This book is devoted to a complete and self-contained introduction to modeling life insurance contracts and pensions from a financial point of view. A particular emphasis on retirement planning in a stochastic environment is put forward. The developments are presented in continuous-time financial economics, merging finance concepts and actuarial models. All the needed material to understand this subject is clearly and in time introduced, so no prerequisites are required.

The author presents in 321 pages twelve chapters grouped in three parts. The first part: models of actuarial finance, which contains eight chapters progressively gives basic tools: models of human life cycle, models of human mortality, models of deterministic interest rates, models of risky financial investments, including some technical elements on diffusion processes. The last three chapters in this first part of the book: model of pension life annuities, models of life insurance and models defined benefits versus defined contribution pension are in the core of the subject. The second part: wealth management: applications and implications, contains two chapters the first gives an analysis of how to manage spending at retirement, and the second is devoted to longevity insurance with a modern view on tontines which are making a coming-back under different names such as survivor bonds. The third and last part: advanced topics contains two chapters, the first is...

« The Calculus of Retirement Income. Financial Models for Pension Annuities and Life Insurance »

Moshe A. MILEVSKY

Cambridge University Press
on variable annuities, and presents two particular contracts: the guaranteed minimum death benefit one, where Titanic options are defined and the guaranteed minimum withdrawal benefit contract. The second chapter develops the utility of annuitization which use a microeconomics approach to analyze the demand for insurance and annuities. Furthermore, the book contains an appendix giving tables, a very useful and complete bibliography and index. Each chapter begins with a vivid short story which gives a non formal introduction, and ends with a very useful guided tour to the relevant literature and some exercises and problems. In this book not only the foundations and developments of models are given but also a deep discussion of them backed by illustrative numerical examples is offered. Many tables and figures contribute to a full understanding of the covered subjects. The insurance industry context is recalled which adds a practical dimension of the utmost importance.

This book actually accomplishes a tour de force to many respects. Firstly, because it can interest readers coming from different horizons: students, academics, researchers and professionals. It is done in such a way no one of them can be disappointed. Secondly, there are many ways to use this book. You can read it sequentially from chapter one to chapter twelve, it could be the case for someone who has no background in actuarial sciences and finance. A more advanced reader with some knowledge in finance and insurance can use the book in a direct access and, for example can only read the part three, where he or she can find an excellent introduction to recent research on variable annuities. Thirdly, this book gives a perfect illustration of convergence between finance and insurance. I could pursue the list. I will stop emphasizing the fact that books on life and pensions are rare and that access to actuarial literature generally is very austere and sometimes “impenetrable to the layman” as Moshe writes. Here the main actuarial concepts of life insurance used in the book are given in a simple way.

This book is the first, as far as I know, on financial models for pension annuities and life insurance which gives a synthesis in the sense of, bringing together in a clever and unified way, a lot of research in an area to which Moshe Milevski gave many noticeable contributions. This book will bring very much, for a minimum effort. The author should be congratulated to make difficult subjects simple to under-
stand. I have two suggestions to make. In future re-editions, it could be interesting to give solutions to the problems. This is very appreciated by students. Three important subjects not covered in this book could be developed: the hedging of life insurance contracts which is a very important issue for insurance companies, and an introduction to stochastic mortality and the presentation of new instruments such as longevity bonds and survivor swaps.

I read with great interest Moshe Milevski’s book: “The calculus of retirement income”. It is one of the best book I have ever red, and I highly recommend its reading.

Professor François M. QUITTARD-PINON
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REFERENCES

