Regression-based wavelet analysis for the shift in mean in the presence of unknown nonlinear trend and serial correlation[*]

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Abstract

We develop a wavelet method for estimating and testing the possible shift in mean of univariate time series in regression framework when the break date is unknown. Our procedure is robust in the presence of unknown smooth nonlinear deterministic trend function and unknown serial correlation structure of errors. The simulation experiements suggest our proposed procedure performs well in finite samples. Our proceduer can be extended to consider the cobreaking hypothesis in multivariate case as well as the detection of a kink in the trend function.

JEL Classification: C12; C14; C22

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