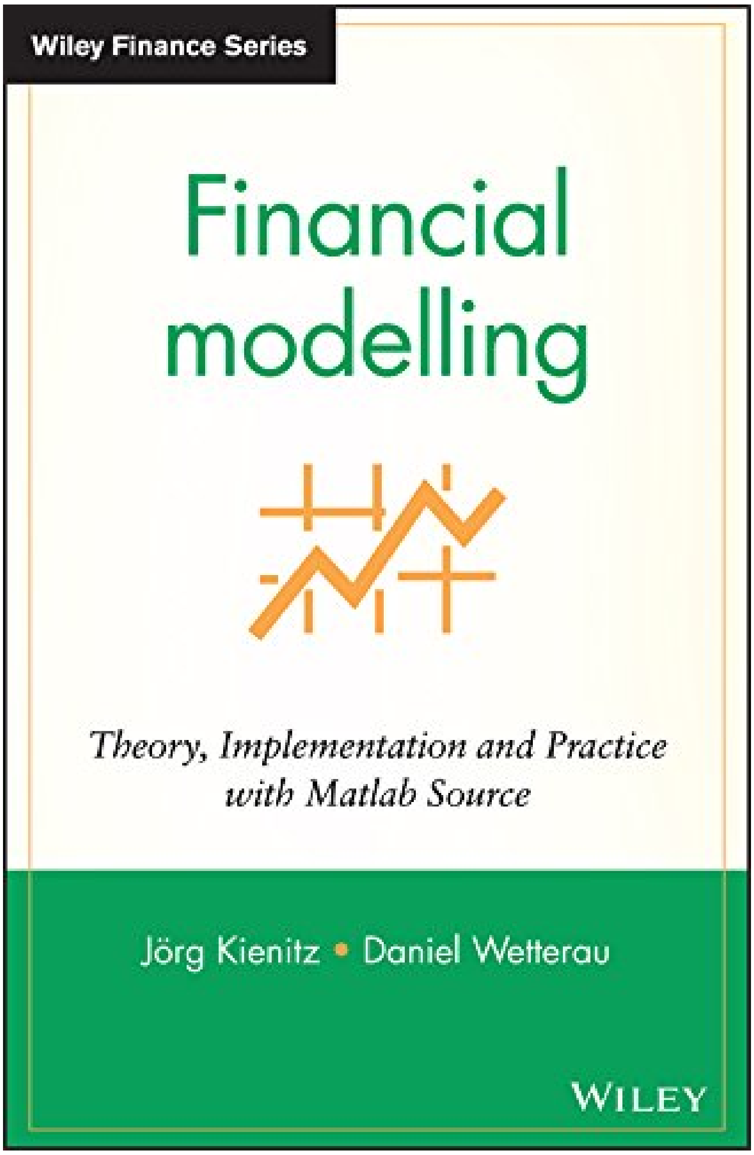
Financial Modelling: Theory, Implementation and Practice with MATLAB Source (The Wiley Finance Series)

Joerg Kienitz, Daniel Wetterau



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Joerg Kienitz, Daniel Wetterau : Financial Modelling: Theory, Implementation and Practice with MATLAB Source (The Wiley Finance Series) before purchasing it in order to gage whether or not it would be worth my time, and all praised Financial Modelling: Theory, Implementation and Practice with MATLAB Source (The Wiley Finance Series):

