depend on a number of different risk factors which need to be predicted accurately. This prediction of risk factors and outstanding loss liabilities is the core for pricing insurance products, determining the profitability of an insurance company and for considering the financial strength (solvency) of the company.

Following several high-profile company insolvencies, regulatory requirements have moved towards a risk-adjusted basis which has lead to the Solvency II developments. The key focus in the new regime is that financial companies need to analyze adverse developments in their portfolios. Reserving actuaries now have to not only estimate reserves for the outstanding loss liabilities but also to quantify possible shortfalls in these reserves that may lead to potential losses. Such an analysis requires stochastic modeling of loss liability cash flows and it can only be done within a stochastic framework. Therefore stochastic loss liability modeling and quantifying prediction uncertainties has become standard under the new legal framework for the financial industry.

This book covers all the mathematical theory and practical guidance needed in order to adhere to these stochastic techniques. Starting with the basic mathematical methods, working right through to the latest developments relevant for practical applications; readers will find out how to estimate total claims reserves while at the same time predicting errors and uncertainty are quantified. Accompanying datasets demonstrate all the techniques, which are easily implemented in a spreadsheet. A practical and essential guide, this book is a must-read in the light of the new solvency requirements for the whole insurance industry.
ABOUT THE AUTHOR

Mario V. Wüthrich holds a Ph.D. in mathematics from ETH Zurich (The Swiss Federal Institute of Technology Zurich). He completed his postdoctoral work on statistical physics in 2000 at the University of Nijmegen in The Netherlands. From 2000 to 2005, he held an actuarial position at Winterthur Insurance (Switzerland) where he was responsible for claims reserving in non-life insurance, as well as developing and implementing the Swiss Solvency Test. Since 2005, he has served as senior researcher and lecturer at ETH Zurich with teaching duties in actuarial and financial mathematics. He serves on the board of the Swiss Association of Actuaries (SAA) and is joint editor of the Bulletin SAA.

Michael Merz has been Assistant Professor for Statistics, Risk and Insurance at the University of Tübingen since October 2006. He was awarded the internationally renowned SCOR Actuarial Prize 2004 for his doctoral thesis in risk theory. After completing his doctorate, he worked in the actuarial department of the Baloise insurance company in Basel/Switzerland and gained valuable practical working experience in actuarial science and quantitative risk management. His main research interests are actuarial science and quantitative risk management, with special emphasis on claims reserving and risk theory. He is a referee for many academic journals and has published extensively in leading academic journals, including the ASTIN Bulletin and the Scandinavian Actuarial Journal.

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