Challenges posed by globalisation: the case for future changes in the System of National Accounts [1]

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The rapidly changing nature of production arrangements and in particular the ways in which producers produce goods and services has cast a spotlight on the SNA's preference for the use of the establishment as the unit to compile national accounts statistics by industry, in the supply and use framework. One of the primary motivations for this preference reflected the view that establishments classified to the same industrial classification grouping shared similar characteristics in their production functions, and, so, were considered broadly "homogeneous". However, especially increased international fragmentation of production, coupled with growing emergence of new types of producers, in particular factory-less producers, processors, and a growing share of output generated by foreign affiliates have led to more complex and dynamic structures of production, that can no longer be regarded as homogeneous. In this respect, calls have been made for having the enterprise as the preferred statistical unit. The choice for the latter unit would also increase the possibility of having an improved linkage between the analysis of the production process and the analysis of income and finance, which have become increasingly interconnected. It would also substantially increase the potential for linking macro-data with micro-data, thus creating a more flexible approach for having alternative groupings responding to emerging user demands. Last but not least, the use of the enterprise as the statistical unit would also lead to a significant reduction of the respondent burden.

Key words: statistical unit, supply and use tables, globalisation

1. Challenges posed by globalisation and international fragmentation of the production process

1. Production becoming more and more internationally integrated poses serious challenges to adequately account for domestic activities. To arrive at a consistent recording of all transactions of internationally operating enterprises becomes more and more complex, especially in an economic environment which is characterised by quickly changing organisational structures, also across borders. This is further complicated by having different units for describing the production process in the supply and use tables (establishments) and those used for describing income and finance in the institutional sector accounts (institutional units). Also conceptual differences in recording international trade flows, on the basis of crossing national borders, and national and business accounts, on the basis of change in ownership, is not really helpful. When in practice combining the various source data, one is faced with very significant inconsistencies, which also show up when balancing supply and demand of goods and services at the macro-level in the supply and use framework. One may also be confronted with significant differences between the transactions in the Balance of Payments statistics and the source statistics on income and finance of corporations. These consistency problems have triggered various initiatives, such as creating specific organisational units within statistical offices, which are responsible for micro-balancing the transactions and positions of the largest and most complex corporations. Another initiative is the growing international coordination of the allocation of the various parts of multinational enterprises to countries.

2. In addition to the above, more practical and source statistics related problems, the activities of multinational enterprises also raise more conceptual or analytical concerns for the compilation of national accounts for national economies. The first and perhaps most prominent issue concerns the

[1] This short paper should not be reported as representing the official views of the OECD or of its member countries. The opinions expressed and arguments employed are those of the author.

allocation of value added to national economies. Multinationals have substantial intra-firm transactions in goods and services which cross the borders of national economies. The valuation of these transactions, often referred to as "transfer pricing", has a direct impact on the allocation of value added and GDP to countries. If, for example, a multinational from the USA arranges the production of its goods in China, and subsequently distributes them to another subsidiary in Europe, a low price for the export from China to Europe will result in lower output, value added and profits in China, and higher values outside China, and vice-versa. Although such prices, according to most national tax legislations, have to be set at market-equivalent prices, there is obviously quite some room to manoeuvre, especially in the case the relevant goods contain high margins for reasons of knowledge content and/or brand reputation, or in the case the relevant goods are intermediate products which are not marketable as a consequence of which it is not possible to apply a true market-equivalent price.

3. The appropriate allocation of value added across countries may also be hampered by the (non) recording of the use of services which are produced within a multinational enterprise. Especially the recording of the use of intangible assets may raise issues, but also various intermediate services of an ancillary nature may cause similar problems. Here, one can think of, for example, software that is produced in one location of the multinational but used throughout the enterprise. Another example concerns expenditures on Research and Development (R&D), which according to SNA 2008 are to be treated as gross fixed capital formation. Anecdotal evidence for a number of large Dutch multinationals shows that R&D-activities are heavily concentrated, a relatively high share taking place in the home country close to the headquarters of the multinational. These R&D-assets most probably benefit the production of goods and services of the subsidiaries allocated in various countries. Nonetheless, one hardly observes any payments from the subsidiaries to the headquarters for the use, or the outright purchase, of R&D-capital, as a consequence of which value added and investments in the countries of the subsidiaries may be underestimated from an economic substance point of view.

