Empirical Asset Pricing:
The Cross-Section of Stock Returns

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“Bali, Engle, and Murray have produced a highly accessible introduction to the techniques and evidence of modern empirical asset pricing. This book should be read and absorbed by every serious student of the field, academic and professional.”

- Eugene Fama, Robert R. McCormick Distinguished Service Professor of Finance, University of Chicago and 2013 Nobel Laureate in Economic Sciences

“The empirical analysis of the cross-section of stock returns is a monumental achievement of half a century of finance research. Both the established facts and the methods used to discover them have subtle complexities that can mislead casual observers and novice researchers. Bali, Engle, and Murray’s clear and careful guide to these issues provides a firm foundation for future discoveries.”

- John Campbell, Morton L. and Carole S. Olshan Professor of Economics, Harvard University

“Bali, Engle, and Murray provide clear and accessible descriptions of many of the most important empirical techniques and results in asset pricing.”

- Kenneth R. French, Roth Family Distinguished Professor of Finance, Tuck School of Business, Dartmouth College

“This exciting new book presents a thorough review of what we know about the cross-section of stock returns. Given its comprehensive nature, systematic approach, and easy-to-understand language, the book is a valuable resource for any introductory PhD class in empirical asset pricing.”

- Lubos Pastor, Charles P. McQuaid Professor of Finance, University of Chicago
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The objective of this book is to provide an overview of the empirical research on the cross-section of expected stock returns. The book is intended for use in doctoral-level empirical asset pricing classes and by investors who are looking for a review of the most important predictors of future stock returns. A doctoral student reader should come away with a solid understanding of the most fundamental results in the field and a strong base upon which to pursue future research in empirical asset pricing. For the reader whose intention is to apply the results presented in this book to practice, our hope is that the book provides a basis upon which investment strategies can be constructed as well as a strong understanding of the most prevalent patterns of risk and returns in the cross-section of stocks.

It is assumed that the reader of this book has at least an MBA level understanding of theoretical asset pricing and a solid grasp of basic econometric techniques. Fantastic books on these topics have been written by Cochrane (2005), Campbell, Lo, and MacKinlay (1996), and Elton, Gruber, Brown, and Goetzmann (2014). More in-depth knowledge in either of these areas is obviously a benefit. While all of the analyses in this book are statistical in nature, the book is not designed to be an econometrics or statistics reference. Our discussions of statistical concepts, therefore, will be primarily conceptual. For a more detailed discussion of the statistical theory underlying our methodologies, we suggest that the reader find an econometrics or statistics text appropriate for the reader’s level of knowledge in this area.

This book is divided into two main parts. Part I is devoted to a discussion of the most widely used statistical methodologies in empirical asset pricing research. The objective of this section is to give readers a detailed understanding of how to conduct such analyses and how to interpret the results. In addition, we discuss how the results are summarized and presented in academic research articles. The techniques can, very generally, be separated into two groups. Techniques in the first group are designed to summarize the data upon which the research is based. Techniques in the second group are designed to assess relations between the variables used in a study. These are the tools used to investigate the cross-sectional relations between a set of variables and future stock returns. Analysis of such relations is the primary objective of this book and, more generally, the majority of empirical asset pricing research. That being said, these techniques can be used for other purposes as well.

The second, and by far most important, part of this book discusses the major findings in

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1Several other books have been written on related topics. Ang (2014) gives an in-depth insight into factor investing. Factor analysis plays a large role in the empirical asset pricing literature and is used heavily throughout this book. Karolyi (2015) gives a comprehensive exposition of risks associated with investing in emerging markets. Pedersen (2015) provides a strong introduction into the trading strategies used by hedge funds, many of which have their roots in the phenomena documented throughout this book. Campbell provides a theoretical and empirical overview of asset pricing research.
empirical asset pricing research. In presenting each of the findings, we begin by discussing in detail the calculation of the main variables used to capture the characteristic of the stock that is under investigation. We then apply the techniques discussed in Part I, with the main objective being to understand the relation between the characteristic being examined and expected stock returns. While there are literally hundreds of different variables that have been shown to be related to future stock returns, we focus on the most widely recognized and cited phenomena in the literature.

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