BOOK REVIEW

BJÖRN SUNDT (1993): *An Introduction to Non-Life Insurance Mathematics*. Third edition. Veröffentlichungen des Instituts für Versicherungswissenschaft der Universität Mannheim, Vol. 28, Verlag Versicherungswirtschaft, Karlsruhe, 215 pages, DM 32.—.

In ASTIN Bulletin 1987 we could read the book review on Sundt's first edition. Since then, two further editions have appeared, the third being published in late 1993. Like the preceding this third edition of the book covers the most important topics of non-life insurance mathematics: credibility theory, bonus systems, tariffication, the risk process, accumulated claims distribution, reserves, and utility theory. It is a very properly written introductory textbook into modern risk theory for students as well as for practitioners. Whenever new editions appeared, it resulted in a considerable improvement of the presentation.

In order to document the changes from one edition to the next, we cite from the prefaces (and this reflects indeed what is needed to be said about this edition):

"The most extensive changes from the first edition of the book are the following: A new Section 6.8 on hierachical credibility and a new Chapter 8 on multiplicative rating models are included. In Chapter 7 on bonus systems, the asymptotic optimality criterion has been replaced with a non asymptotic one. In Chapter 9 a different proof of Lundberg's Inequality is given. To give a better flow in the presentation, the material on moment-generating functions, Laplace transforms, and convex functions has been transferred to appendices. A simple proof of Ohlin's Lemma is given in Appendix A. The discussion on the optimal choice of a compensation function has been extended and presented under more general conditions as it seemed that greater generality could be achieved without complicating the mathematics." (Second edition)

"The most extensive change from the second edition to the third edition is the inclusion of exercises... In the exercises, I have to a large extent included questions where one should comment on assumptions or results. In a practically oriented subject like insurance mathematics, it is important that the material becomes not only mathematics, but that one also continuously considers questions like, what does this imply, are these assumptions realistic, does this result seem reasonable, etc. At an exercise course, such questions could be discussed between the teacher and the students.

The text of the book has been much less changed than was the case with the second edition. Most of the changes have been aimed at simplifying and clarifying, and correcting errors in the second edition. The most important changes are the following: New material includes subsections 5F, 6.4D-E, 7B, 8.3D, 10.2B, 10.6C-D, and 12D, and Appendix A... The material in the old section on ruin theory in Chapter 9 has been reorganized and divided into three sections (Sections 9.4-6)." (Third edition)

There is only one point which could possibly be criticized: In each step, from edition one to two and from two to three, the size of the text and the formulas has been diminished. This together with a somewhat nonstandard style for sub- and superscripts (e.g. on p. 80 below) makes the reading considerably harder.

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