

## REVIEWS

*Financing Growth: A Financial History of American Life Insurance Through 1900.* By MICHAEL PRITCHELL. (University of Pennsylvania 1985)

This is one of a series of monographs published by the Huebner Foundation for Insurance Education.

It deals with the investments of United States' Life Insurance Companies (including Life Assurance Companies in United Kingdom terminology) before the year 1900.

The problem for the researcher in this case is that the main sources of information were to be found in unpublished company records.

One of the theories investigated was that Insurance Company investment in the years up to 1900, made an important contribution to the development of the American railway system.

The conclusion is reached that, although a significant part of Insurance Company investment was in railroad stocks, the total of such investments represented a relatively small part of the available stock, and the overall influence of the Insurance Industry in new projects was much less than had hitherto been thought.

In the course of reaching his conclusions the author produces some interesting statistics.

These include the numbers of Insurance Companies operating in the U.S.A. during the period up to 1900, details concerning the occupations of policyholders and further information which had not been previously published.

It concludes with an extensive list of references which could prove useful for further research.

R. W. SCADDEN

*City Financial 1985/86 Insurance Register (United Kingdom).* EDITED BY VANESSA BARRIE. (Kluwer)

This register provides a substantial volume of information concerning Insurance Companies, Underwriters, Brokers and ancillary organizations.

It includes a comprehensive list of addresses, names of current directors and details the connections between many companies.

Clearly, to retain its value, it will need to be updated regularly but it currently forms a very valuable source of reference.

R. W. SCADDEN

*Insuring Foreign Risks: A guide to regulations world-wide.* Published by City Financial/Kluwer. Edited by G. N. CROCKFORD.

This manual provides a useful source of concise information on one hundred countries dispersed over six continents ranging from Uganda to USSR and Gabon to Guatemala. This reference book would be particularly helpful when there is a need to find out the degree of sophistication and structure of an unknown insurance market when time is of the essence.

For each country there is a short abstract of geographical statistics, a listing of the prevailing legislation, requirements for formation and operation of insurance companies, solvency, state involvement in insurance/reinsurance, non-admitted insurance, compulsory insurance, premium taxes and levies, intermediaries' qualifications, and a list of addresses in the UK or in the country in question where one could obtain further information. All this information takes up an average length of two pages for each country. In an enterprise of this breadth, depth of detail and accuracy are the victims. For instance, the stamp duty in the UK is 50p per mille and not 50p per cent as stated and the premium levy in Ireland is 1.67% of first year's premiums instead of 1%.

The loose leaf feature facilitates regular updating which is clearly essential to prevent this work from getting out of date. In future updates, I would like to see the incorporation of a few financial statistics like GNP, premium income, growth rates etc. which would undoubtedly be of interest and relevance to users of this manual.

All in all, I would not hesitate to recommend this work to be included in the reference libraries of insurance companies with expansion of overseas interests in mind.

S. C. TAN

*Graduation: The Revision of Estimates.* By DICK LONDON. ACTEX Publications 1985.

This new textbook encouraged by the Society of Actuaries comes at a timely moment. Sophisticated statistical methods can easily be used by actuaries for purposes of graduating tables once a program has been developed and a suitable computer is available. The author of this text has been at pains to make clear the statistical aspects of graduation.

As a statistical text for actuarial students the book has many admirable qualities. There is an abundance of good examples. Where examples are not worked through answers are provided in the back of the book. The level of mathematics seems about right. Sensible use is made of matrices but real variable and complex variable analysis at an advanced level is avoided. The book provides a well balanced survey of the main statistical methods with some emphasis on the Bayesian approach which is rather ambitious in this context. Perhaps the central chapters in the book are those on Whittaker graduation and the following chapter on Bayesian graduation. Both of these methods seek to minimize the weighted sum of squares of deviations of observed values from the revised values but the Whittaker method is modified by an attempt to minimize a smoothness measure as well. In a clear and concise book of less than 200 pages there is a good account of all the main methods of graduation. Perhaps the only statistical opportunity the author has missed is to exploit the resemblance between Box-Jenkins Time Series methods and moving average methods of graduation using least squares of errors.

More generally there are some reservations about this approach to graduation. Most actuaries are committed to relying on graduation for purposes of constructing premium rates that progress satisfactorily from age to age. One would never guess from a reading of this book that it may be better to level out mortality rates for males aged 20–25, even if there is a genuine peak in observed deaths around age 20, to produce a table from which premiums are to be calculated. There may also be sound reasons for wishing to incorporate higher margins in mortality rates at more advanced ages around age 70. A reservation at a technical level is that the automatic use of a sophisticated method of graduation cleverly programmed may obscure what is being done and may fail to highlight spurious features of the data. There is scope for the modern equivalent of using squared paper, pencil and a piece of string so as to spot outliers.

Dick London is also to be congratulated as the publisher of this book. The printing and appearance of the book are attractive and the layout makes the text easy to follow. The graphic design in blue and green on the cover looks professional without achieving the usually forbidding appearance of statistical and actuarial text-books. And the price is remarkably low. Actuaries can be well served by an independent private venture that exploits the new printing technology and uses the marketing channels already available within the actuarial domain.

PATRICK CARROLL

*Making Decisions* (Second Edition). By D. V. LINDLEY. Wiley 1985. 207 pages.

The Bayesian movement in academic statistics has been exerting an influence reflected in the latest books on such distinctively actuarial topics as Graduation and Credibility Theory. So a popular and readable book by the acknowledged leader of the Bayesian School, Professor Denis Lindley is to be welcomed. The second edition expands and improves the treatment of Probability Theory. To develop the basic results the author has changed in this edition to using the model of “balls drawn from an urn which provides the basic results much more easily”. The first edition had used “the fall of a point at random, that was artificial and unnecessarily complicated”. So some of the new edition is rather like the treatment of Bayes’ theorem in the book by Bizley.

PATRICK CARROLL