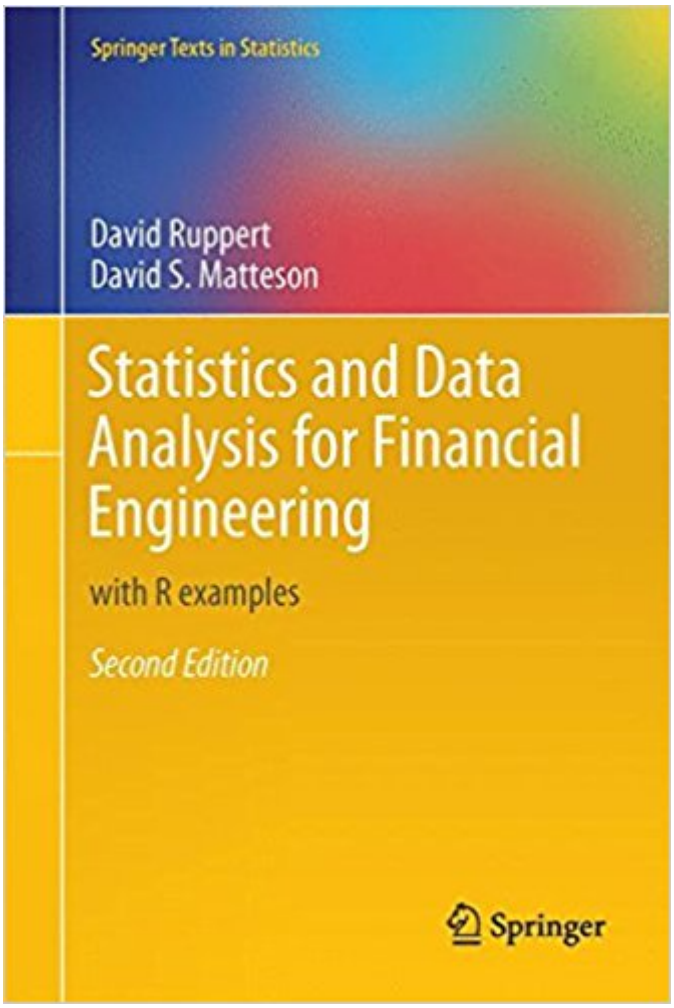
Statistics And Data Analysis For Financial Engineering: With R Examples (Springer Texts In Statistics)



Synopsis

The new edition of this influential textbook, geared towards graduate or advanced undergraduate students, teaches the statistics necessary for financial engineering. In doing so, it illustrates concepts using financial markets and economic data, R Labs with real-data exercises, and graphical and analytic methods for modeling and diagnosing modeling errors. These methods are critical because financial engineers now have access to enormous quantities of data. To make use of this data, the powerful methods in this book for working with quantitative information, particularly about volatility and risks, are essential. Strengths of this fully-revised edition include major additions to the R code and the advanced topics covered. Individual chapters cover, among other topics, multivariate distributions, copulas, Bayesian computations, risk management, and cointegration. Suggested prerequisites are basic knowledge of statistics and probability, matrices and linear algebra, and calculus. There is an appendix on probability, statistics and linear algebra. Practicing financial engineers will also find this book of interest.

Book Information

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Customer Reviews

The new edition of this influential textbook, geared towards graduate or advanced undergraduate students, teaches the statistics necessary for financial engineering. In doing so, it illustrates concepts using financial markets and economic data, R Labs with real-data exercises, and graphical and analytic methods for modeling and diagnosing modeling errors. Financial engineers now have access to enormous quantities of data. To make use of these data, the powerful methods in this

book, particularly about volatility and risks, are essential. Strengths of this fully-revised edition include major additions to the R code and the advanced topics covered. Individual chapters cover, among other topics, multivariate distributions, copulas, Bayesian computations, risk management, multivariate volatility and cointegration. Suggested prerequisites are basic knowledge of statistics and probability, matrices and linear algebra, and calculus. There is an appendix on probability, statistics and linear algebra. Practicing financial engineers will also find this book of interest.David Ruppert is Andrew Schultz, Jr., Professor of Engineering and Professor of Statistical Science at Cornell University, where he teaches statistics and financial engineering and is a member of the Program in Financial Engineering. Professor Ruppert received his PhD in Statistics at Michigan State University. He is a Fellow of the American Statistical Association and the Institute of Mathematical Statistics and won the Wilcoxon prize. He is Editor of the Journal of the American Statistical Association-Theory and Methods and former Editor of the Electronic Journal of Statistics and of the Institute of Mathematical Statistics's Lecture NotesÃ¢â ¬â ¢Monographs. Professor Ruppert has published over 125 scientific papers and four books: Transformation and Weighting in Regression, Measurement Error in Nonlinear Models, Semiparametric Regression, and Statistics and Finance: An Introduction.David S. Matteson is Assistant Professor of Statistical Science at Cornell University, where he is a member of the ILR School, Center for Applied Mathematics, Field of Operations Research, and the Program in Financial Engineering, and teaches statistics and financial engineering. Professor Matteson received his PhD in Statistics at the University of Chicago. He received a CAREER Award from the National Science Foundation and won Best Academic Paper Awards from the annual R/Finance conference. He is an Associate Editor of the Journal of the American Statistical Association-Theory and Methods, Biometrics, and Statistica Sinica. He is also an Officer for the Business and Economic Statistics Section of the American Statistical Association, and a member of the Institute of Mathematical Statistics and the International Biometric Society.

