

Smooth Transition Cointegration

Abstract:

Two types of nonlinear cointegration based on Smooth Transition Autoregressive (STAR) models, named Smooth Transition (ST) cointegration, are introduced. Type I of ST cointegration is specified as each time series is a STAR process but a linear combination of those processes is linear, in which nonlinear factors and/or linear factors in those models are shared in common. Type II of ST cointegration defined as a nonlinear combination of $I(1)$ process is $I(0)$, nests linear cointegration of Engle and Granger (1987) and threshold cointegration of Balke and Fomby (1997). In addition, testing procedure for testing linear cointegration against ST cointegration and its empirical application to the purchasing power parity data are considered here.