

BOOK REVIEWS

W. R. HEILMANN (1987). *Grundbegriffe der Risikotheorie*. Versicherungswirtschaft e.V., Karlsruhe, 215 pages, 32DM.

This book is based on the author's lectures to students in mathematics and economics at the Universities of Hamburg and Karlsruhe. As the author writes in the introduction, "it is neither a research monograph nor a reference book for insurance practice, but an introduction into the fundamentals of risk theory."

The following topics are dealt with in this book:

1. Standard elements of probability theory.
2. The risk process.
3. Numerical methods for the determination of the distribution of aggregate claims.
4. Principles of premium calculation.
5. Credibility theory.
6. Reinsurance as well as different kinds of risk sharing (deductibles, franchises, etc.).
7. Ruin theory.

The opinion one has of a book can be a very subjective one, and instead of attempting to write a professional review, I should like to confine my comments to particular aspects of the book I regard as positive as well as to others I regard as less positive.

Positive aspects in my opinion are:

- that I believe it to be a good book for students. It is very clearly and carefully written and is a very suitable foundation for a lecture as well as for private study. The first chapter may initially appear too important (about a third of the book), but this is compensated by the fact that the mathematical tool developed therein is "necessary and sufficient" for the mathematical comprehension of the rest of the book.
- that the choice of the topics dealt with in the framework of such a book seems to me to be the appropriate one.

Less positive aspects are, for example,

- the chapter on credibility. Essentially this chapter deals only with the subject called "exact credibility" in some papers, i.e. some examples of likelihoods with corresponding conjugate prior.
- the presentation of certain topics, especially in chapter 4. With such a book the author will clearly have to make some decision as to what he will present under the name "Risk Theory". In this book risk theory is essentially presented as a collection of mathematical models and methods, without a real connection between the different problems, without an effective attempt to place these

problems into a more general framework and, on the other side, by leaving all statistical problems out of consideration. This is probably the only possible choice for an introduction, but in such a context (or more precisely without context), it seems to me that chapter 4 with all its elaborated principles and properties is too long in relation to other chapters, and must therefore appear as a more or less academic exercise to the reader.

Despite this criticism, this book is in my opinion a good introduction to the topic. It is pleasant to read and will motivate the reader to look further into the subject. In addition to this, it is to my knowledge the first book in this category to have been published in the German language.

A. DUBEY

E. KREMER (1985). *Einführung in die Versicherungsmathematik*. Vandenhoeck and Rupprecht, Göttingen, 158 pages, 38DM.

In this book the following topics have been dealt with: principles of premium calculation; credibility; life insurance mathematics; applications of premium; calculation in different lines of non-life insurance; loss reserving methods.

In each chapter interesting aspects of the various problems have been dealt with, but in my opinion, because of the very selective choice of the topics as well as because of the extremely technical approach to the problems, the book can hardly be recommended as an "Introduction to Insurance Mathematics".

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