

## Foreword

*by Harry M. Markowitz (University of California, San Diego)*

Herein follows a remarkable volume, suitable as both a textbook and a reference book. Mondher Bellalah starts with an introduction to options and basic hedges built from specific options. He then presents an accessible account of the formulae used in valuing options. This account includes historically important formulae as well as the currently most used results of Black–Scholes, Merton and others. Bellalah then proceeds to the main task of the volume, to show how to value an endless assortment of exotic options.

Mondher Bellalah is to be congratulated for this tour de force of the field.

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*by James J. Heckman (University of Chicago and University College Dublin)*

Mondher Bellalah offers a lucid and comprehensive introduction to the important field of modern asset pricing. This field has witnessed a remarkable growth over the past 50 years. It is an example of economic science at its best where theory meets data, and shapes and improves on reality. Economic theory has suggested a variety of new and “exotic” financial instruments to spread risk. Created from the minds of theorists and traders guided by theory, these instruments are traded in large volume and now define modern capital markets.

Bellalah offers a step-by-step introduction to this evolving theory starting from its classical foundations. He takes the reader to the frontier by systematically building up the theory. His examples and intuition are splendid and the formal proofs are clearly stated and build on each other.

I strongly recommend this book to anyone seeking to gain a deep understanding of the intricacies of asset pricing.

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by George M. Constantinides (University of Chicago)

Both the trading of options and the theory of option pricing have long histories. The first use of option contracts took place during the Dutch tulip mania in the 17th century. Organized trading in calls and puts began in London during the 18th century, but such trading was banned on several occasions. The creation of the Chicago Board Options Exchange (CBOE) in 1973 greatly encouraged the trading of options. Initially, trading took place at the CBOE only in calls of 16 common stocks, but soon expanded to many more stocks, and in 1977, put options were also listed. The great success of option trading at the CBOE contributed to their trading in other exchanges, such as the American, Philadelphia and Pacific Stock Exchanges. Currently, daily option trading is a multibillion-dollar global industry.

The theory of option pricing has had a similar history that dates to Bachelier (1900). Sixty-five years after Bachelier's remarkable study, Samuelson (1965) revisited the question of pricing a call. Samuelson recognized that Bachelier's assumption that the price of the underlying asset follows a continuous random walk leads to negative asset prices, and thus makes a correction by assuming a geometric continuous random walk. Samuelson obtained a formula very similar to the Black–Scholes–Merton formula, but discounted the cash flows of the call at the expected rate of return of the underlying asset. The seminal papers of Black and Scholes (1973) and Merton (1973) ushered in the modern era of derivatives.

*Exotic Derivatives and Risk* is a lucid textbook treatment of the principles of derivatives pricing and hedging. At the same time, it is an exhaustively comprehensive encyclopedia of the vast array of exotic options, fixed-income options, corporate claims, credit derivatives and real options. Written by an expert in the field, Mondher Bellalah's comprehensive and rigorous book is an indispensable reference on any professional's desk.