David Ruppert is Andrew Schultz, Jr., Professor of Engineering and Professor of Statistical Science, School of Operations Research and Information Engineering and Department of Statistical Science, Cornell University, where he teaches statistics and financial engineering and is a member of the Program in Financial Engineering. His research areas include asymptotic theory, semiparametric regression, functional data analysis, biostatistics, model calibration, measurement error and astrostatistics. Professor Ruppert received his PhD in Statistics at Michigan State University. He is a Fellow of the American Statistical Association and the Institute of Mathematical Statistics and won

the Wilcoxon prize. He is Editor of the Journal of the American Statistical Association-Theory and Methods, former editor of the Electronic Journal of Statistics, former Editor of the Institute of Mathematical Statistics's Lecture Notes--Monographs Series and former Associate Editor of several major statistics journals. Professor Ruppert has published over 125 scientific papers and four books: Transformation and Weighting in Regression, Measurement Error in Nonlinear Models, Semiparametric Regression, and Statistics and Finance: An Introduction.David S. Matteson is Assistant Professor of Statistical Science, ILR School and Department of Statistical Science, Cornell University, where he is a member of the Center for Applied Mathematics, Field of Operations Research, and the Program in Financial Engineering, and teaches statistics and financial engineering courses. His research areas include multivariate time series, signal processing, financial econometrics, spatio-temporal modeling, dimension reduction, machine learning, and biostatistics. Professor Matteson received his PhD in Statistics at the University of Chicago and his BS in Finance, Mathematics, and Statistics at the University of Minnesota. He received a CAREER Award from the National Science Foundation and won Best Academic Paper Awards from the annual R/Finance conference. He is an Associate Editor of the Journal of the American Statistical Association-Theory and Methods, Biometrics, and Statistica Sinica. He is also an Officer for the Business and Economic Statistics Section of American Statistical Association, and a member of the Institute of Mathematical Statistics and the International Biometric Society.

I have spent a number of years working through the 1st Edition. Not only has the book served as a foundation for my understanding in this area, it continues to serve as a ready reference for actual projects I've endeavored. I do not consider myself a mathematical savant so working through the theory is not always easy but it is definitely doable (and, I might add, necessary to have an understanding of what you're actually doing). I would consider Ruppert's approach a nice balance between mathematical rigor and the pressing need for actual application. A reasonable understanding of matrix operations, basic mathematical stats is definitely helpful before coming to the book but not a deal killer. I have not mastered this material and some areas yet remain out of my grasp (copulas, MCMC). Still, I feel like a beggar who has been allowed into the banquet hall to enjoy most of the choice foods yet hasn't yet feasted on the mutton...I am in much better condition than when I entered!!In my mind this book gave me exactly what I was looking for: a launching pad for a better working knowledge of this field. The R code, introduction to some key packages, and custom functions created by the author are all well placed and easy to incorporate. I am getting ready to purchase the 2d edition as I understand that it has more R code & examples, reference to

MGARCH, among other things.If you are looking to copy and paste stuff, go to StackOverflow. However, if you are looking for understanding of the material and you're willing to put in a little work and not get too wound up when your understanding doesn't quite keep up with your desires, give the book a try. You will shortly be doing and understanding things that you thought were out of your reach.

Useful book, fantastic!

While the content is absolutely useful. The author has shown no initiative in showing examples of the theory within R. The R-Code is so basic even within what he defines as R-LABS, makes you wonder whether the author just mentioned R as a Marketing ploy. The truth is Financial concepts need to be implemented in software but it appears the author doesn't believe that to be necessary. This book is dedicated to theorists.

The book includes concepts that are tremendously valuable, but the author is unable to explain these concepts in a lucid manner. Approximately 40% of the book is written in mathematical notation and the author rarely takes the time to define the notation that he uses. At times, it seems like the author purposefully obfuscates the material because his explanations on simple financial concepts are laboriously dense. The author cannot describe simple concepts such as the natural log, or normal distributions in a lucid manner. In regard to more difficult concepts, the reader will be spending ample time at Khan Academy and on the web attempting to deduce the notation and concepts. This book is only useful for mathematicians that have a biblical grasp on mathematical notation.

Not enough example.

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