On Markov-switching ARMA processes - stationarity, existence of moments and geometric ergodicity.

Abstract: The probabilistic properties of Rd-valued Markov-Switching ARMA processes with a general state space parameter chain are analysed. Stationarity and ergodicity conditions are given and an easy-to-check general sufficient stationarity condition based on a tailor-made norm is introduced. Moreover, it is shown that causality of all individual regimes is neither a necessary nor a sufficient criterion for strict negativity of the associated Lyapunov exponent. We also consider finiteness of moments and prove geometric ergodicity and strong mixing. The easily verifiable sufficient stationarity condition is extended to ensure these properties.

Stichworte: Lyapunov exponent, non-linear time series models, stochastic difference equation, strict stationarity, strong mixing, V-uniform ergodicity

Zeitschriftentitel: Econometric Theory

Jahr: 2009

Band: 25

Heft / Issue: 1

Seiten: 43-62