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Agenda item: 2.1
Guidance on measuring global production

Introduction

The Guide to Measuring Global Production (December 2015) provides detailed practical guidance to national accounts compilers on the implementation of the 2008 SNA recommendations related to global production. It also reviews some conceptual issues linked to emerging globalization phenomena that are not well addressed in current international standards. The guide however, also highlights the need for further research and exchanging experience on data collection and compilation methods in respect to global production arrangements, particularly the measurement of factoryless goods producers, exchange of economic data and data sharing.

Developing the Guide was truly a global effort. The UNECE Task Force included: Ireland (Chair), Netherlands (Editor), Canada, Finland, Israel, Italy, Norway, Sweden, United States, Eurostat, IMF, OECD, UNECE, UNSD and WTO. The Guide underwent two global consultations and many reviews by international experts groups, including the AEG and BOPCOM.

This paper presents the main recommendations of the Guide and proposals for future research. It also informs on follow-up activities undertaken by Eurostat, OECD and UNECE in the respective areas.

Documentation

Guide to Measuring Global Production – Main recommendations and further work

Main issues to be discussed

The AEG is requested to:

- take note of the various international initiatives in response to the recommendations of the Guide and provide views on the planned activities
- express their views on the priorities of work

Guide to Measuring Global Production – Main recommendations and further work

I. Introduction

1. The System of National Accounts 2008 (2008 SNA) and the Balance of Payment and International Investment Position Manual, sixth edition (BPM6), have introduced many changes in order to better reflect aspects of globalization. At the same time the implementation of the new standards revealed many new conceptual and measurement challenges. The key purpose of the Guide to Measuring Global Production was strengthening the practical guidance given to national accountants and balance of payments compilers and enhancing international comparability with respect to the 2008 SNA recommendations related to global production, such as good for processing, merchanting and ownership within global value chains. It also addresses some additional globalization phenomena and the associated conceptual challenges as well as emerging data needs for explaining the macro-economic consequences of globalized production processes.

2. In the process of drafting the Guide a number of conceptual issues related to the interpretation of the 2008 SNA and related international economic standards (such as BPM6 and ISIC Rev.4) were identified by the UNECE Task Force on Global Production (TFGP). The following issues were consulted with the AEG:

- Industrial classification of factoryless goods producers (FGP) (April 2013)
- Treatment of the transactions of FGP and delineation with the other two main types of global production arrangements: manufacturing services on physical inputs owned by others and merchanting (September 2014).
- Defining economic ownership (including a decision tree) over IPP assets within large Multinational Groups (September 2014).

3. Finalization of the Guide included wide consultations with expert groups, especially with respect to the proper treatment and classification of factoryless goods producers but also on collecting evidence of emerging global production arrangements in the area of services. Although the Guide raises awareness and promotes a better understanding of various global production arrangements, the Task Force was not able to bring all the conceptual issues to firm conclusion. Therefore a number of issues remain on the research agenda.

4. Similarly further research is going on in the domain of trade in value added and in particular on the broader topic of extended supply use tables. More practical experience and best practices will emerge in the process of implementation of the recommendations of the Guide. This may lead to the update of the Guide in a few years.

5. This paper summarizes the main recommendations and action points for future work of the Guide to Measuring Global Production. It also reports on activities undertaken by Eurostat, OECD and UNECE in order to implement the recommendations of the Guide or to advance the research agenda.

II. Implementation and follow up to the Guide

6. In the coming years countries will focus their efforts on implementation of the recommendations of the Guide and, in general, the 2008 SNA and BPM6 with respect to global production. Inevitably this will involve review of data sources and methods, increase the data requirements, development (or revision) of questionnaires and potentially increase response burdens.

7. As a follow up to the Guide, it was recommended to set up an information exchange platform for stocktaking of complex cases, identifying best practices and further harmonization of accounting practices. Part of the work will also encompass testing and further refining or expanding the typology of global production arrangements based on the examination of new case studies. The platform could

also be used for exchange of practical experience on data collection, compilation methods and organizational issues, international data confrontations and improving the measurement of global production in cooperation with other subject matter statisticians (price and business, classification, balance of payments, etc.).

