

Contents

| | |
|--|-------------|
| A Word of Greeting | VII |
| Professor Gunter Dufey's Career Contributions: | IX |
| Preface | XIII |
| Part 1: Expanding the Focus of Risk Management | |
| Does Risk Management Make Financial Markets Riskier? | 3 |
| <i>Ian R. Harper, Joachim G. Keller and Christian M. Pfeil</i> | |
| 1. Introduction | 4 |
| 1.1. Increased Risk through Risk Management? | 4 |
| 2. Market Risk as a Regulatory Concern | 5 |
| 3. The Measurement of Market Risk | 6 |
| 3.1. Some Comments on Different Approaches to VaR | 6 |
| 3.2. VaR as an Amplifier of Volatility? | 9 |
| 4. Some Empirical Results on Volatility in Major Stock Markets | 11 |
| 4.1. Model Set-up, Data and Hypotheses | 11 |
| 4.2. Estimation Results | 19 |
| 5. Conclusion | 20 |
| The Relevance and Management of Reputation Risk in the Global Securities Industry | 25 |
| <i>Ingo Walter</i> | |
| 1. Performance Benchmarks | 25 |
| 2. Between Values and Expectations | 26 |
| 3. Between Expectations and Public Policy | 27 |
| 4. Management's High-Wire Act | 27 |

| | |
|--|----|
| 5. Pricing Reputation Risk: An Example | 29 |
| 6. Managing Reputation Risk | 33 |
| 7. What Can be Done? | 34 |
| 8. Balancing the Pieces | 36 |

Managing Catastrophic Risk with Financial Instruments **39**

Ulrich Hommel

| | |
|--|----|
| 1. Introduction | 39 |
| 2. CAT-Linked Securities – A New Asset Class | 43 |
| 3. Traditional and ART-Based CAT Reinsurance | 45 |
| 4. Optimizing the Issuer’s Risk Portfolio | 49 |
| 5. Hedging Strategies with CAT-Linked Securities | 51 |
| 5.1. Excess-of-loss Contract Replication with PCS Call Option Spreads | 51 |
| 5.2. Ex-Post Capital Provision and Funding Cost Reduction with CAT-linked Bonds | 54 |
| 6. Valuation Issues | 55 |
| 7. Concluding Remarks | 57 |

**Introducing New Risk Classes to Organized Exchanges:
The Case of Electricity Derivatives** **63**

Christian Geyer and Werner G. Seifert

| | |
|---|----|
| 1. Introduction | 63 |
| 2. Building on New Paradigms | 64 |
| 2.1. The Integration of the Markets is Accelerating | 65 |
| 2.2. Consolidation of European Market Infrastructures | 66 |
| 2.3. A New Understanding of Roles, New Technologies, and New Abilities Need a Different Form of Capitalization | 69 |
| 3. New Risk Classes in Electricity | 72 |

| | | |
|------|---|----|
| 3.1. | Challenges and Opportunities in the Emerging Power Market | 72 |
| 3.2. | Competition in the Electricity Industry | 73 |
| 3.3. | Opportunities Offered by an Electricity Exchange | 74 |
| 3.4. | Why Power is Different | 74 |
| 3.5. | Determinants of Power Prices and Related Risks | 75 |
| 3.6. | Limitations of Black/Scholes With Respect to Electricity | 76 |
| 3.7. | New Evaluation of Assets and New Products | 77 |
| 4. | Price Discovery: Reshaping the Power Industry | 78 |
| 4.1. | The Role of the Forward Curve | 78 |
| 4.2. | Price Discovery in Bilateral and Exchange Markets | 79 |
| 4.3. | Reshaping of the Energy Industry has Begun | 80 |
| 4.4. | The Creation of the European Energy Exchange | 81 |
| 5. | Transfer to Other Risk Classes | 82 |
| 5.1. | The Future of Deutsche Börse: Developer and Operator of Markets for Tradable Products | 82 |

Challenges and Solutions for the Management of Longevity Risk 85

Petra Riemer-Hommel and Thomas Trauth

| | | |
|----|--|----|
| 1. | Introduction | 85 |
| 2. | Establishing the Relevance of Longevity Risk to the Insurance Industry | 86 |
| 3. | Economic Reasons for the (Re)insurance Gap | 90 |
| 4. | Possible Solutions for Longevity Risk (Re)insurance | 95 |
| 5. | Conclusions | 98 |

