



The next generation of International Statistical Standards

Gabriel Quirós-Romero*¹ and Jennifer Ribarsky¹

¹ International Monetary Fund. GQuiros@imf.org and JRibarsky@IMF.org. The views expressed are those of the authors and do not necessarily represent the views of the International Monetary Fund (IMF), its Executive Board, or IMF management.

Abstract:

Advances in technology and communication, increasing capital movements and dominance of multinationals as well as reductions in shipping costs have redefined the global economy. Leading to tighter integration of economies, with the creation of global value chains through which multinational corporations stretch their operations across borders. Current statistical manuals, for which value-added generation is anchored in the traditional notion of residency, are showing their limits.

Digitalization is also changing how we work, play and communicate in manners that stretch our statistical standards. Likewise, the gig economy, facilitated by digitalization, has given a new meaning to the concept of informality, but may help better measure these activities using big data. Furthermore, data is “the new oil” of modern economies, a valuable corporate asset. Lastly, distributional issues are poorly accounted for in the SNA whose metrics depicts aggregates or averages. This paper offers a discussion on these issues.

Keywords:

SNA; Balance of payments; Globalization; Digitalization; Informal economy

1. Introduction

The International Monetary Fund’s (IMF, the Fund) primary purpose is to ensure global stability of the international monetary system which includes all macroeconomic and financial sector issues that bear on global stability. The Fund does this in three ways: economic surveillance¹, lending, and capacity development. Statistics are an important component for ensuring sound policy analysis and appropriate evidence-based policy responses.

The international standards explain concepts, definitions, classifications, and accounting rules that comprise the internationally agreed standards for measuring the relevant concept (e.g., gross domestic product (GDP)) and are designed to be robust and flexible so that needs of the various users are met. It has been over ten years since the adoption of the 2008 System of National Accounts (SNA) and the IMF’s 6th edition Balance of Payments and International Investment Position Manual (BPM6) and economic systems have continued to evolve. The IMF’s Government Finance Statistics Manual (GFS 2014) and the Monetary and Financial Statistics Manual and Compilation Guide (MFS 2016) were updated more recently. There are good reasons for maintaining separate manuals across specific topical domains (e.g. MFS meets the data needs for monetary statistics) but demands from the user community to have consistent statistics across domains and statistical compilers to have consistent guidance point towards a harmonized conceptual approach to standard setting. Thus, an overarching goal is to maintain the theoretical linkages across macroeconomic statistics while maintaining separate manuals.

While the current conceptual frameworks of national accounts (SNA) and international accounts (BPM6) are harmonized, robust, resilient and still relevant, it is also clear that globalization, digitalization, economic welfare, “gig” employment, or the informal economy provide significant

¹ The provision of economic and financial information needed for surveillance is spelled out in the Articles of Agreement of which Article VIII, Section 5 is a central pillar.

challenges, especially in the case where the issues become entangled. Concerns have arisen over how these issues are being addressed both from a conceptual and a practical measurement perspective.

The IMF Statistics Department's (STA) mandate is to provide global leadership on statistical methodologies and standards for the Fund, its member countries, and the international statistical community, as well as strengthen member countries' capabilities to produce and disseminate macroeconomic and financial statistics through technical assistance and capacity development. STA's challenge is to provide guidance to a wide range of countries with very different economic structures and statistical systems, making the aspiration of one-statistical-standard-fits-all particularly difficult to implement. Therefore, a balance must be struck between methodology and statistical capacity in the IMF membership especially for less statistically advanced countries. This paper is organized by first providing some necessary reflections to consider before changing the international standards, then discusses main priority issues and recent progress.

