

D.G. HART, R.A. BUCHANAN, B.A. HOWE (1996): *The Actuarial Practice of General Insurance*. Institute of Actuaries of Australia, Sydney. 591 pp. ISBN 0-85813-055-6.

This book is the general insurance textbook used by students of the Institute of Actuaries of Australia. In broad terms, its coverage can be broken down into the following three areas:

- The nature and operation of general insurance (chapters 1-5).
- Actuarial techniques for general insurance (chapters 6-16).
- Actuarial practise of general insurance (chapters 17-40).

The first part provides a thorough, but very readable introduction into the nature of general insurance. Starting with a description of the risks covered by different classes of insurance and a brief historical overview, it then moves into the area of insurance law and insurance regulation. Having dealt with these issues at considerable length, the authors then discuss the actual operation of an insurance company, including underwriting and claims management, coinsurance and reinsurance, and financial reporting. The last two chapters of the first part cover the data requirements of a general insurer and, briefly at this stage, the role of the actuary in general insurance.

By necessity, the first part of this book is steeped in Australian legislation, which can be a bit daunting to a reader unfamiliar with the federal structure of Australia. Of somewhat greater concern is the fact that the authors attempt to give an up-to-date presentation of several state-based statutory insurance schemes such as Workers' Compensation. As such schemes are constantly being modified, frequent revisions of this book will be inevitable. The reviewer's hope is that a future edition will be written with a view to being less ephemeral. For the current reader, however, this part of the book provides a wealth of information on how to operate an insurance company in any country.

The second part provides an overview of important actuarial and statistical techniques for the general insurance actuary. The following areas are covered: claim frequency and size distributions leading to aggregate claim distributions; basic risk theory leading to methods for optimising capital, profit and reinsurance; experience rating and risk classification; forecasting and run-off techniques; premium rating.

This part is very comprehensive and provides many useful quantitative methods. All the methods presented are clearly motivated and described with numerical examples. Due consideration is given to situations with less-than-perfect data, such as incomplete run-off triangles (the assumption of perfect data is a frustrating aspect of many theoretical textbooks).

Naturally it has been impossible for the authors to cover all the available methods, or to provide more than an outline of the theoretical derivation and statistical properties of the methods presented: for this, the interested reader must consult other sources.

The third part of the book covers different aspects of the actuary's role and tasks in general insurance. Areas of actuarial involvement covered include:

- Rating and design.
- Reserving.
- Financial control.
- Reinsurance.
- Appraisal.
- Compensation schemes.
- Risk management.
- Statutory supervision.

Within each area, the authors provide a wide-ranging discussion of the relevant practical, professional and legal issues that need to be addressed by the general insurance actuary in the performance of his or her duties.

The authors of a book as comprehensive as this one must make a number of compromises. Thus one could point out a number of topics that are treated in greater depth by dedicated theoretical texts. However, within the limitation of almost 600 pages, the authors have succeeded remarkably well in balancing the general discussion of issues, with a presentation of quantitative techniques that has an acceptable degree of mathematical rigour.

In the opinion of this reviewer, *The Actuarial Practice of General Insurance* is an excellent introduction to actuarial work in general insurance.

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