Title: An Estimation Procedure of an ARIMA Model in the Presence of Structural Change

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Abstract:

A procedure for estimating ARIMA models with structural change is proposed. The procedure applies nonparametric bootstrap estimation to a series of estimates obtained through a forward search algorithm. The forward search algorithm is implemented to overlapping and independent blocks.

The simulation study indicated robustness in the presence of structural change of the proposed estimation procedure provided that the series is relatively long. Generally, the estimates from the proposed procedure have been shown to be more robust to perturbations (e.g., structural change) compared to the estimates from (conditional) least squares estimation procedure.