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Overview of Programme of Working Group on Data Template and Analytical Indicators

Ivo Havinga
United Nations Statistics Division

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I Introduction

The joint initiative by UNSD and Eurostat to organise the series of international seminars on early warning and business cycle indicators has the purpose to formulate an international statistical response to the economic and financial crisis for improved monitoring of the rapid and systemic changes in the global real economy and the financial markets, and to monitor the impact of these developments on vulnerable countries and populations groups.

One of the five themes of the international seminars is the development of data template of High Frequency Indicators for assessing rapid economic changes. The main outcome of the first meeting of the series, in Ottawa, was support for an international data template to monitor rapid changes in economic activity. The Ottawa seminar also requested an assessment of its relevance and feasibility in terms of availability, periodicity and timeliness by the international statistical community and its relevance to users in fulfilling analytical and policy needs. The outcome of the global assessment and an analytical indicator framework was presented at the second seminar in Scheveningen.

Central to the purpose of the seminars is the need to: 1) to seek agreement for an international data template consisting of High Frequency Indicators for the purpose of early warning of economic and financial vulnerabilities and detection of turning points in business cycles along with the metadata; 2) to review the availability and adequacy/relevance of statistical methodologies and best practises for each of the indicators in the data template taking into account the components of the statistical production process; and 3) to explore the feasibility of centralized hubs at country level led by country coordinators to ensure unified dissemination practises of country data to regional and international databases. For this purpose a Work Group on the Data Template and Analytical Indicators was established. The Work Group was lead by the United Nations Statistics Division (UNSD) and the statistical offices of the European Union (Eurostat), India and Brazil.

This paper reports on the work of the Work Group and is set out as follows. After the introduction the proposed data template is presented in Section II. In Section III an overview of available methodological guidance for compiling the High Frequency Indicators is provided. A metadata structure for the data template is presented in Section IV and in Section V a proposed diagnostic tool for assessing the strengths and weaknesses of a statistical system is discussed. Section VI elaborates on the development of data hubs, followed by a strategy for developing a High Frequency Indicator data set in Section VII. Section VIII concludes with recommendations on the way forward.

II Data template for a core set of economic and financial High Frequency Indicators

The proposed statistical dissemination framework consisting of a comprehensive set of data categories of high frequency statistics is presented in Annex I. Detailed descriptions of the data categories are provided in terms of their scope and coverage and their related analytical and statistical framework in Annex II. The data template is based on the *System of National Accounts 2008* (2008 SNA), which has been recognized by the Statistical Commission as the relevant

statistical standard to meet the information needs for the monitoring of the recent economic and financial crisis. The data template also draws on other standards and international recommendations such as the Sixth Edition of *the Balance of Payments and International Investment Position Manual* (BPM6) for the external sector and related normative recommendations for the government sector, financial sector, prices and business statistics.

Through the consultation process the data template is considered to meet the analytical and policy needs to identify and monitor economic and financial shocks in a timely and reliable manner. Moreover, the scope, periodicity and timeliness of the framework of high frequency statistics are adequate in rendering early warning signals for the changes in trends in macroeconomic growth and stability of the real and financial economy.

The data template is based on traditional high frequency statistics recommended and prescribed in existing dissemination standards. Where possible, it includes accelerated releases of traditional high frequency statistics. This accelerated release of a traditional high frequency statistics is coined "a rapid or *first estimate*" defined as *an accelerated production and release of a high frequency statistics as a first estimate early after the end of the reference period*. While these first estimates might contain less detail in terms of break down, existing best practices have shown that accuracy is not necessarily compromised. The limited coverage of direct observations could be supported by extrapolation techniques. These first estimates are, however, distinct from forecasts. First estimates signal developments for past reference periods through direct observations, while forecasts refer to expected developments in future reference periods usually based on econometric techniques.

The scope of the data template extends the existing dissemination standards by suggesting a supplementary set of indicators for the non-financial corporate sector and the household sector as well as for the financial and real estate market. The elaboration for the household and non-financial sector has been included to meet the analytical needs to monitor the critical transactions and positions of assets and liabilities. Moreover, their inclusion has the advantage to promote the integrated compilation of the balance sheets for all domestic institutional sectors using aggregated categories for financial assets and liabilities, such as gross debt, for balancing purposes.

