MICHAEL FRENKEL
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MARKUS RUDOLF
Editors

Risk Management

Challenge and Opportunity

2nd Edition

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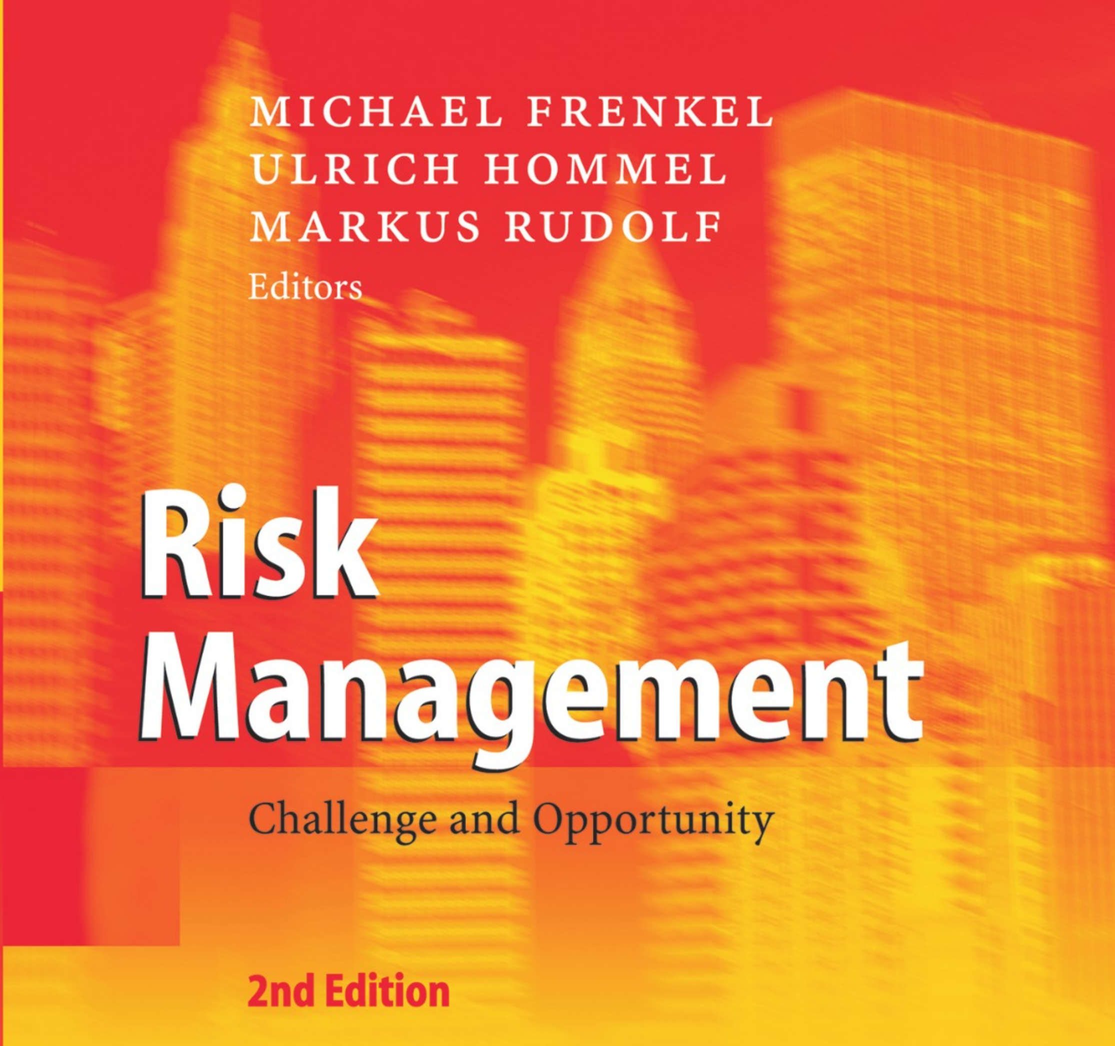

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Second Revised and Enlarged Edition

Michael Frenkel · Ulrich Hommel
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With 100 Figures
and 125 Tables

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A Word of Greeting

In my "Word of Greeting" of the first edition of this book which was dedicated to Günter Dufey, I pointed out that I appreciate Günter Dufey as someone who builds bridges between Germany and the United States. Meanwhile, almost 5 years have gone by. Günter Dufey's significance as an academic intermediary between the continents has even increased since then. Due to his efforts, the cooperation between high ranked U.S. business schools and the WHU - Otto Beisheim Hochschule in Germany have been intensified. The joint summer MBA program on the WHU campus is attended by 45 U.S. students every year. This number is still growing. Moreover, since the issue of the first edition, Günter Dufey has enlarged his activity spectrum also to Asia. In 2002 until 2003 Günter Dufey joined the Singapore Office of the firm as Senior Advisor, supporting the Corporate Governance Practice of the firm in the Region. Since then he was appointed as Professor of Banking and Finance at the Nanyang Business School - Nanyang Technological University and as Principal of the Pacific International Business Associates. Last but not least, he is now an ordinary member of the Singapore Institute of Directors.

