Nonlinear error correction model with multiple regimes and multiple thresholds cointegration

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Abstract

Nonlinear error correction models (ECM) with multiple regimes have been widely used in finance and statistics. These models encompass the multiple threshold vector ECM as a special case. In this paper, the asymptotic properties of the least squares estimator of a nonlinear ECM with multiple regimes are established. For threshold cointegrated modeled of a threshold vector ECM, estimation procedures based on the least squares principle are examined. Both least squares and smoothed least squares estimations are studied and their asymptotic theories are established. In particular, the super-consistency of the least squares methods of the cointegration vector and the threshold parameters are developed. Simulation results confirm the theoretical findings.

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