The data template focuses on high frequency statistics for monitoring the economic and financial performance of the economy using only on "historical" direct observations and known dynamic relationships in trends and cyclical patterns between the high frequency statistics representing an economic monitor. The economic monitor could be supplemented at a later stage with other monitors going beyond the narrow economic focus of the data template. This could include a broader set of statistical indicators in the areas of socio-demographic or environmental development with focus on the sustainability of the trends. As one of the lessons of the recent crisis was its global character, globalization indicators illustrating the interdependencies in the global economy and society could also provide additional useful information. Due to the importance of agricultural and rural statistics in relation to the Millennium Development Goals and other emerging issues such as the development of the sector of bio fuels, environment and food security, these types of statistics could also at a later stage supplement the data compiled and disseminated on the basis of the High Frequency Indicators data template of economic statistics.

The FAO Global Strategy for agricultural statistics has similar components as the ISWGNA implementation programme of the 2008 SNA , including the proposal for developing a High Frequency Indicator data set. It is, therefore, possible to harmonize the proposed minimum core data set for agricultural statistics and adopt a common structure for the HFI data templates using the same data domains, data categories and indicators according to the required periodicity and timeliness. Annex 7 provides an example.

The data template consists of 12 data categories of economic and financial indicators for real time monitoring of macroeconomic and institutional sectoral developments through quarterly national accounts (QNA) supplemented by high frequency indicators for production, prices, markets (labour, real estate and financial markets) and sectors (government, financial, non-financial, household and external sectors).

III Availability of statistical standards and compilation guidance

The availability of statistical standards and compilation guidance is recognised as an important element of the principles for governing international statistical systems facilitating the development of consistent and internationally comparable statistical data. For this purpose the United Nations Statistical Commission requests from time to time the development and updating of such statistical standards and compilation guidance. Various international and regional organisations and countries are involved in developing these standards and compilation guidance and disseminate them through their own internet sites and publications. Consequently the availability of these statistical standards and compilation guidance is dispersed.

To facilitate the sharing of statistical standards and compilation guidance two initiates were established. The National Institute of Statistics and Geography of Mexico (INEGI) developed an inventory of international statistical standards[1] and the Economic Statistics Branch of UNSD developed a Knowledge Base on Economic Statistics[2]. These initiatives combine information made available by various official sources by optimizing the collection, organization, and display of statistical standards and compilation guidance.

The Knowledge Base on Economic Statistics was developed in support of the Implementation Programme for the System of National Accounts 2008, which include the development of supporting economic statistics as one of its elements.

The Knowledge Base facilitates the international sharing and exchange of knowledge on economic statistics programmes and includes international standards and recommendations as well as country practices. It serves as a single web-based access point for a dynamic and centralized repository of information on the collection, analysis and dissemination of all domains of economic statistics. The Knowledge Base is therefore also a useful resource for developing High Frequency Indicators for economic statistics.

In the assessment of the availability of statistical standards and compilation guidance for High Frequency Indicators data template the UNSD Knowledge Base on Economic Statistics was first

[1] http://mapserver.inegi.gob.mx/estandares/en/Consulta_Produccion/Index.cfm?Ligas=Inventario.cfm
[2] http://unstats.un.org/unsd/EconStatKB/Knowledgebase.aspx

analysed. The Knowledge Base contains about 270 documents on standards and country practises. Annex 3 shows a list of methodological documents. The list does not cover all the elements of the High Frequency Indicator data template. However, over the past two years work was initiated to develop statistical standards and compilation guidance for those High Frequency Indicators that have none. These include guidance on early estimates, sentiment indicators, composite indicators export prices and real estate prices. The indicators for which statistical standards and compilation guidance needs to be developed or updated include construction statistics, statistics on new orders and services activities. The last column of the table in Annex 1 shows the status of the current availability, work in progress and outstanding methodological guidance.

IV Metadata structure for the data template

This section describes an analysis of the available metadata in support of the high frequency indicators data template. The analysis was done using primarily the information on metadata available for the Principle European Economic Indicators and other economic statistics disseminated by Eurostat. In addition metadata available on web pages of several countries and international organizations were used.

The analysis has shown that metadata available at Eurostat cover most of the indicators in the data template. The data on the web pages of the international organizations and individual countries are also normally accompanied by metadata.

The scope and the contents of the metadata however differ among countries and also international organizations. In spite of a longer term effort to harmonize the reference metadata, differences exist with regard to the structure and contents of the information available for the statistical data. This can mainly be attributed to institutional factors. In country groupings where there is an effort to implement common or highly coordinated policies the imperative of having highly harmonized and comparable statistical data is reflected also in the level of harmonisation of their metadata.

For example the statistics of the EU Member States is very much harmonized. The production of the statistical data is regulated by EU legislation, which specifies in considerable detail how the statistics should be compiled by the EU Member States and also how the data collection and compilation systems should be designed. One of the tools for this harmonisation is the quite detailed metadata requirements for European statistics both at Eurostat and for the individual EU Member States. The EU metadata are thus Europe specific and you would expect that for other countries there would be differences in the metadata detail between countries reflecting national specificities in the production of the statistics.

