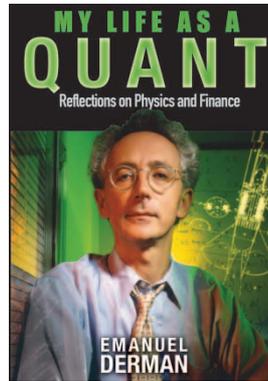


A clear reflection



My Life as a Quant: Reflections on Physics and Finance by E. Derman, John Wiley & Sons, (2004), 304 pp, £19.99 \$29.95, ISBN 0471394203 (hbk), Email: www.wiley.com

After reading Emanuel Derman's memoir, *My Life as a Quant*, I realized just how precise the selection of each word in the title phrase is. Yes, Derman is indeed one of the foremost experts in the field that is known today as 'financial engineering' and many on Wall Street would name him first if they were asked to give an example of a great QUANT. But far from being just an account of the professional field, this book is much more—it is an account of LIFE, its journeys and decisions, the people and the times. But ever so modest, even while philosophizing, Derman did not forget to put the word 'MY' in the title—it must have been the instinct of a physicist and financial modeller who has seen too many theories stretched beyond their range of applicability that made him to explicitly narrow down the claim to the universal truth about the life of quants.

Indeed, the book is touchingly personal, almost impossibly honest for the world of Wall Street, where everyone keeps their cards close to the vest, and no one likes to admit being even slightly wrong. Following the footsteps of his favourite anthroposopist Rudolf Steiner, Derman opens to the readers the complexities and confusion of life, the mistakes as well as the great accomplishments, the accidental as well as the purposeful.

For many quants just reading the prologue chapter will prove to be an irresistible teaser with its uncanny observations and witty one-liners hitting home every time. How many of us have experienced the situation when quants clumsily try changing the subject of conversation from the discussion of some esoteric model to an exchange of meaningless soundbites about what the market did this morning as soon as people from the 'business side' come into room? How many would not be

surprised to find out on the same page a quotation from the dictionary of financial terms 'quant—often pejorative'? And of course my favourite observation (I burst into uncontrollable laughs during my subway commute when I read that line): that quants are the non-kosher species of Wall Street, because they violate categories and cannot be fully classified as either 'fish of the sea' or 'birds of the sky' (i.e. programmers or traders).

As a former physicist myself, I found Derman's account of the years in academia interesting in two ways. One was the informative part—to have a first-hand account about the life and scientific struggles of particle physicists of the previous generation who have done so much to build the foundation of our knowledge about Nature. To hear interesting undertones about what it was like to work in the same department with the fearsome T.D. Lee (who received his Nobel prize in 1958 at the age of 28 for the discovery of parity non-conservation). And to read about the confusion and occasional illuminating glimpses of light in the particle physics phenomenology in the 1960s and the early 1970s (one of those glimpses being the work on dimuon events in neutrino–proton collisions done by Derman in collaboration with Chang and Ng, in a widely cited paper that earned him a post-doc position in Oxford University). That period was a prelude to the beginning of the next great 'bull market' in particle physics that took off in earnest after the 1973 discovery of asymptotic freedom and the development of quantum chromodynamics, the theory of strong interactions, for which just a few months ago D. Gross, F. Wilczek and D. Politzer were awarded the 2004 Nobel prize in physics.

The other part of interest comes from the reflective analysis of the social pressures, life circumstances and personal transformation that kept some people in academia while others, including Derman, drifted away—first to research jobs in the industry, then to Wall Street. It is

both interesting and instructional to follow the path of a post-doc who had to cope with a split-reality of self-imposed deliberate pace of academic research that is assumed to be the pre-requisite of quality work, and a frantic search for the next position and next grant that is known to be the pre-requisite of survival. Some (and many of us still think of them as the lucky ones) power their way through that dual world by simply refusing to acknowledge the existence of either side of the split reality. Others get focused on the chasm between the two sides, either due to their own propensity to think too much, or because life around them (family needs, desire for stability, etc.) forces them to it, and then they reassess the reasons for being in academia and quite often find out that few if any of those reasons are either present or truly desired.