8. The platform could take the form of face-to-face meetings but may also include a website (with restricted access) for the collection and dissemination of case studies and new methodology.

Follow up activities

9. Eurostat, OECD and UNECE jointly organized a special meeting of the Group of Experts on National Accounts in July 2015 to discuss experiences in measuring global production and to follow up on research issues. The meeting brought together examples on data sources, questionnaires, compilation techniques and different tools countries are using to measure global production arrangements. In addition, it collected new evidence on emerging global production arrangements such as factoryless goods production and merchanting of services as an input for further discussion with classification experts. Finally the meeting engaged different data users and other key stakeholders and sought their view on future work and research agenda. Sessions on global production are included on the agenda of the joint UNECE/Eurostat/OECD Group of Experts on National Accounts in May 2016 and related issues have, and continue, to figure prominently on the agenda of the OECD's annual Working Party on Trade in Goods and Services. In addition the OECD launched a new Expert Group at the end of 2014 to develop Extended Supply Use Tables.

10. Eurostat is planning to launch a project on global production and integrated global accounts (IGA) to assist the EU countries in implementing the recommendations of the Guide. Eight EU Member States as well as the OECD and the ECB will participate in a dedicated task force. While the implementation is scheduled for September 2016 – December 2018, the first meeting of the task force will take place on 17-18 March 2016 to prepare the launch of the project. In the area of global production, the aims are to ensure a wide and consistent implementation of the Guide recommendations across national accounts and balance of payments statistics and to ensure the EU input to the research agenda. While IGA is mainly addressed to the national accounts and balance of payments compilers, business and trade statisticians will be involved on number of common subjects.

11. Based on the experience gathered with this project, Eurostat and UNECE are planning to organize a further workshop(s) for SEE and EECCA countries to discuss new surveys, data collection and compilation techniques in respect to the different global production arrangements. UNECE and CIS-Stat will provide a translation of the Guide into Russian.

12. All collected material will be used to supplement the Guide to Measuring Global Production with concrete country case studies and practical examples. It will also be used in future updates of the Guide.

III. Action points for future research

13. In addition to establishing the above-mentioned platform, this section presents the other Main recommendations and research items suggested in the Guide for future work.

Typology of global production arrangements, industrial classification of factoryless goods producers and recording of their transactions

14. The Global Production Guide provides a typology of global production arrangements, which aims to enhance international comparability by helping national accountants and balance of payments compilers to determine: the roles of the various actors in a global value chain, the economic owners of inputs, outputs and assets along the production chain and the nature of transactions taking place inside the global value chain.

15. The typology of global production arrangements should frequently be updated based on the examination of new case studies, particularly in the area of FGPs and global services producers,

combining all relevant expertise in the areas of e.g. national accounts, balance of payments, business registers, economic classifications, foreign affiliates trade statistics (FATS), foreign direct investment (FDI), international merchandise trade statistics (IMTS), services international trade statistics (SITS) and R&D. This also requires maintaining a regular dialogue between the national accounts community and International Accounting Standards Board (IASB) which will allow following and adapting to new developments in business accounting.

