JDemetra+, an open framework for seasonal adjustment

Jean Palate*
National Bank of Belgium, Brussels, Belgium jean.palate@nbb.be

Seasonal adjustment (SA) is an important method for the analysis of short term statistics. The two leading algorithms in that domain are Tramo-Seats (TS) and X12-Arima/X13-Arima-Seats (X12). Besides SA itself, the time series modelling features included in those programs are useful for numerous tasks like outliers' detection, forecasting or estimation of missing values. Taking into account the broad scope of those methods, we have developed a new set of object-oriented tools that can be easily plugged in in-house developments or that can be extended for new needs. The modules, which form JDemetra+, are completely written in Java and are available in open source form. In addition to the new implementations of TS and of X12, JDemetra+ has also been enriched to deal with related time series problems like structural models, non-standard SA methods, temporal disaggregation, benchmarking and business cycle analysis. All those problems are handled by means of a common state space framework, which can be used for other purposes. We will describe the architecture of JDemetra+ and we will give an overview of its main statistical features. Some of them will be illustrated by means of practical examples. The results provided by the original TS and X12 methods and by the new implementation will also be compared, using a set of real time series.

Key words: Tramo-Seats, X12-Arima, Java, state space model