

**Twenty-Fourth Meeting of the
IMF Committee on Balance of Payments Statistics
Moscow, Russia
October 24–26, 2011**

SDMX Data Structure Definition for BPM6–Based Data

**Prepared by the Statistics Department
International Monetary Fund**

INTRODUCTION

1. This paper updates the IMF Committee on Balance of Payments Statistics (Committee) on the work being undertaken to leverage the Statistical Data and Metadata eXchange (SDMX) standards for the exchange of external sector statistics and seek the support of the Committee members on the proposed way forward. This work, which started early-2010, is led by the European Central Bank (ECB), Eurostat, and the IMF, in coordination with the Organisation for Economic Co-operation and Development (OECD), and the SDMX Secretariat.

I. BACKGROUND

2. SDMX is a standard to foster increased efficiency in the electronic exchange of data and metadata among international organizations and from national data-producing agencies. It is sponsored by the Bank for International Settlements, ECB, Eurostat, IMF, OECD, World Bank and United Nations.

3. At the twenty-third meeting of the Committee, the IMF presented an overview of the SDMX and its benefits in the transmission of balance of payments data. The purpose of establishing SDMX for the transmission of *BPM6*-based statistics is to move away from the situation where the same data are transmitted in different formats to different international organizations. Thus, the goal is to have one standard format that can be used by all organizations. Since then, the IMF has worked extensively with the ECB and Eurostat in preparing draft concepts and code lists for encoding *BPM6*-based data in SDMX (the SDMX encoding structure is known as a data structure definition or DSD).

4. The objective is the finalization of the DSD for *BPM6*-based data prior to the dissemination of *BPM6*-based data by the IMF Statistics Department (STA), which is scheduled for the August 2012 issue of the *International Financial Statistics (IFS)*. The DSD would then go into a phase of pilot-testing which could result in minor enhancements.

II. KEY DEVELOPMENTS AND BENEFITS

Approach adopted

5. SDMX provides an information model for describing statistical data, formats for encoding the data based on the information model, and standards for exchanging the data.

6. From the start, the lead organizations agreed that it would be better to approach the construction of the DSD from the core methodological concepts underlying the balance of payments and international investment position data. These core concepts—referred to as “dimensions” in SDMX terminology—include:

- Reference area (country)

- Reference Institutional Sector
- Flows and Stocks Entries
- Accounting Entries
- BOP items
- Functional Classification
- Instrument Classification
- Maturity
- Currency of Denomination of instrument
- Counterpart Area (e.g., country or region)
- Counterpart Institutional Sector

7. Following the SDMX information model, the combination of components from the dimensions above would provide the unique “key” to identify a time series. The benefit of such an approach is that all conceptually valid time series could be exchanged using a common approach, and not only the time series requested in a specific report form. For example, the IMF is interested in balance of payments transactions vis-à-vis the rest of the world, while the ECB is interested in euro-area countries’ transactions defined as “extra-euro area;” these two sets of time series are distinguished by the dimension “Counterpart Area.”

8. The “report form” being envisaged for reporting *BPM6*-based data to the IMF¹ will include approximately 1150 time series for the balance of payments (BOP), including supplementary items and exceptional financing transactions, and over 1000 time series for international investment position (IIP), including the additional analytical position data.

9. Permutation on the first eight dimensions listed above will allow defining all the time series keys for reporting the BOP components to the IMF. The same eight concepts are required to define the standard IIP components, while reporting the additional analytical position data will require bringing into play the concept of the currency of denomination of the financial instrument. A complete list of the proposed dimensions and attributes for the *BPM6*-based DSD is provided in Appendix I.²

¹ The term “report form” does not fully apply in the context of SDMX data exchange, since the data are transmitted in electronic format. However, it is easier to visualize the data in terms of a table comprised of time series, hence the reference to “report form”.

² Dimensions are used to uniquely define and describe the time series being exchanged, while attributes are attached at various levels of the data being exchanged (e.g., dataset, time series, observation) and are used to describe the selected aspects of the data.

Benefits of the proposed DSD

10. The proposed DSD for the external sector statistics provides for the reporting of many datasets in addition to BOP and IIP.