4. Another issue is the establishment of brass plate companies, often referred to as Special Purpose Entities (SPEs), in certain countries, to reallocate the collection and distribution of royalties, license fees, or profits more generally, with the purpose of avoiding or minimising worldwide tax payments. For obvious reasons, some countries are very attractive for the establishment of such conduits. The use of them often gets front page news coverage, once they become publicly known and relate to well-known multinational enterprises.

5. It goes without further saying that the above examples clearly have an impact on the allocation of output, value added (GDP) and profits across the world. Decisions at the enterprise level will often be governed by reasons related to worldwide tax minimisation, not by goals related to arriving at an economically adequate description of production processes in the various national economies, thus possibly hampering the adequacy of providing a good macro-economic picture of national economies. Lipsey [2] provides an overview of the profit allocation of multinational enterprises with their headquarters in the USA. It shows that in some countries the ratio of profits to compensation of employees of subsidiaries is as high as 35-36 (Barbados and Bermuda). The Other Western Hemisphere as a total has a ratio which is close to 12, whereas for the Other Middle East the ration is as high as 9.4. This is strikingly different from the worldwide average equalling 0.8. For European subsidiaries, the ratio is even lower, less than 0.6, although Ireland has a particularly high level of 6.6.

6. The above points mainly concern the compilation and interpretation of the more traditional macro-economic statistics. However, globalisation also poses significant challenges to the way in which we can interpret and analyse economic developments more generally. The diminishing validity of analysis based on gross trade flows between countries is a striking example. Because of the growing

[2] Robert Lipsey, Measuring the Location of Production in a World of Intangible Productive Assets, FDI and Intrafirm Trade, in: Review of Income and Wealth, Issue 56, Special Issue 1, June 2010.

international fragmentation of production processes, it may be better to look at the value added content of trade flows, by subtracting the import content from the exports and, by doing so, removing the double counting implicitly included in gross trade flows. As a consequence, a completely different picture emerges from bilateral trade flows, especially when it relates to the flows between two countries. To disentangle these trade flows, and to arrive at estimates of the trade in value-added, the OECD-WTO project on Trade in Value Added uses a global input-output table that brings together national input-output tables for national economies, combined with bilateral trade data on goods and services. See http://www.oecd.org/sti/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.htm for more information. The relevant analysis also provides a strikingly different picture on the competitiveness of a national economy, which may be much more governed by comparative advantages in certain stages of the globally fragmented production process, instead of the more traditional view of countries having comparative advantages in the production of certain products. Also services show to be much more important in international trade and competitiveness than the overwhelming share in traditional cross-border trade flows suggest.

7. The growing importance of multinational enterprises also seems to direct the analysis of a national economy into the need to consistently distinguish multinationals from nationally operating enterprises. Subsidiaries of multinationals are different animals, because of the international fragmentation of their production processes and the skills required, the allocation of their activities based on considerations of tax avoidance, etc. Also the share of value added generated by multinationals in a certain economy that is actually appropriated by the residents of that very same economy, can have staggering different levels.

8. It should also be clear that it will not be possible to solve all of the issues mentioned in the above. The allocation of value added and profits being governed by tax considerations, rather than by arriving at an accurate understanding of production processes, is a matter of fact, and from a certain perspective also reflects economic rationale. On the other hand, it is good to realise that this kind of issues does affect, at least to some extent, the measurement of the GDP (growth). Multifactor productivity analysis, the analysis of changes in the volume of output as compared to changes of the volume of all inputs including services provided by e.g. intangible capital, may also need to be treated with care, especially in cases of knowledge intensive industries with high shares of foreign controlled enterprises. Clearly, the same holds, even to a larger extent, for analysis of value added and profits of foreign controlled enterprises per se.

