

Technical challenges and opportunities for the international exchange of national accounts data

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Abstract

The United Nations Statistical Commission and the Committee for the Coordination of Statistical Activities (CCSA), the latter comprising a wide range of international organisations with a statistics function, have supported the Statistical Data and Metadata eXchange (SDMX) and encourage the comprehensive SDMX implementation including for data following the System of National Accounts.

This very welcome development has a huge potential for a real-time exchange of national accounts data across countries and international organisations and minimises at the same time transmission errors. It will also increase the consistency among databases of the international organisations.

The paper describes objectives of the SDMX implementation regarding the international exchange of national accounts data as far as they can be imagined today. It also addresses the significant organisational challenges that will derive from a global cooperation among countries and international organisations and suggests next steps to be taken in order to ensure the success of this key project in the field of official statistics.

Key Words: Official international statistics, SDMX, national accounts

1. International data cooperation – at the core of multilateral economic surveillance

Economic and financial statistics and indicators are at the core of multilateral macroeconomic surveillance and policy coordination. Comparable, regular, timely and high quality national accounts and related statistics such as balance of payments are necessary to identify macroeconomic imbalances and to monitor the vulnerabilities of economies in multilateral surveillance exercises, such as the G-20 Mutual Assessment Process (MAP) or the Macroeconomic Imbalances Procedure (MIP) in the European Union.

Regular multilateral surveillance necessitates an **effective and efficient international provision of comparable macroeconomic statistics and indicators** per economy. This enables policy makers to take coordinated evidence-based preventive or corrective policy actions. Moreover, such data also facilitate the compilation of high quality aggregates that represent global or regional economic developments.¹

The introduction of the **Statistical Data and Metadata eXchange (SDMX)** as a global standard offers the opportunity for an **effective and efficient international provision** of comparable macroeconomic statistics and indicators in the near future. SDMX provides a

¹ The compilation by international and supranational organisations (ISOs) of high quality global and regional aggregates requires typically more than just comparable country statistics.

“common language” between statistics and IT that **allows for a real-time exchange of macroeconomic datasets** between national statistical authorities (NSAs) and international or supranational organisations (ISOs) as well as among ISOs.

SDMX is sponsored by seven ISOs (BIS, ECB, Eurostat, IMF, OECD, United Nations and World Bank) and supported by the United Nations Statistical Commission and the Committee for the Coordination of Statistical Activities.

2. A medium-term vision for the international data cooperation – “SDMX 2020”

2.1 SDMX 2020

The medium-term objective is to empower an official global statistical information system (SIS) applying SDMX with harmonised data structure definitions where NSAs and ISOs publish on their websites free of charge comparable macroeconomic statistics and indicators supported by metadata in English.

2.2 Key features of SDMX 2020

(a) NSAs are at the centre

Such an official global SIS assigns to **NSAs the ultimate responsibility for the statistics, indicators and metadata for their own country**. The NSAs have to guarantee the availability and overall quality of the statistics, indicators and metadata. This is already the case for the data and metadata published in the National Summary Data Pages (NSDP) according to the IMF’s Special Data Dissemination Standard (SDDS). Countries adhering to it must observe the SDDS rules and are solely responsible to demonstrate to the public, market participants and policy makers that the published data are of sufficient quality and aligned to the international data standards.

(b) ISOs have an own role to play

The ISOs coordinate and monitor the standards to be applied. This refers not only to the international statistical standards, but also to SDMX including the data structure definitions as well as to publication standards such as NSDPs. In short, the ISOs coordinate and administer the SIS.² **Moreover, the ISOs are ultimately responsible for the availability and overall quality of the statistics, indicators and metadata of regional and global aggregates.**

(c) The international statistical standards are the statistical foundation of the SIS

The statistics and indicators provided as part of the official global SIS should wherever possible follow the **concepts and definitions laid down in the international statistical standards** such as the System of National Accounts (SNA) and the Balance of Payments Manual (BPM). The SIS covers not only statistics and indicators but also metadata. The latter describe inter alia any deviations from the international statistical standards.

² Different Committees and Groups of the ISOs have contributed to aspects of such an official global SIS, among them the Inter-Agency Group on Economic and Financial Statistics (composed of the BIS, ECB, Eurostat, IMF, OECD, United Nations and World Bank) and the Committee on the Coordination of Statistical Activities (CCSA) that is currently composed of almost forty ISOs.

NSAs may compile of course also statistics and indicators according to national concepts and definitions with the purpose of serving specific national needs. These statistics and indicators are not included in the standard international data exchange even though disseminated nationally.

(d) Harmonised reporting templates

Harmonised reporting templates (sometimes called transmission programmes) **are the link between the international statistical standards and SDMX**. The international statistical standards provide concepts and definitions, but do seldom refer to reporting aspects such as frequency, timeliness, revision status, currency of denomination, seasonal-adjustment, working-day adjustment, etc. Even more important, the international statistical standards do typically not take into account priorities in the user demand and cost constraints of NSAs in providing statistics and indicators. This needs to be balanced in harmonised reporting templates that are translations of international statistical standards into reporting forms that are applicable in practice.

