
Joint Statistics Seminar

The Hong Kong University of Science and Technology

Bayesian Causal Effects in Quantiles: Accounting for Heteroscedasticity

by

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Time: 2:30 p.m. - 3:30 p.m.

Venue: Room 3416 (Lift 17/18)

Abstract

Testing for Granger non-causality over varying quantile levels could be used to measure and infer dynamic linkages, enabling the identification of quantiles for which causality is relevant, or not. However, dynamic quantiles in financial application settings are clearly affected by heteroscedasticity, as well as the exogenous and endogenous variables under consideration. GARCH-type dynamics are added to the standard quantile regression model, so as to more robustly examine quantile causal relations between dynamic variables. An adaptive Bayesian Markov chain Monte Carlo scheme, exploiting the link between quantile regression and the skewed-Laplace distribution, is designed for estimation and inference of the quantile causal relations, simultaneously estimating and accounting for heteroscedasticity. Dynamic quantile linkages for the international stock markets in Taiwan and Hong Kong are considered over a range of quantile levels.

Specifically, the hypothesis that these stock returns are Granger-caused by the US market and/or the Japanese market is examined. The US market is found to significantly and positively Granger-cause both markets at all quantile levels, while the Japanese market effect was also significant at most quantile levels, but with weaker effects.

❖ *All interested are welcome!* ❖

For details, please contact ISOM Department.