

Residual-based tests for cointegration in three-regime TAR models

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Abstract

This paper proposes residual-based tests for cointegration in three-regime threshold autoregressive (TAR) models. We propose Wald-type and t -type tests that have the null hypothesis of no cointegration and the alternative of cointegration with three-regime TAR adjustment, and also derive the asymptotic distributions. Monte Carlo simulations show that the proposed tests perform better than the Engle-Granger cointegration test and the cointegration test in a two-regime TAR model introduced by Enders and Siklos (2001), under cointegration with three-regime TAR adjustment, particularly when the threshold and sample size increase. When we apply these tests to the money demand of the U.S., the proposed tests reject the null of no cointegration whereas other tests do not.

Keywords: cointegration; three-regime TAR model; money demand

JEL Classification: C12; C22

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