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Markov Switching of Conditional Variance

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Abstract : Forecasting of volatility, i.e. returns fluctuations, has been a topic of interest to portfolio managers, option traders and market makers in order to get higher profits or less risky positions. Based on the fact that volatility is time varying in high frequency data and that periods of high volatility tend to cluster, the most common used models are GARCH type models. As standard GARCH models show high volatility persistence, i.e. integrated behaviour of the conditional variance, it is difficult the predict volatility using standard GARCH models. Due to practical limitations of these models different approaches have been proposed in the literature, based on Markov switching models. In such situations models in which the parameters are allowed to change over time are more appropriate because they allow some part of the model to depend on the state of the economy. The empirical analysis demonstrates that Markov switching GARCH model resolves the problem of excessive persistence and outperforms uni-regime GARCH models in forecasting volatility for selected emerging markets.

Keywords : emerging markets, Markov switching, GARCH model, transition probabilities
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