Testing for Coefficient Stability of AR(1) Model When the Null is an Integrated or a Stationary Process

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Abstract

In this paper, we propose a test for coefficient stability of an AR(1) model against the random coefficient autoregressive model of order 1 without assuming a stationary nor a non-stationary process under the null hypothesis of constant coefficient. The proposed test is obtained as a modification of the locally best invariant (LBI) test by Lee (1998). We examine finite sample properties of the proposed test by Monte Carlo experiments comparing with other existing tests, in particular, the LBI test by McCabe and Tremayne (1995), which is for the null of a unit root process against the alternative of a stochastic unit root process.

Key Words: Random coefficient autoregressive model; Stability; Constancy