

Modelling Seasonality and Multiple Structural Breaks. Did 9/11 Affect Visitor Arrivals to NZ?

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Abstract:

We demonstrate the poor performance, with seasonal data, of existing methods for endogenously dating multiple structural breaks. Motivated by iterative nonparametric techniques, we present a new approach for estimating parametric structural break models that performs well. We suggest that iterative estimation methods are a simple but important feature of this approach to seasonal modelling. The methodology is illustrated with an analysis of monthly short term visitor arrival time series for New Zealand, to assess the effect of the 9/11 terrorist attacks. While some historical events have had a marked structural effect on trends in those arrivals, we show that 9/11 did not.

Keywords: Break dates; Endogenous dating of structural changes; Iterative fitting; Seasonal adjustment; Trend extraction.