9. Some have argued that the increasing globalisation will lead to the end of GDP as the principal indicator of economic activities for a national economy. In their opinion, it would be preferable to put more emphasis on Gross or Net National Income (GNI/NNI). It is indeed true that GNI/NNI is not affected by the allocation of value added and profits across countries, as all profits will anyhow end up in the country of residence of the multinational, via “reinvested earnings on foreign direct investment”. This view may be overly pessimistic, although it may become reality in the future with an ever increasing globalisation, and it may already be reality in smaller economies with high levels of activities by multinationals. In section 3, some proposals will be made to address the problems posed by the increasing globalisation, both within the context of the current international standards and going beyond the SNA 2008. Before doing so, the next section will briefly discuss what has been included in the latest international standards for national accounts.

2. Globalisation: SNA 2008 and other on-going work

10. When it comes to issues related to globalisation, the SNA 2008 contains two important changes, which may actually have a quite significant impact on the resulting national accounts aggregates for imports and exports of goods and services. First of all, it has been decided to always record goods for processing on the basis of a change in (economic) ownership. Only in the case of a

change in ownership, the exports of goods to be processed as well as the (higher valued) imports of the processed goods are recorded on a gross basis. If no change in ownership occurs, the difference of the two flows is to be recorded as imports of processing services.

11. The other change in recording relates to merchanting. The latter activity concerns wholesale trade in which a domestic trader in country A purchases goods in country B to re-sell them in country C. The SNA 1993 did not provide specific guidance on the recording of merchanting, but most probably the imports of goods into country C, e.g. at the value of 100, were recorded as imports from country B, e.g. at the value of 80, supplemented by imports of wholesale services from country A for the difference between the selling and purchasing value (20). This resulted in an asymmetric recording at the worldwide level for goods and services. According to the SNA 2008, as in the case of goods for processing, imports and exports of goods related to merchanting have to be recorded on the basis of a change in (economic) ownership. As a consequence, the relevant goods are to be recorded as exports from country B to country A (the country in which the merchant is resident), at the value of 80, and subsequently as exports from country A to country C, at the value of 100. In addition, it has been agreed to record the imports of country A from country B not as positive imports, but as negative exports from country A to country B, to prevent imports and exports of goods to be inflated by wholesale trading.

12. The above changes to the recording of imports and exports based on change in (economic) ownership clearly are better aligned to business accounting. On the other hand, however, quite some changes need to be made to the traditional trade statistics that are usually based on flows of goods crossing the borders. Furthermore, the appropriate recording of goods for processing and merchanting, especially in these times of growing international fragmentation of production processes, requires dedicated surveying of the relevant internationally operating enterprises. More guidance is provided in the Guide on the Impact of Globalisation on National Accounts, the results of the work of the UNECE/OECD/Eurostat Expert Group on the Impact of Globalisation on National Accounts (GGNA, 2011[3]. Additional in-depth work on the recording and measurement of global production arrangements is being pursued by the UNECE/OECD/Eurostat Task Force on Global Production. The results of this Task Force are in the process of being finalised[4].

13. One of the results of the work of the Task Force on Global Production is a recommendation to change the recording of so-called "factoryless goods producers" (FGPs). FGPs are producers that completely outsource the manufacturing transformation activities but own the underlying intellectual property products (IPPs) and control the outcome of the production process. A strict interpretation of the ISIC.Rev4 guidelines on the classification into activities would mean that an FGP is classified as a distributor, if the FGP does not provide (own) the material inputs subject to processing even though the FGP provides the technical specifications of the output, and owns and supplies other critical inputs. The opinion of the Task Force is that ownership of material inputs should not be the sole determining factor in classifying an FGP. An FGP that controls the outcome of the production process and provides (owns) either the IPP inputs or other inputs (goods and services) to a contract processor should be classified to manufacturing as a separate and new subset of existing classifications that highlights the factoryless characteristic of the firm.

