Reading SDMX Data with SAS

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SDMX – Statistical Data and Metadata eXchange

Sdmx.org

- ISO Standard to describe statistical data and metadata
- ISTAT offers a SDMX helper and %gettimeseries() macro to retrieve SDMX data from different providers
- SAS Econometrics provides libname several engines
- SDMX-ML allows retrieval of SDMX timeseries in XML and JSON format

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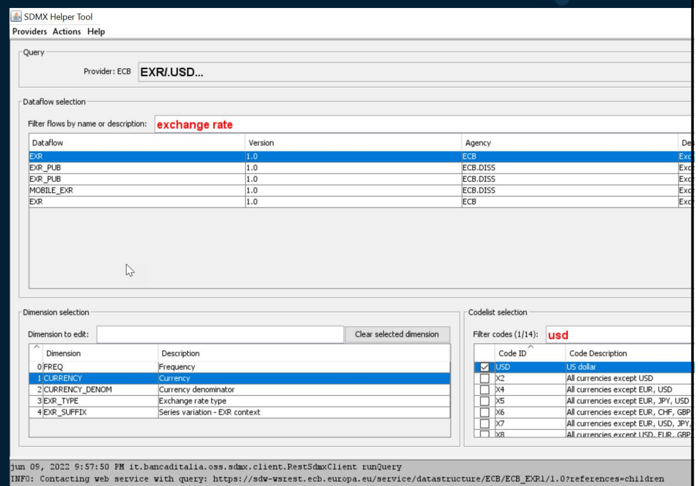
Reading SDMX Data

with SDMX Helper and %gettimeseries()

- https://github.com/amattioc/SDMX
- SDMX Helper: select Data Provider
- Data Flow and Dimensions of the Time Series like currency=USD
- Actions Menu: Build Commands
- The command in SAS uses the %gettimeseries () macro call:



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Reading SDMX Data

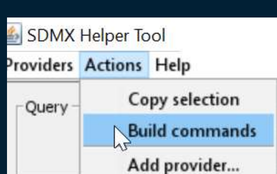
with SDMX Helper and %gettimeseries()

- https://github.com/amattioc/SDMX

Actions Menu: Build Commands

The command in SAS uses the

%gettimeseries () macro call:



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Reading SDMX Data

with SDMX Helper and %gettimeseries()

```
/*create the SDMX folder in the home directory of the user*/
%let homedir=%sysget(HOME);
%let path=&homedir;
options dlcreatedir;
libname data "&path/SDMX";

/*clone the SDMX git repository to a local folder*/
data _null_;
RC = GITFN_CLONE("https://github.com/amattioc/SDMX.git",
"&path/SDMX");
run;
/* example Getting Exchange Rates from ECB data provider*/
%gettimeseries(provider="ECB", tsKey="EXR.A.USD.EUR.SP00.A",
metadata=1);
```


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Reading SDMX Data

using SAS ETS Data Access engines

- IMF data (14742 series) & ECB (13 series) can be read using SASEFRED engine
  - FRED website here: "https://fred.stlouisfed.org/tags/series?t=imf"
  - The SASEFRED Interface Engine
- ECB data (13 series) can be read using SASEFRED engine- see FRED website here: "https://fred.stlouisfed.org/tags/series?t=ecb"
- ECB data (212,000 series) can be read using SASEQUAN engine.
  - Using the NASDAQ api , see the following documentation page: https://data.nasdaq.com/data/ECB-european-central-bank/documentation
- Retrieving OECD Data using SASEOECD engine
  - https://documentation.sas.com/doc/en/etsug/15.2/etsug_saseoecd_examples01.htm

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Reading SDMX Data

using SASEFRED for IMF series

- IMF data (14742 series) & ECB (13 series) can be read using SASEFRED engine
  - FRED website here: "https://fred.stlouisfed.org/tags/series?t=imf"
  - The SASEFRED Interface Engine
- Create an account + create API key
- Select time series