Part 2: Risk Measurement Issues

The Key to Risk Management: Management 103

Adrian E. Tschoegl

| | | |
|------|-------------------------------------|-----|
| 1. | Introduction | 103 |
| 2. | Some Examples of Financial Debacles | 105 |
| 2.1. | Barings Brothers | 105 |
| 2.2. | Daiwa Bank | 107 |

| | |
|--|------------|
| 2.3. Sumitomo Corporation | 109 |
| 3. Conceptualizing Debacles and their Prevention | 112 |
| 4. Conclusion | 117 |
| Market Risk: Benchmark and Standard Model | 121 |
| <i>Claudia Holtorf and Markus Rudolf</i> | |
| 1. Introduction | 121 |
| 2. VaR Calculation | 122 |
| 3. Regulatory Reporting, VaR, and Capital Requirement | 132 |
| 4. Internal vs. Standard Model | 134 |
| 5. Summary and Outlook | 138 |
| KMV Credit Risk Modeling | 141 |
| <i>Florian Rehm and Markus Rudolf</i> | |
| 1. Introduction | 142 |
| 2. Option Pricing and the Market Value of the Assets | 142 |
| 3. EDF Calculation | 146 |
| 4. KMV Credit Monitor Compared to Agency Ratings | 147 |
| 5. KMV Portfolio Manager | 151 |
| 6. Summary | 152 |
| Value at Risk: Tool for Managing Trading Risks | 155 |
| <i>Wolfgang Eisele and Alois Paul Knobloch</i> | |
| 1. The Concept of Value at Risk and its Role in Contemporary Risk Management | 155 |
| 1.1. The Value at Risk Measure and Significant Trading Risks of Concern | 156 |
| 1.2. Applications and Regulatory Background | 158 |

| | |
|---|-----|
| 2. Calculating Value at Risk: Methods and Inherent Sources of Inaccuracy | 160 |
| 2.1. Delta-normal and Delta-gamma Approach | 161 |
| 2.2. Simulation Methods: Historical and Monte Carlo Simulation | 164 |
| 3. Risk Reduction and Capital Allocation within a Value at Risk Framework | 166 |
| 3.1. Minimizing Value at Risk | 166 |
| 3.2. Delta-normal as a Tool for Capital Allocation | 169 |
| 4. Shortcomings of Value at Risk as a Measure of Risk | 171 |
| 5. Conclusions | 176 |

● **The Real Option Value of Operational and Managerial Flexibility in Global Supply Chain Networks** **181**

Arnd Huchzermeier

| | |
|---|-----|
| 1. Introduction | 182 |
| 2. The Benefit of Operational Flexibility | 183 |
| 2.1. The Original Problem | 183 |
| 2.2. Supply Chain Network Cost Optimization | 184 |
| 2.3. Profit Maximization | 186 |
| 2.4. Shareholder Value Maximization | 186 |
| 2.5. Transfer Pricing | 187 |
| 2.6. Knowledge Management | 188 |
| 2.7. Real Exchange Rate Risk | 188 |
| 3. The Option Value of Managerial Flexibility | 189 |
| 3.1. Demand Risk | 190 |
| 3.2. Exchange Rate Uncertainty | 192 |
| 4. Summary | 198 |

● **Problems of Evaluating R&D Projects as Real Options** **203**

Klaus Brockhoff

| | |
|--|-----|
| 1. A Sketch of Developments Towards R&D Project Evaluation | 203 |
| 2. R&D Projects as Options | 206 |

| | |
|---------------------------|-----|
| 2.1. Research Projects | 206 |
| 2.2. Development Projects | 207 |
| 3. Conclusion | 210 |

Financial Hedging and Banks' Assets and Liabilities Management 213

Jack E. Wahl and Udo Broll

| | |
|--|-----|
| 1. Introduction | 213 |
| 2. Bank Hedging and Interest Rate Risk | 215 |
| 3. Assets and Liabilities Management without Hedging | 217 |
| 4. Assets and Liabilities Management with Hedging | 219 |
| 4.1. No Basis Risk | 219 |
| 4.2. Basis Risk | 221 |
| 5. Welfare and the Value of Hedging | 224 |
| 6. Concluding Remarks | 225 |

Part 3: Regulatory Issues

Governance of Global Financial Markets: Risk of Hubris 231

Arvind K. Jain

| | |
|---|-----|
| 1. We are Rational People – More or Less? | 233 |
| 2. Good Guys Like Us Would Never Do That! | 234 |
| 2.1. Moral Hazard | 234 |
| 2.2. Herding | 236 |
| 2.3. Poor Analysis and Simply „No Analysis“ | 238 |
| 2.4. Disaster Myopia | 242 |
| 3. Concluding Remarks | 243 |

Risk Management, Corporate Governance and the Modern Corporation 247

Fred R. Kaen

| | |
|-----------------|-----|
| 1. Introduction | 247 |
|-----------------|-----|

| | |
|--|-----|
| 2. „Scientific” Theoretical Perspective On Risk Management | 248 |
| 3. From Theory To Practice: Why Firms Should Manage Risk | 250 |
| 3.1. Using Risk Management to Lower Taxes | 251 |
| 3.2. Reducing Financial Distress and Bankruptcy Costs | 251 |
| 3.3. Using Risk Management to Encourage and Protect Firm Specific Investment | 252 |
| 3.4. Using Risk Management to Monitor and Control Managers | 254 |
| 3.5. Using Risk Management to Improve Decision Making and Capital Budgeting | 256 |
| 3.6. Risk Management and Dividends | 256 |
| 4. Back to Berle and Means | 257 |
| 5. Summary and Conclusions | 259 |