It is impressive to see the energy and the enthusiasm with which Günter Dufey travels restlessly around the world, once eastwards, another time westwards. Without any doubt, it is quite unusual that a Festschrift sells out. The first edition of this book has been written by a global selection of financial experts. They wanted to act as a sign of friendship by honoring Günter Dufey's 60th birthday. I am very happy, that the first edition was so successful because this indicates also the importance of the book' content.

Much has been changed in the field of risk management since then. Probably most significantly, there has been an intensive discussion between financial institutions dealing with modified rules of determining the adequate amount of equity capital for risks. The committee of banking supervision located at the Bank of International Settlement in Basel, Switzerland, has initiated several proposals known under the short form "Basel II". One of the core questions in the context of these capital adequacy rules is the capital requirement for credit risks. According to Basel II, in the future this will be closer related to the rating of transaction counterparties enhancing the role of the rating process and the rating industry. Another important risk category which is addressed by Basel II for the first time is operative risk. The terror attack on the World Trade Center on 11 September 2001 showed drastically how significant external and unpredictable events can be on the operations of any company, particularly of banks. Moreover, risks form internal processes, people, or systems contribute to the success or to the failure of the business. All these risks are summarized as new risk type in Basel II, namely as operative risk. Operative risk is much more difficult to measure than credit and market risks. But they nevertheless affect the performance of financial institutions.

The deadline for implementing Basel II in national laws is year-end 2006. It is obvious that this development is intensively covered in the second edition of the book. I hope that this book will help to understand the complex and new aspects of risk management better. And I am happy that such an instructional content is associated to the name of my former student in Würzburg, Günter Dufey.

Otmar Issing

Preface

Michael Frenkel, Ulrich Hommel, Markus Rudolf

The success of the first edition of this book encouraged us to update and extend this volume in order to provide an up-to-date and comprehensive survey of the major areas of risk management issues. Since the first edition of this book, a number of changes in the area of risk management took place. Some of them are reflected in the discussions on the “Basel II” rules. The new edition takes these new developments into account. Given the wider scope of the new edition, we decided to structure the book according to the type of risk management the various aspects are most narrowly related to. More specifically, we distinguish four broader topics. Part 1 focuses on bank risk management, part 2 on insurance risk management, part 3 on corporate risk management, and part 4 on systemic issues of risk management. In the following, a very brief outline of the papers is presented.

Part 1 begins with the analysis by Thomas Hartmann-Wendels, Peter Grundke and Wolfgang Spörk of the Basel II rules and their consequences on bank lending. Then, Ingo Walter looks at conflicts of interest involving financial services firms. He shows the conditions that can cause or limit exploitation of conflicts of interest and argues that external regulation and market discipline can be both complements and substitutes. A normative theory or risk management in banks is the subject of the contribution of Gerhard Schröck and Manfred Steiner. Then, Claudia Holtorf, Matthias Muck and Markus Rudolf present a case study that analyses the new Basel capital accord requirements by applying the RiskMetricsTM. Value at Risk is the core of several papers in part 1. Alois Paul Knobloch surveys applications of this concept for risk measurement purposes; John Bilson uses to concept to review fixed income portfolios, Robert Härtl and Lutz Johanning examine risk budgeting, and Jack Wahl and Udo Broll examine the implications of Value at Risk for the optimum equity level of a bank. Wolfgang Drobetz and Daniel Hoechle compare alternative estimates of conditional return expectations. Subsequently, Ludger Overbeck surveys modelling of credit risk portfolios. A critical evaluation of credit risk models is the topic of the paper by Hergen Frerichs and Mark Wahrenburg. Related to this type of risk is the analysis of Stefan Huschens, Konstantin Vogl, and Robet Wania, who look at possibilities to estimate default probabilities and default correlations. The subsequent two papers examine operational risk in the context of Basel II. While Carol Alexander gives an overview of the different dimensions of this risk type, Wilhelm Kross addresses practical issues for management dealing with such risk. In the last paper of this part, Christoph Kaserer, Niklas Wagner and Ann-Kristin Achleitner investigate possibilities to measure private equity returns under conditions of illiquidity.

