



Economics



Myron S. Scholes
The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 1997

Autobiography



I was born in Timmins, Ontario, Canada on July 1, 1941. My father had ventured to Timmins, a relatively prosperous gold-mining region, to practice dentistry during the depression. My mother and her uncle established a chain of small department stores in and around Timmins. The death of her uncle resulted in a family dispute, my first exposure to agency and contracting problems. To my benefit, my mother then devoted her time to raising her two sons. At the age of ten, we moved 500 miles south to Hamilton, Ontario.




I was a good student, ranking near the top of my class. Soon after we arrived in Hamilton, my life changed dramatically. My mother developed cancer. She died a few days after my sixteenth birthday. Another shock awaited me. I developed scar tissue on each of my corneas that impaired my eyesight. It was difficult to read for extended periods of time. I learned to think abstractly and to conceptualize the solution to problems. Out of necessity, I became a good listener--a quality appreciated by subsequent associates and students. Luckily, at age twenty-six, a successful cornea transplant greatly improved my vision.

Through my parents and relatives I became interested in economics and, in particular, finance. My mother loved business and wanted me to work with her brother in his book publishing and promotion business. During my teenage years, I was always treasurer of my various clubs; I traded extensively among my friends; I gambled to understand probabilities and risks; and worked with my uncles to understand their business activities. I invested in the stock market while in high school and university through accounts set up first by my mother and then by my father. I was fascinated with the determinants of the level of stock prices. I spent long hours reading reports and books to glean the secrets of successful investing, but, alas, to no avail.



Because of my mother's death, I decided to remain in Hamilton attending McMaster University for my undergraduate studies. Although the McMaster University entrance committee thought that I would concentrate in Physics or Engineering, I stuck mostly to the liberal arts, majoring in Economics. At McMaster, Professor McIver, a University of Chicago graduate in economics, worked closely with me and directed me to read and understand the works of [George Stigler](#) and [Milton Friedman](#), two subsequent Nobel Prize winners in Economics. I was impressed. Upon graduation in 1962, I had considered attending law school but instead, I decided to follow my mother's wishes and join my uncle in his publishing business. I would do so, however, if I could first attend graduate school at the University of Chicago.

Intuitively, I knew that if I wanted to grow and achieve my potential, I should attend a school where I could learn from and work with those who were the best and who could bring out the best in me. And that has become a cornerstone of my career. During that first year in Chicago, I met a few classmates, who would become life-long friends, and from whom I have learned a tremendous amount over the years. Michael Jensen and Richard Roll, both in the Ph.D. program in Finance, who have become world-renowned scholars in their own right, were significant contributors to my growth in understanding of finance and economics. Also, I credit Jack Gould for helping me clarify many of the finer points of economic reasoning.

The summer after my first year at Chicago changed the direction of my life forever. I decided that I would not return to my uncle's firm. Instead, although I had never programmed before, I secured a junior computer-programming position at the school through the kindness of Dean Robert Graves. During my first few days on the job, several professors asked for computer-programming assistance on their research projects. I was able to fend them off by arguing that the senior programmers would soon be on scene to assist them. They never did show up. By the third day, I could no longer fend off the aggressive professors seeking programming assistance. On confronting Dean Graves, he informed me that I, a novice, was the only "programmer" left. He pointed me to the computer facility some six blocks from the school, and I was on my way. I spent the next four and one-half months falling in love with computers and with the researchers that I

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met that summer. I worked all hours of the day and night. But by the end of that summer, I was becoming a computer wizard, a skill that I would continue to develop over many years. If Chicago had had a computer science school or if computer science had been a more developed field, I might have become a computer scientist.

A more powerful force, however, had taken hold of me that summer: the love of economics and economic research. I absorbed how my professors created and addressed their own research. This was empowering. They enjoyed the process. From time to time I ventured to ask them to explain their research, and occasionally I made suggestions to improve the research design. Lester Telser and Peter Pashigian were two of my clients. [Merton Miller](#) and Gene Fama, two financial-economics professors, were clients as well. Either because of my scholastic qualities or because he did not want to lose me as a programmer, Merton Miller suggested that I enter the Ph.D. program. I did and I came to love economics and its young new branch, which has come to be called Financial Economics. Chicago provided me with a wonderful learning environment. Miller and Fama were blazing ahead in financial economics. Stigler was leading the way in information economics. Friedman was fighting on in the macro-economic front.

I became interested in relative asset prices and the degree to which arbitrage prevented economic agents from earning abnormal profits in security markets. My Ph.D. dissertation attempted to determine the shape of the demand curve for traded securities. Since risk and return characteristics distinguish one security from another, the extent of the market was far greater than that of the individual stock. It was new information that would cause a change in the price of the security, information that was signaled by a large sale by an informed trader.