Governing the Corporate Risk Management Function: Regulatory Issues **263**

Ehrenfried Pausenberger and Frank Nassauer

| | |
|--|-----|
| 1. Introduction | 263 |
| 2. Risk Definition and Risk Management | 264 |
| 3. The Reform of Corporate Control by the German KonTraG | 265 |
| 3.1. Specifying the Duties of the Management Board | 265 |
| 3.2. Professionalization of the Supervisory Board | 266 |
| 3.3. Reform of the Auditing | 267 |
| 3.4. Survey of the New Regulations | 268 |
| 4. Subtasks of the Corporate Risk Management Function | 269 |
| 4.1. Identification and Classification of Risks | 269 |
| 4.2. Measuring of Risks | 270 |
| 4.3. Formulating a Strategy to Manage Risks | 272 |
| 4.4. Taking Counteracting Measures | 273 |
| 4.5. Monitoring the Risk Management Process | 273 |
| 5. Concluding Remarks | 274 |

**Statutory Regulation of the Risk-Management Function in Germany:
Implementation Issues for the Non-Financial Sector** 277

Jürgen Weber and Armin Liekweg

1. Introduction: New Statutory Regulations Cause a New Discussion in Germany on Risk Management 277
2. Entrepreneurial Risk and Risk Management: a Holistic Approach 279
3. Opportunity, Risk, and Their Definitions 279
4. Opportunity, Risk, and Their Dimensions 280
5. The Process of Entrepreneurial Opportunity and Risk Management 281
 - 5.1. Opportunity/Risk Strategy 282
 - 5.2. Opportunity/Risk Identification 284
 - 5.3. Opportunity/Risk Analysis 285
 - 5.4. Opportunity/Risk Reporting 286
 - 5.5. Opportunity/Risk Management 289
 - 5.6. Opportunity/Risk Monitoring 290
6. The Process-External Monitoring and Audit Function 291
7. Summary: the Critical Factors for Implementing the Risk-Management Function 292

Financial Reorganization in Japan: Can Japanese Banks Survive? 295

Mitsuru Misawa

1. Current Status 295
2. Demise of the High Growth Period and Birth of the Bubble Economy 299
3. The Japanese Big Bang (Financial Overhaul) 301
4. Reforming the Financial System 303
 - 4.1. Shift Toward the „Business-Category Subsidiary” System 303
 - 4.2. Legalization of Financial Holding Companies 304
5. Revitalization Through Coordination and Consolidation 307

International Trade in Risky Foods: The Policies of the European Community and the World Trade Organization 313

William James Adams

1. Introduction 313
2. The Hormone Beef Dispute Between the EC and the US 315
3. The Mad Cow Dispute Between the EC and the UK 318
4. Genetically Modified Foods 320
5. Discussion 322
6. Conclusion 331

Part 4: Risk Management from an International Perspective

Economic Risks of EMU 335

Michael Frenkel and Paul McCracken

1. Introduction 335
2. Risk to Stability Stemming from National Developments 336
3. Risk of High Adjustment Costs Stemming from European Labor Markets 341
4. Risks Associated with EMU Enlargement 350
5. Risks in EMU Financial Markets 352
6. Conclusions 354

Estimating the Exchange Rate Exposure of US Multinational Firms: Evidence from an Event Study Methodology 357

Kathryn L. Dewenter, Robert C. Higgins, and Timothy T. Simin

1. Introduction 358
2. Sample Selection and Event Study Methodology 360
3. Event Study Measures of Exchange Rate Exposure 363

| | |
|---|-----|
| 4. Determinants of Exchange Rate Exposure | 365 |
| 5. Conclusion | 369 |

Foreign-Exchange-Risk Management in German Non-Financial Corporations: An Empirical Analysis **373**

Martin Glaum

| | |
|---|-----|
| 1. Introduction | 373 |
| 2. Theoretical Framework: Measurement and Management of Foreign-Exchange Risk | 375 |
| 3. Methodology of the Empirical Study | 378 |
| 4. Results of the Empirical Study | 379 |
| 4.1. Exposure Concepts | 379 |
| 4.2. Exchange-Risk-Management Strategies | 382 |
| 4.3. The Use of Foreign-Exchange-Rate Forecasts | 386 |
| 4.4. Organization of Exchange-Rate Management | 386 |
| 4.5. Further Arguments and Hypotheses on Exchange-Risk Management | 388 |
| 5. Conclusion | 390 |

Authors **403**