16. The work on the typology highlighted a number of outstanding questions in relation to FGPs - producers outsourcing their manufacturing activities but owning the underlying intellectual property products (IPP) and controlling the outcome of the production process. A strict interpretation of the ISIC Rev.4 means that an FGP should be classified as a distributor if the FGP does not provide (and own) the material inputs subject to transformation, even though the FGP provides the technical specifications of the output and owns and supplies other (non-material) critical inputs such as the IPPs used in production, including those cases where IPP related services reflected the largest share of the value of the final good produced. There is an emerging consensus among national accountants and balance of payments compilers that the current treatment of FGPs is not satisfactory because simply shifting who purchases the material inputs (which may be inconsequential for many goods, especially electronics, and where the significant value is provided by IPPs) changes the classification of the unit. Under current rules, FGPs whose value model is built around the development of IPP and control of production processes will be classified to the same sector as classic distributors, even if the FGP has no classic distribution activity. In recognition that FGPs that controlled production process and provided significant IPP input to the production process were different enterprises to those FGPs that had only marginal IPP activity, the Guide put forward an alternative view that classifies (high IPP content) FGPs as a sub-set of manufacturers, and proposed rules for their delineation and recording. This work is not yet finalised and requires follow up. Immediate steps are developing rules for identification of FGPs in ISIC classes and testing by national statistical institutes (NSIs) of the alternative accounting recommendations provided in Chapter 2 of the Guide. Ultimately, a firm decision on the classification and recording of FGPs is needed in the course of future updates of the ISIC, the SNA and the BPM.

17. As the goods-services distinction inside production chains becomes less and less clear, this distinction should also be examined in future revisions of SNA, BPM, ISIC and CPC.

Follow up activities

18. In the end of 2015 Eurostat established an EU Task Force to follow up on the work of TFGP and develop rules for detection of FGPs. The EU Task Force will develop methodology for the identification of FGPs based on the data sources of the European Statistical System and for flagging them in the business register.

19. The joint UNECE/Eurostat/OECD Group of Experts on National Accounts has made efforts to collect and examine additional country examples of FGP and other emerging production arrangements in services. The May 2016 meeting the Group will have a common day with the Technical Subgroup on ISIC to discuss in more detail the outcome from the EU Task Force on FGPs and the more concrete guidelines for detection of FGP.

20. The rapidly changing nature of production and in particular the ways in which companies produce goods and services has been a major impetus in the push to review what is the appropriate statistical unit. In response, the Task Force on the Use of Statistical Units in National Accounts, launched by the Inter-Secretariat Working Group on National Accounts (ISWGNA) and chaired by OECD will review the SNA preference for the use of the establishment as the preferred unit to compile industrial statistics, and in particular, supply and use tables. The interpretation of the SNA-definition of an “institutional unit” for the compilation of institutional sector accounts will also be discussed.

21. It should be clearly noted that the Task Force will mainly deal with the issue of defining statistical units in the context of a possible future update of the System of National Accounts (SNA) 2008 and, if needed, the update of related standards. The mandate of the Task Force thus clearly goes beyond the interpretation of the current standards. The Task Force on Statistical Units will be discussed more in a separate item for discussion.

Economic ownership - theory and practice

22. The 2008 SNA enforces the strict recording of international transactions on a change in ownership basis. This new guidance leads to better coherence of national accounts and balance of payments but also brings many measurement challenges. The Guide further elaborates these rules in the context of Multinational enterprises (MNEs) and global production arrangements. It reviews some difficult questions related to the legal versus economic ownership over specific entities such as special purpose entities (SPEs), assets and IPPs and prorating the transactions and assets of multiterritory enterprises.

23. MNEs may set up their geographical structure using legal entities such as SPEs assigning them for e.g. legal ownership of IPPs. National accountants will not easily be able to deviate from such legal arrangements and they will have to follow reported earnings on IPP investment, despite the fact that these SPEs may not be considered as the economic owners according to the 2008 SNA principles. The Guide recommends explicitly identifying these "artificial" IPP services in the national accounts or balance of payments, for example by presenting them in supplementary tables, to inform users about the significance of these flows. The precise design of such supplementary tables is a topic for future research.

24. The principles of economic ownership of IPPs are particularly difficult to apply inside MNEs, where the creation of IPPs, their legal ownership and their economic use in production may involve different entities that are resident in a broad range of countries. This seriously complicates the recording of IPP related trade flows. The Guide introduces a decision tree, which provides guidance in properly linking IPP use to the individual economic activities inside global value chains. However, the information required to make solid judgements may still be difficult to obtain and testing the applicability of the decision tree to real country examples may lead to further elaboration.