2 of 2 people found the following review helpful. Excellent Book for practitioners and researchers in the Financial Engineering industry.By JaundreI am currently a Master's Student doing my dissertation on Stochastic Volatility models (with application to equity,interest rate and crerdit derivatives). This book can be judged to be relatively easy to read once you have worked through at least 2 graduate courses in financial engineering and if you have a solid mathematical and mathematical statistics background. Thus in my opinion if you don't meet this criteria then don't buy as the book will be hard to read (as commented by some of my colleges who specialize in other fields).However I find this book to be more of practitioner's book than a theoretical course. Most of the main results are presented without depth (although references are included) and the aim of the book is focused on real world application. There are many real world examples, particularly at the start of the book in the introductory chapters. To give a potential buyer an indication of what the book entails we can split the book into three parts:Part 1 Covers Financial Markets and many of the popular models one would use. The chapters range from the characteristics of the market, working through diffusion and jump models and finally ending with multi-dimensional models. The content gives a great overview of all the tools in the industry, particularly the stochastic volatility models. Many topics are covered relating to risk neutral densities of each model, the characteristic functions and how the models reproduce the skew and smile effects seen in the market. Additionally source code is provided which makes the implementation in Matlab easy.Part 2 is the essence of the book and the Authors have even named it "Numerical Methods and Recipes". This is essential to my research and some of the advance topics (e.g. The cosine method to valuing barrier options) and Monte Carlo Simulation techniques were new to me, although the exposition by the authors certainly didn't impede my understanding of these topics. The great part is the source code that the authors gave to implement some of these strategies in Matlab. Additionally in some cases an algorithm is given with the accompanying source code. The advantage of the former is that it makes the implementation of the scheme possible in other programming languages (which is useful if your advisor doesn't share your love of Matlab!). The experienced practitioner is likely to only read this part of the book as it covers many numerical schemes to be used in option pricing under various models.Part 3 is interesting. The authors give an overview of Matlab, although I believe the reader is better off first having experience in Matlab before reading this section in chapter 11. My reasons are that the progression is rather fast and this chapter is a useful recapitulation in case you haven't worked with a particular toolbox before (assuming you have this toolbox installed). Chapter 12 goes into more advance uses of Matlab including my favourite part regarding the development of a calibration engine for equity models. I believe this is the best part of the entire Part 3. The last chapter includes a section on the fundamental mathematics required and used in the book. I would think this is useful for the practitioner that needs a bit of a review having been out of university for some time. Those in the academia would probably skip it and the reader wanting to read the book by first working through this section is advised not to: The chapter is too self-contained and technical unless you already know the content.In summary, this is an excellent book and deserves 5 stars. The book is definitely on a graduate level and would be suitable for research purposes as well as the practical day to day pricing of options. The book is only suitable for a technical audience.Note: A product link has been attached to another book that in my opinion should furbish sufficient preparation to read this book (assuming the reader has been exposed to 3 years of mathematics and mathematical statistics).Financial Mathematics: A Comprehensive Treatment (Chapman and Hall/CRC Financial Mathematics Series)0 of 0 people found the following review helpful. Excellent bookBy Mikhail SkugorevI was trying to find the book with math explanation and matlab examples and can say it is this book. The book is definitely above my expectations, the context, explanations and examples are clear. I can highly recommend this book for market professionals who are working with derivatives, rates and so on. Irsquo;d like to thank authors very much and wish them good luck.1 of 1 people found the following review helpful. Good book that details all the widely used models with ...By Karl MarxGood book that details all the widely used models with their characteristic function, their skew, their smile along with the MATLAB code. Really love it and highly recommanded for those who seek to improve their skills in quant analysis.

Financial Modelling - Theory, Implementation and Practice is a unique combination of quantitative techniques, the application to financial problems and programming using Matlab. The book enables the reader to model, design and implement a wide range of financial models for derivatives pricing and asset allocation, providing practitioners with complete financial modelling workflow, from model choice, derivingnbsp; prices and Greeks using (semi-) analytic and simulation techniques, and calibration even for exotic options.The book is split into three parts. The first part considers financial markets in general and looks at the complex models needed to handle observed structures, reviewing models based on diffusions including stochastic-local volatility models and (pure) jump processes. It shows the possible risk neutral densities, implied volatility surfaces, option pricing and typical paths for a variety of models including SABR, Heston, Bates, Bates-Hull-White, Displaced-Heston, or stochastic volatility versions of Variance Gamma, respectively Normal Inverse Gaussian models and finally, multi-dimensional models. The stochastic-local-volatility Libor market model with time-dependent parameters is considered and as an application how to price and risk-manage CMS spread products is demonstrated.The second part of the book deals with numerical methods which enables the reader to use the models of the first part for pricing and risk management, covering methods based on direct integration and Fourier transforms, and detailing the implementation of the COS, CONV, Carr-Madan method or Fourier-Space-Time Stepping. This is applied to pricing of European, Bermudan and exotic options as well as the calculation of the Greeks. The Monte Carlo simulation technique is outlined and bridge sampling is discussed in a Gaussian setting and for Leacute;vy processes. Computation of Greeks is covered using likelihood ratio methods and adjoint techniques. A chapter on state-of-the-art optimization algorithms rounds up the toolkit for applying advanced mathematical models to financial problems and the last chapter in this section of the book also serves as an introduction to model risk.nbsp;The third part is devoted to the usage of Matlab, introducing the software package by describing the basic functions applied for financial engineering. The programming is approached from an object-oriented perspective with examples to propose a framework for calibration, hedging and the adjoint method for calculating Greeks in a Libor Market model.

