Robust forecasting of short time series

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Simple forecasting methods, such as exponential smoothing, are very popular in business analytics. This is not only due to their simplicity, but also because they perform very well, in particular for shorter time series. Incorporating trend and seasonality into an exponential smoothing method is standard. Many real time series, including the short ones, show seasonal patterns that should be exploited for forecasting purposes. Including a trend or not may be less clear. For instance, weekly sales (in units) may show an increasing trend, but the sales will not grow to infinity. Here, the damped trend model gives an outcome. Damped trend exponential smoothing gives excellent results in forecasting competitions.

In a highly cited paper, **?** develop an automatic forecasting method, available as an R-package and very easy to use. Within a class of 15 different types of exponential smoothing methods, the best one (according to an information criterion) is selected for a given time series, and a prediction is made. The damped trend model is one of these 15 types. In our paper we provide a robust version of this automatic forecasting procedure. The approach we take generalizes **?**. We show that the robust automatic forecasting method performs well on simulated data, and outperforms the non-robust approach in presence of additive outliers . But for out-of-sample forecasting of real time series, results are less convincing.

References

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