DEUTSCHE BUNDESBANK
EUROSYSTEM

Elementary seasonal adjustment of economic data with JDemetra+: Module I – Introduction JD+

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- JDemetra+
  - Basic functionalities
  - Plug-ins
  - Useful links

JDemetra+
History I

Since the early 19th century seasonal adjustment is a component of the statistics business process. This business has developed over the years and different methods have been implemented in different applications.

Widely-used methods for seasonal adjustment:

- X-11 (developed at the U.S. Census Bureau, iterative application of linear filters)
- TRAMO/SEATS (developed by Augustin Maravall and Victor Gómez, Signal Extraction in ARIMA Time Series to obtain simultaneously the different components of a time series)
- Structural Models (e.g. Harvey)

Applications using these methods

- Win X-13 (X-13ARIMA-Seats)
- TSW+ (Tramo seats for Windows)
- Statistical Programs (EViews, SAS, R, …)

JDemetra+
History II

JDemetra+
Today

- One extendible main application
- Open source application (Java, Maven, NetBeans Framework)
- Officially adopted for the ESS since February 2015
- Recommended software in the ESS Guidelines
- Development is done by the National Bank of Belgium, supported by the Deutsche Bundesbank for the X11 part
- The release version 2.2.3 (jdemetra-2.2.3.zip) is available for download on GitHub
  https://github.com/jdemetra/jdemetra-app/releases
- Installation guide
  https://github.com/jdemetra/jdemetra-app/wiki/Quick-install-guide

