

Regime Switching and Long Memory

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Abstract:

A bi-variate regime switching model which can generate long memory (fractional integration) in each of the regime states is suggested. The property is relevant, e.g., for the deregulated market for electricity power in the Nordic countries which is characterized by electricity spot prices with a high degree of long memory. It occurs that in some time periods bilateral prices are identical whereas in other periods the prices differ. If the price series are fractionally integrated, then in the former regimes, an extreme form of fractional cointegration amongst prices will exist. The latter regimes occur when a capacity congestion exists across regions and multiple price areas will result. We define a bivariate Markov switching fractional integration model from which the fractional orders of integration in separate states can be estimated by maximum likelihood.