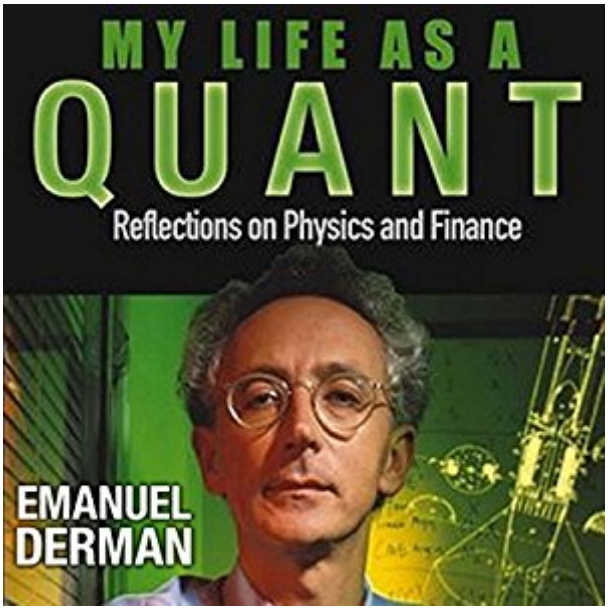
My Life As A Quant: Reflections On Physics And Finance



Synopsis

In My Life as a Quant, Emanuel Derman relives his exciting journey as one of the first high-energy particle physicists to migrate to Wall Street. Derman details his adventures in this field, analyzing the incompatible personas of traders and quants, and discussing the dissimilar nature of knowledge in physics and finance. Throughout this tale, he also reflects on the appropriate way to apply the refined methods of physics to the hurly-burly world of markets.

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Customer Reviews

It is unusual for an ordinary scientist - by that I mean one of the number of working professionals capable of contributing research to major journals but perhaps not winning the Nobel Prize - to write an autobiography. I appreciated Derman for putting down his life story because it has considerable resonance with my own. We were both trained in elementary particle physics and quantum field theory at top universities during the same years, and, due to the Ballet Dancer effect, both of us later had to fiind a transition to some other career path. (The Ballet Dancer effect means that in highly compelling activities such as violin, ballet, or fundamental physics, the tens of thousands of students who become enraptured and devote their early years to these disciplines ultimately come up against the reality that real-life jobs exist only for a very small number. The rest of us open neighborhood ballet schools with names like Miss Pauline’s Academy of Dance, or go to work in industry.) Derman conveys some of the excitement of the 1970’s as the standard model emerged and looked for verification; a heady time. He was able to make some contributions of his own. He also talks about his life as a graduate student in a department which was not well managed nor

concerned with its students' career development, unfortunately all too common.After some frustrating years, Derman ultimately found his metier in financial modeling. Ironically, the best and most collegial academic atmosphere he experienced was not in a university but at Goldman Sachs. There he made significant contributions to the mathematics of derivatives pricing, building on the Black-Scholes model which has been called the only real achievement of economics theory. This part of the book is stimulating and one gets a feeling for the issues and challenges. I was happy that he found himself; also I would say that Derman is too modest - not every theoretical physicist would have his facility and intuition for finance. But what the heck is a swaption?If I had reviewed this in 2004 when the book came out, I would stop here. But following events of the last two years, it is impossible to ignore that the financial innovations Derman worked on - mortgage backed derivatives and obscure risk swaps - are the very ones which came close to vaporizing the world economy. These exotic derivatives, when circulated in large volumes, turned out to have potential for destablizing the entire financial system. Derman's book does not give any indication that the global stability issue was even considered in the overheated trading dens of Goldman.I was reminded of another digression that the physics community took from the path of pure science, namely the atomic and hydrogen bombs. In the latter case theorists were at least decent enough to consider, briefly, whether a thermonuclear reaction set off by an H bomb just might destroy the atmosphere of the earth. The calculations showed that this was not a concern. Probably. At least they thought about it.Maybe there is something about using the powerful methods of physics for unholy purposes that leads to catastrophe. Beyond the derivatives work that Derman and others pioneered, the quantitative and computational approach to trading has more recently become capable of causing global financial singularities within a matter of minutes. Algorithmic and high-frequency trading - where buy and sell decisions are made by computer programs in milliseconds - are now a real concern. These market strategies, which would not exist if not for the quants, are not so much investing as hacking the world's trading system, and we are now in an era of institutionalized selfishness on steroids, with no safety rules or limits. If financial innovators have no concern for global destabilization - or more likely not even the tools to evaluate it - then they are putting us all at risk and there is no other choice but to damp down their activity by heavy handed government regulation. I would like to know what Dr. Derman has to say about that.