The analysis has further found that the metadata exist in different forms. One is a short description of the data which is often attached directly to the tables containing the statistical data. This short description in the form of one sentence or one paragraph gives the very basic information about the given statistical indicator. This type of metadata is available for example with the Principal European Economic Indicators on the Eurostat web page or with economic indicators disseminated by international organizations.

Another form is the detailed metadata ideally compiled according to international standards like SDDS or SDMX, which contain structured methodological description of the data. In other cases the detailed metadata follow less harmonized structures.

Eurostat is producing and disseminating a number of policy indicators also so called quality profiles of the data. The quality profiles contain the information on the different quality dimensions of the data as well as an overall assessment of the quality in terms of attaching to the data a certain ranking (A, B, C).

The differences in the contents of the metadata are understandably more pronounced when the metadata are more detailed. The short descriptions are in general more universal even when there is a national focus.

Based on the above analysis the following suggestions can be made.

To be universally valid for all countries the content of the metadata can be only rather short and general. The short description for some of the data available in Eurostat and other international organizations could be used after some adjustment for this purpose. Annex 4 provides an overview of the availability of short descriptions for the Principal European Economic Indicators as a starting point.

For the detailed metadata, e.g. in the SDMX format, it is not possible to draft universally valid metadata. Such metadata would have to describe the specificities of the different countries. This type of metadata can only be meaningfully compiled at the country level.

The option is therefore to propose a structure of metadata which could then be used by individual countries depending on the availability of the information for the different parts of this universal structure. Ideally this structure would be based on the SDMX standard for reference metadata.

The question is then how detailed this structure should be. Should it be a rather exhaustive structure, which would enable the dissemination of very detailed information including the quality aspects of the data, legal basis, description of the production process etc.? The example of a detailed structure is in Annex 5. Or should the contents be reduced just to the basic information on the data? Annex 6 represents one possible reduced metadata file.

The advantage of the exhaustive structure is that detailed information available for some countries could be disseminated. It would provide users with useful information about the data. At the same time this detailed structure could provide incentives for countries that don't compile the more detailed information, to do so. Moreover, the more detailed structure of the metadata could be used as a tool for more harmonized and more comparable statistics among countries.

V Diagnostic tool for self assessment

With a view to help countries to assess the adequacy of their national statistical production process to support implementation of the 2008 SNA, a Diagnostic Framework for National Accounts and Supporting Economic Statistics (DF-NA&ES) has been developed. This tool aims to help countries assessing the statistical prerequisites for the implementation of the 2008 SNA.

Based on this assessment countries would be able to develop a vision for improving the availability and quality of the basic economic statistics required for the compilation of national accounts according to the 2008 SNA recommendations. In developing the vision document countries need to consult, preferably in a national seminar, with all stakeholders, policy planners and other users including the academia and business community. Such a discussion is expected to help the national statistical office (NSO) to prioritize the problem areas and ultimately write a plan for the improvement of the supporting economic statistics with a view to compile national accounts within the framework of the 2008 SNA.

This framework develops an information structure for planning, monitoring and evaluating the implementation of the SNA that could also be used for the development of a High Frequency Indicator data set. The DF-NA&ES uses the taxonomies of the Classification of International Statistical Activities (UNECE 26 September 2005 version, Annex 2 to document ECE/CES/BUR/2005/5) available at
http://www.unece.org/stats/documents/ece/ces/bur/2005/5.e.pdf

The Classification of International Statistical Activities includes a listing of domains that provide a structured presentation of statistical activities. It classifies statistical activities aimed at collecting, producing and disseminating data, developing standards, harmonisation and implementation approaches for official statistics. It organizes the broad types of statistical activities in five statistical domains. Domains 1-3 constitute subject area classifications dealing with the outputs of the statistical production process. Domains 4 and 5 cover substantive issues that are more process and organization oriented and also deals with the managerial aspects of official statistics.

The diagnostic tool covers broad indicators relating to economic statistics contained in domain 2 and income and expenditure of households and labour statistics of domain 1 covering all aspects of the statistical production process. The statistical activities in these domains have been cross classified with elements of domain 4 and domain 5.

VI National data hubs

It is recognised that the items of the High Frequency Indicator data template may be compiled and disseminated by various institutions in a country. In addition, international organisations also collect overlapping sets of High Frequency Indicators. To improve the usefulness of the High Frequency Indicators for monitoring rapid and systemic changes in the real economy and the financial markets these indicators need to be made available at a single access point. For this purpose it is suggested that countries establish a data hub from where these data could be disseminated. This centralization of the data at the national level could also facilitate future data transmission from a country to international organizations.

