A unified approach to testing for stationarity and unit roots

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Abstract

Tests against nonstationary unobserved components such as stochastic trends and seasonals can be set up in such a way that the test statistics have asymptotic distributions belonging to the class of generalised Cramer-von Mises distributions. Conversely, unit root tests can be formulated, using the Lagrange multiplier principle, so as to yield test statistics which also have generalised Cramer-von Mises distributions under the null hypothesis. These ideas may be extended to multivariate models and to models with structural breaks thereby providing a simple unified approach to testing in nonstationary time series.

KEYWORDS: Cramér-von Mises distribution, Co-integration, Common trends, Locally best invariant test, Seasonality, Stochastic trend.

JEL classification: C22, C32