The governance of the development and maintenance of such harmonised reporting templates is currently weak. It requires on the one hand a close cooperation among ISOs; otherwise, different ISOs have a tendency to agree with the Committees associated to them different reporting templates. In case the agreement on reporting templates is allocated to different ISOs, the coordination among reporting templates, e.g. for national accounts and balance of payments, is by experience insufficient. On the other hand, harmonised reporting templates cannot sensibly be adopted without a very strong involvement of NSAs. They together with the reporting agents, which are represented by NSAs in the international Committees, bear the main costs of providing comparable economic and financial statistics. Finally, the capacity of NSAs across economies is uneven. The templates must take this into account by being applied in a dynamic not a static manner, i.e. NSAs would not be asked to agree or to disagree with a template as a whole, but to express self-commitments by when which parts of a template are implemented. The Inter-Agency Group on Economic and Financial Statistics was instrumental in recent years in narrowing down the gap in the governance of harmonised reporting templates.

(e) SDMX is the IT foundation of the SIS

SDMX is the IT cornerstone of the official global SIS. It is sponsored by the same seven ISOs that form the Inter-Agency Group on Economic and Financial Statistics. SDMX allows to standardise the regular dissemination of a wide range of comparable economic and financial statistics and indicators and this real-time. It also allows establishing an industrial production process on official statistics among ISOs.

Comparable statistics and indicators that are part of harmonised reporting templates are provided by NSAs on their own (public or restricted) **websites**. When new statistics are available, automatic notifications are transmitted to ISOs who may decide to download the content of the harmonised reporting templates or parts of it at any time, either real-time or later. As the IT systems of every relevant partner use a ‘common language’ (SDMX with harmonised data structure definitions), the IT systems ‘directly talk’ to each other (‘machine-to-machine’ as in industrial production processes).

An industrial production process on official statistics requires some minimum coordination on the respective business processes among ISOs and among macroeconomic data sets such as national accounts and balance of payments. An example is the coordination of revision policies. Similar to industrial production processes across companies and national borders, the degree of coordination should be determined by its merits and costs.

The SDMX sponsors already provide a range of IT tools aiming at minimising the implementation costs of SDMX. Equally important, **the sponsors will tighten their cooperation also on the business processes of disseminating and receiving statistics and related metadata.** This is likely to lead to a range of best practices.

(f) Global reference database

The comparable economic and financial statistics and indicators of the official global SIS that are available on the websites of NSAs and ISOs may be presented in a global reference database (GRD) including metadata in English. It shall provide the information free of charge and in real-time. The GRD will facilitate the overall data quality assurance and will allow users easier access. Such a GRD may be hosted by an ISO or a group of them and may benefit from a cooperation with commercial data providers. The **Principal Global Indicators (PGI) website**³, which provides core statistics for G-20 economies and is sponsored by the Inter-Agency Group on Economic and Financial Statistics, is a first, currently small-scale, example of such a GRD.

Obviously, **the GRD does not replace or compete with the databases of ISOs** or with commercial data providers as the GRD offers only real-time comparable economic and financial statistics as agreed in the harmonised reporting templates and monitored by the ISOs sponsoring the GRD. However, the GRD would provide an anchor for the data typically used in multilateral economic surveillance exercises.

2.3 Benefits of SDMX 2020

For NSAs, SDMX 2020 will reduce the reporting burden to ISOs, as the NSAs will provide the harmonised reporting templates (or parts of it) on their websites. For ISOs, they will receive more timely and comparable economic and financial statistics. As the workload can be shared among ISO statistics departments, the ISOs will at the same time reduce the costs for receiving data. For **analysts and policy makers** in ISOs and **users** in general, SDMX 2020 will significantly support establishing undisputed facts and figures about the global economic and financial development that are the basis for any judgment about the economic situation and finally evidence-based policy action.

3. Towards SDMX 2020

Given that any development on the global level takes time and effort, what are from now onwards important **milestones on the way towards SDMX 2020?**

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³ See <http://www.principalglobalindicators.org/default.aspx>.

- **NSAs** will continue **implementing the new international statistical standards** (in particular SNA08 and BPM6).
- **ISOs** of the Inter-Agency Group on Economic and Financial Statistics will continue proposing **harmonised reporting templates**. The templates established for the G-20 Data Gaps Initiative and for the IMF's SDDS Plus are already a sound basis.
- **SDMX Data Structure Definitions (DSDs)** in particular for national accounts and balance of payments are to be finalised and need to be adopted. Moreover, **maintenance arrangements for the DSDs** (SDMX Registry, DSD inventories) have to be put in place.
- **NSAs and ISOs have progressively to adapt their IT systems to SDMX** (creation of SDMX compliant files and messages, testing data transmissions). While the full efficiency gains of SDMX will only become available with an **automatic 'machine-to-machine' data pulling**, SDMX also offers efficiency gains when applied in the **traditional manual data pushing mode**. In this case, SDMX compliant datasets are transmitted by an NSA to all ISOs involved or only a first ISO following regional arrangements, which subsequently 'pushes' immediately the data to the other ISOs. The ISOs agree among themselves, which ISO will take care of the data quality monitoring for a specific country. This arrangement has advantages to the current business process as it ensures that all ISOs involved have the same dataset at their disposal, avoiding differences due to heterogeneous reporting templates and different data vintages. The division of labour among ISO will also save resources. The NSAs keep in any case their responsibilities for the quality of the data and the relationships between them and the ISOs remain unchanged whether the data are reported directly or pushed by a first ISO to other ISOs.
- **NSAs and the Inter-Agency Group on Economic and Financial Statistics continue updating and gradually amending the PGI website**. The latter also extend the compilation of global and regional aggregates based on a methodology agreed among them while the regular compilation of an aggregate is allocated to one of the ISOs.