BOOK REVIEW

The Legacy of Fischer Black. By Bruce N. Lehmann, editor, Oxford University Press, New York, (800) 451-7556. 306 pages, $65.50.

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Abstract

This wide-ranging, well-edited book provides a good taste of Black's approach to quantitative finance through a thoughtful introduction and a variety of essays on Black's many interests in finance theory and application.

In late 1996, I attended a memorial conference organized by the Berkeley Program in Finance in honor of Fischer Black, who had died about a year earlier. Many of the talks delivered there have now been published in this book, accompanied by a thoughtful introduction and an essay on Black's approach to valuation by Bruce Lehmann, professor of finance in the Graduate School of International Relations and Pacific Studies at the University of California at San Diego.

As Lehmann points out, Black's main focus throughout his life was the "determination of the price of risky assets in real-world capital markets." Black was driven by the idea of equilibrium—the notion, imported from physics and chemistry, that market prices of assets settle at the values where they provide equal return per unit of risk.

Working within his chosen framework, Black was led not only to the famous options valuation formula but also to his contributions to corporate finance, the CAPM, models of the yield curve, strategies for asset allocation, methods for electronic trading, international asset pricing, and viewing interest rates themselves as options. Shortly before he died, he e-mailed me, in response to a question, as follows: "I view all our work on fixed-income models as resulting from the application of the capital asset pricing model to fixed-income markets." His interests were broad, and many of the topics are discussed in *The Legacy of Fischer Black*, in a variety of broad-ranging papers by renowned financial economists.

What comes through most intensely from the comments about Black in this book is his character. Throughout the years I knew him at Goldman Sachs, I noticed that one could not easily predict his attitude to a situation by knowing his opinion about another. Yet, even though its parts seem uncorrelated, his character was a coherent whole. He simply liked to think through everything for himself.

This characteristic is evident in the quotations of Black scattered throughout the book, all of which illustrate his iconoclastic and independent style of thinking. Here are a few:

"It's better to 'estimate' a model than to test it. I take 'calibration' to be a form of estimation, so I'm sympathetic with it, so long as we don't take seriously the structure of a model we calibrate. Best of all, though, is to 'explore' a model."

"My job, I believe, is to persuade others that my conclusions are sound. I will use an array of devices to do this: theory, stylized facts, time-series data, surveys, appeals to introspection and so on."

"In the real world of research, conventional tests of [statistical] significance seem almost worthless."

What distinguishes these statements from the statements of many other academics is Black's determination to understand both theory and practice, his pragmatic devotion to comprehending reality (I particularly admire his appeals to introspection), and his emphasis on the benefits of rational thinking. In this regard, Lehmann reminisces about something I myself often heard Black say: "I recall Fischer saying that managers should be paid in accord with the quality of their reasoning regarding the strategies they employed and not for their *ex post* performance."

Black was an unsentimental realist, unafraid to see and take the world for what it is. He applied the same standards to himself. Once, when I asked him about the appropriate way to refer to the options model—should I call it "Black–Scholes" or "Black–Scholes–Merton"?—he left me a voice mail saying it was OK to call it the "Black–Scholes–Merton" model because Robert Merton had come up with the replication argument for valuing an option. Then, he added, quite calmly, "That's the part that many people think is the most important." He said this despite his love of his original equilibrium-based derivation of the Black–Scholes equation.

In the same spirit, several months before his death, in submitting his final paper to the *Financial Analysts Journal*, Black wrote to the editor in the accompanying letter, "I would like to publish this, though I may not be around to make any changes the referee may suggest. If I'm not, and if it seems roughly acceptable, could you publish it as is with a note explaining the circumstances?" (This article, "The Plan Sponsor's Goal," was published in the July/August 1995 issue.)

The Legacy of Fischer Black is a broad-ranging, well-edited book that provides a good taste of Black's approach to quantitative finance. I particularly enjoyed Lehmann's essay on Black's work, Stewart Myers' discussion of Black's contributions to corporate finance, and Darrell Duffie's review of the Black–Scholes–Merton approach.

—E.D.

Topical Index Keywords

- Derivative Instruments
  - Debt Derivatives
- Investment Theory
  - CAPM, APT, and Other Pricing Theories
- Equity Investments
  - Fundamental Analysis and Valuation Models

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