## In Memoriam Stephen A. Ross (1944-2017)



Over the course of his remarkable career, Stephen A. (Steve) Ross made path-breaking research contributions across many areas of finance and economics. His overall impact extends much beyond his exceptional research and includes his influence as a colleague, mentor and teacher of numerous students. Through his involvement in a number of business and nonprofit organizations, Steve was also an accomplished practitioner of finance.

Steve was an alert observer of reality and had unusually strong skills to build and analyze models that help us understand the world. Inspired by his study of physics as an undergraduate in Cal Tech, Steve was a firm believer in the scientific method. He was a clear thinker with a deep grasp of economic and statistical modeling and inference. In his research, he was able to provide brilliant insights, often starting with simple examples and then generalizing to get at the essence of the settings he was analyzing.

At the time of his death, Steve Ross was the Franco Modigliani Professor of Financial Economics at the MIT Sloan School of Management. Prior to accepting the position at MIT, he was the Sterling Professor of Economics and Finance at Yale University, and prior to that, he was a professor of economics and finance in the Wharton School at the University of Pennsylvania.

Steve was among the earliest contributors to agency theory. In his 1973 paper, he formalizes "the principal's problem," recognizing that agents' actions affecting the principal are determined by the agent's preferences, which are often different from the principal's. It is now widely appreciated that conflicts of interest are pervasive and significantly affect many economic outcomes.

Shortly after he wrote on agency theory, Steve became fascinated by financial economics and shifted his research and teaching in that direction. His contributions were broad and profound. He developed the Arbitrage Pricing Theory and undertook subsequent empirical investigations (with Richard Roll) of the factors that explain risk premia. The theory captures and formalizes the important idea that only the risks that affect many assets, and not diversifiable risks, have a potential role to play in determining expected returns. With John Cox and John Ingersoll, Steve also wrote important and impactful papers on the term structure of interest rates. He also made critical contributions to our understanding of options and derivatives, through his work with John Cox and Mark Rubinstein on the Binomial approach to derivative valuation. This work has had a lasting impact on both teaching and practice.

Steve also contributed greatly to our understanding of risk aversion, the notion of mutual fund separation, performance measurement, hedge fund contracting, and the effect of option compensation on managerial risk aversion. He remained active in research throughout his life, focusing most recently on the possibility of recovering risk premia as well as natural probabilities from asset prices with minimal assumptions.

Steve received numerous awards and honors throughout his career. He served as the President of the American Finance Association in 1988. His presidential address, published in 1989, is entitled "Institutional Markets, Financial Marketing, and Financial Innovations." This address showcases Steve's brilliance in trying to connect theory with real-world observations, asking probing questions and identifying important future areas for research. He recognizes that market frictions, including information asymmetries and agency problems, provide a role for financial institutions and governments to improve the ability of markets and contracts to allocate resources.

Together with Randolph Westerfield and Bradford Jordan, Steve published successful corporate finance textbooks. His role as a teacher, however, was realized primarily through his mentoring of over sixty doctoral students who have academic positions or are successful practitioners in the field. In 2007, Steve's students launched the Foundation for Advancement of Research in Financial Economics (FARFE), aimed to advance high quality research in the spirit of Steve Ross and to honor Steve established the Stephen A. Ross Prize in Financial Economics. (For videos capturing Steve's career, insights on research and mentoring, and the impact he had on his students, see http://farfe.org/conference.html )

Steve Ross is remembered, loved, and will be missed not only for his brilliant academic contributions but for his positive attitude, broad wisdom, and infectious enthusiasm. The joy he took in the research process, the practice of finance, intellectual and social engagement, and life more generally was matched by his tremendous generosity and humility.

The finance group at MIT Sloan School of Management organized a conference in honor of Steve Ross' memory. Videos from the event are available here <a href="https://livestream.com/accounts/2261474/events/7804219">https://livestream.com/accounts/2261474/events/7804219</a>