

中央研究院統計科學研究所

學術演講

講題：Hysteretic Multivariate Bayesian Structural GARCH Model with Soft Information

演講人：Prof. Shih-Feng Huang (黃士峰 教授)

Graduate Institute of Statistics, National Central University

時間：2024-05-27(Mon) 11:00-12:00

地點：Auditorium, B1F, Institute of Statistical Science ; The tea reception will be held at 09:40.

備註：Lecture in English. Online live streaming through Cisco Webex will be available.

Abstract

This study proposes a hysteretic multivariate Bayesian structural GARCH model with soft information, denoted by SH-MBS-GARCH, to describe multidimensional financial time-series dynamics. We first filter the GARCH effects inherent in each financial time series by the De-GARCH technique. Next, we establish a hysteretic multivariate Bayesian structural model for the multidimensional De-GARCH time series to simultaneously capture the trend, seasonal, cyclic, and endogenous (or exogenous) covariates' effects. In particular, we extract soft information from the daily financial news and add the information into the hysteretic part of the model to reflect economic effects on the time-series behavior. An MCMC algorithm is proposed for parameter estimation. The empirical study employs the Dow Jones Industrial, Nasdaq, and Philadelphia Semiconductor indices from January 2016 to December 2020 to investigate the performances of the proposed model. Numerical results reveal that the SH-MBS-GARCH model has better fitting and prediction performances than competitors.



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