ESTP: Selected Webinars for Young Statisticians

JDemetra+ basics: Seasonal adjustment with X13-Arima

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Section 1

Opening

Your trainer

Time series methodologist at Insee (Paris, France)

- Consulting and methodological support for the analysis of time series at Insee
- Conception and refactoring of seasonally adjusted data production processes.
- Training: development and delivery of internal and external training courses on JD+ and seasonal adjustment

Member of the expert group in Eurostat's Center of excellence on Time Series Analysis, STACE

- Coordination of new online JDemetra documentation https://jdemetra-new-documentation.netlify.app/
- Coordination of the "R-Team" in charge of developing and documenting the R ecosystem of packages providing access to JDemetra+ algorithms.

The Webinar on GitHub

For material: slides, code, data, resources

head over to the GitHub repository
https://github.com/annasmyk/ESTP-ys-JD-webinar

Course agenda (1/2)

- What is JDemetra + ?
- What is Seasonal Adjustment (SA)? Motivation and main concepts
- Using JDemetra+ for SA: getting familiar with the Graphical user Interface (GUI): a worked example (follow along)
- X13-Arima algorithm: decomposition, linearization, calendar correction
- Applying X13-Arima with JDemetra+ GUI: a worked example (follow along)

Course agenda (2/2)

- X13-Arima algorithm: decomposition, linearization, calendar correction
- Applying X13-Arima with JDemetra+ GUI: a worked example (follow along)
- Applying X13-Arima with {rjd3x13} R package: a worked example (follow along)
- Generate output from the GUI and using the Cruncher
- Refresh policies: a quick overview (GUI and cruncher)
- Production of seasonally adjusted data: summary and review
- Q&A

Section 2

JDemetra+ overview

JDemetra+: a library of algorithms for time series analysis

JDemetra+ a library of algorithms (written in Java) on:

- Seasonal Adjustment (Historical domain)
- Trend and cycle estimation
- Benchmarking and temporal disaggregation
- Revision Analysis
- Nowcasting

They can be accessed via Graphical user-interface (GUI) and/or R packages.

JDemetra+ is an open source software, officially recommended by Eurostat since 2015 for Seasonal Adjustment to ESS members.

JDemetra + on Github

- Repository dedicated to Java algorithms and Graphical User interface (+ extensions) : https://github.com/jdemetra
- Repository dedicated to R packages: https://github.com/rjdverse

For each R package:

- README files
- Documentation of (almost) all functions in (almost) all R packages
- GitHub pages (linked in JD+ on-line documentation, https://jdemetra-new-documentation.netlify.app/)

Seasonal Adjustment Algorithms in JDemetra+

Algorithm	Version 2.x		Version 3.x	
	Access in GUI	Access in R	Access in GUI	Access in R
X-13 Arima	yes	RJDemetra	yes	`rjd3x13`
Tramo-Seats	yes	RJDemetra	yes	`rjd3tramoseats`
X12plus			yes	`rjd3x11plus`
STL			yes	`rjd3stl`
BSM			yes	`rjd3sts`
SEATS+			upcoming	upcoming

Today focus on **X13-Arima** with GUI and in R.

(Admissible periodicities for low frequency data: p in $2, 3, 4, 6, 12$ in all algorithms, main and additional)

Section 3

Conclusion and useful links

Useful Links

To get the Software:

- R Packages giving access to JDemetra+: https://github.com/rjdverse
- Graphical User Interface: https://github.com/jdemetra

Documentation and news:

- Online documentation: https://jdemetra-new-documentation.netlify.app/
- Blog: https://jdemetra-universe-blog.netlify.app/
- YouTube channel (Tutorials, Webinars): https://www.youtube.com/@TSwithJDemetraandR

After the webinar

Assistance with JDemetra+ use and SA production process set up can be provided

As well as additional material, specifically on algorithms (X-11, Reg-Arima, Tramo-Seats)

If you have any questions, just email me

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THANK YOU FOR YOUR ATTENTION