Prof. Dr. Helmut Lütkepohl
DIW Berlin und Freie Universität Berlin

Bayesian Inference for Structural Vector Autoregressions Identified by Markov-Switching Heteroskedasticity

Abstract

In this study, Bayesian inference is developed for structural vector autoregressive models in which the structural parameters are identified via Markov-switching heteroskedasticity. In such a model, restrictions that are just-identifying in the homoskedastic case, become over-identifying and can be tested. A set of parametric restrictions is derived under which the structural matrix is globally or partially identified and a Savage-Dickey density ratio is used to assess the validity of the identification conditions. For that purpose, a new probability distribution is defined that generalizes the beta, F, and compound gamma distributions. As an empirical example, monetary models are compared using heteroskedasticity as an additional device for identification. The empirical results support models with money in the interest rate reaction function.