

---

## Preface

In March 2014, when this book was finished and handed over to the publishers, more than 5 years had passed since the collapse of the U.S. investment bank Lehman Brothers. Yet, the consequences of this bankruptcy, which was the culminating point of the subprime crisis, can still be felt today. And when we look at the current status of the euro crisis, which itself was triggered by the subprime crisis, we find few convincing signs that the financial issues in Europe have really been fundamentally solved.

The *cepDefault-Index 2014*, published in February 2014 by the cep (Center for European Policy, a think tank), shows that while the creditworthiness of countries like Ireland and Spain has improved, Greece is still far from having regained the trust of the investors.<sup>1</sup> The situation of France has remained unchanged, whereas the credit standing of Italy continues to decline. Surprisingly, for the first time, there are troubling signs of a deteriorating creditworthiness of Belgium and Finland, two core countries of the eurozone.

The euro crisis and the subprime crisis are only the latest crises in a long line of historical financial meltdowns and stock market crashes. However, the frequency of these crashes has become higher and their impact has become more severe in the recent past. Therefore, when we deal with asset and risk management today, these extreme market situations should be considered, as we have endeavored to do in this book.

This book takes a practical look at the rational and irrational aspects of investing. In financial research, these two sides of the coin are represented by modern portfolio theory and behavioral finance. The significance of both was recently highlighted by the decision of the Nobel Prize Committee to award the Nobel Prize in Economics to Eugene Fama, a proponent of a rational view of finance, as well as to Robert Shiller, who follows the approach of behavioral finance.

This book is intended to serve as a comprehensive introduction to asset and risk management for bachelor and master students in this field as well as for young professionals in the asset management industry. In addition, the account of the actual

---

<sup>1</sup>Gerken and Kullas (2014, p. 1).

investment behavior of investors given in this book may be appreciated also by more senior professionals.

There are two central questions that this book refers to, which were provoked by the worldwide events in the stock markets since the middle of the last decade:

- Why do crashes happen when in theory they should not?
- How do investors deal with such crises in terms of their risk measurement and management and, as a consequence, what are the implications for the chosen investment strategies?

While the first question concerns critical situations that we have all encountered over the last two decades, the second question is much more important to financial investors, be it big institutional investors, like pension funds or sovereign wealth funds, or retail investors, like you and me: how do investors respond to these crises? How do they manage tail risk and prevent drawdowns?

We start, in Chap. 1, with presenting the necessary basic concepts used to measure the risk and the return of a portfolio or a single investment. The mathematical definitions will be introduced using simple math and many illustrations. This is supported by many detailed examples and a step-by-step business case. All calculations are done in Microsoft® Excel®. The Excel® file with the calculations and solutions for all 17 examples as well as all business case calculations can be downloaded at <http://www.pecundus.com/publications/springer-solutions>.

In Chap. 2 we utilize these concepts to introduce modern portfolio theory. We will present the capital asset pricing model (CAPM) and investigate its validity. Our result is that while CAPM is an elegant theoretical concept, it rarely reflects reality. Its most famous extension, the Fama–French three-factor model, is also not supported by empirical results, as we will show in the final part of Chap. 2.

In Chaps. 3–5 we shift our attention to events and developments which cannot be sufficiently explained by MPT and contradict the concept of the investor as a rational *Homo economicus*. Chapter 3 is devoted to various forms of stock market anomalies. Some are persistent over a very long time and in various asset classes like the turn-of-the-month effect while others are not. Chapter 4 focuses on stock market crashes and looks at crashes with a regional impact and crashes with a global effect. The chapter ends with the analysis of the possibility of a crash in China.

Chapter 5 introduces behavioral finance, a field of research that evolved in the 1970s and includes the psychology of investing. We present the key behavioral biases that seem to have the most significant explanatory power for stock market crashes. At the end of this chapter we look especially into the October 1987 crash and try to find a potential answer to the question why these crashes happen.

After having introduced a lot of concepts and empirical tests concerning the theory and practice of stock markets, the final Chap. 6 answers the second key question of this book: How do investors deal with such crises in terms of their risk measurement and management? Doing so, we distinguish between different EMEA regions and investor types, i.e., institutional investors, retail investors, sovereign wealth funds, and central banks. We describe how investors managed risk in the time

before the Lehman demise, i.e., up to the middle of 2008, which risk measures were applied during the crisis and which changes occurred since mid-2009 until early 2014. We take a detailed look at a study of the Economist Intelligence Unit from summer 2012 that shows that drawdown protection was a priority of investors in the years 2011 and 2012 and we discuss the consequences for product development in light of the market situation.

This book would not have been possible without the assistance and support from various people. First of all I want to thank my co-authors Yves-Michel Leporcher and Ching-Hwa Eu, Ph.D., who were ready to join me in this publication project and to contribute their expertise and their share of work. Ching-Hwa Eu produced Chap. 2 and Yves-Michel Leporcher authored Chaps. 3, 4, and 5, while I wrote Chaps. 1 and 6 and was in charge of the general oversight of our work. We developed the book concept together, but each of us is responsible for the content that he has provided.

I am particularly grateful to Christian Theis who doublechecked the whole text and gave valuable input. Many thanks go to Alexander Schmid whose support when finalizing the book was a great aid.

Last but not least, we all wish to thank our wives, partners, and significant others. If it had not been for their ongoing encouragement, we might not have been able to achieve the publication of this book.

Munich, Germany  
March 2014

Marcus Schulmerich

---

## Reference

Gerken, L., & Kullas, M. (2014, February). *cepDefault-Index 2014*, cepStudie, cep - Centrum für europäische Politik, Freiburg, Germany. [http://www.cep.eu/fileadmin/user\\_upload/cepDefault-Index/cepStudie\\_cepDefault-Index\\_2014.pdf](http://www.cep.eu/fileadmin/user_upload/cepDefault-Index/cepStudie_cepDefault-Index_2014.pdf). Accessed 1 Mar 2014.

<http://www.springer.com/978-3-642-55443-8>

Applied Asset and Risk Management  
A Guide to Modern Portfolio Management and  
Behavior-Driven Markets

Schulmerich, M.; Leporcher, Y.-M.; Eu, C.-H.

2015, XVII, 476 p. 129 illus., 22 illus. in color.,

Hardcover

ISBN: 978-3-642-55443-8