



# Modern Actuarial Risk Theory: Using R

By Rob Kaas, Marc Goovaerts, Jan Dhaene, Michel Denuit



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Modern Actuarial Risk Theory contains what every actuary needs to know about non-life insurance mathematics. It starts with the standard material like utility theory, individual and collective model and basic ruin theory. Other topics are risk measures and premium principles, bonus-malus systems, ordering of risks and credibility theory. It also contains some chapters about Generalized Linear Models, applied to rating and IBNR problems. As to the level of the mathematics, the book would fit in a bachelors or masters program in quantitative economics or mathematical statistics. This second and much expanded edition emphasizes the implementation of these techniques through the use of R. This free but incredibly powerful software is rapidly developing into the de facto standard for statistical computation, not just in academic circles but also in practice. With R, one can do simulations, find maximum likelihood estimators, compute distributions by inverting transforms, and much more.

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## **Modern Actuarial Risk Theory: Using R** By Rob Kaas, Marc Goovaerts, Jan Dhaene, Michel Denuit **Bibliography**

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### Review

From the reviews of the second edition:

"The book gives a comprehensive survey of non-life insurance mathematics. ... Originally written for use with the actuarial science programs at the Universities of Amsterdam and Leuven, it is now in use at many other universities as well as for the non-academic actuarial education program organized by the Dutch Actuarial Society. The methods presented can not only be used in non-life insurance, but also in other branches of actuarial science, as well as in actuarial practice." (Pavel Stoyanov, Zentralblatt MATH, Vol. 1148, 2008)

"This book gives an introduction to non-life insurance mathematics. ... Throughout the book, the software R is used for the implementation of the techniques presented. One finds also many exercises with hints for their solution in an appendix." (F. Hofbauer, Monatshefte für Mathematik, Vol. 161 (1), August, 2010)

### From the Back Cover

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