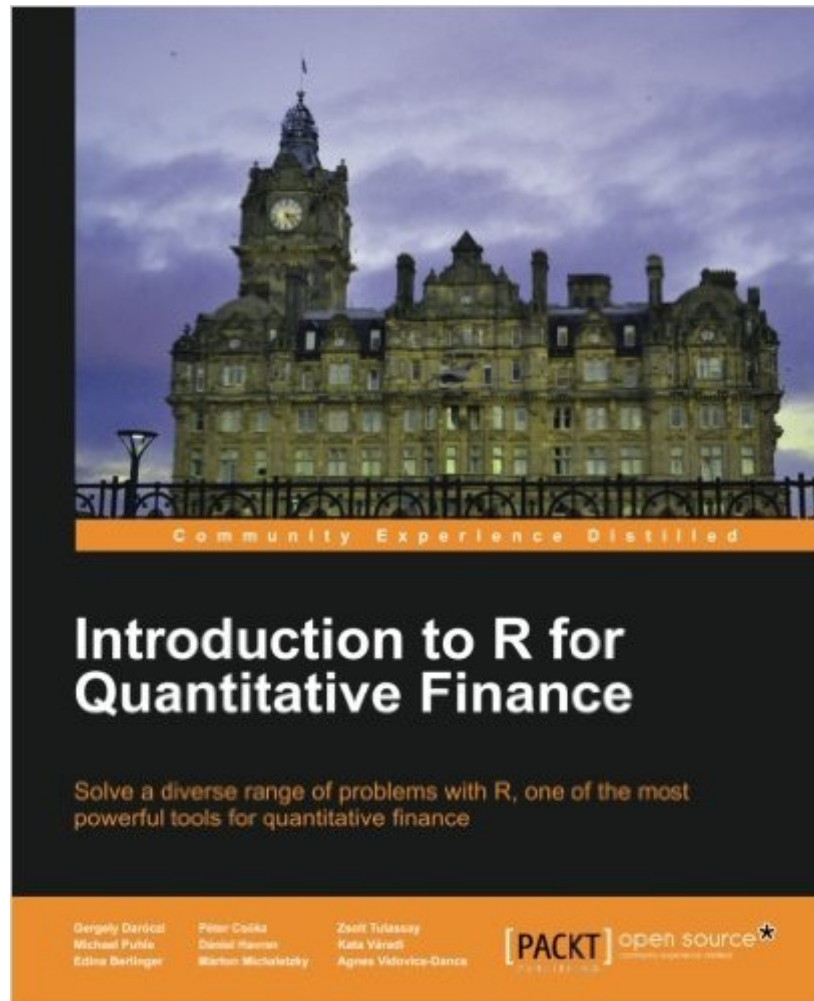# Introduction To R For Quantitative Finance

Synopsis

R is a statistical computing language that's ideal for answering quantitative finance questions. This book gives you both theory and practice, all in clear language with stacks of real-world examples. Ideal for R beginners or expert alike. Overview Use time series analysis to model and forecast house prices Estimate the term structure of interest rates using prices of government bonds Detect systemically important financial institutions by employing financial network analysis In Detail Introduction to R for Quantitative Finance will show you how to solve real-world quantitative finance problems using the statistical computing language R. The book covers diverse topics ranging from time series analysis to financial networks. Each chapter briefly presents the theory behind specific concepts and deals with solving a diverse range of problems using R with the help of practical examples. This book will be your guide on how to use and master R in order to solve real-world quantitative finance problems. This book covers the essentials of quantitative finance, taking you through a number of clear and practical examples in R that will not only help you to understand the theory, but how to effectively deal with your own real-life problems. Starting with time series analysis, you will also learn how to optimize portfolios and how asset pricing models work. The book then covers fixed income securities and derivatives like credit risk management. The last chapters of this book will also provide you with an overview of exciting topics like extreme values and network analysis in quantitative finance. What you will learn from this book How to model and forecast house prices and improve hedge ratios using cointegration and model volatility How to understand the theory behind portfolio selection and how it can be applied to real-world data How to utilize the Capital Asset Pricing Model and the Arbitrage Pricing Theory How to understand the basics of fixed income instruments You will discover how to use discrete- and continuous-time models for pricing derivative securities How to successfully work with credit default models and how to model correlated defaults using copulas How to understand the uses of the Extreme Value Theory in insurance and fi nance, model fitting, and risk measure calculation Approach This book is a tutorial guide for new users that aims to help you understand the basics of and become accomplished with the use of R for quantitative finance. Who this book is written for If you are looking to use R to solve problems in quantitative finance, then this book is for you. A basic knowledge of financial theory is assumed, but familiarity with R is not required. With a focus on using R to solve a wide range of issues, this book provides useful content for both the R beginner and more experience users.

Book Information

Paperback: 164 pages

Publisher: Packt Publishing (November 22, 2013)

Language: English

ISBN-10: 178328093X

ISBN-13: 978-1783280933

Product Dimensions: 7.5 x 0.4 x 9.2 inches

Shipping Weight: 13.3 ounces (View shipping rates and policies)

Average Customer Review: 3.0 out of 5 ststarsÂ Â See all reviewsÂ (13 customer reviews)

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Customer Reviews

As there are currently no R book which specifically cover quantitative finance in broader terms, the book is interesting for all finance guys who want to quickly understand implementation in R.The book is intended to be an introduction to R for readers with some knowledge in finance. It is basically a collection of self-contained essays on some well-known concepts of finance like portfolio optimization, term structure of interest rates and derivatives pricing. These concepts are then implemented in R. To really understand what is going on, a fairly advanced understanding of finance theory and econometrics (master level at least) and a working knowledge or R are required, although the authors claim that no prior R knowledge is needed. There is no R intro included and the code is not easy to follow through without prior knowledge (e.g. the apply functionality is utilized and for R novices this is a complicated animal since it is unique to R and is one of the hottest topics in all help forums). The R code is usually sound, however, there are parts where it could be simplified and there are parts of the code that are not fully explained.A drawback of the book is that it is very short and sometimes the text lacks technical precision or uses unconventional approaches (examples: if the conditions of the CAPM are satisfied, all securities will be on the SML while the text states that they â œshouldâ • or â œthe APT states that, in equilibrium, no arbitrage opportunities can existâ • â " the APT is not an equilibrium model, absence of arbitrage is a necessary but not a sufficient condition for the existence of an equilibrium). At a later stage, it is said that the CAPM is an equilibrium model, while APT is a statistical model (it is in fact a no-arbitrage model).

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