

Title: **ON THE ROLE OF FINANCIAL INNOVATION AND QUANTITATIVE FINANCE IN FINANCIAL STABILITY AND ECONOMIC GROWTH: 50 YEARS OF THE PAST INTO THE IMPENDING FUTURE**

Speaker: **ROBERT C. MERTON**
MIT Sloan School of Management

Importance: Why this matters:

Merton provided us a history of the use of quantitative finance (financial engineering). He used the history to provide a context for ongoing research. Importantly, he argued that quantitative finance is alive and well, and contributes to economic growth. And, ongoing innovations will allow it to continue to contribute.

Investigation: "Speaker analyzed XXX data to address the questions yyy, zzz, etc."

Professor Merton began his talk by providing a brief history of quantitative finance, beginning with Bachelier's continuous time finance at the start of the last century; to the 1950s when Markowitz and others introduced using mathematical solutions to address investment topics; to the 1960s when data was incorporated to the analysis. He then went on to demonstrate the importance of our industry. His first case study was about how the city of Leipzig was able to use swaps and other derivatives to produce a long-term fixed price for natural gas, without having to construct an expensive pipeline. Other examples included the benefits of global diversification relative to investing only in the home market, and using swaps to achieve diversification when it would not be possible by direct investment.

Innovation: Are there new techniques of interest in the data or approach to the problem?

He reminded us of the value and importance of our existing tools and techniques to address important problems, and enhance economic welfare.

Insights: 1-2-3, what are the three most important things the speaker offered?

1. A well-functioning financial system is essential for sustainable growth and development, and financial innovation drives improvement of the financial system.
2. Derivative markets and quantitative finance tools are fundamental to a modern well-functioning financial system. They provide efficient implementation of the three methods of managing risk: diversification, hedging and insurance.
3. Intelligent regulation needs to realize the benefits of financial innovation while managing its risk.

Audience rating: 4.59