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Need for new satellite accounts in international accounts statistics¹

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Need for new “satellite” accounts in International Accounts Statistics

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Currently BPM6 manual gives a perfect framework to compile canonical statistics in general framework and logic of National Accounts Statistics. But the reality is that users need more and more data that diverge from official statistical data in some specific way. Digital economy statistics is an example of how different treatment of transactions in official statistics is and what users actually want to see. And this is not a single example: many other aspects of our life are recognized differently in different metrics. Therefore, there is ongoing demand for alternative data. On one hand, official statistics can argue that it is not possible to cover everything, and we are in charge of compiling right statistics. On the other hand, users are not capricious children. Different view on common economic phenomena are needed to analyse and understand what is happening and has happened in economy. National accounts compilers have such statistical frameworks like Tourism satellite accounts or Health satellite accounts. In principle, there are several tables in external accounts statistics, designed to reflect additional data that might be interesting to users. Reserve template and foreign currency liquidity or External debt tables are examples that emphasize the importance of collecting data not covered by central framework.

The paper discusses the need in such additional presentations of External Sector Statistics, as well as the possible areas of their implementation.

Keywords: new data, data gaps, balance of payments, satellite accounts, remittances.

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Introduction

Russian statistician Chuprov brought example of correlations between fire and firemen, concluding that possibly firemen organize fires themselves to create new jobs for themselves. In analogy the feeling when one looks into data presented on our websites is that statistical system is very poorly covered or very difficult to explore to underline the need of development and new work.

On one hand, there is a system of national accounts (including BOP, GFS, etc) which gives a comprehensive view on how economic values are created, exchanged, stored. More, the indicators provide very clear explanations of processes. On the other hand, there is ongoing demand not only to traditional canonical indicators, but also for alternative, supplementary and even non-quantitative indicators.

Many users are happy with the data that system provides. Generally, for the most users it is enough to know that the export totalled some 25 bln USD and the annual growth is 1.2 % against the same period of previous year. Some detailed geographical distribution in this context seems to be a very granular data that explains everything. There are other users, however, in official, academic and financial areas who feel the current granularity and datasets not being sufficient to understand and analyze the economy.

External sector is one of most important and complex areas of economy, taking into account the fact that globalization and additional data that will accompany existing datasets are crucial for economic analysis.

Current system of external sector indicators

Current statistical system of external accounts is generally based on two whales. One is system of national accounts and as a part of the system, system of BOP-IIP. It represents tables on output, transactions in financial instruments, and corresponding stocks of financial positions with nonresidents. Statistics is based on several principles most important one is residency principle. This one of crucial differences that users would wish to be supplemented. Though residency principle is used to make differentiation between internal and external world, and is reasonable, some extensions or some exclusions (for example some data that do not include SPE's transactions) are required by users. The other principle that sometimes needs to be 'transformed' is the accrual principle. Sometimes cash accounting data are needed for analysis. As it was mentioned BOP standard components provide more than average details on external economic transactions. The supplementary items and the tables in the BPM6 manual provide (or better to say could provide) even more. Maybe that is the case that the publications in most of countries web sites are so short. Most users probably would be lost in a long set of indicators. Among other principles that users want to change may be the valuation principle, but to a lesser extent.

To supplement main data current manual and related statistical guides offer some additional tables that relate to accumulation of arrears, currency composition of IIP, etc. Well known are supplementary data that are collected for external debt statistics purposes.

Of course, the way that the general framework construct statistics has some limitations that brought to development of some new indicators that add a new look on international economic relations. Trade-in-value-added indicators, for example, create new possibility for analysis.

User needs

Similar to Oliver Twist - users need 'some more'. Unlike Oliver Twist - they usually do not say 'please'. Different articles periodically appear in press where, instead of blaming statisticians², they state that official statistics

- a) Does not cover new phenomena in existing framework
- b) Inclusion of new economic transactions into existing framework does not reflect reality; neither provides any projections of reality on outdated and old-fashioned map
- c) The data is not enough to analyse current situation (neither it is enough to analyse events in the past)
- d) And last, but not least the fact that current statistical framework does not mean anything at all. The latter is very popular and even some articles describe the types of shortcomings the framework has, nevertheless they do not try to suggest a solution (there are even some statements that although the indicators fail to describe reality, there is no substitute of GDP³ indicator).

Economy is changing all the time, it is a continuing process, economy and its structure change all the time, therefore this type of criticism usually addresses statisticians rather than statistical framework. No one can require the framework to forecast the reality twenty years forward.

