BOOK REVIEW

R. V. Hogg and S. A. Klugman (1984). *Loss Distributions.* xii+235, £28.45. Chichester: John Wiley & Sons Limited

This book is written from the point of view of mathematical statistics and attacks the problem how to model the probability distribution of the financial severity of a single claim.

Two actuaries, *C. C. Hewitt* and *G. S. Patrik*, functioned as sparring partners for the authors and they were also responsible for part of the written text. As such this book represents a good blend of the pure statistical and practical aspects of the reality of loss phenomena.

The authors advocate the philosophy that a mathematical model for the empirical loss distribution, with parameters estimated from the data, provides a better tool for forecasting and pricing than the empirical distribution itself. I agree, especially when one has to account for structural change through time.

The book consists of five chapters and an appendix, containing the major distributions and their properties. The inclusion of exercises in all chapters provides further insight and makes it useful as a text.

The introductory chapter addresses itself to matters of terminology, kinds of coverages and, what I like to coin, accounting induced descriptive insurance statistics. Most of it will be well known to most of us, but it is always good to see how others put it down on paper.

Hereafter there are two chapters, titled *Models for Random Variables* and *Statistical Inference*, which form about 40% of the whole book. These two chapters are essentially an introduction to mathematical statistics, motivated by and written from the insurance point of view. Even actuaries with a strong training in mathematical statistics and nonlinear optimization procedures may find various instructive examples and models.

Various probability density functions, which should be candidates to graduate the loss distribution, are introduced. These include Gamma, lognormal, Pareto, Weibull, Burr, a generalization of Fisher's F, etc. In my opinion the inverse Gaussian distribution should have been included too.

Parameter estimation for grouped data is thoroughly discussed.

The next chapter, *Modelling Loss Distributions*, applies the procedures, described in the statistical chapters, to various real data sets, which include hurricane, homeowners physical damage, theft and fire, long-term disability, automobile bodily injury and hospital malpractice. Here also an interesting digression on the allocation of loss adjustment expenses can be found. Most of the data are in grouped format.

The final chapter, *Applications of Distributional Models* forms in my view the crown of this book. Here we find such matters as inflation, deductibles and leveraging, limits and layers, loss elimination ratios, and all this with fitted mathematical models.

This is a good book. It should be seminal for the analysis of loss data in practice. Therefore it should attract to all actuaries who take an active interest in the statistical analysis of loss data.

P. TER BERG

ANNOUNCEMENT ASTIN WORKSHOP

In this Bulletin appears for the first time a new section called ASTIN Workshop. It is intended to attract papers on practical applications and related to the daily work of the actuary.

We are aware of the fact that such papers might be different in nature and/or style from those regularly published in this bulletin. Nevertheless we feel it to be important to have also such papers in our journal. Of course they should contain a valuable message which is important to the readers.

P. TER BERG