25. As recognised in the 2008 SNA, recording the output of multiterritory enterprises, or similar enterprises such as construction companies carrying out large projects abroad, on a country-by-country basis may require the creation of notional units and prorating of transactions and asset ownership. Applying the principles of economic ownership in the context of multiterritory enterprises may however be challenging in practice, particularly for global coherence. It is advised to carry out prorating as a concerted exercise of all the NSIs involved. Also it is advised to continue the exchange of country experiences in recording the activities of multiterritory enterprises. Globalization is an on-going process that may lead to new types of global production arrangements. This implies that accounting methods, including the rules of assigning economic ownership in global value chains, must be adapted accordingly. As discussed above, maintaining regular dialogue between the national accounts community and IASB is essential.

New data sources and new methods needed to measure global production

26. While the changes in concepts in the 2008 SNA with respect to recording processing of goods owned by others, merchanting and FGPs are well understood, the required modifications in data collection are not always straightforward. More specifically, the additional data needs relate to:

- Identifying import and export of goods in IMTS statistics which are not subject to transfer of economic ownership (goods sent abroad for processing or repair).
- Identifying purchases and sales of goods abroad which need to be recorded as imports and exports in the national accounts and balance of payments, but which

remain unobserved in IMTS statistics, as these goods do not physically cross the borders of the domestic economic territory.

- Identifying inventories held by the surveyed unit. Inventories of goods held abroad need to be recorded in supply-use tables and national balance sheets.
- The data collection on international trade in services is a challenge in many countries. It is advised to include explicit questions about intra-group services in international trade in services surveys, depending of course on the relative size of MNE activities and related output or consumption of intra-group services.

27. In many countries, a sound coverage of the items above requires expanding the scope of existing surveys. Aspects of global production may be difficult to measure with existing sets of source statistics, or may even remain unobserved altogether (e.g. transactions in goods under merchanting, inventories held abroad). Yet, many NSIs are facing serious constraints in this regard. The optimal use of existing data may be the only feasible way forward. One important step in this direction is data validation by bringing together, and reconciling, the results from business surveys, merchandise trade statistics and international trade in services statistics. This should preferably be done on the basis of an integrated business register that allows bridging the statistical business register and the customs register. It is also recommended to utilize existing customs data or information from the tax authorities to the fullest extent.

28. In recent years several NSIs set up so-called large and complex enterprises units (LCU), which proved to be efficient in collecting and compiling data on the largest and most complex enterprises. Typical LCU activities include integrated data collection (including register data), data compilation and consistency analysis. In the context of further improving the performance of LCUs, the TFGP recommends developing sufficient cooperation mechanisms and collaboration among producers of statistics, both nationally and internationally.

29. Issues related to global production may oblige NSI's to combine efforts in completing their views on MNEs and global production and international trade more generally. The following areas of further development are recommended:

30. The development of common international business registers for the most complex MNEs (such as the Euro Groups Register) will assist in assigning the economic activities of the enterprises on a country-by-country basis in a mutually consistent way.

31. Improving the recording of intra-company services flows of MNEs in international trade in services statistics could be a joint effort by NSIs. Confidentiality policies and existing restrictions on data exchange have to be taken into account. Further work is needed to explore the possibilities for exchanging micro data between NSIs strictly for statistical purposes such as data validation. International organisations should consider what role they could play to facilitate this process.

32. Data comparison programs should be established to help overcome the substantial bilateral asymmetries in statistics on imports and exports of goods and services. Classifications supplementary to ISIC and CPC, global chain fragments or business functions, should be developed to enhance international trade data comparability and data validation.

33. A clear request expressed by national accounts and balance of payments compilers is to establish a permanent forum where country experts could share information and experiences on measurement issues related to global production arrangements. Globalization will continue to lead to new global production related issues that have not been examined so far. Such a forum could support stocktaking of new cases, identifying best practices and further harmonization of accounting practices.