The main point that is worth to discuss, is whether statistical framework needs to be changed, as well as the kind of changes users need in order to be satisfied with the data. While changing general SNA framework is problematic, the user satisfaction is possible to be reached easier. Most users just need more data rather than changing existing framework. *After all, statistical framework is accepted with main category and most users.* We should keep this statement in mind while discussing any additional data or dataset needs.

The other thing that is misleading for the analysts or users with more simple requirements, is that they want to find a single indicator to understand developments in economy. Meanwhile use of number of indicators is capable of solving most of their problems. The main target is again GDP, but the external accounts statistics also has its part of criticism (for example, the FDI does not give real picture of investments). While some of them understand deeper the problems that exist in current data⁴, others may have some false understanding of what is required under methodology and why⁵.

² The main target for criticism is GDP of course. A few articles could be found on separate problems of external sector statistics concentrating on data quality more than on framework itself. Some examples are brought in article to illustrate how users criticize or look for more data.

³ See Diane Coyle, Why GDP Statistics Are Failing Us, <https://www.uschamberfoundation.org/article/why-gdp-statistics-are-failing-us>.

⁴ See for example Konstantin M. Wacker (2013), On the Measurement of Foreign Direct Investment and its Relationship to Activities of Multinational Corporations, Working Paper Series NO 1614.

⁵ Иван Ткачев (2019), Тихая «революция» в анализе иностранных инвестиций.

Existing supplementary frameworks

Understanding, that the set of BOP-IIP components do not cover significant area of users' needs is not new. For that reason, there are some additional data sets/extensions that cover different needs for statistical data. Examples of well-known frameworks/datasets are brought below. Besides, these examples there are some other datasets on different topics, covering wide range of economic areas from globalization to migration. Discussion of each is out of scope of the paper. These cases are just examples of how the existing system satisfies data needs.

External debt

Probably the most developed set of indicators concerns external debt statistics, taking into consideration that the problems with external debt in different countries started even before first macro economical tables were compiled.

The other reason is that users of this data were more powerful to demand different granularity of data on external debt. It is one thing when a researcher asks for nominal and market values of companies' shares and another when a government (or even group of governments) requires data on bonds issued internationally.

The importance of external debt statistics was in focus of different groups, so even on national level each country compiled data based on own considerations. Introduction to first guide on external debt is very interesting and worth to be cited here (see Appendix 1). It can be used as a short guide/introduction to any new statistical initiative.

The data that are included in several tables explains in detail the structure of external debt, debt service, any other valuation changes, arrears or whatever the users might need. Maybe some qualitative data can be presented as well like debt burden indicators or interest rates⁶, but generally the external debt statistics tables cover different user needs quite well.

International merchandise trade statistics and Statistics of international trade in services

IMTS is example how the two concepts on the same item supplement each other. Transfer of ownership in BPM6 framework is one of the basic principles. At the same time, IMTS is generally based on cross-border movement of goods. This might be more practical and easy to understand for many users. Usually the data is collected through customs and supplemented through various surveys. Data gives operative picture of development in external sector. Different granularity is available immediately.

Nevertheless, the IMTS data is treated as some raw, operational or preliminary data. For most of analysts BOP data on external trade are treated as more 'complete' or 'meaningful'.

SITS also provides some additional details on international services, one of the most important things in which is the provision of the four GATS modes of supply.

⁶ Can be calculated based on data included in tables. Such calculations are present on World Bank data page.

Data Template on International reserves and foreign currency liquidity

Here we have other situation, when data based on general statistical system was not sufficient to estimate vulnerabilities. Therefore, here we have data that in some cases are based not on residency principle but on liquid foreign currency characteristic instead.

Table I.B in Template suggested that a liquid asset against resident institutions can be recorded in this section. This is just item that would not be included in external sector statistics but might have significant role in assessing foreign exchange liquidity. The same applies to predetermined flows. Flows that affect reserve assets would be recorded in template. Template also asks for some more granular information on reserve assets, predetermined flows that may require information about resident-resident transaction and positions.

The need of such data is objective and based on specific view on positions and flows through the prism of international reserves and ability of country to meet its future obligations.

It should be stated clearly, that the template does not give a full picture of liquidity of country. International reserves are only one part of such indicators. Estimates can be done taking into account more indicators. But the template provides analyst with data that would play central role in such assessment. Of course, it provides enough data for narrower analysis of international reserves and sovereign position dynamics.

Reserve template is an excellent example of a 'satellite' account in external sector statistics framework, that provides users with additional data *and have a informative way* of presenting data.