2. Some initial reflections

The national and international accounts are a system of accounts that are interlinked, comprehensive, consistent, and integrated. Changes to one component may have implications that ripple throughout the fundamental principles, e.g. residence (territory), production boundary, asset boundary, as well as the "core", of the entire system of accounts. For an orderly discussion, it is convenient to sort issues by the complexity of the potential solutions. Hence, we propose first to reflect on whether the issue can be remedied by (i) just clarifying the recording of the new phenomena and/or providing more detailed guidance, without affecting the fundamental framework; (ii) providing (more) disaggregated (i.e. more granular) statistics, offering institutional sector, firm characteristics (e.g., ownership, industry, and size) or distributional information; (iii) rearrangement of classifications to reflect new agents (e.g., digital platforms), transactions, goods and/or services, however, all of them supplementary to related statistics; (iv) changing the fundamentals of the international standards.

Such distinctions are key when considering when an update of the manuals is warranted, and if so with which depth and range. Issues that do not change the fundamentals of the international standards could be addressed through separate documents, such as compilation guidance and clarification notes, in addition to the current BPM6 and 2008 SNA. In other cases, the issues may go to the heart of the national and international accounts, and can only be addressed within an updated version, "benchmark" type of revision, of the international standards. Furthermore, issues that are viewed as affecting fundamental principles may be best addressed through "extensions" or supplements to the basic, core concepts (e.g., extending the production boundary to include unpaid household service work such as cleaning), providing alternative concepts, but leaving the "core" framework intact.

At the same time, the solutions to be provided should be tested by several critical restrictions. Among the most important are: (i) statistical compilation feasibility; (ii) data source availability and accessibility; (iii) objectivity; (iv) and flexibility to implement second-best solutions, due to differences across countries related to their economic structure and statistical capacity. As such, the conceptual guidance should provide a roadmap for what can be done by national statistical offices and central banks, considering existing as well as new and innovative good statistical compilation practices.

The following questions are worth considering:

- What areas, economic and financial developments are not sufficiently or well covered?
- What issues would change the fundamentals of the system? Do benefits of the potential change outweigh costs?
- What issues can be addressed through granular, supplementary, or extended measures?
- Are issues relevant for most countries? Could the potential solutions be implemented by national statistical compilers?

The major priority issues discussed below are broadly consistent with issues put forward by other international organisations. The only addition in which we seek new efforts in the next generation of standards is the *Informal Economy*, where the concept is being tested with new types of jobs largely linked to digitalization, e.g. the gig economy. Furthermore, practical measurement issues on the informal economy need to be addressed as well. In fact, most of the priorities are substantially linked: globalization, digitalization, informality, income and wealth inequality or the need for welfare indicators are often closely linked and reinforce each other.

3. Globalization

The broad topic. Economic globalization has led to tighter integration of economies, with the creation of global value chains, allowing businesses to organize their production chains more efficiently. Furthermore, multinational enterprises (MNEs) organize their production and marketing at a global level and may utilize special purpose entities (SPEs) structures, to obtain benefits from different legal and tax regimes which allow them to maximize profits after taxation. In addition, as the economy becomes increasingly digitalized, digital businesses can be “born global” reaching customers all around the world at an unprecedented scope and scale. This has increased the complexity of compiling economic statistics as it is more difficult to break down production activities on a country-by-country basis as well as to determine in which cases there is a real transfer of economic ownership as opposed to the provision of (manufacturing or other) services. As a result, the measurement of key economic indicators, including GDP, has been affected.

These emerging and ever-changing global production arrangements pose challenges to macro-economic statistics. The IMF’s Committee on Balance of Payments Statistics (BOPCOM), have made progress, described below, on certain issues that can be addressed through more supplemental and granular statistics (that do not change the core fundamentals of the accounts) to shed light on the phenomena.

Globalization: Progress made so far. SPEs have evolved beyond those structures anticipated in the current statistical manuals. While originally SPEs were mostly set up by financial institutions, they have evolved to include nonfinancial specialized entities established by MNEs to manage intellectual property rights, research and development, trade, and other activities as part of the group-wide financial and profit maximization strategy. The common denominator of these activities is often tax arbitrage among jurisdictions in a context of free capital movements. Considering the evolving nature of SPEs, the IMF BOPCOM’s Task Force on SPEs proposed an international definition of SPEs in the context of cross-border statistics, providing further guidance on SPEs beyond what is in the current statistical manuals which allows for cross-country comparable data to be collected.² This definition was adopted by BOPCOM and supplementary SPEs data collection will begin by the end of 2021.

