Open Trade Statistics

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Open Trade Statistics (OTS) was created with the intention to lower the barrier to working with international economic trade data. It includes a public API, a dashboard, and an R package for data retrieval.

OTS provides data for the period 1962-2017 covering all countries that report to the United Nations, accessing out datasets has no cost and does not need to create an account.

The project started when I was affected by the fact that many Latin American Universities have limited or no access to the United Nations Commodity Trade Statistics Database (UN COMTRADE) because the institutional access is paid and can be very expensive in our latin american reality.

There are alternatives to COMTRADE, for example the Base Pour L'Analyse du Commerce International (BACI) constitutes an improvement over COMTRADE as it is constructed using the raw data and a method that reconciles the declarations of the exporter and the importer, but you will need UN COMTRADE institutional access to download their datasets.

After contacting UN COMTRADE, and suggesting to them my idea of doing something similar to BACI available for anyone but keeping commercial purposes out of the scope of the project, I got an authorization to share curated versions of their datasets.

R is central to this project. Even our API was made with R. I used the Plumber package and nginx enhanced with a secured connection by using Let's Encrypt.

tradestatistics package, a part of OTS and available on CRAN, provides a really efficient way to interact with the API. OTS was created thinking of people from humanities and social sciences, json files from an API are not optimal, and therefore the package converts the information to tidy data and even handles some joins to provide the best human readable data.

rOpenSci ideas and support were crucial to the development of the project as both the package and the API were highly improved with comments from the community.

In addition to the package, I created a shiny dashboard. The idea of the dashboard is to provide a GUI for the package, providing the option to obtain the same data and the possibility of downloading it from the browser in different formats such as csv, xlsx and others.

References

Vargas (2019). tradestatistics: Open Trade Statistics API Wrapper and Utility Program. R package version 0.2.2. https://docs.ropensci.org/tradestatistics

Dowle and Srinivasan (2019). data.table: Extension of `data.frame`. R package version 1.12.2. https://CRAN.R-project.org/package=data.table

Wickham (2017). tidyverse: Easily Install and Load the 'Tidyverse'. R package version 1.2.1. https://CRAN.R-project.org/package=tidyverse

Conway, et al (2017). RPostgreSQL: R Interface to the 'PostgreSQL' Database System. R package version 0.6-2. https://CRAN.R-project.org/package=RPostgreSQL

Trestle Technology, LLC (2018). plumber: An API Generator for R. R package version 0.4.6. https://CRAN.R-project.org/package=plumber

Chang and Borges (2019). shinydashboard: Create Dashboards with 'Shiny'. R package version 0.7.1.8000. http://rstudio.github.io/shinydashboard

United Nations (2010). United Nations commodity trade statistics database (COMTRADE). http://comtrade.un.org