

Time-varying asymmetric copula using split-normal distribution

Masahito Kobayashi

Yokohama National University

This paper derives a novel copula from bivariate split normal distribution, models the separately time-varying upper and lower tail quantile dependences of financial returns, and estimates them using the particle filter. In empirical analysis of the US and Japan equity markets it is confirmed that the lower tail quantile dependence is higher than the upper tail quantile dependence, but we have no evidence that the correlation between volatility and quantile dependences, whether lower or upper, is higher in volatile periods.