Estimation of Nonlinear Cointegrating Regression

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Abstract

This paper studies nonlinear cointegrating regression. Both nonparametric and parametric estimation are considered in multivariate setting beyond bivariate case. The crucial point of the problem is that the Browinan motion with more than three dimension is non-recurrent. Therefore, the limit distribution obtained by an ergodic theorem for d dimensional Brownian motion degenerate into zero. To meet this problem, we introduce an analytical markov process theory and Kipnis=Varadhan type central limit theorem. We establish asymptotic theory for nonlinear least squares estimator and Nadaraya-Watson estimator.

Keywords: Nonlinear cointegration; nonlinear least square; nonparametric regression; non-recurrent markov process; change of measure

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