

Testing for Cointegration in Heterogeneous Panels: A Monte Carlo Comparison

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Abstract

This paper investigates the size and power properties of the residual-based cointegration tests of Im, Perasan and Shin (2003) (IPS) and Maddala and Wu (1999) (MW) as well as the panel likelihood-based test for cointegration rank of Larrson *et.al* (2001) (LLL) using the Monte Carlo experiments. The simulation results show that the panel LLL rank test is more powerful than the two residual-based panel cointegration tests. In the presence of cross-sectional dependence, all of these panel tests are over-sized. The MW panel residual-based test suffers less than the other two panel tests in the presence of cross-sectional correlation. The true distribution of panel test statistics is available from the bootstrap method. Bootstrapping the panel cointegration tests to correct for size distortions yields the correct sized tests. However, power of the bootstrap panel tests decrease significantly in the presence of cross-sectional dependence. Bootstrapping likelihood-based panel rank test is still more powerful than bootstrapping residual-based panel tests.