11. The Committee has approved modifications to the IMF Coordinated Portfolio Investment Survey (CPIS), including the possibility to provide data on the sector issuing the portfolio instrument. The proposed DSD supports reporting CPIS data, which include data on the counterpart country and, when relevant, on the counterpart institutional sector and the currency of denomination of the financial instrument. The DSD will also support the exchange of data for the Coordinated Direct Investment Survey (CDIS).

12. In addition, the proposed DSD allows for the detailed reporting of investment income by function and instrument. The reporting of such data is not envisaged by the IMF, but it was seen as an important requirement by the ECB, which has a keen interest in these data.

13. In providing a detailed encoding structure for data compilers, the DSD also provides a data model and structure that could be adopted in the development of a *BPM6*-based data production and dissemination system. This is the approach that is being used by the IMF and ECB, which will follow the DSD model and code lists in developing their respective *BPM6* databases.

III. COLLABORATION WITH OTHER DOMAINS AND GOVERNANCE

Collaboration with other relevant domain groups

14. The agencies developing the *BPM6*-based DSD collaborated with the domain groups responsible for two other statistical domains, namely Interagency Task Force on Statistics of International Trade in Services (TFSITS) for the Extended Balance of Payments Services Classification (EBOPS) and the OECD Working Group on International Investment Statistics (WGIIS) for the detailed data on direct investment statistics.

15. The collaboration with the TFSITS involved their review of the draft list of components included in the dimension “BOP items” with a view to adding all the components required to satisfy the reporting needs of EBOPS. These components and associated codes will be included in the draft DSD that will be circulated for external review.

16. The collaboration with the WGIIS has been less active, since from the start, the group working on the *BPM6* DSD agreed that it would be preferable to include the detailed reporting of direct investment statistics—including information on economic activity and special purpose vehicles—using a separate DSD. Bringing such data within the scope of the *BPM6*-based DSD would require introducing additional complexity in the DSD coding scheme. The WGIIS has been provided with draft versions of the DSD and it is foreseen that

the WGIIS would build from the *BPM6*-based DSD when developing a DSD specifically for direct investment statistics.

Proposal for a governance structure for the BPM6-based DSD

17. In May 2011, the IMF and World Bank co-hosted the third SDMX Global Conference in Washington, D.C., which was attended by around 280 participants from 90 countries. The Conference provided the opportunity to seek inputs from participants that led to the development by the SDMX sponsors of an Action Plan for 2011–2015.³ Two items of this Action Plan are related to the creation and release of DSDs for global use for balance of payments and national accounts statistics. These developments are intended to address the demand by the statistical community for ready-to-use DSDs that meet the global reporting requirements of international agencies. The same request was made by the Inter-Agency Group on Economic and Financial Statistics (IAG)⁴, which was established in 2008 to coordinate statistical issues and data gaps highlighted by the global crisis and to strengthen data collection.

18. In response to these requests, the ECB, Eurostat, and IMF are drafting a proposal for a governance structure for the balance of payments DSD project. The BOP DSD project is already well underway. The proposal will formalize the governance structure of this project going forward, including for the maintenance of the DSD over time, and provide a road map for finalizing the DSD. The main role of this governance structure would be to ensure that outstanding technical issues are quickly solved, to coordinate the approval process by the domain group responsible for the statistical domain, to set the ground for the subsequent implementation and maintenance activities, and to coordinate with the ongoing work on other relevant DSDs (e.g., for the *SNA 2008*).

19. The proposed governance structure would involve the three organizations currently in the lead for the *BPM6*-based DSD, which would work independently from, but regularly report to, the SDMX Sponsors—via the SDMX Secretariat—and to the IMF Committee on Balance of Payments Statistics, or other competent domain groups responsible for balance of payments statistics. The Committee would provide a forum for reviewing and approving the subject-matter issues related to the *BPM6*-based DSD.

³ The details of the Action Plan are available on the SDMX website at www.SDMX.org.

⁴ The IAG is comprised of the same seven agencies that sponsor the SDMX Initiative.

IV. NEXT STEPS

Establishing data reporting for BPM6-based data

20. Jurisdictions responsible for compiling BOP and IIP data will be provided with a number of options for reporting data to the IMF. Jurisdictions with more developed statistical systems will be encouraged to adopt the SDMX standards and formats for providing *BPM6*-based data.

