

Estimating weak Markov-switching AR(1) models

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In this paper, we present the asymptotic properties of the moment estimator for autoregressive (AR for short) models subject to Markovian changes in regime under the assumption that the errors are uncorrelated but not necessarily independent. We relax the standard independence assumption on the innovation process to extend considerably the range of application of the Markov-switching AR models. We provide necessary conditions to prove the consistency and asymptotic normality of the moment estimator in a specific case. Particular attention is paid to the estimation of the asymptotic covariance matrix. Finally, some simulation studies and an application to the hourly meteorological data are presented to corroborate theoretical work.

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