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CURTIS VALERIE

Actuarial Principles CRC Press

A wide range of topics to give students a firm foundation in statistical and actuarial concepts and their applications.

Cambridge University Press

Actuarial ModelLife Insurance and Annuity

Derivatives, Quantitative Models and Risk Management Cambridge University Press

Focusing on life insurance and pensions, this book addresses various aspects of modelling in modern insurance: insurance liabilities; asset-liability management; securitization, hedging, and investment strategies. With contributions from internationally renowned academics in actuarial science, finance, and management science and key people in major life insurance and reinsurance companies, there is expert coverage of a wide range of topics, for example: models in life insurance and their roles in decision making; an account of the contemporary history of insurance and life insurance mathematics; choice, calibration, and evaluation of models; documentation and quality checks of data; new insurance regulations and accounting rules; cash flow projection models; economic scenario generators; model uncertainty and model risk; model-based decision-making at line management level; models and behaviour of stakeholders. With author profiles ranging from highly specialized model builders to decision makers at chief executive level, this book should prove a useful resource to students and academics of actuarial science as well as practitioners.

Risk Classification, Credibility and Bonus-Malus Systems Springer Nature

Health Insurance aims at filling a gap in actuarial literature, attempting to solve the frequent misunderstanding in regards to both the purpose and the contents of health insurance products (and 'protection products', more generally) on the one hand, and the relevant actuarial structures on the other. In order to cover the basic principles regarding health insurance techniques, the first few chapters in this book are mainly devoted to the need for health insurance and a description of insurance products in this area (sickness insurance, accident insurance, critical illness covers, income protection, long-term care insurance, health-related benefits as riders to life insurance policies). An introduction to general actuarial and risk-management issues follows. Basic actuarial models are presented for sickness insurance and income protection (i.e. disability annuities). Several numerical examples help the reader understand the main features of pricing and reserving in the health insurance area. A short introduction to actuarial models for long-term care insurance products is also provided. Advanced undergraduate and graduate students in actuarial sciences; graduate students in economics, business and finance; and professionals and technicians operating in insurance and pension areas will find this book of benefit.

Proposed Actuarial Standard of Practice Cambridge University Press

This 2006 book introduces and develops the basic actuarial models and underlying pricing of life-contingent pension annuities and life insurance from a unique financial perspective. The ideas and techniques are then applied to the real-world problem of generating sustainable retirement income towards the end of the human life-cycle. The role of lifetime income, longevity insurance, and

systematic withdrawal plans are investigated in a parsimonious framework. The underlying technology and terminology of the book are based on continuous-time financial economics by merging analytic laws of mortality with the dynamics of equity markets and interest rates. Nonetheless, the book requires a minimal background in mathematics and emphasizes applications and examples more than proofs and theorems. It can serve as an ideal textbook for an applied course on wealth management and retirement planning in addition to being a reference for quantitatively-inclined financial planners.

ERM and QRM in Life Insurance Springer

The increasing complexity of insurance and reinsurance products has seen a growing interest amongst actuaries in the modelling of dependent risks. For efficient risk management, actuaries need to be able to answer fundamental questions such as: Is the correlation structure dangerous? And, if yes, to what extent? Therefore tools to quantify, compare, and model the strength of dependence between different risks are vital. Combining coverage of stochastic order and risk measure theories with the basics of risk management and stochastic dependence, this book provides an essential guide to managing modern financial risk. * Describes how to model risks in incomplete markets, emphasising insurance risks. * Explains how to measure and compare the danger of risks, model their interactions, and measure the strength of their association. * Examines the type of dependence induced by GLM-based credibility models, the bounds on functions of dependent risks, and probabilistic distances between actuarial models. * Detailed presentation of risk measures, stochastic orderings, copula models, dependence concepts and dependence orderings. * Includes numerous exercises allowing a cementing of the concepts by all levels of readers. * Solutions to tasks as well as further examples and exercises can be found on a supporting website. An invaluable reference for both academics and practitioners alike, *Actuarial Theory for Dependent Risks* will appeal to all those eager to master the up-to-date modelling tools for dependent risks. The inclusion of exercises and practical examples makes the book suitable for advanced courses on risk management in incomplete markets. Traders looking for practical advice on insurance markets will also find much of interest.

