

Springer Finance

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Yue-Kuen Kwok

Mathematical Models of Financial Derivatives is a textbook on the theory behind modeling derivatives using the financial engineering approach, focussing on the martingale pricing principles that are common to most derivative securities. A wide range of financial derivatives commonly traded in the equity and fixed income markets are analyzed, emphasizing on the aspects of pricing, hedging and their risk management. Starting from the renowned Black-Scholes-Merton formulation of option pricing model, readers are guided through the text on the new advances on the state-of-the-art derivative pricing models and interest rate models. Both analytic techniques and numerical methods for solving various types of derivative pricing models are emphasized.

The second edition presents a substantial revision of the first edition. The continuous-time martingale pricing theory is motivated through analysis of the underlying financial economics principles within a discrete-time framework. A large collection of closed-form formulas of various forms of exotic equity and fixed income derivatives are documented. The most recent research results and methodologies are made accessible to readers through the extensive set of exercises at the end of each chapter.

Yue-Kuen Kwok is Professor of Mathematics at Hong Kong University of Science and Technology. He is the author of over 80 research papers and several books, including *Applied Complex Variables*. He is an associate editor of *Journal of Economic Dynamics and Control* and *Asia-Pacific Financial Markets*.

This book is a rather comprehensive treatment of vanilla and single asset first generation exotic options in the Black-Scholes model with a focus on equity markets. The correct and focussed exposition along with the numerous exercises makes it a pleasure to read for the expert and a useful resource for newcomers. Kwok covers a lot of products in considerable detail, for example, discretely monitored barrier options, cumulative Parisian options and symmetries in Look-back and Asian options. The necessary pricing theory is developed and explained so the reader new to derivatives can take this book as a single source to access the theory of derivatives valuation.

Uwe Wystup, CEO MathFinance AG

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