In addition, I worked on measures of risk and the effect of differential risk on security returns in a paper with Merton Miller. I studied the relation between accounting and market-determined measures of risk in another paper with William Beaver and Paul Kettler.

After essentially finishing my Ph.D. dissertation in the fall of 1968, I became an Assistant Professor of Finance at the Sloan School of Management at MIT. Paul Cootner, [Franco Modigliani](#), and Stewart Myers became my colleagues. During my first year at the Sloan School I met Fischer Black, then a consultant working for Arthur D. Little, in Cambridge. We started collaborating on many research projects. It was an extremely productive relationship.

Although Paul Cootner unfortunately left the Sloan School in 1969, Robert Merton joined our group at that time. Essentially, because Franco Modigliani was involved in large macro projects, the young assistant professors controlled the development of the financial economics program at the Sloan school. Stewart Myers greatly influenced my thinking in the area of corporate finance, and Franco Modigliani on macro and asset-pricing models.

Robert Merton, Fischer Black and I were interested in asset pricing and derivative pricing models. It was through many interactions that we developed and extended the field of contingent-claims pricing. During my years at the Sloan school, I worked on testing the capital asset pricing model with Fischer Black and Michael Jensen, and developing the option pricing technology with Fischer Black, while continuing to work with Merton Miller.

Although I knew that I would miss working on a day-to-day basis with Robert Merton, I returned permanently to the Graduate School of Business at the University of Chicago after visiting for the 1973-74 academic year. Fischer Black took his first position in academics as a Professor at the University of Chicago in 1972. I wanted to return to Chicago and, in particular, work with Fischer Black, Gene Fama and Merton Miller. It was an important period in the life of the school and I had the opportunity to interact with many interesting colleagues. Although Robert Merton was successful in luring Fischer back to Boston in 1974, I resisted and remained at Chicago. During my Chicago years, I started to work on the effects of taxation on asset prices and incentives. For example, I studied the effects of the taxation of dividends on the prices of securities in three papers, one with Fischer Black and two others with Merton Miller. Merton Miller and I studied the interaction of incentives and taxes in executive compensation. Robert Hamada and I addressed capital structure issues with taxation, and George Constantinides and I studied the effects of taxes on the optimal liquidation of assets.

I became heavily involved with the Center for Research in Security Prices at the University of Chicago between 1973 - 1980. This led to the development of large research data files of daily security prices. Joe Williams and I wrote a paper on the estimation of risk parameters employing nonsynchronous data.

In 1981, I visited Stanford University and became a permanent faculty member in the Business School and the Law School in 1983. The period at Stanford was a time of significant learning for me. My close colleagues in the Business School included [William Sharpe](#), James Van Horne, and a host of up and coming younger professors most notably Jeremy Bulow, Anat Admati, Paul Pfleiderer and Michael Gibbons. My close colleagues in the Law School included Ronald Gilson and Kenneth Scott. With Jeremy Bulow, I wrote several papers on pension planning. Most important, I was fortunate to work with and become a close friend of Mark Wolfson. We wrote several articles together on investment banking and incentives. We developed a new theory of tax planning under uncertainty and information asymmetry. Many of our published articles on these topics were rewritten and incorporated into our book, *Taxes and Business Strategy: A Planning Approach* that was published in 1992.

In 1990 my interests shifted back to the role of derivatives in financial intermediation. I became a special consultant to Salomon Brothers, Inc. and continued on as a managing director and co-head of its fixed-income-derivative sales and trading group, while still conducting research and teaching at Stanford University. In 1994, I joined with several colleagues, many from Salomon Brothers, to become a principal and co-founder of a firm called Long-Term Capital Management. By applying financial technology to practice, I have achieved a better understanding of the evolution of financial institutions and markets, and the forces shaping this evolution on a global basis. My research papers in the last few years have focused on the interaction and evolution of markets and financial institutions.

I have received honorary doctorate degrees from three universities. University of Paris-Dauphine awarded one to me in 1989. McMaster University awarded me another in 1990, and Katholieke Universiteit Leuven awarded me my third in 1998. I am fortunate to have two wonderful daughters, Anne and Sara, and a son-in-law, Anne's husband Seth. They have added tremendous joy to my life. My fortunes have also risen in the last few years for I have found Jan. She completes my life. We plan to be married on October 4th 1998 and enjoy each other's company and insights for many years to come. Although I do not have time for many hobbies, I do enjoy skiing and golf, two sports that allow me to be outdoors in both winter and summer.

Selected Publications

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From [Les Prix Nobel](#). *The Nobel Prizes 1997*, Editor Tore Frängsmyr, [Nobel Foundation], Stockholm, 1998

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