OECD Benchmark Definition of Foreign Direct Investment

The Benchmark definition is the base for FDI data calculation in BPM6 manual and at the same time it suggests another point of view on FDI presentation. While BPM6 asks to present data on assets liabilities principle both in BOP and IIP, the benchmark definition suggests to use directional principle. It also gives detailed explanation on FDI chain and FDI related transactions. It is worth to mention, that OECD produces a lot of data sets, from activities of multinational enterprises to transportation costs and different statistics on environment issues. Benchmark definition is well integrated in external sector statistics, but it is another example of how additional data and explanations help to describe the developments in economy.

External sector satellite accounts

Returning to the question on whether a simple data should be presented to users or more sophisticated data can be delivered to them, we should mention that it took a lot of time from researcher to find and systemize data for analysis. For cross-country comparison, it takes even more.

We can look into examples of international assistance. A very good database is kept by OECD, which allows users explore the data, however the data are formed from point of view of providers of financial assistance. At the same time, it will not cost too much to compile data for such transaction based on the existing data that all compilers have. Some more granularity can be added, like distinction between types of goods or services, areas on development flows. Such data exists already in datasets of compilers. Previously it would take a lot of time to compile such statistics, but currently IT solutions can be applied to have the data at any time it is necessary. More, BOP standard components include such items, nevertheless such details are not available on regular publications. It can be requested from statistic producers, but this means

an additional effort for a user. There is also a need for reverse information: how much a country participates in international assistance directly and through providing finance to international organizations. Adding recipient data will bring something new to the data. Again, the data are compiled already, main donor countries already provide such information to OECD database. But this can be collected with participation of all countries both recipients and donors. And with all respect to the great work on constructing such statistics, I found some empty data for Armenia, that should be treated as official assistance. There would be also additional input if we have a harmonized definition that *meet all* user needs (not only from point of view of official donors).

This is an example of additional data that can be produced and delivered to public on systematic base covering all users. The experience of OECD in this case can be merged with statistical principles, which will create dataset with improved quality.

There exists another example of data that, which do not fit in the framework. Data on remittances and migration can be combined in a single tables' group to provide a complete picture of migration and remittances. There are some initiatives to gather such information, for example by International labour organization. However, if this information is gathered in BPM6 framework, it would be economic data supplemented with some qualitative indicators. When the data are built by an organization focused on social and legal aspects of migration, it would look more a social picture supplemented with some economic indicators. One of the most problematic issues in calculating compensation of employees is compiling data on accrual basis when compilation is based on cash transfers from abroad. Analytics very often need both data, and sometimes cash inflow is more important than calculation of compensation of employees based on accrual accounting principles. Additional data like the average length of stay and the average amount of salary might be useful for analysts.

Of course, all country specific issues should form an indicator (or separate table). In Armenia we have a situation when large number of 'new' migrants exists, and the public wants to know information on 'new' migrants with the same details as for seasonal workers. I would suggest that probably this is a country specific issue, that can be identified in country's own publication.

This is an example of data that is an extension to the existing framework.

There can be a large list of such areas that different statisticians may want to have. With obvious positive moments, several questions need to be answered before considering introduction of such indicators.

If we go back to user requirements, we can classify the need for additional/alternative data as follows:

- a) Some additional granularity of data (we want to know FDI structure with traded\not traded on market breakdown)
- b) Conversion matrixes with some preliminary data (we know the figures of external merchandize trade and we want to know conversion between BOP and IMTS data)
- c) Additional data, that might be either extension (exclusion) from principles, or qualitative (we want to know how much average single traveller spend abroad and how long they stay there)
- d) Reflection and underlining new phenomenon in economy, and how they are treated in economic statistics (for example rapid globalization).

A solution to these requirements can be setting up several satellite accounts to most important areas, that may deliver a comprehensive information on the topic. The user will benefit full picture of the selected area of economic relations. The fact, that a large set of indicators are available already, is not a strong argument. Existence of such indicators independently from each other lower their usefulness, users have to make additional significant efforts to find, understand and combine data, while the same can be done by

statisticians easier. The author himself experienced difficulties bringing in one set information from different sources, though as a compiler he knows the principles and the sources where to look for data. Other users experience various types of difficulties, *which could easily be overcome with existence of single data source*.

An option should be discussed whether such information should be compiled in framework of external sector statistics or can be integrated to one common satellite account. Data on Tourism satellite accounts cover most important aspects for external accounts statistics in that area as well. A 'Digital trade (or digital economy)' satellite accounts in SNA can contain some tables or items concerning external digital trade in a single set of data presentation. Otherwise the users may ask for so many details, that it would be more appropriate to have a separate account for external transactions. Even in the first case the data required would be large enough to require significant participation of external sector statisticians.