From the Inside Flap"This book offers a comprehensive overview of the main derivative pricing models used in practice across various asset classes. Many numerical examples are provided, and precious implementation details are revealed to the financial community. If the devil is in the details, this is one hell of a book!"mdash;Fabio Mercurio, Bloomberg"This book is a dream come true, a must have, a must read and a must use. High-tech financial engineering and numerics are now becoming accessible to the broad quant community."mdash;Wim Schoutens, Research Professor, University of Leuven"This is a book I wish I'd owned ten years ago to prepare for the exotic derivatives models hype in equity and rates of the first decade. It saves identifying, finding, screening and reading dozens of papers and treats the full life cycle of the models from theory to implementation. The reader can get quickly familiar with the pre-LSV modelling age. With any luck, the Matlab code will also run on octave."mdash;Uwe Wystup, Professor of Quantitative Finance/ Founder CEO, MathFinanceldquo;This book is a nice exposition for those Quants in Financial Engineering who are interested in an overview of modern pricing and calibration techniques in the field of Financial Derivatives. For those who have a strong mathematical background and are interested in implementation issues, this book is a severe choice.rdquo;mdash;Dr. Ingo Schneider, Financial Engineering, DekaBankldquo;This handbook is a compendium of useful formulae for computational finance. This ndash; and the fact that the authors provide full Matlab code in all cases ndash; makes this work unique. You can test the code as well as looking at the formulae! This book brings many results in one place. It saves much time. The book will certainly be useful as a reference for practitioners, developers and MFE students. In particular, I also see it as a handbook of algorithms that quants can use as input to their favourite production languages C++, C# and Java.rdquo;mdash;Daniel J. Duffy, Founder, Datasimldquo;In the application of mathematical finance the popularity of a model or theoretical result strongly depends on the ability to provide it with an efficient and robust implementation. Thus, a theory and modelling should naturally be combined with a discussion of its implementation.Being practitioners with a strong academic background, Kienitz and Wetterau provide this complete package in this excellent book; adding a lot of valuable insights.rdquo;mdash;Christian P. Fries, Head of Model Development, Group Risk Control, DZ BANK AG Frankfurt/Professor for Quantitative Finance, Department of Mathematics, LMU MunichAbout the AuthorJouml;rg Kienitz is head of Quantitative Analytics at Deutsche Postbank AG. He is primarily involved in developing and implementing models for pricing complex derivatives structures and for asset allocation. He also lectures at university level on advanced financial modelling and implementation including the University of Oxfordrsquo;s part-time Masters of Finance course. Jouml;rg works as an independent consultant for model development and validation as well as giving seminars for finance professionals. He is a speaker at the major financial conferences including Global Derivatives, WBS Fixed Income or RISK. Jouml;rg is the member of the editorial board of International of Applied Financial Issues and Economics and holds a Ph.D. in stochastic analysis from the University of Bielefeld.Daniel Wetterau is senior specialist in the Quantitative Analytics team of Deutsche Postbank AG. He is responsible for the implementation of term structure models, advanced numerical methods, optimization algorithms and methods for advanced quantitative asset allocation. Further to his work he teaches finance courses for market professionals. Daniel received a Masters in financial mathematics from the University of Wuppertal and was awarded the Barmenia mathematics award for his thesis.