

TOMASZ R. BIELECKI

DAMIANO BRIGO

FREDERIC PATRAS

EDITORS

CREDIT RISK FRONTIERS

SUBPRIME CRISIS, PRICING
AND HEDGING, CVA, MBS,
RATINGS, AND LIQUIDITY

Contents

Foreword Greg M. Gupton	ix
Introduction Tomasz R. Bielecki, Damiano Brigo, and Frédéric Patras	1
PART I: EXPERT VIEWS	
CHAPTER 1 Origins of the Crisis and Suggestions for Further Research Jean-Pierre Lardy	7
CHAPTER 2 Quantitative Finance: Friend or Foe? Benjamin Herzog and Julien Terc	19
PART II: CREDIT DERIVATIVES: METHODS	
CHAPTER 3 An Introduction to Multiname Modeling in Credit Risk Aurélien Alfonsi	35
CHAPTER 4 A Simple Dynamic Model for Pricing and Hedging Heterogeneous CDOs Andrei V. Lopatin	71
CHAPTER 5 Modeling Heterogeneity of Credit Portfolios: A Top-Down Approach Igor Halperin	105
CHAPTER 6 Dynamic Hedging of Synthetic CDO Tranches: Bridging the Gap between Theory and Practice Areski Cousin and Jean-Paul Laurent	149
CHAPTER 7 Filtering and Incomplete Information in Credit Risk Rüdiger Frey and Thorsten Schmidt	185

CHAPTER 8**Options on Credit Default Swaps and Credit Default Indexes**

219

Marek Rutkowski

PART III: CREDIT DERIVATIVES: PRODUCTS**CHAPTER 9*****Valuation of Structured Finance Products with Implied Factor Models***

283

Jovan Nedeljkovic, Dan Rosen, and David Saunders

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

319

Philippos Papadopoulos

CHAPTER 11**Analysis of Mortgage-Backed Securities: Before and After the Credit Crisis**

345

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**

397

Samson Assefa, Tomasz R. Bielecki, Stéphane Crépey, and Monique Jeanblanc

CHAPTER 13**Structural Counterparty Risk Valuation for Credit Default Swaps**

437

Christophette Blanchet-Scalliet and Frédéric Patras

CHAPTER 14**Credit Calibration with Structural Models and Equity Return Swap Valuation under Counterparty Risk**

457

Damiano Brigo, Massimo Morini, and Marco Tarenghi

CHAPTER 15**Counterparty Valuation Adjustments**

485

Harvey J. Stein and Kin Pong Lee

CHAPTER 16**Counterparty Risk Management and Valuation**

507

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

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

Further Reading

725

About the Contributors

727

Index

729