very advanced mathematics, it is sometimes necessarily a bit long-winded. Nevertheless, the book connects students to content while they are still learning technique. Although the instructor in specialized courses will want to cover some topics in more detail, the book has a breadth and consistency that make it an excellent introduction to what practitioners need to know.

—E.D.

***My Life as a Quant: Reflections on Physics and Finance.* By Emanuel Derman. John Wiley & Sons, Inc., 10475 Crosspoint Boulevard, Indianapolis, IN 46256, 877-762-2974, www.wiley.com. 292 pages, $29.95.**

Reviewed by Martin S. Fridson, CFA.

> My friend Chang-Li Yu spent more than six months working on a thesis problem without conversing with his advisor, only to discover that his advisor had solved the same problem a few months earlier. (From *My Life as a Quant*)

The indifference of the faculty was just one grim aspect of physics graduate students' existence at Columbia University in the early 1970s. In *My Life as a Quant: Reflections on Physics and Finance*, Emanuel Derman recounts that at one point, he and Chang-Li were informed that a small bomb had exploded in one of the Physics Department's bathrooms. Without a moment's hesitation, they reflexively jumped in the air for joy, whooping and cheering.

Despite the ordeal of graduate study, Derman eventually produced a thesis creditable enough to be cited 20-odd years later in a history of particle physics. He eventually left science, however, and became one of Wall Street's pioneering quantitative analysts. (At first, this new breed was dubbed "rocket scientists," based on the mistaken belief that rocketry represented the most advanced branch of science.)

Derman rose to important positions at Goldman Sachs and, for a brief interval, Salomon Brothers. In collaboration with global investor William Toy and the late Fischer Black, he developed a landmark model of the U.S. Treasury yield curve.[1] In 2000, Derman became the first practitioner to be named Financial Engineer of the Year by the International Association of Financial Engineers.

My Life as a Quant recaps the main intellectual challenges successively tackled by the quants. In 1990, the action was in exotic options. Derman helped to create a valuation model for the listed put, introduced in that year, on the Nikkei 225 Index of Japanese stocks. The research focus next moved to the problem of the "smile," a puzzling asymmetry in the prices of out-of-the-money and in-the-money options. "Our work started in the typical rush of energy and ambition," writes Derman, "that made me feel as though I was in physics again, racing to be the first to find the 'right' model for something important and interesting."

In the course of conveying the excitement of cutting-edge research, Derman inevitably makes some minor errors. For example, he mistakenly credits the United States with the world's highest homeownership rate and asserts that "Marty Liebowitz" (*sic*) co-authored a book called *Inside the Yield Curve*. (In reality, Leibowitz and Sidney Homer's title referred to the yield book, a now-forgotten bond trading tool of the pre-calculator era.) The obligatory misspelling "Proctor & Gamble" also appears.

Notwithstanding these small slips, *My Life as a Quant* provides an invaluable firsthand account of the quantitative revolution in finance from the 1980s onward. Derman is insightful about the interplay of money and ego on Wall Street, as well as the personality gulf separating traders and quantitative analysts. He lends insight into the process of creating models, while also stressing their limitations. "We are always trying to shoehorn the real world into one of the models," Derman observes. That constitutes a sound warning; as many traders have learned to their sorrow, market prices do not know about the models to which they are supposed to conform.

—M.S.F.

Note

1. The Black–Derman–Toy model entered the financial literature via the *Financial Analysts Journal* in the 1990 article "A One-Factor Model of Interest Rates and Its Application to Treasury Bond Options" (vol. 46, no. 1, January/February, pp. 33–39).