However, most important areas that would have strong support by public are FDI statistics and of course digital economy. Especially in the FDI statistics field, there are many datasets and rich experience of understanding of what can be delivered to users. Recent initiatives on MNE-s, SPE's and global value chain indicators statistics will benefit the data. Users ask for more information about FDI related production, distribution and related statistics. The author would add also transactions in international financial cooperation and remittances.

Specific data sets may be compiled with less periodicity. We should not forget about cost/benefit analysis should not be forgotten while choosing whether a new data collection system can be introduced. The coverage, quality and granularity of existing datasets (for example the same OECD database on ODA) may be enough for users and thus the additional efforts may be unjustified.

There indeed needs to be a balance between providing more information, corresponding statistical burden and user needs. Data collection and processing automatization has created a lot of possibilities for the provision of large number of statistical data to users. Current data collection, coding, storing and processing possibilities makes it possible to compile complex and very granular data on periodical bases. In future we will see even more possibilities to compile granular data. Digitalization of reporters accounting systems and implementation of artificial intelligence may create even more possibilities to compile and provide complex data. This is very important aspect in planning and considering new statistical works.

There are two important arguments against adding additional data. The first one is that there are already many separate supplementary tables and items in standard presentation in BPM6 manual that are not filled (even if the data is existing). This is a very strong argument. Probably the authors of statistical manuals had discussed different user needs and statistical capacity of different countries. If we keep going this way, there will be a need for "a guide for statistical manuals" (maybe even an academic course to learn the list of the data available). This is the reason that many countries publish not the standard presentation but the shorter version of BOP (generally hiding supplementary items). Other countries publish both long and short versions of BOP components. In case of European countries, there is a detailed version on Eurostat website which can be used directly or via automated systems.

The second one is that official statistics usually follows both international standards and internal user requirements. If a country thinks that some item or data is important for their users, it can compile and publish data on their own. If other countries want to compile additional statistics, there are no restrictions to compile the data. Going back to the example of international assistance, Japan identifies this item in their balance of payments separately due to the importance of indicating how much the country contributes to international financial aid. The counter argument is that the standard sets allow to have data on the same basis representing the same indicators. One of the main objectives of such indicators are cross country comparison. Thus, although specific data may not be important for one country, statistics should still be compiled to make possibility of cross-country comparison. Here international organizations can play central

role in both encouraging countries to compile and bringing together data received from countries. They already have an experience, credibility and IT infrastructure to implement such tasks.

Finally, the last remark. The author of course does not suggest unification of all the indicators across all the organizations and datasets. Regardless of the discussions about the correctness and usefulness of such indicators, it seems impossible to come to an agreement to have a single set of indicators.

Conclusion

Users always need more data, and researchers are currently switching from using common datasets to using a large number of more granular data, including raw data. Growing interest in economic situation and differentiated economic structure, globalization and digitalization are pushing users to asking for more and more granularity to understand the modern complex world. By analogy of blind men trying to guess what they are touching we try to describe economy by looking into some figures. In opposite to those blind men we do not have the idea of an elephant in our mind. To understand and describe the more complex international economy we need to have data projections on different system of coordinates, bringing together data that is out of current SNA framework. Not only qualitative, but also some non-monetary data may help to clarify the picture of economic relations. Absence of such supplementary data makes users to apply their own figures and rely on simpler data instead of official statistics. Current IT solutions, especially database managing software and data processing techniques allow to bring not only data compilation but also delivery of statistics into a new level. It should be taken into account that statistics not only describes, but also leads users to apply *and find* appropriate indicators. One option is whether international organizations and especially IMF and World Bank can bring together different data sets and provide users with database as it is done for example for external debt. As mentioned before, OECD construct several supplementary data on external sector. Finally, most data (for example the data that describe globalization) cannot be constructed by any other means than cooperation between countries under coordination of supranational statistical authorities.

In addition, the experience of satellite in SNA accounts or population census can be used to compile additional data. Data, that require additional efforts can be compiled once in 2-3-5 years. This may reduce the burden of construction of additional data.

References

William Davies (2017), „How statistics lost their power – and why we should fear what comes next“, The Guardian.

Diane Coyle, „Why GDP Statistics Are Failing Us“.

External debt: Definition, Statistical Coverage and Methodology, IMF, 1988.

Иван Ткачев (2019), Тихая «революция» в анализе иностранных инвестиций.

Konstantin M Wacker (2013), On the Measurement of Foreign Direct Investment and its Relationship to Activities of Multinational Corporations, Working Paper Series NO 1614.