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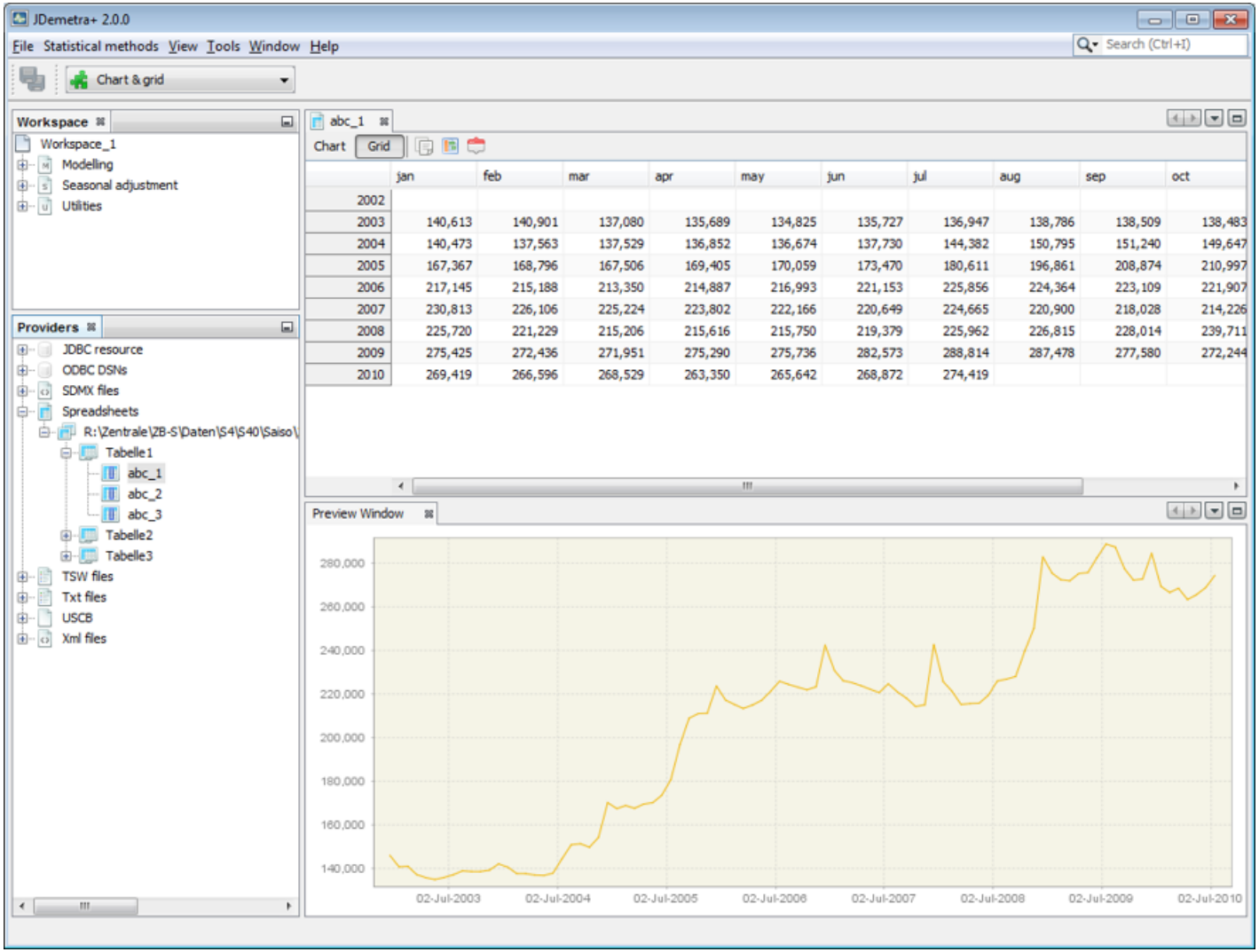
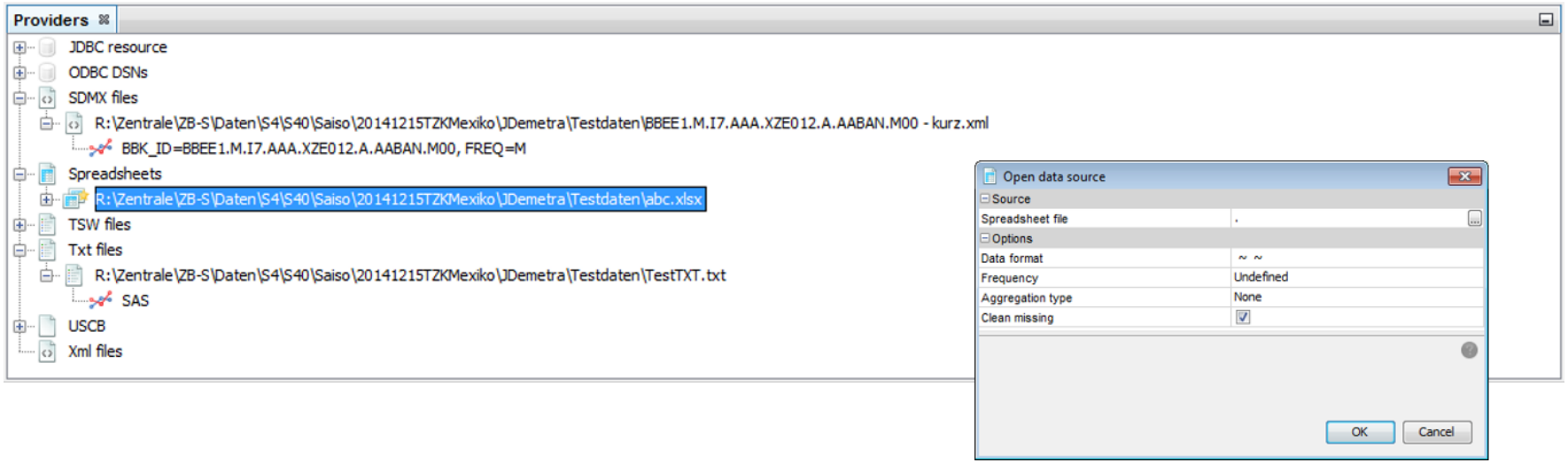
Basic functionalities
Application to work with time series



Basic functionalities
Import Data



- Spreadsheets: Excel files
- Text file: date and data columns, . as decimal separator
- SDMX files: files which fulfil the standard of Statistical Data and Metadata eXchange, e.g. time series provided by Deutsche Bundesbank, OECD, EUROSTAT, …

Basic functionalities
Seasonal Adjustment I

Seasonal Adjustment for a time series (single analysis) or several time series (multi- processing)

- tramoseats: methods of TSW
- x13: methods of X13

Basic functionalities
Seasonal Adjustment II

JDemetra+ offers two possibilities to conduct a seasonal adjustment:

