



STATISTICS

SDMX for Data Dissemination

OCTOBER *, 2024

II INTERNATIONAL STATISTICAL FORUM OF THE CIS

Niall O'Hanlon

Deputy Division Chief, Data Governance and
Services Division, IMF Statistics Department

Challenges for Modernizing Official Statistics



Wider Policy Usage

- Economic
- Social
- Financial
- Climate



Accessibility

- Open data
- Interpretation and use
- Contested information



Global Perspectives

- Globalization
- Linkages
- Spillovers

Compilers of Official Statistics Must Innovate



New Data Sources

Usually by-products, as opposed to survey-based data sources which are designed for production of official statistics - Satellite images, vessel traffic, postings in social networks, search volumes



New Methods

Machine Learning, AI, data synthesis



New Expectations for Data Openness

Findable, Accessible, Interoperable, Reusable (FAIR)

- Harmonized data
- Search optimization using standard vocabularies and taxonomies (DSDs, MSDs, and codelists). Semantic searching and retrieval
- Reduced dissemination and use burden



Global Data Commons

All our official statistics brought together as accessible, understandable, and linkable

Enhanced processes for SDMX Usage



Improved quality
(consistency,
timeliness,
accuracy)



Greater
accessibility



Regulatory
alignment and
risk reduction



Increased
efficiency

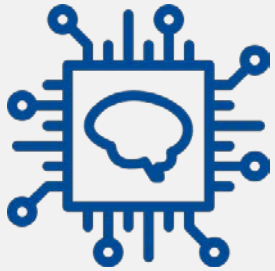


Innovation
enablement

SDMX is an international initiative that aims at standardizing and modernizing (“industrializing”) the mechanisms and processes for the dissemination of statistical data and metadata

Enhanced Processes for SDMX* Usage

**Support modernization
and ensure trust**



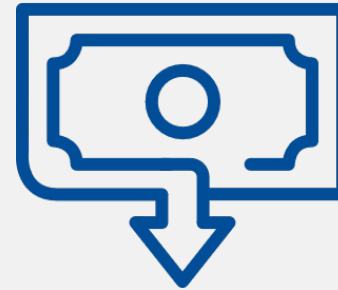
**To ensure data can be
discovered,
understood, and used
- facilitated by global
standards**

**Improve timeliness and
accessibility**



**Automated processes
– dissemination as an
event**

**Reduce costs and
reporting burden**



**Open source,
community sharing,
and automation**

**Enable access to
global ecosystems**



**Ecosystems of
support and linked
open data**

*An international initiative that aims at standardizing and modernizing ("industrializing") the mechanisms and processes for the dissemination of statistical data and metadata.

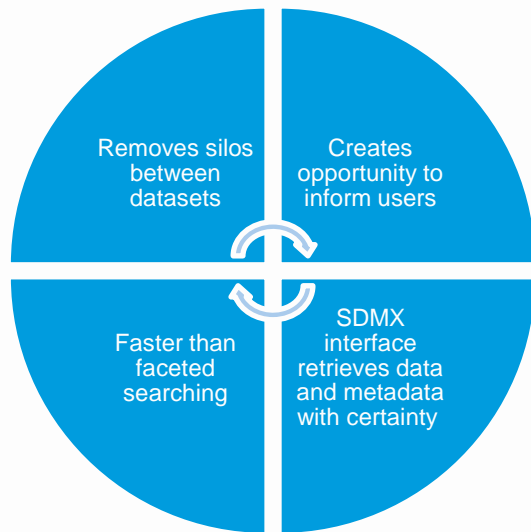
Working Towards 5 ★ Open Data

Dissemination practices with 1 to 3 stars persist.

- PDF and HTML ★
- SDMX-enabled NSDP at the high end of ★★ ★
- Data Dissemination TA delivers ★★ ★ ★
- and enables the jump to ★★ ★ ★ ★



SDMX enables AI-Supported Querying – StatGPT



get data please

Response Type

Build SDMX Query

https://apidev.imf.org/external/sdmx/2.1/data/CPI/111.PCPI_PC_CP_A_PT?startPeriod=1990&endPeriod=2023

https://apidev.imf.org/external/sdmx/2.1/data/SNA/111.NGDP_R_SA_USD+NGDP_R_USD+NGDP_R_XDC?startPeriod=1990&endPeriod=2023

Data Query

Here is the requested data:

Attachments

- Code Snippet
- Data
- CPI.PCPI_PC_CP...
- SNA.NGDP_R_S...
- SNA.NGDP_R_U...
- SNA.NGDP_R_XDC. Gross Domestic Product, Real, Domestic Currency

SNA.NGDP_R_XDC. Gross Domestic Product, Real, Domestic Currency

United States

Regenerate response

I would like some indicators of economic growth and inflation for the US for 1990 to 2023

Response Type

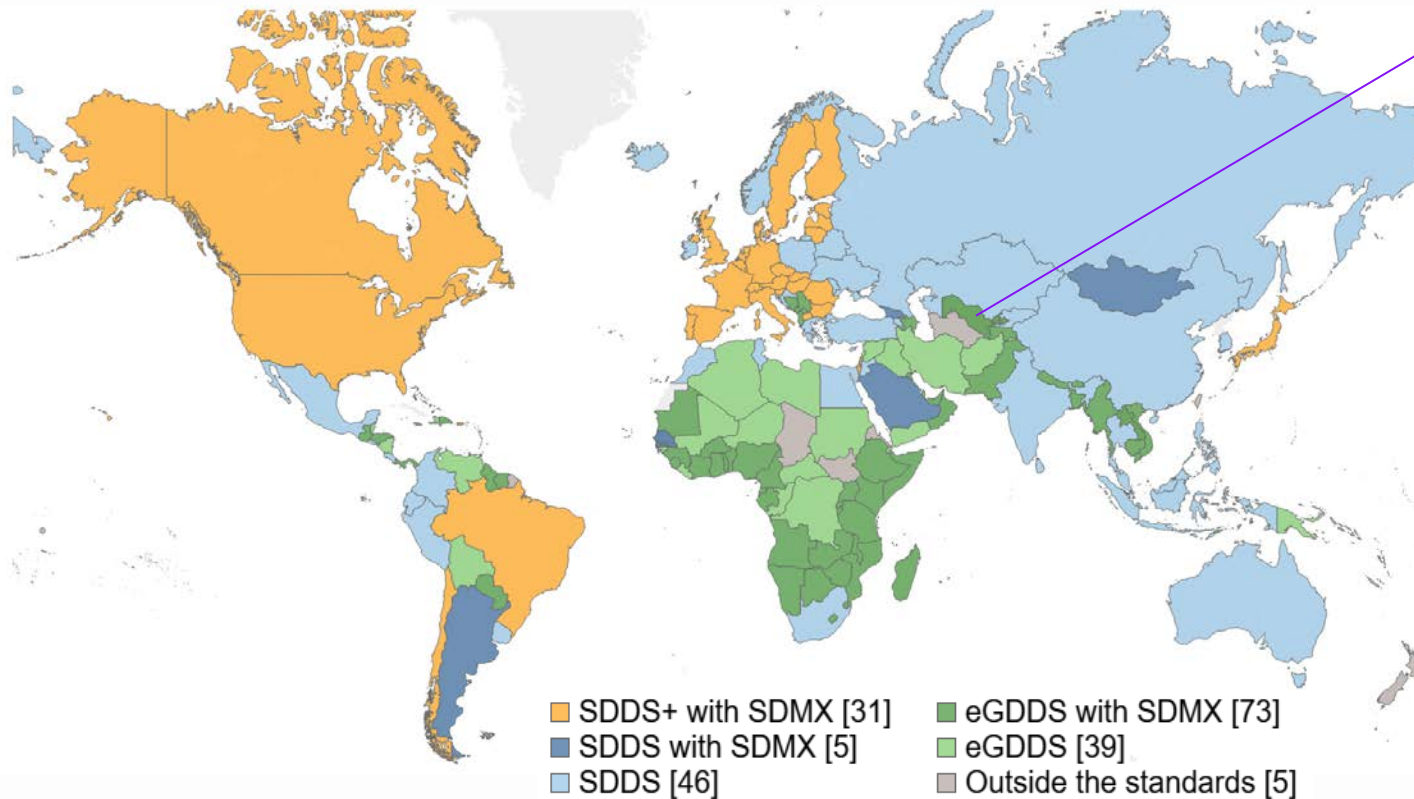
Data Query

You asked for indicators of economic growth and inflation for the United States [111]. I have created the following data query:

- Indicators:
 - All items, consumer price index, year-on-year percent change (end-of-period) [CPI.PCPI_PC_CP_A_PT]
 - Gross Domestic Product, Real, Domestic Currency [SNA.NGDP_R_XDC]
 - Gross Domestic Product, Real, Seasonally Adjusted, US Dollars [SNA.NGDP_R_SA_USD]
 - Gross Domestic Product, Real, US Dollars [SNA.NGDP_R_USD]
- Country:
 - United States [111]
- Time period: 1990 - 2023

SDMX at IMF

IMF Data Dissemination Standards



National Summary Data Page (NSDP)-Uzbekistan

Data linked from this page correspond to data described in the International Monetary Fund's DSBB. For a full list of data, please visit the [DSBB home page](#).