Setting up a national data hub and standardization of data transmission requires an assessment of the data in respect of data quality and comparability and developing metadata for the indicators. Such metadata would highlight differences between countries which could over the longer term be addressed to improve the international comparability of the data and subsequently its usefulness to the "international" policymakers.

The EU has certain experience with harmonizing statistics between countries. It is one of the accession criteria for countries to join the EU. Once part of the EU the EU statistical regulations ensure the harmonized compilation of statistics by the EU Member States. This EU experience is however rather specific and is not easy to apply mechanically outside EU. Therefore, other "soft" mechanisms should be used to establish the harmonisation and comparability of national statistics. Coordination among international organisations could facilitate this process of harmonisation.

Another example of a centralised data hub is the IMF's Special Data Dissemination Standard (SDDS). The SDDS aims to enhance the availability of timely and comprehensive statistics and therefore contribute to the pursuit of sound macroeconomic policies.

The SDDS prescribes a list of indicators in terms of data coverage, periodicity, and timeliness; access to the data by the public; the integrity of the disseminated data; and the quality of the disseminated data. Metadata for the indicators are maintained on the IMF's Dissemination Standards Bulletin Board (DSBB). The metadata are useful on their own, facilitating the monitoring of the observance of standards. The data are displayed on a National Summary Data Page (NSDP). The DSBB provides hyperlinks between the SDDS metadata and actual country data shown in the NSDP for all subscribers.

Taking into account the examples of the harmonisation of the collection and dissemination of data by the EU and the IMF's SDDS the development of data hubs at the country level would require the cooperation of all stakeholders of the national statistical system. The compilation and dissemination of the High Frequency Indicators ultimately involve the participation of several agencies in a country. Where a coordinating agency, such as those for the SDDS, is not present in a country it would need to be established to facilitate the exchange of data and monitoring of the agreed standards of dissemination.

By establishing a national data hub that adheres to international statistical and dissemination standards would also facilitate the dissemination of these data to international organisations. The following steps need to be considered when establishing a national data hub. Firstly decide on the scope of data to disseminate, including the timeliness and periodicity of the data. The High Frequency Indicators data template suggests three categories of data, namely Tier one, which includes readily available short term statistics and strategically important indicators (this tier also corresponds with the Principle Global Indicators); the second tier includes indicators that are less readily available, but which may still be strategically important; The third tier includes indicators that are mainly country specific and could therefore be included in national templates.

Secondly, develop the metadata for the indicators according to international statistical standards and compilation guidance using the formats proposed in this paper.

Thirdly, the means of collecting the data for the data hub and the dissemination of the data to users should be established. The aim should be to minimise the reporting burden for data compilers. It is important to consider how to provide simple and efficient data transmission mechanism without adding an extra burden to the work routine. By not addressing this issue could lead to low quality information.

Lastly, making the system operational and establishing a sound routine for updating the data, not only in terms data transmission and collection, but also to maintain the infrastructure and expansion of the data hub.

VII Strategy for establishing a high frequency indicator data set

As the implementation programme for the 2008 SNA calls for strengthening the availability of the underlying economic statistics used in the integration frame work of the SNA the elements of this programme are also applicable for establishing a high frequency indicator data set.

The efficiency and sustainability for establishing a high frequency indicator data set should be based on the principles of: (a) strategic planning, (b) coordination, monitoring and reporting; and (c) improving statistical systems. .

These principles are operationalised through:

- Establishing a common system wide consultative process comprising an assessment of the current strengths and weaknesses of the statistical production process, the development of goals to mitigate weaknesses and the development of a programme for remedying short comings and implementation of national and sectoral capacity building programmes.

- Establishing a common core set for sectoral and structural short term statistics;

- Establishing a common structure for metadata template for sectoral and structural and short term statistics

- Using a common diagnostic tools for the assessment of strengths and weaknesses of statistical production process

VIII Recommendations on Data template and Analytical Indicators

Agree on the data template

Agree on the proposed structure of reference metadata.

Agree on the development of methodological guidance on the compilation for those indicators where there is no guidance or where guidance needs to be updated.

Agree to provide documents on country practises for the compilation of the High Frequency Indicators for the UNSD Knowledge Base of Economic Statistics.

Agree on the development of national data hubs for the dissemination of High Frequency Indicators for monitoring rapid changes in economic activity.

Agree that for the assessment of a country’s statistical system to compile High Frequency Indicators the diagnostic tool could be used.