Single Analysis:

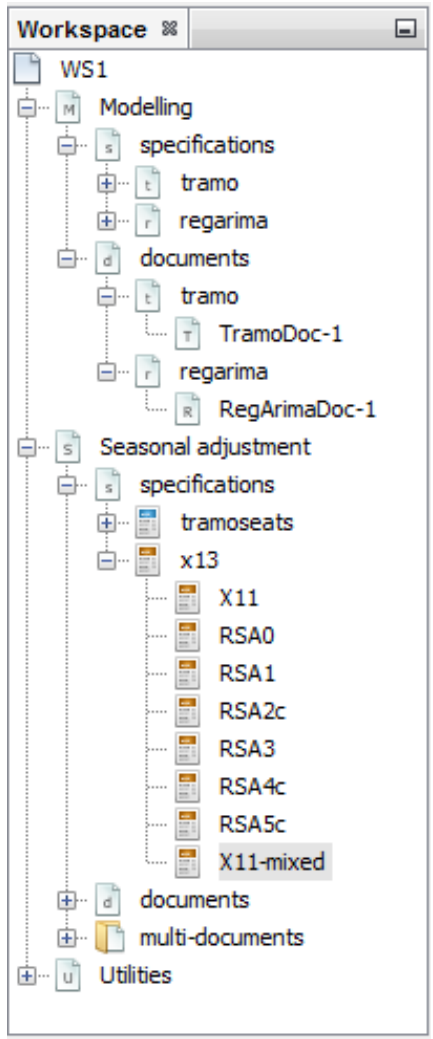
- One time series
- One specification
- Single document

Multi-processing:

- Several time series with individual specifications
- Multi document

Basic functionalities
Save Workspace

- The current work is saved in a workspace, it is a directory with subdirectories containing several xml files
- Contains all specifications, documents and variables (e.g. calendars)
- It is displayed in the Workspace Window
- Only a single workspace can be opened
- A workspace can be exchanged between different users



Basic functionalities
Some nice features

- Drag and drop for time series
- Save comment for the specification
- Copy specification
- Customize the window to your own needs
- Open recent time series with right mouse click
- Alt-R show data points in a chart
- Decide what you want to do, when you double click a time series
- Zoom in charts: move mouse right down and other direction to reset

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Plug-ins
Endless possibilities of extensions with plug-ins

It is possible to extend the application with the installation of a plug-in (an add-in which integrates new features in the existing application)

Possible examples:

- New seasonal adjustment
- Additional data provider
- Customize the application to your own needs and style
- New features what you can do with a time series

Existing plug-ins:

- TransReg
- ConCur
- Data providers (dot.stat), benchmarking, KIX, …

Plug-ins
Installation: TransReg-1.1.2.nbm

Steps to do:

1. Download the plug-in from e.g. `https://github.com/bbkrd/TransReg/releases` and save it on the computer
2. Tools/Plug-in
3. Downloaded/Add plug-in: e.g. TransReg-1.1.2.nbm
4. Select and install
5. Accept the terms in all the license agreements
6. Install

Then the plug-in can be used

After the restart of the program the plug-in is in the list of the installed plug-ins

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Useful links I

Release 2.2.3

- `https://github.com/jdemetra/jdemetra-app/releases/tag/v2.2.3` ⇝ Application
- `https://github.com/jdemetra/jwsacruncher/releases` ⇝ Cruncher

Documentation (Eurostat CROS-Portal)

- `https://jdemetradocumentation.github.io/JDemetra-documentation/`
- `http://ec.europa.eu/eurostat/cros/content/documentation_en`
- `https://…/jdemetra-cruncher-mass-production_en`

Helpdesk (Eurostat CROS-Portal)

- `https://…/ess-seasonal-adjustment-helpdesk_en`

Useful links II
Deutsche Bundesbank

Plug-ins (Development)

- https://github.com/bbkrd/TransReg
- https://github.com/bbkrd/ConCur
- https://github.com/bbkrd/KIX-UI, https://github.com/bbkrd/KIX2.0

Documentation

- https://bbkrd.github.io/

Source Code (Open Source)

- https://github.com/jdemetra/jdemetra-app
- https://github.com/jdemetra/jdemetra-core

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