HANDBOOK OF ASSET AND LIABILITY MANAGEMENT

VOLUME 2: APPLICATIONS AND CASE STUDIES

Edited by

S.A. ZENIOS,.

University of Cyprus, Nicosia, Cyprus and The Wharton Financial Institutions Center, Philadelphia, PA, USA

W.T. ZIEMBA

University of British Columbia, Vancouver, Canada

M UNIVERSITATM LIECHTENSTEINBibliothek





CONTENTS OF THE HANDBOOK

Volume 1 Theory and Methodology	
Chapter I Enterprise-Wide Asset and Liability Management: Issues, Institutions, and Models Dan Rosen and Stavros A. Zenios	I
Chapter 2 Term and Volatility Structures Roger JB. Wets and Stephen W. Bianchi	25
Chapter 3 Protecting Investors against Changes in Interest Rates Olivier de La Grandville	69
Chapter 4 Risk-Return Analysis Harry M. Markowitz and Erik van Dijk	139
Chapter 5 Dynamic Asset Allocation Strategies Using a Stochastic Dynamic Programming Approach Gerdlnfanger	199
Chapter 6 Stochastic Programming Models for Asset Liability Management Roy Kouwenberg and Stavros A. Zenios	253
Chapter 7 Bond Portfolio Management via Stochastic Programming M. Bertocchi, V. Moriggia and J. Dupafiova	305
Chapter 8 Perturbation Methods for Dynamic Portfolio Allocation Problems George Chacko and Karl Neumar	337
Chapter 9 The Kelly Criterion in Blackjack Sports Betting, and the Stock Market Edward 0. Thorp	385
Chapter 10 Capital Growth: Theory and Practice Leonard C. MacLean and William T. Ziemba	429

Volume 2	
Applications and Case Studies	
Preface	xi
A. Banking	
Chapter 11 ALM in Banking Jean Dermine	489
B.Insurance	
Chapter 12 Dynamic Financial Analysis for Multinational Insurance Companies John M. Mulvey, Bill Pauling, Stephen Britt and Francois Morin	543
Chapter 13 Stochastic Programming Models for Strategic and Tactical Asset Allocation—A Study from Norwegian Life Insurance Kjetil H0yland and Stein W. Wallace	591
Chapter 14 Design and Management of Unit-linked Life Insurance Contracts with Guarantees Ronald Hochreiter, Georg Pflug and Volkert Paulsen	627
Chapter 15 The Prometeia Model for Managing Insurance Policies with Guarantees	
Andrea Consiglio, Flavio Cocco and Stavros A. Zenios	663
C. Money Management	
Chapter 16 Integrated Risk Control Using Stochastic Programming ALM Models for Money Management N.C.P. Edirisinghe	707
D. Individual Investor Financial Planning	
Chapter 17 Asset-Liability Management for Individual Investors	
Giorgio Consigli	751
E. Pension Funds	
Chapter 18 A Scenario Approach of ALM Guus Boender, Cees Dert. Fred Heemskerk and Henk Hoek Chapter 19 The Russell-Yasuda Kasai, InnoALM and Related Models for Pensions, Insurance Companies and High	829
Net Worth Individuals William T. Ziemba	861

of

the

viii

Contents

Handbook

Contents of the Handbook ix

Chapter 20

Dynamic Asset and Liability Management for Swiss Pension Funds
Gabriel Dondi, Florian Herzog, Lorenz M. Schumann and Hans P. Geering 963

Chapter 21

Joined-Up Pensions Policy in the UK: An Asset-Liability Model for Simultaneously Determining the Asset Allocation and Contribution Rate

John Board and Charles Sutcliffe 1029

F. Social Security

Chapter 22
ALM Issues in Social Security
Sandra L. Schwartz and William T. Ziemba

1069