21. It is envisaged that the most statistically advanced jurisdictions will take advantage of the functionality offered by an SDMX web service for the dissemination of *BPM6*-based data. The ECB, IMF, and OECD already provide computer-to-computer access to the data stored in their respective data warehouses via an SDMX web service.⁵ The availability of an SDMX web service eliminates the need for data reporting, as the requesting organization would “pull” the data from the “providing” organization using the web service. A number of data producing agencies are now implementing that technology to better serve their data users.

22. The IMF will also accept *BPM6*-based data transmitted in SDMX-ML format using the *BPM6* DSD. The IMF Integrated Correspondence System (ICS) will provide a secured mechanism to report these data to the IMF and, in return, will notify the data provider of (un)successful transmissions. This reporting model would be beneficial for countries that maintain *BPM6* and related data—such as CPIS and CDIS—in structured databases and find it cumbersome to convert these data onto multiple Excel report forms. SDMX will provide the format (SDMX-ML) and the encoding structure (the *BPM6* DSD) to transmit these data electronically.

23. Finally, the IMF will keep maintaining and upgrading in Excel-based reporting system via ICS. It is expected that most of the 170+ balance of payments reporters will continue transmitting the data in Excel for the foreseen future. The ICS is designed to facilitate such reporting by showing previously reported data, highlighting the magnitude of revisions, and performing a number of validations on behalf of the data reporter.

⁵ A web service is a URL that supports receiving queries and that returns data or other artifacts. The IMF provides a user query test interface for the SDMX web service it maintains for the Principal Global Indicators website and which allows users to familiarize themselves with this technology. It is available at http://www.principalglobalindicators.org/about_sdmx.aspx.

Questions for the Committee:

On the proposed governance structure for the BPM6 DSD: What are the views of the Committee on the proposed governance model for the BPM6 DSD? Under the proposal, updates to the DSD would be proposed to two organizations, i.e., the Committee (as the expert group responsible for answering technical questions about BPM6 and relationships within external sector statistics), and the SDMX Sponsors (which is responsible for overseeing all DSDs). This governance structure is supported by the SDMX Sponsors and by the IAG.

On the implementation of the BPM6 DSD: What are the views of the Committee on the best approach to encourage the implementation of SDMX, particularly for very large datasets, such as the CPIS?

Proposed Dimensions and Attributes for the *BPM6*-Based DSD

Table 1. Dimensions¹ for the data structure definition

Dimension name	Description of the dimension
Frequency	Time series frequency (e.g. monthly)
Reference area	Reporting country code (e.g. Portugal)
Adjustment indicator	Specific adjustments or concepts for the time series (e.g. seasonal adjustment)
Flow stock entry	Flow or stock variable indicator (e.g. positions)
Bop item	External statistics item classification
Accounting entry	Type of flow or stock in relation to the reporting area (e.g. assets)
Functional category	Classification by function of the financial investment (e.g. reserve assets)
Financial instrument classification	Breakdown by financial instrument (e.g. debt securities)
Resident sector	Institutional sector in the reporting area (e.g. general government)
Currency of denomination	Currency of issuance for financial items or invoicing for goods and services (e.g. euro)
Maturity	Original maturity of financial item, combined with remaining maturity (e.g. short term)
Counterpart or partner area	Country of counterpart (e.g. Japan or rest of the world)
Counterpart sector	Institutional sector of counterpart (e.g. general government)
Series unit of measure	Unit of measure used for reporting the time series (e.g. euro)

¹ Dimensions define the time series, therefore a valid code must be provided for each dimension in order to uniquely define the time series.

Table 2. Attributes¹ for the data structure definition

Attribute name	Description of the attribute	Reporting Requirement	Attachment Level
Unit multiplier	Indicates whether the unit of measure for the series represents thousands, millions, ...	M	Series
Decimals	Indicates whether the level of precision for the series	M	Series
Observation status	Indicates whether the value is a normal value, provisional data, a forecast, ...	O	Observation
Confidentiality Status	Indicates whether an observation is freely available, restricted, confidential, ...	O	Observation
Time Format	Specifies the format used for describing the reference period	O	Series
Compiling organization	Identifies the organization responsible for the compilation of the series	M	Series
End of reporting fiscal year	Indicates whether the data are based on a fiscal year and specifies the fiscal year	M	Series

¹ Attributes further describe time series defined by dimensions. As such, some attribute must be reported (M), while others are optional (O). In addition, attributes can be attached at various levels, such as observations, series (time series or siblings), or the dataset.