ACADEMIC SEMINAR

A New Approach to Valuing Risk-neutral Moments from Option Prices

This paper proposes a new approach to valuing risk-neutral skewness and kurtosis from option prices that enjoys several advantages over existing approaches. The first advantage is the use of an exact integration method that overcomes the sensitivity of risk-neutral moments to small changes in the cubic and quartic contracts defined in Bakshi, Kapadia and Madan (2003). The second advantage is that it builds upon and extends elements of the Bali and Murray (2013) approach to obtain separate risk-neutral moments using out-of-the-money call and put options separately. The risk-neutral skewness thus inferred is positive (negative) for the right (left) tail of the risk-neutral distribution. Finally, the risk-neutral kurtosis extracted via our approach is significantly lower than that from extant approaches, suggesting much lower crash risk than hitherto assumed in the literature. This has important implications for Value at Risk computations for investors holding option portfolios and for the capital adequacy requirements of investment banks.

Dr Xiaoquan Liu

Associate Professor in Finance,
Nottingham University Business School China,
University of Nottingham Ningbo

Dr. Xiaoquan Liu is an Associate Professor in Finance with the Nottingham University Business School China, University of Nottingham Ningbo, in China. Prior to joining the University of Nottingham Ningbo in September 2014, she was Lecturer and Senior Lecturer in Finance with Essex Business School, University of Essex, UK. Her research areas include derivatives, asset pricing, and applied financial econometrics. She has published in international journals such as the *Journal of Economic Dynamics and Control*, the *Journal of Banking and Finance*, the *European Journal of Operational Research*, and the *European Journal of Finance*.

Date: 22 January 2015 (Thursday)

Time: 15:00 – 16:30

Venue: SEK104, 1/F, Simon & Eleanor Kwok Bldg.

Language: English