

**Department of Banking and Financial Management
University of Piraeus**



Research Seminar Series

**Thursday, May 28th, 2009
Time: 16:00 - 18:00, Room 013**

Seminar Title

"The Risk Neutral Density for the U.S. Stock Market"

Stephen Figlewski

Professor of Finance

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Summary

We examine the intraday behavior of the risk neutral probability density (RND) for the Standard and Poor's 500 Index extracted from a continuous real-time data feed of bid and ask quotes for index options. This allows an exceptionally detailed view of how investors' expectations about returns and attitudes towards risk fluctuated during the financial crisis in the fall of 2008. The increase in risk measures was extraordinary, such as a fivefold increase in minute-to-minute volatility from October 2006 to October 2008. In contrast to moderate positive autocorrelation in the S&P index, the analysis reveals unusually large negative autocorrelation in the mean and standard deviation of the RND. Using quantile regressions, we find a strong pattern in how much different portions of the RND move when the level of the stock index changes, with the middle portion of the RND amplifying the change in the index by a factor of as much as 1.5 or more in some cases. This phenomenon increased in size during the crisis and, surprisingly, was stronger for up moves than for down moves in the market.

Stephen Figlewski is a Professor of Finance at the New York University Leonard N. Stern School of Business, where he has been since 1976. He holds a B.A. in Economics from Princeton University and a Ph.D in Economics from the Massachusetts Institute of Technology. He has published extensively in academic journals, especially in the area of financial futures and options. He is the founding Editor of The Journal of Derivatives and he also edits the Financial Economics Network's two "Derivatives" series published over the Internet. He is the director of the NASDAQ OMX Derivatives Research Project, which is a research initiative at the Stern School that supports applied and theoretical research on derivatives and promotes intellectual interchange between academics and practitioners in derivatives, risk management, and financial engineering. Professor Figlewski has also worked on Wall Street. Recently he took a leave of absence to work on margin setting for credit-sensitive securities at Citigroup. Previously, he spent a year at the First Boston Corporation, in charge of research on equity derivative products, and was at one time a member of the New York Futures Exchange and a Competitive Options Trader at the New York Stock Exchange.