Additional statistics are also needed to better analyze global value chains (GVCs), including the role of MNEs in these processes. Key to better understanding this fragmentation of production is interpreting current trade related statistics as gross exports when they often contain significant foreign intermediate goods and services. Since GVCs are not evident in the gross trade data, potentially distorting who really trades with whom, current measures of bilateral trade balances may need supplemental measures for optimal policy analysis requiring national statistics to offer additional data to shed light on the partial globalization of their respective national economies. It is also necessary to better identify the role of MNEs in current account transactions, potentially identifying intra-MNE flows some of which utilize transfer pricing to shift profits to minimize an MNEs global tax burden. Breaking down the goods and services account by enterprise characteristics, such as industry, nationality (foreign vs. domestic) and firm size would be highly useful for analysis of globalization issues. However, is it feasible, and if so to which degree of granularity?

Globalization: Issues for further consideration. While progress has been made, further research is needed in certain areas. One such issue is addressing the globalization issue through extensions of the current BPM6 framework. To do this, the BPM6 framework could be extended to provide an alternative view that complements the residency concept, i.e. territorial, on which the fundamentals of BPM and SNA are based. Introducing a nationality concept, i.e. ownership, would allow users to better understand the passage from GDP to gross national income or the value of conventional international investment

² <https://www.imf.org/external/pubs/ft/bop/2018/pdf/18-03.pdf>

position statistics. Further exploration on how to manage the duality of residence/nationality within the international accounts' framework would be needed before such extensions could be produced.

However, some issues— in which further research is still needed— may need to be addressed through changes in the core framework as advances in technology and communication, dominance of MNEs, use of SPEs, increasing free capital movements, as well as the distortion of GVCs themselves due to profit-shifting are seriously testing some of the fundamentals of the system.

It can be argued whether SPEs should be considered as separate institutional units from their parent. An intrinsic difficulty to record and treat appropriately SPEs is when their creation is due to tax-arbitrage and profit-shifting, as is often the case. Currently, the residence of an SPE is determined according to the economic territory under whose legal jurisdiction the entity is incorporated or registered. If the entity is legally located in an economy different from its parent, then it is recognized as a separate institutional unit. As discussed in Moulton and Van de Ven³, there are two reasons why: (i) this treatment is consistent with the actual cross-border cash flows resulting from economic transactions; (ii) rerouting such transactions would require the exchange of individual data between statistical offices, which is not possible given existing legal constraints.

Another challenge is determining the economic ownership of intellectual property products (IPPs), e.g. research and development, because of their intangible nature their ownership, location and use are not easily observed. Key amongst this is trying to determine economic ownership of these intangible assets amongst an MNE group. The parent may assign legal ownership of IPPs to SPEs which otherwise do not contribute to the MNE's production activities. Recent work of the IMF's Task Force on SPEs put forward a proposal to collect supplementary information on SPEs for a reduced number of BOP and IIP components beyond direct investment activities. As transactions in goods would be relevant for merchanting SPEs, a separate line for net merchanting by SPEs is required. Regarding services, four distinct components of services have been included in the reporting list where SPEs can be of relevance: transport, financial services, charges for the use of intellectual property, and other business services.

The principles of economic ownership of IPPs are difficult to apply inside MNEs because the use of the IPP by one part of an enterprise group does not prevent the simultaneous use by another part and legal ownership of IPPs can be placed anywhere amongst the group. Currently, the guidance states to record a change in economic ownership when a financial transaction between two institutional units occurs, which corresponds to a change in legal ownership. Various options for deviating from this suggested approach⁴ have been discussed but further research is needed as to what can be done in practice. Furthermore, the recording of what entity is the economic owner of the IPP also has implications for how and where the related charges for the use of the intellectual property are recorded. Since IPPs are often considered corporate property, payments for its use may not always be observed separately and may instead be shown as distributed or retained earnings from foreign direct investment.

