



Markov Switching Component ARCH Model: Stability and Forecasting

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This paper introduces an extension of the Markov switching ARCH model where the volatility in each state is a convex combination of two different ARCH components with time varying weights with different volatilities. The asymptotic behavior of the second moment is investigated and an appropriate upper bound for it is evaluated. The estimation of the parameters by using the Bayesian method via Gibbs sampling algorithm is studied. We propose a dynamic programming algorithm for the forecasting. Finally we illustrate the efficiency of the model by simulation and forecasting the volatility. We show that this model provide much better forecast of the volatility than the Markov switching ARCH model.

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