BOOK REVIEWS

J. E. BACHMAN (1978): CAPITALIZATION REQUIREMENTS FOR MULTIPLE LINE PROPERTY-LIABILITY INSURANCE COMPANIES.

Huebner Foundation Monograph 6. xiii + 94, $ 10.00.
Homewood: Richard D. Irwin, Inc.

This book has as inputs aspects of accounting, linear statistical models, Markowitz portfolio theory and ruin theory by means of random walks with continuous time and state-space. This all coupled with knowledge of the institutional aspects of the insurance industry.

These quite different disciplines are used to arrive at a result-oriented model to determine the appropriate size of capital for an insurance company, conditionally on the "design" of the company or in more explicit terms: its product line mix and composition of its investment portfolio.

Especially appealing is the illustration with real data, based on 14 companies, 12 product lines and 15 years.

The profit margin is defined with the help of the combined ratio and is tested to be normally distributed and stationary over time.

At several places in the book, implicit use has been made that the variance of underwriting results is proportional with the square of the volume of underwriting business. I doubt the appropriateness of this specification, however.

The virtue and appeal of this book are its multidisciplinary approach, which is shown to have the possibility to generate simple and useful models.

The general conclusions of the book do have intuitive appeal and the book should be of interest to people, studying solvency matters.

P. ter Berg

H. P. STERK (1979): SELBSTBETEILIGUNG UNTER RISIKOTHEORETISCHEN ASPEKTEN.

Veröffentlichungen des Instituts für Versicherungswissenschaft der Universität Mannheim 14. viii + 278. Karlsruhe: Verlag Versicherungswirtschaft e.V.

The title of this book creates the expectation to read a monograph on deductibles, written from a risk-theoretic point of view. This is enforced by a foreword by HELTEN, which clearly states the problem. However, only the last 80 pages are on this topic. The first part of the book forms a reasonable complete text on the mathematical, statistical and economic aspects of insurance. The book is clearly and thoroughly written and contains a long list with references.

After a short introductory chapter, models in risk theory are presented paralleling the traditional expositions which are characterized by key-words like: Poisson, negative binomial, exponential, Pareto, gamma, lognormal, beta, etc. In the next chapter the more inferential aspects of insurance are touched on with utility and decision theory. Chapter 4 concerns premium calculation principles.

After that the real promise of the book enters the picture. Two chapters on the nature of deductibles and the associated premium reducing forces. The conclusions of these final chapters should be that deductibles can and should be studied in an analytical framework, which parallels the existing theory and methods for deductible-free insurance matters.

The major qualitative conclusion is that deductibles do decrease the level of aggregate loss, and simultaneously increase the coefficient of variation of the probability distribution for aggregate loss. This results in a more dangerous risk situation, which requires more loading in the premium.

The book can be used as an introduction to the quantitative aspects of insurance and can be read by all people with a mathematical background.

P. ter Berg

INTERNATIONAL BIBLIOGRAPHY OF REINSURANCE, 5TH EDITION, 1981/82.

Bayerische Rückversicherung A.G., Munich

This work which covers the most important titles in international reinsurance literature is now in its 5th edition.

Relevant publications of the years 1979 and 1980 have newly been added. Particular trouble has been taken to also include dissertations as well as works on the theory of reinsurance of former years. The bibliography could not only be extended but also improved.

Worth mentioning: a study of reinsurance in Chinese language which appears this year already in its 3rd edition.

Press Release