Contents

Foreword ix
Greg M. Gupton

Introduction 1
Tomasz R. Bielecki, Damiano Brigo, and Frédéric Patras

PART I: EXPERT VIEWS

CHAPTER 1
Origins of the Crisis and Suggestions for Further Research 7
Jean-Pierre Lardy

CHAPTER 2
Quantitative Finance: Friend or Foe? 19
Benjamin Herzog and Julien Turc

PART II: CREDIT DERIVATIVES: METHODS

CHAPTER 3
An Introduction to Multiname Modeling in Credit Risk 35
Aurélien Alfonsi

CHAPTER 4
A Simple Dynamic Model for Pricing and Hedging Heterogeneous CDOs 71
Andrei V. Lopatin

CHAPTER 5
Modeling Heterogeneity of Credit Portfolios: A Top-Down Approach 105
Igor Halperin

CHAPTER 6
Dynamic Hedging of Synthetic CDO Tranches: Bridging the Gap between Theory and Practice 149
Areski Cousin and Jean-Paul Laurent

CHAPTER 7
Filtering and Incomplete Information in Credit Risk 185
Rüdiger Frey and Thorsten Schmidt
CHAPTER 8  
Options on Credit Default Swaps and Credit Default Indexes  
Marek Rutkowski  

PART III: CREDIT DERIVATIVES: PRODUCTS  

CHAPTER 9  
Valuation of Structured Finance Products with Implied Factor Models  
Jovan Nedeljkovic, Dan Rosen, and David Saunders  

CHAPTER 10  
Toward Market-Implied Valuations of Cash-Flow CLO Structures  
Philippos Papadopoulos  

CHAPTER 11  
Analysis of Mortgage-Backed Securities: Before and After the Credit Crisis  
Harvey J. Stein, Alexander L. Belikoff, Kirill Levin, and Xusheng Tian  

PART IV: COUNTERPARTY RISK PRICING AND CREDIT VALUATION ADJUSTMENT  

CHAPTER 12  
CVA Computation for Counterparty Risk Assessment in Credit Portfolios  
Samson Assefa, Tomasz R. Bielecki, Stéphane Crépey, and Monique Jeanblanc  

CHAPTER 13  
Structural Counterparty Risk Valuation for Credit Default Swaps  
Christophette Blanchet-Scalliet and Frédéric Patras  

CHAPTER 14  
Credit Calibration with Structural Models and Equity Return Swap Valuation under Counterparty Risk  
Damiano Brigo, Massimo Morini, and Marco Tarenghi  

CHAPTER 15  
Counterparty Valuation Adjustments  
Harvey J. Stein and Kin Pong Lee  

CHAPTER 16  
Counterparty Risk Management and Valuation  
Michael Pykhtin
PART V: EQUITY TO CREDIT

CHAPTER 17
Pricing and Hedging with Equity-Credit Models  539
Benjamin Herzog and Julien Turc

CHAPTER 18
Unified Credit-Equity Modeling  553
Vadim Linetsky and Rafael Mendoza-Arriaga

PART VI: MISCELLANEA: LIQUIDITY, RATINGS, RISK CONTRIBUTIONS, AND SIMULATION

CHAPTER 19
Liquidity Modeling for Credit Default Swaps: An Overview  587
Damiano Brigo, Mirela Predescu, and Agostino Capponi

CHAPTER 20
Stressing Rating Criteria Allowing for Default Clustering:
The CPDO Case  619
Roberto Torresetti and Andrea Pallavicini

CHAPTER 21
Interacting Path Systems for Credit Risk  649
Pierre Del Moral and Frédéric Patras

CHAPTER 22
Credit Risk Contributions  675
Dan Rosen and David Saunders

Conclusion  721
Tomasz R. Bielecki, Damiano Brigo, and Frédéric Patras

Further Reading  725
About the Contributors  727
Index  729