Admittedly, not all rocket scientists on Wall Street these days go through a long and somewhat heart-wrenching process of choosing between the academia and quant finance. Once the pathway has been flattened by the footsteps of pioneers like Emanuel Derman and others whom he recalls in his book, a whole army of students each year can get ready for a quant job on the Street by reading a book or two on financial engineering, or taking a series of courses in one of several professional degree programs (one of which, an M.S. degree program in Financial Engineering in Columbia University, is chaired by Derman himself after his retirement from Goldman Sachs). Of course, what they invariably miss is the life experience that comes with struggles and decisions.

Perhaps, as a surrogate of that experience, they can read Derman's book and picture themselves going through the same steps and ask themselves whether they would have come to the same conclusions. If they can answer affirmatively—I sincerely congratulate them, because they have the potential to devote themselves to their chosen field and be successful just as Derman has been with the full knowledge of having made the right decision, and the blessing of not having had to spend years coming to it, but rather spending a few minutes to order the book through the Amazon or Barnes and Noble websites, and a few hours of pleasant reading. If they don't know what I am talking about and are perfectly happy to follow the annual recruitment process in the graduate school and take the job offer that suits their financial and geographic criteria—I simply envy them.

Moving on to the finance world, Derman crossed paths with many people who are today regarded as pioneers of their respective fields. From encounters with David E. Shaw (the future founder of the eponymous investment firm) whose class on database programming he took while at AT&T Bell Labs, to his first manager at Goldman Sachs' financial strategies group Ravi Dattatreya, to Peter Freund (then head of GS bond options business and later a pioneer in credit derivatives at Bankers Trust), Jacob Goldfield (charismatic bond options trader who rose to become one of the youngest Goldman partners and later the CIO of Soros Fund

Management), and Bob Litterman (then a core member of the 'brains trust' at GS fixed income research and now the head of the quantitative strategies department at GSAM), to Bob Kopprasch (then at GS and later of YieldBook fame), Michael Waldman (Salomon Brothers) and Marty Leibowitz (then at Salomon Brothers, later the CIO of TIAA-CREF).

But of course the most memorable encounter was with the legendary Fischer Black, the co-discoverer of the option pricing theory and perhaps the most intuitive quantitative finance researcher ever. Derman recalls with fondness and great detail their work on the now famous Black–Derman–Toy model of interest rate options (*Financial Analyst Journal*, 1990, **46(1)**, 33). But equally interesting are the details of what were the problems that ticked Black's intellectual and business interests, what were his peculiarities and things that made him angry, and how he interacted with colleagues in research and trading. The 'reflections on Fischer' pages of the book offer some of the most pleasant reading and they leave you wishing that you, too, had a chance to work with him.

Unquestionably, and it comes through clearly in the book, Derman has learned a great deal from Fischer Black and has tried for most of his career to be a standard bearer for his kind of quantitative finance. His work on implied volatility surfaces in the mid-1990s together with Iraj Kani (Riding on a smile, *Risk*, 1994, **7**, 32) and other members of the GS equity derivatives quantitative strategies group which Derman headed for many years is an excellent example of how a lucid intuition coupled with precise technical excellence give rise to some of the most elegant models that are widely used in the markets today. In my personal view, Derman's more recent paper on 'The Perception of Time, Risk and Return During Periods of Speculation' (*Quantitative Finance*, 2002, **2**, 282) where he offers an intriguing explanation of the rise and burst of the latest stock market bubble, is an even purer example of his ability to zoom in on the most critical aspects of the financial problem with the simplest tools that suffice to solve it—a trait that was so prominent in Fischer Black's research, and which can also be traced back to some of the best phenomenological models in physics.

The 2000 SunGuard/IAFE Financial Engineer of the Year award and the inclusion in the Risk Magazine's 2002 Derivatives Hall of Fame are just two of many ways in which the industry has recognized Emanuel Derman's contributions to the field that he helped create—Financial Engineering, and the profession that he came to personify—being a Quant. This book is a must read for any scientist who contemplates a career in finance. Moreover, it is a must read for any manager who faces the everyday challenges of keeping those unruly quant minds in line. And finally, it is a must read for everyone else who could use something more intellectual than Dilbert cartoons (and even wittier at times—if you can read between the lines) as a conversation topic about keeping one's sanity in the corporate world.

A.M. Berd

BlueMountain Capital Management L. P.