

scandals in U.S. corporations, both financial and nonfinancial, and the havoc wreaked on our own capital markets as faith in our accounting practices is shattered.

Some helpful features of each chapter include supporting tables with summary statistics and numerical data. For example, Chapter 5 includes numerous tables with bar graphs and line graphs depicting information such as market capitalization and liquidity in emerging markets between the years 1990 and 2000. This type of visual presentation reinforces the major ideas presented in the narrative. Also, a great volume of narrative information is captured in summary tables that facilitate easy review and further consideration. Inset boxes capably provide a greater depth of information on related topics such as the Chilean Model of Pension Reform and Mutual Fund Governance.

The major theme that capital markets and the financial institutions residing in these markets have a significant impact on the economic development, growth, and stability of a country is well documented and convincing. The authors are successful in making a connection between sound capital markets and a solid economic system. The importance of the role of regulation of financial institutions on this success is convincingly crafted. Carmichael and Pomerleano use a consistent framework to analyze nonbank financial institutions and their specific impact on economic growth and stability. The work also gives the reader an appreciation for the differences among countries in their approach to regulation and how each individual approach may contribute to the success or failure of the institution in question. The greatest compliment that can be given to the book is that it is intellectually stimulating as well as being a reliable source of information on the topic.

*An Introduction to Actuarial Mathematics*, by A. K. Gupta and T. Varga, 2002, Dordrecht: Kluwer Academic Publishers

Reviewer: Maurizio Pompella, University of Siena

In just a few chapters, the fundamentals of actuarial mathematics are covered in this book by Gupta and Varga. An introduction to financial mathematics comes first; mortality functions, main life insurance contracts, premiums, and reserves calculation are dealt with in the following sections.

The volume represents a good example of an institutional textbook about the mathematics of life insurance. The rigorous—but not so terribly high—level of actuarial sophistication adopted by the authors is one, probably the main, of the added values, which can be appreciated by the “target readers.” As specified in the preface, in practice these are undergraduate students to be provided with the conceptual and statistical tools needed to gain a perspective into the basic calculus of life policies. A much wider audience could be interested in the offered contents, anyway, as suggested by the friendly writing style.

The first chapter goes to the very fundamentals of financial mathematics: compound interest, present value, and annuities are the titles of three paragraphs, which constitute the first approach to the subject matter. That is a formal approach, based on a set of key theorems and an abundant series of most useful examples, which also characterize the treatment throughout the book. Problems and questions, as complementary exercise tools, may be found at the end of each paragraph; and this is the standard for the subsequent sections as well.

“Mortality” is the topic addressed in the second chapter, which represents some sort of bridge between the institutional notions given at the beginning and the contracts. Basic theory of mortality, mortality functions, and an easy readable guide to the mortality tables are presented here.

Before dealing with individual policies and their specific features, the authors also give the reader some hints on the theory of life insurance, described as a combination of financial mathematics and mortality theory. The great significance for insurance companies of the concept of stochastic cash flow is deeply explained in the first paragraph of the third chapter: Amounts related to both contingent payments by insured persons and payments by the company on death or survival are recognised, properly, as stochastic, and the calculation of expected present values is illustrated. *Duality* of policies, being at the same time financial instruments and life contracts, becomes evident here. Theoretical foundation of this duality—on the other hand—represents a crucial topic, more and more as the difference between traditional investment products and life policies becomes latent.

Pure endowment insurance, policies whose benefits are payable on death (life insurance), endowments, and life annuities are examined in the following paragraphs.

Then the fourth and the fifth chapter follow. The former overviews the calculation of premiums, and provides an essential, but rigorous treatment of the subject, accompanying the text with the necessary worked examples; the latter deals with the computation mechanism of the reserves, in order to recall the model explaining the origins of the mortality profit for the company.

The answers to the “Odd-Numbered” problems presented within the text and two annexes—containing compound interest values and mortality tables, respectively—close the book.

There is no doubt the volume is neither a financial risk management textbook, nor a text concerned with management and operation of insurance companies; not at all. Nevertheless—as the book is designed to serve as an introductory course, usually representing some sort of *trait d'union* between the institutional modules in calculus and probability theory, on the one hand, and the courses in life and health insurance management on the other hand—a financial management perspective could have been included in the text. The financial consequences of buying/selling a life insurance policy are no longer an easy matter today, especially in the case of structured products. This suggests as a priority to pay attention—also at the level of such an introductory course—to the interdisciplinary nature of subjects concerned with both the actuarial mathematics of life insurance and the economics of financial intermediaries.

Copyright of Journal of Risk & Insurance is the property of Blackwell Publishing Limited and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.