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Testing for trend in the presence of autoregressive error. (English) Zbl 1055.62097

J. Am. Stat. Assoc. 99, No. 468, 1082-1091 (2004).

Summary: A popular model for assessing dependence on time is the time series model composed of a linear trend plus a zero mean autoregressive (AR) process. Although considerable effort has been devoted developing tests for linear trend in the presence of serial correlation, the testing procedures used in practice are less than satisfactory for portions of the parameter space for the AR coefficient. This is because the variance of the feasible generalized least squares (FGLS) estimator of the trend coefficient is heavily dependent on the parameters of the AR process. A test based on the Gauss-Newton procedure is shown to have more uniform behavior over the parameter space than tests based on FGLS. The test based on Gauss-Newton procedure also has good power.

MSC:

62M10 Time series, auto-correlation, regression, etc. in statistics (GARCH)

62F12 Asymptotic properties of parametric estimators

Cited in **1** Review
Cited in **9** Documents

Keywords:

feasible generalized least squares; Gauss-Newton; pivotal quantity; test statistic

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