<u>Follow up activities</u>

34. The Eurostat-OECD compilation guide on measuring inventories will contain a section related to the global production arrangements most related to the movement of goods (e.g., goods sent abroad for processing, goods under merchanting, and factoryless goods production) and how the materials or goods should be recorded within inventories if the resident institutional unit owns them, even if held abroad. The compilation guide will also discuss possible data sources and survey questions.

35. The issue of data sharing was further discussed at the joint Meeting of Group of Experts on National Accounts devoted to measuring global production, 7-9 July 2015. The meeting concluded that: "Notwithstanding the considerable challenges imposed by national confidentiality restrictions, the meeting agreed that sharing of business micro data or aggregations of such data across countries should be encouraged – international organisations were asked to consider what role they could play to facilitate this process."

36. Based on the recommendations of the Group of Experts and the Guide the CES Bureau decided to undertake an in-depth review of Exchange and sharing of economic data. Statistics Finland will coordinate the preparation of a paper that will provide the basis for the review in cooperation with several other countries and organizations. The scope of the review is to examine the benefits and challenges (especially including risks) in the area of national and international exchange and sharing of economic data. The review should focus not only on micro data exchange but also on confrontation of aggregated economic statistics. To inform the review UNECE will conduct a survey of country experience with exchange and sharing of economic data. The outline of the in-depth review and the first results of the survey will be discussed at the May 2016 meeting of the joint UNECE/Eurostat/OECD Group of Experts on National Accounts. The review will be finalized and presented to the CES Bureau in October 2016, when decision for follow up work will be taken.

37. The EuroGroups Register (EGR) is the statistical business register of multinational groups in the EU. It pools together micro data on legal units, relationships, enterprises and enterprise groups, through cooperation in the ESS. EGR produces annually a frame. The EGR 2013 frame was disseminated in April 2015. It covered 46822 multinational enterprise groups and 611499 legal units. The next release, the first one fully based on renewed procedures relying more on NSIs information, is expected in the coming weeks and should cover nearly 60000 multinational enterprise groups.

38. The joint UNECE/Eurostat/OECD Expert Group on National Accounts mentioned above will continue to provide a forum for countries to exchange experience with measurement issues and also to follow up on progress with the research agenda.

Price and volume measurement

39. Price and volume measurement in light of globalization was not examined in the Guide, although it is acknowledged that this is important. It is recommended that the international guidelines for measuring prices (and volumes) should be adapted to some of the key characteristics of the output of global producers. Inevitably this work will require the engagement of price statisticians. Price and volume measures of those goods and services categories typically observed inside global production should be picked up, preferably in future updates of the Price and Volume Measurement Handbook (Eurostat) and PPIM (International Monetary Fund).

Follow up activities

40. In January 2015 a Eurostat-chaired task force on price and volume measures in national accounts started its work. One of its tasks was to analyse and provide recommendations on price and volume measures for merchanting and processing abroad activities. The task force met in April and October 2015 and in January 2016. As a result of these meetings an update of the Eurostat Handbook on Price and Volume Measures in National Accounts was published in February 2016 (see http://ec.europa.eu/eurostat/product?code=KS-GQ-14-005).

Analysing trade in value added amplifies the need of high quality statistics on global production

41. One key requirement of carrying out input-output analysis for measuring trade in value added is reconciling trade statistics with input-output tables at bilateral level. Key in this process is avoiding (or otherwise eliminating) asymmetries in trade statistics. In addition, the analysis of global value chains requires that national statistics build in a global dimension from the outset. This could be done by developing aggregations, not only on the basis of industrial classification, but also on the basis of the underlying and heterogeneous characteristics that determine how engaged firms are in global value chains, for example by showing separate sub-groupings of processors, FGPs, foreign owned firms, etc. Doing so would allow countries to construct supply-use tables, broken down by these new groupings, that would certainly have a higher degree of homogeneity, compared to aggregations which focus only on the industrial classification of firms, where, and as the Guide illustrates, there exists considerable heterogeneity. This supplementary classification, which is expected to help identifying the functions along the global value chain, is an issue for future research.

