Joint Seminar

The Hong Kong University of Science and Technology
Department of Information Systems, Business Statistics and Operations Management
Department of Finance

Exploring Time-Varying Jump Intensities: Evidence from S&P500 Returns and Options

by

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Time: 11:00 a.m. – 12:30 p.m.
Venue: Room 4379 (Lift 17/18)

Abstract

Standard empirical investigations of jump dynamics in returns and volatility are fairly complicated due to the presence of latent continuous-time factors. We present a new discrete-time framework that combines heteroskedastic processes with rich specifications of jumps in returns and volatility. Our models can be estimated with ease using standard maximum likelihood techniques. We provide a tractable risk neutralization framework for this class of models which allows for separate modeling of risk premia for the jump and normal innovations. We anchor our models in the literature by providing continuous time limits of the models. The models are evaluated by fitting a long sample of S&P500 index returns, and by valuing a large sample of options. We find strong empirical support for time-varying jump intensities. A model with jump intensity that is affine in the conditional variance performs particularly well both in return fitting and option valuation. Our implementation allows for multiple jumps per day, and the data indicate support for this model feature, most notably on Black Monday in October 1987. Our results also confirm the importance of jump risk premia for option valuation: jumps cannot significantly improve the performance of option pricing models unless sizeable jump risk premia are present.

Biography

Peter Christoffersen is an Associate Professor of Finance at the Desautels Faculty of Management at McGill University. He is the author of the book Elements of Financial Risk Management, and his research has also been published in a number of leading finance and econometrics journals. He is currently an associate editor of the Journal of Applied Econometrics, the Journal of Financial Econometrics, and the Journal of Risk. He has won research awards from the Q-Group, KPMG, the Montreal Exchange, and STOXX. He has given invited lectures at the Bank of America, the Bank of Canada, the European Central Bank, the Board of Governors of the Federal Reserve, and the International Monetary Fund among others. Before joining McGill University he worked as an economist at the International Monetary Fund in Washington, DC. You can find him on the web at www.christoffersen.ca.

❖ ***All interested are welcome!*** ❖
For details, please contact ISOM Department.