

Contents

Part I Financial Applications

1 Using the Kelly Criterion for Investing	3
William T. Ziemba and Leonard C. MacLean	
2 Designing Minimum Guaranteed Return Funds	21
Michael A.H. Dempster, Matteo Germano, Elena A. Medova, Muriel I. Rietbergen, Francesco Sandrini, and Mike Scrowston	
3 Performance Enhancements for Defined Benefit Pension Plans	43
John M. Mulvey, Thomas Bauerfeind, Koray D. Simsek, and Mehmet T. Vural	
4 Hedging Market and Credit Risk in Corporate Bond Portfolios	73
Patrizia Beraldi, Giorgio Consigli, Francesco De Simone, Gaetano Iaquina, and Antonio Violi	
5 Dynamic Portfolio Management for Property and Casualty Insurance	99
Giorgio Consigli, Massimo di Tria, Michele Gaffo, Gaetano Iaquina, Vittorio Moriggia, and Angelo Uristani	
6 Pricing Reinsurance Contracts	125
Andrea Consiglio and Domenico De Giovanni	

Part II Energy Applications

7 A Decision Support Model for Weekly Operation of Hydrothermal Systems by Stochastic Nonlinear Optimization 143
 Andres Ramos, Santiago Cerisola, Jesus M. Latorre, Rafael Bellido, Alejandro Perea, and Elena Lopez

8 Hedging Electricity Portfolio for a Hydro-energy Producer via Stochastic Programming 163
 Rosella Giacometti, Maria Teresa Vespucci, Marida Bertocchi, and Giovanni Barone Adesi

9 Short-Term Trading for Electricity Producers 181
 Chefi Triki, Antonio J. Conejo, and Lina P. Garcés

10 Structuring Bilateral Energy Contract Portfolios in Competitive Markets 203
 Antonio Alonso-Ayuso, Nico di Domenica, Laureano F. Escudero, and Celeste Pizarro

11 Tactical Portfolio Planning in the Natural Gas Supply Chain 227
 Marte Fodstad, Kjetil T. Midthun, Frode Rømo, and Asgeir Tomasgard

12 Risk Management with Stochastic Dominance Models in Energy Systems with Dispersed Generation 253
 Dimitri Drapkin, Ralf Gollmer, Uwe Gotzes, Frederike Neise, and Rüdiger Schultz

13 Stochastic Equilibrium Models for Generation Capacity Expansion 273
 Andreas Ehrenmann and Yves Smeers

Part III Theory and Computation

14 Scenario Tree Generation for Multi-stage Stochastic Programs 313
 Holger Heitsch and Werner Römisich

15 Approximations for Probability Distributions and Stochastic Optimization Problems 343
 Georg Ch. Pflug and Alois Pichler

16 Comparison of Sampling Methods for Dynamic Stochastic Programming 389
Michael A.H. Dempster, Elena A. Medova, and Yee Sook Yong

17 Convexity of Chance Constraints with Dependent Random Variables: The Use of Copulae 427
René Henrion and Cyrille Strugarek

18 Portfolio Choice Models Based on Second-Order Stochastic Dominance Measures: An Overview and a Computational Study ... 441
Csaba I. Fábián, Gautam Mitra, Diana Roman, Victor Zverovich, Tibor Vajnai, Edit Csizmás, and Olga Papp

Index 471



<http://www.springer.com/978-1-4419-9585-8>

Stochastic Optimization Methods in Finance and Energy

New Financial Products and Energy Market Strategies

Bertocchi, M.; Consigli, G.; Dempster, M.A.H. (Eds.)

2011, XXIV, 476 p., Hardcover

ISBN: 978-1-4419-9585-8