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Reading SDMX Data

Using SASEFRED libname engine

```
title 'Retrieve Balance of Payment Data for the Exports and Imports';
libname _all_ clear;
libname fred sasefred "&path\viyawhatsnew\sdmx_query\freddata"
OUTXML=fredex01 AUTOMAP=replace
MAPREF=MyMap XMLMAP= "&path\viyawhatsnew\sdmx_query\freddata\fredex01.map"
APIKEY='399eb04a24a59583574beeaa2248db31'
IDLIST='bopxgs,bopmgs'
START='1997-01-01' END='2011-01-01'
FREQ='a' OUTPUT=1 AGG='avg' FORMAT=xml;
data export_import;
set fred.fredex01 ;
run;
proc contents data=export_import; run;
proc print data=export_import; run;
```


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Reading SDMX Data

using SASEQUAN

- ECB data (212,000 series) can be read using SASEQUAN engine.
  - Using the NASDAQ api , see the following documentation page: https://data.nasdaq.com/data/ECB-european-central-bank/documentation
  - Create an account + create API key
- Data Organization
- https://data.nasdaq.com/data/{Time-Series_Code}.
- For a complete list of Time-Series Codes included in this data feed, use:
- https://data.nasdaq.com/api/v3/databases/ECB/metadata?api_key=mSqQTwCPgzkiy2KxUjzM

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Reading SDMX Data

Using SASEFRED libname engine

```
title 'Historical Prices for Oil India Limited';
libname _all_ clear;
libname mylib "C:/workshop/viyawhatsnew/sdmx_query/quan/doc";
libname myQoil sasequan "C:/workshop/viyawhatsnew/sdmx_query/quan/test"
   apikey='mSqQTwCPgzkiy2KxUjzM'
   idlist='NSE/OIL'
   format=XML outXml=oil
   automap=replace mapref=MyMap
   xmlmap="C:/workshop/viyawhatsnew/sdmx_query/quan/oil.map"
   start='2013-09-01'
   end='2013-11-05'
   freq='daily'
   collapse='daily'
   ;
data mylib.oilall;
   set myQoil.oil;
run;
```


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Reading SDMX Data

using SAS ETS Data Access engines

- Retrieving OECD Data using SASEOECD engine
  - https://documentation.sas.com/doc/en/etsug/15.2/etsug_saseoecd_examples01.htm

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Reading SDMX Data

Using SASEOECD libname engine

```
libname oecddata base "&path/sdmx_query/oecddata";
data keylist0;
   length key0 $8;
   key0='EA17'; output; /* country is euro area; 17 countries */
run;
data keylist1;
   length key1 $8;
   key1='B1_GA'; output; /* transaction is GDP; output approach */
run;
data keylist2;
   length key2 $2;
   key2='C'; output;     /* measure is current prices */
run;
title 'Request GDP for EA_17 in Current Prices';
LIBNAME myLib saseoecd "&path/sdmx_query/oecddata"
   setid=SNA_TABLE1_SNA93
   inset0=keylist0 inset1=keylist1
   inset2=keylist2 out=gstart
   ;
```

```
data myGDP;
   set myLib.gstart ;
run;
proc print data=myGDP; run;
```


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Reading SDMX Data

SDMX-ML and SAS XMLV2 Engine

- Retrieving OECD Data using SASEOECD engine
  - https://documentation.sas.com/doc/en/etsug/15.2/etsug_saseoecd_examples01.htm
- OECD Statistics

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Reading SDMX Data

Using OECD XML Rest Api and XMLV2 libname engine

```
%let homedir=%sysget(HOME);
%let path=&homedir/viyawhatsnew;
%let xmlpath = &path/sdmx_query/;

filename map "&xmlpath.map.txt";
filename resp "&xmlpath.resp.txt";
proc http
URL="https://stats.oecd.org/restsdmx/sdmx.ashx/GetData/QNA/AUS+AUT.GDP+B1_GE.CU
R+VOBARSA.Q/all?startTime=2009-Q2&endTime=2011-Q4&format=compact_v2"
    METHOD="GET"
    OUT=resp;
run;quit;

libname resp XMLv2 automap=REPLACE xmlmap=map;
proc datasets;
copy out=WORK in=resp;
run;quit;
```


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sas.com

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