Actuarial Models Cambridge University Press

This book is used in many university courses for SOA Exam MLC preparation. The Fifth Edition is the official reference for CAS Exam LC. The Sixth Edition of this textbook presents a variety of stochastic models for the actuary to use in undertaking the analysis of risk. It is designed to be appropriate for use in a two or three semester university course in basic actuarial science. It was written with the SOA Exam MLC and CAS Exam LC in mind. Models are evaluated in a generic form with life contingencies included as one of many applications of the science. Students will find this book to be a valuable reference due to its easy-to-understand explanations and end-of-chapter exercises. In 2013 the Society of Actuaries announced a change to Exam MLC's format, incorporating 60% written answer questions and new standard notation and terminology to be used for the exam. There are several areas of expanded content in the Sixth Edition due to these changes. Six important changes to the Sixth Edition: WRITTEN-ANSWER EXAMPLES This edition offers additional written-answer examples in order to better prepare the reader for the new SOA exam format. NOTATION AND TERMINOLOGY CONFORMS TO EXAM MLC MQR 6 fully incorporates all standard notation and

terminology for exam MLC, as detailed by the SOA in their document Notation and Terminology Used on Exam MLC. MULTI-STATE MODELS Extension of multi-state model representation to almost all topics covered in the text. FOCUS ON NORTH AMERICAN MARKET AND ACTUARIAL PROFESSION This book is written specifically for the multi-disciplinary needs of the North American Market. This is reflected in both content and terminology. PROFIT TESTING, PARTICIPATING INSURANCE, AND UNIVERSAL LIFE MQR 6 contains an expanded treatment of these topics. THIELE'S EQUATION Additional applications of this important equation are presented, to more fully prepare the reader for exam day. A separate solutions manual with detailed solutions to all of the text exercises is also available. Please see the Related Items Tab for a direct link I selected Models for Quantifying Risk as the text for my class. Given that the syllabus had changed quite dramatically from prior years, I was looking for a text that would cover all the material in the new syllabus in a way that was rigorous, easy to understand, and would prepare students for the May 2012 MLC exam. To me, the text with the accompanying solutions manual does precisely that. --Jay Vadiveloo, Ph.D., FSA, MAAA, CFA, Math Department, University of Connecticut I found that the exposition of the material is thorough while the concepts are readily accessible and well illustrated with examples. The book was an invaluable source of practice problems when I was preparing for the Exam MLC. Studying from it enabled me to pass this exam." -- Dmitry Glotov, Math Department, University of Connecticut "This book is extremely well written and structured." -- Kate Li, Student, University of Connecticut "Overall, the text is thorough, understandable, and well-organized. The clear exposition and excellent use of examples will benefit the student and help her avoid 'missing the forest for the trees'. I was impressed by the quality and quantity of examples and exercises throughout the text; students will find this collection of problems sorted by topic valuable for their exam preparation. Overall, I strongly recommend the book." -- Kristin Moore, Ph.D., ASA, University of Michigan

Using R Academic Press

Disability insurance, long-term care insurance, and critical illness cover are becoming increasingly important in developed countries as the problems of demographic aging come to the fore. The private sector insurance industry is providing solutions to problems resulting from these pressures and other demands of better educated and more prosperous

Modeling and Risk Management for Equity-Linked Life Insurance CRC Press

Life insurance and life annuities are about cash flows, the time value of money, and the randomness of policyholders' death time. This book intends to present the actuarial model as a combination of these three factors. It also describes how to set premiums and reserves for those insurance products. The subjects are closely related to the Society of Actuaries (SOA) course MLC requirements. Some examples and exercise problems come from past SOA Course 3, Course M, and Course MLC examinations.

Non-Life Insurance Pricing with Generalized Linear Models Routledge

Non-life insurance pricing is the art of setting the price of an insurance policy, taking into consideration various properties of the insured object and the policy holder. Introduced by British actuaries generalized linear models (GLMs) have become today a the standard approach for tariff analysis. The book focuses on methods based on GLMs that have been found useful in actuarial practice and provides a set of tools for a tariff analysis. Basic theory of GLMs in a tariff analysis

setting is presented with useful extensions of standard GLM theory that are not in common use. The book meets the European Core Syllabus for actuarial education and is written for actuarial students as well as practicing actuaries. To support reader real data of some complexity are provided at www.math.su.se/GLMbook.

Automobile Insurance American Mathematical Soc.

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.

Actuarial Aspects of Individual Life insurance and Annuity Contracts, 3rd Edition Springer

There are a wide range of variables for actuaries to consider when calculating a motorist's insurance premium, such as age, gender and type of vehicle. Further to these factors, motorists' rates are subject to experience rating systems, including credibility mechanisms and Bonus Malus systems (BMSs). Actuarial Modelling of Claim Counts presents a comprehensive treatment of the various experience rating systems and their relationships with risk classification. The authors summarize the most recent developments in the field, presenting ratemaking systems, whilst taking into account exogenous information. The text: Offers the first self-contained, practical approach to a priori and a posteriori ratemaking in motor insurance. Discusses the issues of claim frequency and claim severity, multi-event systems, and the combinations of deductibles and BMSs. Introduces recent developments in actuarial science and exploits the generalised linear model and generalised linear mixed model to achieve risk classification. Presents credibility mechanisms as refinements of commercial BMSs. Provides practical applications with real data sets processed with SAS software. Actuarial Modelling of Claim Counts is essential reading for students in actuarial science, as well as practicing and academic actuaries. It is also ideally suited for professionals involved in the insurance industry, applied mathematicians, quantitative economists, financial engineers and statisticians.

