



Methods of Mathematical Finance

Advances in Mathematical Finance

Continuous-Time Asset Pricing Theory

In Part I, the fundamentals of financial thinking and elementary mathematical methods of finance are presented. The method of presentation is simple enough to bridge the elements of financial arithmetic and complex models of financial math developed in the later parts. It covers characteristics of cash flows, yield curves, and valuation of securities. Part II is devoted to the allocation of funds and risk management: classics (Markowitz theory of portfolio), capital asset pricing model, arbitrage pricing theory, asset & liability management, and stochastic programming on a relatively accessible level. It includes a survey of existing software, links to parametric, multiobjective and dynamic programming, and to probability and statistics. It focuses on scenario-based problems with the problems of scenario generation and output analysis discussed in detail and illustrated within a case study.

This book introduces the theory of stochastic processes with applications taken from physics and finance. Fundamental concepts like the random walk or Brownian motion but also Levy-stable distributions are discussed. Applications are selected to show the interdisciplinary character of the concepts and methods. In the second edition of the book a discussion of extreme events ranging from their mathematical definition to their importance for financial crashes was included. The exposition of basic notions of probability theory and quantum mechanics is expanded. The second edition also enlarges the treatment of financial markets. Beyond a presentation of geometric Brownian motion and the Black-Scholes approach to option pricing as well as the econophysics analysis of the stylized facts of financial markets, an introduction to agent based modeling approaches is given.

The mathematical and statistical tools needed in the rapidly growing quantitative finance field. With the rapid growth in quantitative finance, practitioners must achieve a high level of proficiency in math and statistics. Mathematical Methods and Statistical Tools for Finance, part of the Frank J. Fabozzi Series, has been created with this in mind. Designed to provide the tools needed to apply finance theory to real world financial markets, this book offers a wealth of insights and guidance in practical applications. It contains techniques. Most books focus almost exclusively on derivatives pricing, the applications in this book cover not only derivatives and asset pricing but also risk management—including credit risk management—and portfolio management. Includes an overview of the essential math and statistics skills required to succeed in quantitative finance. Offers the basic mathematical concepts that apply to the field of quantitative finance, from sets and distances to functions and variables. The book also includes information on calculus and probability. Drawing on the author's perspectives as a practitioner and academic, each chapter of this book offers a solid foundation in the mathematical tools and techniques need to succeed in today's dynamic world of finance.

Stochastic Methods in Asset Pricing MIT Press

Fixed Income Modelling

An Introduction to Methods and Models

Mathematical Methods for Finance

Accuracy of Stochastic Perturbation Methods

Stochastic Methods in Economics and Finance

Financial Markets in Continuous Time