Macroeconomic and Financial Data

| | | | |
|-----------------------------------|-----------------------------|----------------------------------|-------------------------------|
| National Accounts (GDP) | Browse Data | Download in SDMX | DSBB Metadata |
| Consumer Price Index | Browse Data | Download in SDMX | DSBB Metadata |
| General Government Operations | Browse Data | Download in SDMX | DSBB Metadata |
| Central Government Operations | Browse Data | Download in SDMX | DSBB Metadata |
| Central Government Gross Debt | Browse Data | Download in SDMX | DSBB Metadata |
| Depository Corporations Survey | Browse Data | Download in SDMX | DSBB Metadata |
| Central Bank Survey | Browse Data | Download in SDMX | DSBB Metadata |
| Interest Rates | Browse Data | Download in SDMX | DSBB Metadata |
| - Treasury Bill Rate - Short term | Browse Data | Download in SDMX | DSBB Metadata |
| - Treasury Bill Rate - Long term | Browse Data | Download in SDMX | DSBB Metadata |
| Stock Market | Browse Data | Download in SDMX | DSBB Metadata |

Disseminating Data via NSDPs

| Process | Method | Assessment |
|---|--|---|
| HTML – First Generation (Most SDDS) | Manual entry of small number of datapoints. | Typically, single agency responsible, rigid layout and limited usability. |
| SDMX Current – Second Generation (Mainly e-GDDS and SDDS Plus) | Manual conversion of Excel-based upload files. Posting of “browse data” files | Much more data, but coded to ECOFIN (fixed/static), relatively simple but manual steps required, and no spillovers to other dissemination |
| SDMX Proposed – Third Generation (All) | SDMX-based API dissemination to different needs. | New skills needed, but highly efficient in production. Supported by range of tools for publisher and user with ongoing enhancement. Enables good data governance. |