Follow up activities

FIGARO

42. Eurostat in cooperation with the JRC-IPTS (Research Centre of the European Commission) has set up the FIGARO project: Full International and Global Accounts for Research in Input-Output analysis. The project aims to put in place in Eurostat (DG ESTAT) an annual production of European Inter-Country Input-Output Tables and a five-yearly production of European Inter-country Supply, Use and Input-Output Tables (EU-MC-SUIOTs). The EU-MC-SUIOTs constitute a further development of the current regularly published EU and Euro area consolidated SUIOTs.

43. The EU-MC-SUIOTs will serve to support the analyses of the economic, social and environmental consequences of globalisation in the EU by means of studies on competitiveness, growth, productivity, employment, environmental footprints and international trade (e.g. global value chains). This project capitalises on existing available data transmitted by EU Member States through the National Accounts transmission program and the external trade statistics data collection (both for goods and services).

44. The project has started in October 2015 and the experimental EU ICSUIOTs for the reference year 2010 based on ESA 2010 methodology will be available by end 2017. Eurostat, the JRC-IPTS and OECD are working closely to ensure the integration of the European Multi-Country tables into the global inter-country OECD database.

TIVA

45. Over the next several years the OECD work programme concerning trade statistics will be to consolidate and enhance the TiVA database, including extensions that provide evidence on the trade and investment nexus (discussed in more detail below) and the integration of SMEs within global value chains. In addition, and as part of the broader agenda requiring good quality trade and balance of payments data, work will continue to reduce asymmetries in international trade data, and improve coverage particularly in trade in services, while also seeking efficiencies and improvements in their compilation and production. As part of this activity the OECD has developed a coherent and transport modular approach for balancing merchandise trade data, and a similar approach for trade in services statistics, that it is hoped could form the basis of an eventual common, internationally agreed and coordinated view of balanced trade: an essential (and pre-requisite) component of TiVA that would also facilitate coherence across the many regional initiatives currently being developed in this area.

46. In this regard OECD will continue to play an active role in other international efforts, such as the Eurostat FIGARO project and APEC-TiVA, to ensure alignment with OECD TiVA requirements and to minimise duplication of efforts. This strand of work also extends to the creation of an international network of regional TiVA initiatives and partners (including, UNECA, UNESCWA and UNECLAC). This will assist the expansion of the current country coverage of TiVA in order that the database and underlying global input-output (IO) tables also becomes the international benchmark.

OECD Expert Group on Extended Supply Use Tables

47. Work on supply-use tables will draw on the OECD Expert Group on Extended Supply-Use Tables, seeking to implement an integrated internationally agreed economic accounting framework (one that also significantly improves the quality and relevance of TiVA). The framework links Trade by Enterprise Characteristics data, Foreign Affiliate Statistics, FDI flows, Structural Business Statistics, Trade data, employment data and Supply-Use tables to provide a coherent tool for the analysis of globalisation. This activity will also provide an important input to on-going international efforts in this field, notably the follow-up recommendations of the UN Friends of the Chair Group on International Trade and Economic Globalisation.

Development of Investment Matrices by Industry and Asset Type

48. This new activity relates to the development of more detailed investment matrices by sector/industry and by asset type aligned with the level of industry data used in TiVA. This work will be set within a national accounts framework, and serve as a critical ingredient to efforts to develop improved (more detailed industry-level) estimates of multi-factor productivity. The activity will also include extensions to the TiVA initiative to account for the contribution played by fixed capital in the value-chain, providing more robust estimates of the integration and participation of capital intensive exporting economies in GVCs.

49. From a country perspective, the activity would at first request nationally available details on investment and capital stock by asset type, beyond what is currently collected as part of the national accounts data sets. In line with user demands for more granular data, and perhaps for some countries, where disaggregated data for productivity analysis may not be available at the level required or with long enough time series, the possibilities of deriving estimates both of the investment matrices and corresponding capital stock estimates will be explored.