Derman is one of the pioneers who worked in quantitative finance with a physics background. In this book, he described almost his entire career, including how he decided to jump into this field, his experience of developing theories, his relation with colleagues from other background and some of

his insights about the future of quantitative finance.The text is rather slow paced, just like an old professor or your grandpa talking about his stories of success. Don’t expect to learn finance from this book, rather, expect some first-hand stories from a financial practitioner - one of the best ones.

After reading My Life as a Quant by Emmanuel Derman, I would have to say that this book is more of an account of one man’s journey from the world of physics to the world of finance. Derman leads his readers through the maze that was, collectively, his experience as a "quant", or a person holding an advanced degree in a science, technology, engineering, or mathematical field (such as physics) who goes into the financial industry. Quants are often relegated to creating and improving financial models once they enter the financial industry, helping firms like Goldman Sachs create and maintain the wealth of their clientele through the strategic use of their mathematical expertise. The book follows the central character, Mr. Derman, from his undergraduate studies in South Africa to his graduate studies at Columbia University, pursuing his doctorate in physics. Seven years and one marriage later, Emmanuel Derman goes on to his first of three postdoctoral fellowships, then, "bitter... and resentful" about constantly having to leave his family behind in order to advance his career in academia, Derman moves on to the AT&T Bell Laboratories, where he works in the research industry for about five years. Underpaid and fairly bored with his work, Dr. Derman leaves the Bell Laboratories for Goldman Sachs, something he’d never considered until headhunters began "cold-calling" him on his work phone in search of new talent for various firms. Making a six-figure salary was something Derman could only hope to accomplish in both the academic and scientific research fields, however, this was only to be expected for financial researchers and modelers in the larger, more well-known firms in the United States, as well as around the world. The world he worked in at this point was much more exciting and fast-paced than the world he lived in at Oxford, in which he experienced a "minor epiphany about ambition’s degradation".Derman enjoyed the culture of Goldman Sachs, however, when the pay there began to lose its competitiveness in comparison to that of other firms, Derman decided to move to Salomon Brothers, a publicly owned firm that offered significantly more money. Despite the pay raise, Derman found that Salomon was not the place for him. He felt ill-equipped for the job and, after a year of feeling as if his competition had changed from other firms to other coworkers, left Salomon Brothers to return to Goldman Sachs. This time, Derman worked much more closely with traders and enjoyed the work that he did daily. After witnessing the fall of the World Trade Center in September of 2001, Derman decided to leave Wall Street for good in lieu of the classroom. After about twenty years since first entering the financial world, Emmanuel Derman decided to leave Goldman Sachs, take a year off to write a

book, and then teach financial engineering at Columbia University. Looking back on his time in finance, Derman says that he is amazed at how much of the material needed for his job that he learned on-the-spot, or outside of the classroom environment. Derman's experience, much like the experience of all of the quants during that time period, is especially valuable because he was able to witness the rise of financial engineering as an option for a college student, as well as the "quant" experience becoming somewhat common on Wall Street. The quote, "character and chance count at least as much as talent" is most assuredly true in the case of Emmanuel Derman, who still teaches at Columbia University today.The book itself is very episodic; much like the novel "To Kill a Mockingbird" by Harper Lee, each chapter is a story in of itself that is usually resolved by the end of the same chapter. Personally, this method of chapter organization made it easier to read the book gradually; if I needed to come to a stopping point for an extended period of time, I would just read until I got to the end of a chapter. With the book being under 300 pages and having 17 chapters (including the prologue), reaching the end of the chapter was no big feat.In my opinion, this book is a very useful addition to a financial course at a mainly engineering school. Being a student majoring in polymer engineering at the Georgia Institute of Technology, I was very intimidated when I first stepped into the classroom where I would be taking Finance and Investments. Math is no stranger to me; however, I did not see the link between the type of math and engineering I am comfortable with and the type of math that is involved in finance. Reading this book allowed me to make a connection to the overall concept of finance while also informing me that there is a place for a person of my expertise in this field. The book itself is a fairly quick read, and the episodic nature of the chapters can be used as a means by which to break up the reading of this book into easy-to-digest lessons for a student. Furthermore, I actually liked the book. The author's writing is very down-to-earth and laid back. The only thing I really did not like about this book was the author's tendency to refer to events in the future when introducing a character into the plot, then coming back to the past and neglecting to recount the specifics of the events previously occurred to as we reach them while moving through time.In conclusion, Derman's novel, "My Life as a Quant", is an informative journey through one man's path from academia into the research industry, and finally into the financial sector... then back to academia. The strange twists and turns of Derman's career are not only noteworthy, but a testament to the unexpected twists and turns the life of any engineering student interested in finance may take. Derman's novel opens up the world of the 1980s quant for the universe to behold.

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