SDMX in EViews

Download timeseries

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SDMX

What is SDMX ?

- **SDMX** stands for **S**tatistical **D**ata and **M**etadata e**X**change.
- **Goal:** Standardizing format to exchange timeseries.
- Sponsored by international organisations: OECD, ECB, BiS, IMF, etc.
- Consists of technical standards and statistical guidelines.

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In two words

SDMX is a **file format** and a **markup language**.

Example

What type of content can I download with SDMX ?

What type of content can I download with SDMX ?

- a timeseries
- a dataset
- information on datasets

smdx.herokuapp.com

Outline

Goal

- EViews cannot read (yet) SDMX format.
- **but** EViews can read HTML table on the web.

Example

```
%url = "http://www.bdm.insee.fr/bdm2/affichageSeries?idbank
    =001775994&codeGroupe=1794"
import(t=html) %url
```

How does sdmx.herokuapp.com work ?

sdmx.herokuapp.com translates SDMX flow into HTML tables

1. Find the id of the resource you are looking for (dataset or timeseries) for a provider (ECB, Eurostat, Insee).
2. The url for the resource is :

   http://sdmx.herokuapp.com/provider/resource/id_resource

Example 1 - Eonia

Data: Eonia rate on the ecb website.

- provider: ecb
- resource: series
- id_resource: EXR.A.E2.USD.EN00.A

The url is :
http://sdmx.herokuapp.com/ecb/series/exr.a.e2.usd.en00.a

EViews code:

```
% url = "http://sdmx.herokuapp.com/ecb/series/exr.a.e2.usd
    .en00.a"
import(t=html) %url
```

Example 2 - French Business climate

Data: French business climate on the Insee webiste.

- provider: insee
- resource: dataset
- id_resource: climat-affaires

The url is :
http://sdmx.herokuapp.com/insee/dataset/climat-affaires

EViews code:

```
% url = "http://sdmx.herokuapp.com/insee/dataset/CLIMAT-
    AFFAIRES"
import(t=html) %url
```

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Filters

Filters

The app allows to apply the standard SDMX filters, namely

1. limit the number of observations retreived. For example, data only since 2014, or the last 10 observations.
2. cut a dataset along its *dimensions*: get quaterly data or only SA data.

A filter is used by adding `?name_of_filter=something` at the end of the url.

Limit the number of observations

There are **four** filters to limit the number of observations retrieved:

- `startPeriod`
- `endPeriod`
- `firstNObservations`
- `lastNObservations`

Example

Data since 2003 of annual average of EONIA rate:

`/ecb/series/EXR.A.E2.USD.EN00.A?startPeriod=2003`

Cut a dataset (1/4)

> *"A dataset can be described as a container of ordered observations. Observations are classified by dimensions such as country, age, sex, and time period. Observations may be clustered into series, in particular, time series".*

Example - HICP dataset

HICP dataset has three dimensions:

- Frequency: either monthly or annual data.
- Product: which kind of product: cars, bread, etc.
- Nature: weight or index.

Cut a dataset (2/4)

Only subgroups can be retrieve by restricting dimensions (only monthly data for instance).
It can be done by adding a filter at the end of the url.

`?name_of_dimension=id_of_dimension`

Example - Monthly data for HICP dataset

- the name of the dimension is `freq`.
- the id of monthly dimension is `M`.

$\longrightarrow$ http://sdmx.herokuapp.com/insee/dataset/ipch-2015-fr-coicop**?freq=M**

Test

Cut a dataset (3/4)

Multiple filters can be used and are separated by an **&**.

Example - Annual weights for HICP dataset

- dimensions are `freq` and `nature`
- id of dimensions are `A` and `POND`

$\longrightarrow$ http://sdmx.herokuapp.com/...**?freq=A&nature=POND**

Test

Cut a dataset (4/4)

Be careful!

- Case do matter. Example
- Some combinations might don't exist. For instance, monthly weights for HICP.
- Since output is a table, you **have to use a filter** when a dataset has several time frequencies.
- When a dataset is too big, it cannot be downloaded in a single request. Multiple request should be done along its several dimensions.

Use filters

To retrieve datasets, you need their ids and their dimensions.

- The list of datasets for a provider can be found at: `.../provider/dataflow`
- the list of the timeseries and filters for a dataset can be found at : `.../provider/dataflow/dataset`

Example

- List of ECB datasets: `.../ecb/dataflow`
- List of series in EONIA dataset : `.../ecb/dataflow/EON`

smdx.herokuapp.com

Other functionnalities

Other providers

You can download data from 3 others providers:

- Quandl
- FRED
- Bureau of Labor Statistics

Note

- These providers require an API key (free).
- You can only retrieve individual series.

To use it:

`http://sdmx.herokuapp.com/provider/api_key/id_resource`

Example

Example - The US unemployment rate of FRED

Id of the timeseries is **unrate**.

The url is

`http://sdmx.herokuapp.com/fred/api_key/unrate`.

Other SDMX providers

You can also retrieve data from other SDMX providers like widuking, the OECD, the BIS, using the app as long as you know the url to the sdmx resource.

To use it:

`http:sdmx.herokuapp.com/req?url='url_to_sdmx'`

Example - Data from the BIS on widukind.

- The url of the resource on the widukind website is:
  `http://widukind-api.cepremap.org/api/v1/sdmx/BIS/data/DSRP/Q.BE.N`
- To download it:
  `http://sdmx.herokuapp.com/req?url='http://widukind-api.cepremap.org/api/v1/sdmx/BIS/data/DSRP/Q.BE.N'`
  Test

EViews subroutine

To ease the use of the app, I've coded a subroutine that you can download here.

Questions ?