Non-Life Insurance Pricing with Generalized Linear Models Cambridge University Press

A Hands-On Approach to Understanding and Using Actuarial Models Computational Actuarial Science with R provides an introduction to the computational aspects of actuarial science. Using simple R code, the book helps you understand the algorithms involved in actuarial computations. It also covers more advanced topics, such as parallel computing and C/C++ embedded codes. After an introduction to the R language, the book is divided into four parts. The first one addresses methodology and statistical modeling issues. The second part discusses the computational facets of life insurance, including life contingencies calculations and prospective life tables. Focusing on finance from an actuarial perspective, the next part presents techniques for modeling stock prices,

nonlinear time series, yield curves, interest rates, and portfolio optimization. The last part explains how to use R to deal with computational issues of nonlife insurance. Taking a do-it-yourself approach to understanding algorithms, this book demystifies the computational aspects of actuarial science. It shows that even complex computations can usually be done without too much trouble. Datasets used in the text are available in an R package (CASdatasets).

Actuarial Finance Cambridge University Press

Non-life insurance pricing is the art of setting the price of an insurance policy, taking into consideration various properties of the insured object and the policy holder. Introduced by British actuaries generalized linear models (GLMs) have become today a the standard approach for tariff analysis. The book focuses on methods based on GLMs that have been found useful in actuarial practice and provides a set of tools for a tariff analysis. Basic theory of GLMs in a tariff analysis setting is presented with useful extensions of standard GLM theory that are not in common use. The book meets the European Core Syllabus for actuarial education and is written for actuarial students as well as practicing actuaries. To support reader real data of some complexity are provided at www.math.su.se/GLMbook.

Principles and Protocols John Wiley & Sons

Provides a comprehensive coverage of both the deterministic and stochastic models of life contingencies, risk theory, credibility theory, multi-state models, and an introduction to modern mathematical finance. New edition restructures the material to fit into modern computational methods and provides several spreadsheet examples throughout. Covers the syllabus for the Institute of Actuaries subject CT5, Contingencies Includes new chapters covering stochastic investments returns, universal life insurance. Elements of option pricing and the Black-Scholes formula will be introduced.

Lifetables and Mortality Models CRC Press

Modern mortality modelling for actuaries and actuarial students, with example R code, to unlock the potential of individual data.

Actuarial Perspectives John Wiley & Sons

Actuarial Models: The Mathematics of Insurance, Second Edition thoroughly covers the basic models

of insurance processes. It also presents the mathematical frameworks and methods used in actuarial modeling. This second edition provides an even smoother, more robust account of the main ideas and models, preparing students to take exams of the Society

From Principles to Practice CRC Press

Actuarial Aspects of Individual Life Insurance and Annuity Contracts provides a comprehensive overview of the features and financial aspects of traditional, indexed, and variable products and their related rider benefits. Product development, pricing, financial reporting methods, and regulatory requirements are addressed for all products, including those with derivative-based guarantees. This provides an introduction to actuarial techniques and the relationships among various financial values for the student and provides a comprehensive summary of current practices on more recent products for the experienced actuary. Spreadsheets are available on the ACTEX website to demonstrate profit testing alternatives.

Life Insurance Mathematics Springer

This must-have manual provides detailed solutions to all of the 200+ exercises in Dickson, Hardy and Waters' Actuarial Mathematics for Life Contingent Risks, Second Edition. This groundbreaking text on the modern mathematics of life insurance is required reading for the Society of Actuaries' Exam MLC and also provides a solid preparation for the life contingencies material of the UK actuarial profession's exam CT5. Beyond the professional examinations, the textbook and solutions manual offer readers the opportunity to develop insight and understanding, and also offer practical advice for solving problems using straightforward, intuitive numerical methods. Companion spreadsheets illustrating these techniques are available for free download.

The Mathematics of Insurance, Second Edition John Wiley & Sons

These lecture notes from the 1985 AMS Short Course examine a variety of topics from the contemporary theory of actuarial mathematics. Recent clarification in the concepts of probability and statistics has laid a much richer foundation for this theory. Other factors that have shaped the theory include the continuing advances in computer science, the flourishing mathematical theory of risk, developments in stochastic processes, and recent growth in the theory of finance. In turn, actuarial concepts have been applied to other areas such as biostatistics, demography, economic, and reliability engineering.

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