

報告要旨

セッション名：計量経済学(時系列, ノンパラ)

報告論文タイトル：

Testing for the Stability of Regression Models with Nonstationary Regressors Based on the CUSUM Test

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We consider a CUSUM test in time series regression model with a nonstationary regressor :

$$y_t = \alpha y_{t-1} + \beta z_t + u_t, \quad u_t \sim iidN(0, \sigma_u^2),$$

$$z_t = z_{t-1} + v_t, \quad v_t \sim iidN(0, \sigma_v^2).$$

It is proved that y_{t-1} and z_t are cointegrated. The ordinary CUSUM test constructed by the cumulated OLS residuals in this model is badly distorted. To remedy this defect, we propose a modified CUSUM test of which limiting distribution is still the sup of the absolute value of a Brownian Bridge. We carried out simulation study to see the performance of the test and found that the limiting distribution of the test well attained for a sample size $n=1000$. We also investigated the effect of serial correlation in u_t by simulation.

Key words: CUSUM test, Brownian Bridge, Serial correlation, Nonstationary regressor,

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