

Econometric Inference in the Vicinity of Unity

Anastasios Magdalinos

Peter. C.B. Phillips

ABSTRACT

Present econometric methodology of inference in cointegrating regression is extended to mildly integrated time series of the type introduced by Magdalinos and Phillips (2007, 2009). It is well known that conventional approaches to estimating cointegrating regressions fail to produce even asymptotically valid inference procedures when the regressors are nearly integrated, and substantial size distortions can occur in econometric testing. The new framework developed here enables a general approach to inference that resolves this difficulty and is robust to the persistence characteristics of the regressors, making it suitable for general practical application. Mildly integrated instruments are employed, one using system regressors and internally generated instruments, the other using external instruments. These new IV techniques eliminate the endogeneity problems of conventional cointegration methods with near integrated regressors and robustify inference to uncertainty over the precise nature of the integration in the system. The use of mildly integrated instruments also provides a mechanism for linking the conventional treatment of endogeneity in simultaneous equations with the econometric methodology for cointegrated systems. The methods are easily implemented, widely applicable and help to alleviate practical concerns about the use of cointegration methodology when roots are in the vicinity of unity rather than precisely at unity.