Appendix 1

External debt: Definition, Statistical Coverage and Methodology, IMF, 1988

Part I, DEFINING EXTERNAL DEBT, Chapter I, SEEKING A COMMON DEFINITION OF EXTERNAL DEBT

1. THE OBJECTIVE

The first consideration in formulating a definition of countries' external debt is that it should respect the requirements of a wide range of users. Major users include: banks and export credit guarantee agencies for their work on risk analysis; officials involved in international financial co-operation, especially those concerned with the negotiation of debt agreements; and economic analysts in general. These and other potential users must find statistics derived from the definition relevant and realistic.

At the same time, it has to be recognised that statistics used in the assessment of external debt have already been collected and published for many years by a number of organisations, each with its own constraints and objectives. While any statistical system should be geared to the needs of the final user, the organisations are themselves among those users, and any definition is therefore bound to take into account their own practical needs.

The definition should also embody an internally consistent methodological approach to the concept of debt, capable of being articulated into some of the broader statistical systems dealing with financial stocks and flows.

It must also take into account, as far as possible, the practical problems involved in the reporting, aggregation and presentation of the statistics obtained.

This last aspect will be raised at various points in latter chapters, but it will be useful, before proceeding in Chapter II to the definition adopted by the Group, to discuss briefly the historical background to the role and purposes of the existing systems, and the methodological framework in which the definition is placed.

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User needs for data

User needs moved from simple 'more granularity' to use of complex and differently compiled data

- Additional granularity of data
- Conversion matrixes between primary and compiled data
- Supplementary data that is out of scope of the main framework
- Data on new phenomenon



How to deal with such needs

- Let the users find the data that they need
 - Existence of large datasets in different areas, including those constructed by World bank, OECD, BIS
 - Provide additional guidance and data that cover new economic reality
- Lead users to use specific data on selected topics
 - Bringing together different aspects of economic phenomena in one data set



Current system of statistical indicators of external sector

- System of canonic data based of BOP-IIP
 - Standard components that are strongly follow the logic of SNA
 - Supplementary components, including external debt statistics
 - Indicators based on general principles of the system, for example BIS data on banking statistics
- Indicators that use some other principles due to practical issues (external trade) or do not cross the system (real effective exchange rate)



Supplementary data in BPM6

- Many sub items in BOP
 - Interest before FISIM, spending of seasonal workers, indication of ultimate controlling parent in FDI related items, etc.
- More tables for IIP decomposition
 - Currency composition of different items, on remaining maturity, financial derivatives, etc.

Many countries do not compile or do not publish these data



Examples of additional data sets in external sector statistics area

- External debt
 - Data set was developed and fully based on BPM6 principles
- Data template on reserve assets and foreign exchange liquidity
 - Based not only on BPM6 principles, but also on foreign currency criteria ignoring residency criteria
- International trade
 - IMTS, SITS different principles



Reserve template

BPM6 compatible data

Data out of BPM6 scope

Total reserve assets

Other foreign assets

*Credit lines provided by
international organizations*

Foreign currency flows

*Currency composition of
reserves, some data on
securities*

Foreign currency
derivatives

All other data



Satellite account: areas of interest

- Digital economy/digital trade
 - E-commerce, digital goods and services, digital intermediation, details on production chain
- FDI and related statistics
 - FDI chains, FDI enterprises' production, distribution of income, role of resident UPC units, transfer of intellectual property products, etc
- International assistance, remittances



Satellite accounts on remittances

- Remittances according to balance of payments, country distribution of remittances
- Expenditures in country of destination, sectors of economy in which seasonal workers are engaged
- Data on compilation base: number of migrants/seasonal workers, cash flows, average salary, average length of stay
- Channels of remittances, cost of remittances, remittances in kind



Satellite accounts: objections

- Statistical data follow user needs
- Additional burden on reporters, compilers and international organizations
- Enough data are exist in different datasets already
- Allocation of resources to areas that are in center of interest of users rather than allocating them to make existing data in one set
- Countries do not want to compile and provide detailed data even to international organizations



Satellite accounts: arguments in favor

- Official statistics is not only about data construction, but also insuring compatibility among countries
 - Fit existing data into compatible framework
 - Make cross country comparison even if the topic is not important to several economies
- IT solutions in data management and processing allow to construct and share detailed data with almost same periodicity
- Bringing together different aspects of economic phenomena in one set will provide users with snapshots on the topic from different point of view



Answers to your possible comments and questions

Should all data around the world be in one set	No
Is it possible to bring together all the data	No
Is there need to have different data compiled by different institutions	Yes
Is it possible to have additional data without strong support of international organizations	No
Will the data be usefull if not all countries will participate	Partially



Thank you

