

Title: Improving real-time trend estimates using local parametrisation of local polynomial regression filters

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Abstract:

This paper studies and compares real-time estimates of the trend cycle component with moving averages based on local polynomial regression.

In particular, this theory allows to reproduce Henderson's symmetric and Musgrave's asymmetric filters.

This paper describes how they can be extended to include a timeliness criterion to minimise the phase shift.

While asymmetric filters are generally parameterised globally, which can be suboptimal around turning points, this paper proposes a procedure for parameterising them locally.

An empirical comparison, based on simulated and real data, shows that modelling polynomial trends that are too complex introduces more revisions without reducing the phase shift, and that local parameterisation reduces the delay in detecting turning points and reduces revisions.

The paper also shows how these results can be easily reproduced using the R package `rjd3filters` dedicated to the manipulation of moving averages.

Keywords: time series, trend-cycle, seasonal adjustment, turning points, R statistical software.