An Improved Test for Multiple Mean Shifts of a Time Series

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In order to test for shifts in the mean of a time series, we need to estimate the long-run variance of the error term for the scale adjustment. If we estimate the long-run variance under the null hypothesis of no mean shifts, the tests have non-monotonic power. On the other hand, if we estimate the long-run variance assuming mean shifts, the tests have serious size distortion. In this paper, we develop an improved test for multiple mean shifts by using the bias-corrected long-run variance estimator based on Yamazaki and Kurozumi (2015). We find through simulations that the proposed test has good finite sample properties.

References