In the context of increasing globalization, external sector surveillance has become central to the Fund's mandate. Monitoring and assessing global imbalances (large current account and net international investment position imbalances) and disentangling any measurement distortions are of the highest importance. IMF research suggests that statistical measures of current accounts may not always give an accurate picture of true external imbalances and one such measurement distortion is the treatment of retained earnings on portfolio equity. Currently, retained earnings on portfolio equity are not distributed to foreign portfolio investors and therefore, not distributed to the owner. This is inconsistent with the treatment of retained earnings of a foreign direct investment enterprise that are treated as if they were distributed to foreign direct investors in proportion to their ownership of the equity of the enterprise. It has been proposed that this treatment could be extended to portfolio equity investment to help alleviate the measurement distortion. However, a careful consideration of its implications and feasibility is warranted before committing.

4. Digitalization

³ http://papers.nber.org/conf_papers/f100570.pdf

⁴ <http://www.iariw.org/copenhagen/konijn.pdf>

The broad topic. Digitalization encompasses a wide range of new applications of information technology in business models and products that are transforming the economy as well as welfare implications. The effects of this technological innovation include sharply lower prices and increased efficiency in computers, smart phones, and the Internet; new goods and services; innovations in financial markets and new methods of payment (e.g. Fintech); and reductions in costs and improvements in quality and efficiency associated with the use of technology.

Digitalization: Progress made so far.

There is no generally agreed definition of the “digital economy” and consequently a common metric to measure its size. While digitalization has penetrated many activities, and almost the entire economy is affected—mostly positively by digitalization, it is more realistic to focus the measurement of the digital economy on a concrete range of economic activities at the core of digitalization. The IMF (2018a) Executive Board paper on *Measuring the Digital Economy*⁵ distinguishes a “digital sector” that covers the core activities of digitalization, ICT goods and services, online platforms, and platform enabled activities. Exercises such as these better highlight the digital economy without making changes to the fundamental principles. Furthermore, digitalization also raises measurement issues and new data needs for external, monetary and financial sector statistics. Improved measurement of digital products and transactions could improve measurement of inflation and balance of payments as many of the online platforms are not resident in the economy of the user. Recent work by the OECD, with IMF participation, on *Measuring Digital Trade* and *Digital Supply-Use Tables* will provide more granular data to better shed light on digital transactions and products based on an agreed framework.

Another area in which progress has been made is clarifying the statistical recording of crypto assets in the international standards. Crypto assets combine properties of currencies, commodities and intangible assets. The IMF (2019a) recently released a clarification note on *The Treatment of Crypto Assets in Macroeconomic Statistics*⁶ that presents an overview of crypto assets and provides guidance on the classification for their treatment in macroeconomic statistics based on the current statistical standards and classifications. At present, Bitcoin-like crypto assets do not meet the definition of a financial asset, so they should be classified as produced nonfinancial assets as a distinct sub-category under valuables.

Digitalization: Issues for future consideration. The value of (digital) data. While much can be addressed by providing more granular or supplementary statistics, there may be a need to go beyond the current international standards to better account for the role of data in the modern digital economy. Data have always had a central role in business decision making. Businesses strive to gather data on customers, to improve products and processes to enhance productivity, improve performance, and increase profitability. As storage and acquisition costs decrease and processing capacity (software, IT hardware) increases, an explosion in data accumulation is happening. The simple fact that data is in electronic form allows it to be analyzed for insights and decision-making at an unprecedented scope and scale. In some sense, data itself has been transformed: it has become digital data. This digital data has allowed for new information/knowledge creation that could not have been done if the data were not in digital form. While initial work by the IMF (2019b)⁷ has begun, there is not yet any agreement on the statistical treatment of data, thus further research is needed to determine if data is an asset and, if so, is it produced or non-produced; as well as how to determine its value.

