

CREDIT RISK FRONTIERS

**Subprime Crisis, Pricing and Hedging, CVA, MBS,
Ratings, and Liquidity**

**Tomasz R. Bielecki, Damiano Brigo,
and Frédéric Patras**

BLOOMBERG PRESS
An Imprint of
 WILEY

Contents

Foreword	ix
Greg M. Gupton	
Introduction	1
Tomasz R. Bielecki, Damiano Brigo, and Frédéric Patras	
<hr/> PART I: EXPERT VIEWS <hr/>	
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	
<hr/> PART II: CREDIT DERIVATIVES: METHODS <hr/>	
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	219
Marek Rutkowski	
<hr/>	
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	
<hr/>	
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