Improving Data Accessibility – How it can be done

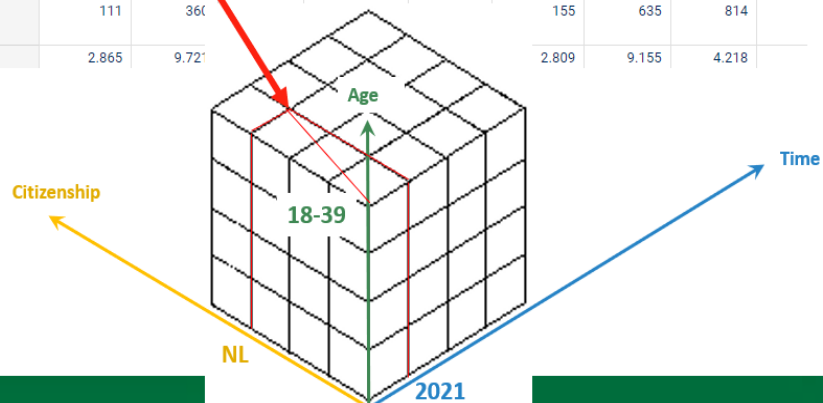
Data Modeling



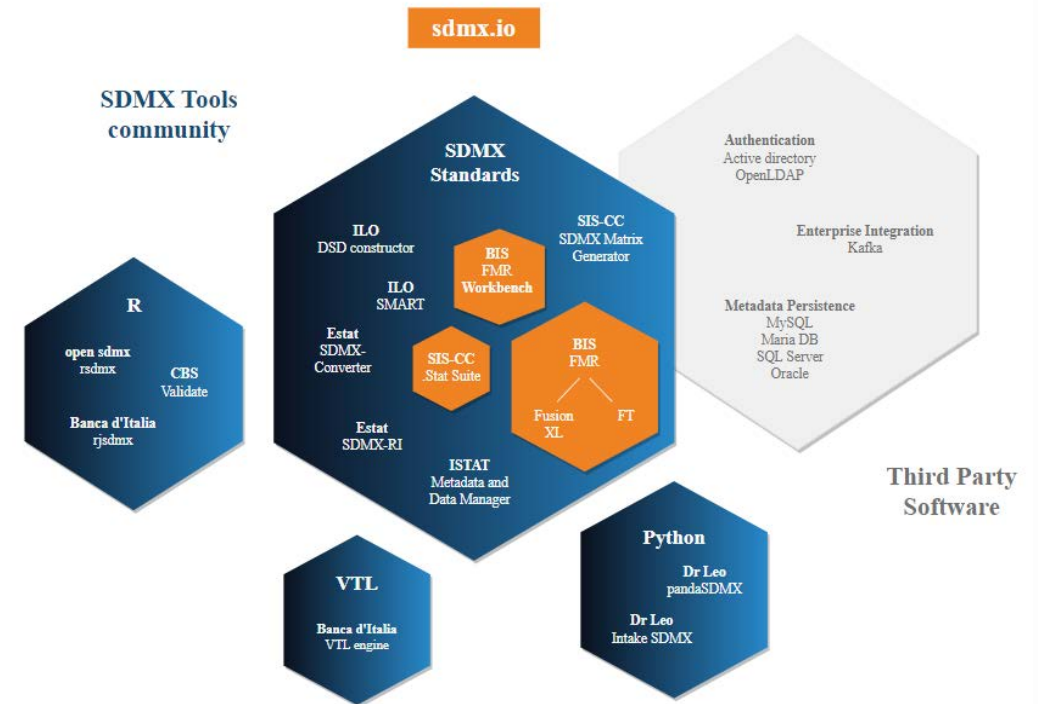
From statistical table to data cube

Immigrants by citizenship and age

| Time | 2018 | | | | | 2019 | | | |
|----------------|----------------|-------------|-------------|-------------------|-------|----------------|-------------|-------------|-------------------|
| | Until 17 years | 18-39 years | 40-64 years | 65 years and over | Total | Until 17 years | 18-39 years | 40-64 years | 65 years and over |
| Citizenship | | | | | | | | | |
| Norway | 8 | 15 | 9 | 2 | 34 | 3 | 12 | 10 | |
| Netherlands | 44 | 87 | 107 | 26 | 264 | 34 | 73 | 129 | |
| Poland | 90 | 210 | 165 | 16 | 511 | 58 | 211 | 196 | |
| Portugal | 23 | 148 | 72 | 7 | 250 | 40 | 156 | 70 | |
| United Kingdom | 111 | 366 | | | | 155 | 635 | 814 | |
| Romania | 2.865 | 9.721 | | | | 2.809 | 9.155 | 4.218 | |



SDMX Tools and Third-Party Software



Data Modeling

- IMF plans to contribute by helping to build capacity for data modeling in SDMX to facilitate member countries to exploit community developed tools
 - **Enabling role “by lowering the entry barrier”**
- A starting point is usually existing dissemination tables
 - Different but related tables describing the same phenomena for publication and reporting requiring individual attention
- Data modeling is a process that brings together and organizes these tables as a single set of data for dissemination. It also describes the characteristics of these data. This process results in a data model or data structure definition (DSD)
- A DSD facilitates the publication and sharing of different subsets of these data as a single process according to predefined specifications known as dataflows
 - **Dissemination and reporting become a single event to different end-users**
- All done in an SDMX-compliant way

Next Steps for IMF and Member Countries

IMF

Continue to support the current approach for new and existing SDMX-enabled NSDPs

Pilot phase to better understand (next 12-18 months)

- What is needed
- What we can offer
- Focus first on cases where SDMX tools are in place
 - Develop our own capacity to support and teach data modeling
- Then roll out a program of capacity development including regional workshops with aim of supporting over time more countries to implement modern dissemination techniques
- Partner with other international and regional agencies

Member Countries

Let us know if you wish to consider implementing SDMX (we will prepare the upload files for you). Very simple to set out. Not difficult to maintain.

Continue with the current SDMX approach including implementation and maintenance

- Refresher training (let us know)
- Provide new ECOFIN codes when authorities change/redevelop dissemination

Thank you!

Please reach out to me with comments, questions, if you are interested in implementing SDMX, or if you might be interested in collaborating with us in our pilot phase!

nohanlon@imf.org

For questions or concerns relating to the maintaining/updating of your current NSDP

STADSSTD@imf.org