Part 2 focuses on insurance risk management. Martin Nell and Andreas Richter discuss three issues related to the management of catastrophic risk which stem from the terror attacks of September 11, 2001. Subsequently, Christopher Culp surveys products and solutions that represent the convergence or integration of capital markets and traditional insurance. Such products are referred to as alternative risk transfer. Ulrich Hommel and Mischa Ritter address a similar area of risk management. They analyze the main forces behind the securitization of catastrophic insurance risk and derive conclusions as to how other forms of insurance can be transferred to financial markets. In recent years, demographic changes in a number of advanced economies have been discussed intensely. The paper of Petra Riemer-Hommel and Thomas Trauth addresses this issue by analyzing possibilities of managing longevity risk associated with pension, annuity and long-term care products. Particularly in the German market, another problem of life insurance companies generate from unknown capital market developments and the simultaneously issued interest rate guarantees of traditional life insurance products. Peter Albrecht and Carsten Weber investigate the implications of this constellation on the asset allocation decision.

Part 3 includes papers that discuss a variety of issues of corporate risk management. In the first paper, Fred Kaen addresses the relationship between risk management and corporate governance and makes the point that risk management not only helps a firm to survive but also serves broader policy objectives. In the next paper, Christian Laux examines how corporate risk management can be integrated into the objective of maximizing firm value. Subsequently, Ulrich Hommel investigates the more fundamental question why the management of corporate risk should be managed at all and why it should be managed on the firm rather than the investor level. Focusing on a German regulation requiring firms to implement risk management systems, Jürgen Weber and Arnim Liekweg discuss critical implementation issues for non-financial firms. How risk analysis and risk aggregation enters value-based corporate risk management is the topic of the paper by Werner Gleißner. A more macroeconomic focus of risk is presented by Lars Oxelheim and Clas Wihlborg who emphasize the importance of exchange rates, interest rates and inflation rates in estimating corporate risk. This issue is taken one step further in the paper of Matthias Much and Markus Rudolf as they include international issues of corporate risk management. They use the case study of three airlines to emphasize commodity and exchange rate risk and show the effects on corporate risk by applying the "Earnings at Risk" concept. A consequence of corporate risk is the use of financial derivatives in risk management. In this context, real options represent alternatives to financial hedging. The paper of Alexander Triantis uses a specific example to discuss the implications of these alternatives. Operational and managerial flexibility in international supply chains also contribute to real options. Arnd Huchzermeier uses a case study to illustrate the value of such flexibility for risk management. In the international context, exchange rate exposure represents a major risk, when cross-border acquisitions are considered. Stefan Hloch, Ulrich Hommel, and Karoline Jung-Senssfelder show that this risk stems from considerable time lags between the acquisition decision and its implementation due to, e.g., the process of regulatory clearance by the antitrust authorities. In the following paper, Christian Geyer and Werner Seifert describe electricity derivatives as new risk classes to organized exchanges and explain why the German Stock Exchange (Deutsche Börse) intends to establish an exchange for energy derivatives. Foreign exchange risk is more closely examined in two contributions. While Martin Glaum presents an empirical study on the measuring and management of foreign exchange risk in large German non-financial corporations, Kathryn Dewenter, Robert Higgins and Timothy Simin show that, contrary to many studies presented earlier in the literature, there is a negative influence of the value of the dollar and stock returns of U.S. multinational firms. The subsequent paper by Wolfgang Breuer and Olaf Stotz addresses the problem of securing the real value rather than the nominal value of assets in risk management. The last paper of part 3 focuses on capacity options. Stefan Spinler and Arnd Huchzermeier explain how options on capacity can be used in capital intensive industries for risk management.

Part 4 focuses on more systemic risk aspects with which firms have to deal in the national and the international environment. Adrian Tschoegl argues in his contribution that financial debacles in the mid-1990s are the result of management failures and suggests that risk management has to take into account that such errors are the result of human nature. While this emphasizes a microeconomic element of risk management, Michael Frenkel and Paul McCracken show that a currency union as represented by the European Monetary Union exerts several additional risks which firms operating in this area have to recognize. Whether risk management itself makes financial markets riskier is discussed in the paper by Ian Harper, Joachim Keller and Christian Pfeil. The authors argue that both on theoretical and empirical grounds there are indications that this is indeed possible. In the same direction, Torben Lütje and Lukas Menkhoff analyze risk management of institutional investors may lead to the behaviour of rational herding. A final look at systemic risk aspects is presented by Mitsuru Misawa. He looks at the Japanese experience in the 1990s when financial markets suffered significant damage due to the burst of the asset price bubble and evaluates Japan's big bang financial reform.

Although this book covers a variety of diverse aspects of risk management, no book on this broad and complex issue can cover all aspects. Therefore, we were forced to be selective in certain areas. In addition, new topics may come up in the future, as further risk categories may continue to evolve and both risk management and policies will also further develop.

Such a volume cannot be completed without the help of many individuals. We thank all authors and those that have given us suggestions for the new edition. We are very grateful to Kerstin Frank who showed enormous commitment and patience in preparing the manuscript. We are also thankful to Gudrun Fehler for proofreading a number of papers of this volume and to Martina Bihn representing the publisher for her support and patience in making this new edition possible.

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