Effects of Filtering Data on Testing Asymmetry in Threshold Autoregressive Models

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Abstract

Empirical researches on business cycle typically use filtering methods to obtain cyclical components in economic time series. This paper examines the effects of filtering data on the test for a linear autoregression against a threshold autoregression. Monte Carlo simulation shows that (1) filtering data in general reduces the power of the test, (2) the power is sensitive to the choice of filters and the specification of the trend and cyclical components, (3) filtering data with heterogeneous disturbances may improve the power. Empirical evidences for cyclical asymmetry are provided for the quarterly U.S. real GNP.

Keywords: Band Pass Filter, Hodrick-Prescott Filter, Moving Average Filter, Threshold Autoregression, Simulation

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