

Optimal Hedging on Spot Indexes with a Duration-Dependent Markov-Switching
Model

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Abstract

This study introduces a duration-dependent Markov-switching vector autoregression (DDMSVAR) model to perform futures hedging on major spot indexes around the world. The transition probabilities of DDMSVAR models are time-varying depending the duration lasted on a state, which are good at modeling duration-dependent business cycles and market conditions. By Gibbs sampling from the Markov chain Monte Carlo method, the model parameters and state variables are accurately estimated. The portfolio implied by the optimal hedge ratio is constructed and compared with those of DCC-GARCH and BEKK-GARCH models. The empirical results indicate that the DDMSVAR model significantly outperforms DCC-GARCH and BEKK-GARCH models and achieves better risk reduction over 50% on average.

Key words : Duration-dependent Markov-switching model; MCMC; Financial hedge;
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