Bhargava, Alok

On the theory of testing for unit roots in observed time series. (English) Zbl 0602.62074

Rev. Econ. Stud. 53, 369-384 (1986).

The paper presents some new most powerful invariant tests for the unit root null hypothesis against the one-sided non-stationary (non-explosive or explosive) alternative hypothesis, for the errors of a linear regression model. The test statistics proposed is applied to the problem of testing the random walk and the random walk with a constant drift null hypotheses against stationary and non-stationary one-sided alternatives. The test statistic corresponding to each case mentioned above is simplified to a form which can be viewed as a von Neumann type ratio, and the exact significance levels are tabulated. The paper ends with two interesting numerical applications to real-life data.

Reviewer: P.Stoica

MSC:

62M10 Time series, auto-correlation, regression, etc. in statistics (GARCH)
91B84 Economic time series analysis
60G50 Sums of independent random variables; random walks

Keywords:

new most powerful invariant tests; unit root null hypothesis; one-sided non-stationary (non-explosive or explosive) alternative hypothesis; random walk with a constant drift; von Neumann type ratio

Full Text: DOI