System-Equation ADL Test For Threshold Cointegration With an Application to the Term Structure Of Interest Rates

Jing Li*
Miami University

Abstract

This paper proposes a new system-equation test for threshold cointegration based on a threshold vector autoregressive distributed lag (ADL) model. The new test can be applied when the cointegrating vector is unknown and when weak exogeneity fails. The asymptotic null distribution of the new test is derived, critical values are tabulated, and finite-sample properties are examined. In particular, the new test is shown to have good size, so the bootstrap is not required. The new test is illustrated using the long term and short term interest rates. We show that the system-equation model can shed light on both asymmetric adjustment speeds and asymmetric adjustment roles. The latter is unavailable in the Enders-Siklos single-equation testing strategy.

Keywords:
Autoregressive Distributed Lag Model; Simultaneous Equation Model; Asymmetry; Weak Exogeneity

JEL Classification: C22, C12, C13

*Jing Li, Department of Economics, Miami University, Oxford, OH 45056, USA. Phone: 001.513.529.4393, Fax: 001.513.529.4992, Email: lij143@miamioh.edu.