5. Economic Welfare

The [6th IMF Statistical Forum](#) (Measuring Economic Welfare: What and How?) held in November 2018 helped set the framework for what measures “Beyond GDP” may be needed to better understand changes in economic welfare in the digital age as GDP is not intended to be a comprehensive measure of economic welfare. In particular, how the gap between welfare growth and growth of real private consumption, a measure of economic welfare, is widening in the presence of new and rapidly changing, often free, digital services. Furthermore, as governments and international organizations, such as the

⁵ <https://www.imf.org/en/Publications/Policy-Papers/Issues/2018/04/03/022818-measuring-the-digital-economy>

⁶ <https://www.imf.org/external/pubs/ft/bop/2019/pdf/Clarification0422.pdf>

⁷ <https://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/ge.20/2019/mtg1/IMF.pdf>

IMF, adopt inclusive growth strategies, there is a clear need and expectation to go beyond measuring the size and aggregated growth of the economy to understand how the benefits of economic activity are being distributed. Further work on linking households' indicators from sectoral accounts, micro data and macro aggregates should be high for national and international statistical agencies.

In addition, while the SNA provides a brief general discussion of real income reflecting the real purchasing power, it is not prescriptive of what types of income measures would be needed to appropriately measure economic welfare. In this respect, a discussion on real household (adjusted) disposable income as being a more appropriate measure of household's economic well-being instead of real GDP could be emphasized to gain traction in countries that do not publish income measures. Furthermore, the SNA could be more prescriptive on the choice of deflator, emphasizing that the appropriate measure of real income would use a deflator containing prices for the uses of that income rather than from the sources of the income.

6. Informal economy

The informal economy broadly defined should comprise (i) the production of goods and market services of households; and (ii) the activities of corporations (illegal; underground) that may not be covered in the regular data collection framework for compiling macroeconomic statistics. Furthermore, the gig economy, facilitated by digitalization, has given a new meaning to the concept of informality in the economy, but also may provide scope for better measuring these activities using big data. The current statistical manuals, 2008 SNA and BPM6, fall short in providing a clear definition that is suitable for compiling the requisite statistics for policy analysis; therefore, more clarification in the international standards may be needed. To make progress on this issue, the [7th IMF Statistical forum](#) in November 2019, will focus on estimation methods by identifying good, feasible, traditional compilation methods as well as innovative data sources from big data to the use of drones—used to measure agriculture and construction activity— to better measure the informal economy.

7. Discussion and Conclusion

A considerable number of current statistical challenges may be satisfied by providing more granular or supplementary information, allowing the flexibility needed. Overall, the basic structure of the current international statistical standards remains valid and there is no need to propose major changes to the core macroeconomic statistics framework. Furthermore, given that many countries have not yet adopted the 2008 SNA⁸ and are unable to comply with the minimum required scope and detail of national accounts data, it is, therefore, not an urgent need for many countries to update the international standards. Nevertheless, developments have continued to progress especially in the areas of globalization, digitalization, economic welfare, and the informal economy that need to be systematically tackled, when thinking about the next generation of international statistical standards, a discussion to which this paper tries to contribute.

References:

1. IMF, Balance of Payments and International Investment Position Manual, Sixth Edition, 2009
2. IMF (2018a), Measuring the digital economy, IMF Executive Board paper
3. IMF (2018b) BOPCOM's Task Force Special Purpose Entities Final Report
4. IMF (2019a), The treatment of crypto assets in macroeconomic statistics, IMF Clarification Note
5. IMF (2019b), Measuring the digital economy in macroeconomic statistics: the role of data, Meeting of the Group of Experts in National Accounts April 2019
5. Moulton, B., Van de Ven, P., Addressing the challenges of globalization in national accounts, National Bureau of Economic Research Conference March 2018
6. Ribarsky J., Konijn P., Nijmeijer H., and Zwijnenburg J. (2018) "Measuring the Stocks and Flows of Intellectual Property Products". International Association for Research in Income and Wealth Conference August 2018
7. United Nations, European Commission, IMF, Organisation for Economic Co-operation and Development, World Bank, System of National Accounts (SNA) 2008, New York, 2009

⁸ Only 88 countries had adopted the 2008 SNA by December 2018. <https://unstats.un.org/unsd/statcom/50th-session/documents/2019-8-NationalAccounts-E.pdf>