14. The SNA 2008 also provides for the first time some brief guidance on the treatment of Special Purpose Entities (SPEs), which are described as follows: "Such units often have no employees and no non-financial assets. They may have little physical presence beyond a "brass plate" confirming their place of registration. They are always related to another corporation, often as a subsidiary, and SPEs in

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[3] http://www.unece.org/fileadmin/DAM/stats/publications/Guide_on_Impact_of_globalization_on_national_accounts__web_.pdf.
[4] http://www.unece.org/stats/groups/tfgp.html.

particular are often resident in a territory other than the territory of residence of the related corporations. In the absence of any physical dimension to an enterprise, its residence is determined according to the economic territory under whose laws the enterprise is incorporated or registered". [5]

3. Globalisation: going further

15. To address the main challenges posed by the increasing globalisation, first of all, and certainly not that revolutionary, it clearly becomes more and more relevant to separately distinguish foreign controlled enterprises, or more generally internationally operating enterprises, from other enterprises in the description of the national economy. This is not only true for the detailed analysis of the production process in supply and supply tables, but also for the analysis of income and finance as described in the institutional sector accounts. By separately distinguishing these corporations, one could analyse the behaviour of internationally operating enterprises, which in a national setting by definition only describe parts of (substantially) larger entities. Doing so, one would also arrive at an improved description of mainly domestically operating enterprises. In its classification of institutional sectors, the SNA 2008 already includes a breakdown of the corporate sectors into: (i) public corporations, i.e. controlled by government; (ii) national private corporations; and (iii) foreign controlled corporations. However, the proposal here goes further. First of all, it is suggested to consider the separate distinction of units belonging to multinational enterprises, either domestically controlled or foreign controlled. Secondly, it is proposed to also have a similar breakdown in the classifications by industry, if needed at the detriment of the granularity of the classification by activity. Having data on units belonging to multinational enterprises at the national level would potentially also allow for the compilation at an aggregate level of worldwide consolidated data on multinational enterprises (see later).

16. More generally, the rapidly changing nature of production arrangements and in particular the ways in which producers produce goods and services has cast a spotlight on the SNA's preference for the use of the establishment as the preferred unit to compile national accounts statistics by industry, in the supply and use framework. One of the primary motivations for this preference reflected the view that establishments classified to the same industrial classification grouping shared similar characteristics in their production functions, and, so, were considered broadly "homogeneous". Even if one overlooks the underlying product heterogeneity that exists across establishments, the idea of homogeneity of production functions has generally never been true, but it was at least "truer" for establishments than it was for enterprises and, so, the preference for establishments was retained in the 2008 SNA.

17. However, the increasing international fragmentation of production, coupled with the growing emergence of new types of producers, in particular factory-less producers, processors, and the growing share of output generated by foreign affiliates (and so the impact of transfer pricing), has further weakened the underlying assumptions of homogeneity. Indeed the changes adopted in the SNA 2008 for the treatment of goods for processing have reinforced the need to consider whether establishments should remain the unit of preference in the system of national accounts. It was at least in part a consequence of these changes, and those pertaining to the ownership issue more generally, that led to the inclusion of the issue of establishments on the research agenda in the SNA 2008 (para. A4.21).

18. In respect of the above, it can be noted that countries increasingly collect data in the first instance on an enterprise basis (rather than establishment), so removing the preference for establishments may reduce statistical burdens for National Statistical Offices and also potentially reporting burdens for respondents. But there are further reasons, notwithstanding those described above, why a fresh look would be useful. First of all, data for establishments often require arbitrary

[5] See para. 4.55 – 4.67 for further guidance.

(pro-rata) allocations of central services (and value-added and employment) provided by head offices, various ancillary services, and also, importantly and increasingly services related to intellectual property. Recording these flows between affiliated firms across international borders is challenging enough, but within borders the exercise becomes almost purely mathematical. Given the growing importance that knowledge based assets add to the value of any product, such allocations can significantly affect meaningful comparisons of value added to production ratios of establishments in the same industrial sector. Using the enterprise as the statistical unit, overcomes, at least at the national level, this problem (and avoids arbitrary allocations).

19. Furthermore, more practically, the enterprise as a unit also provides the basis for important links to other data that are typically only available at the enterprise level, for example total R&D expenditures, total C02 emissions, total employment. It also provides the vehicle for creating coherent global information on and supply and use tables broken down by foreign/domestic ownership and/or broken down by units either or not belonging to a multinational – which is essential to be able to fully understand how production, investment and trade are linked –, as Foreign Affiliate Trade Statistics (FATS) and statistics on Activities of Multinational Enterprises (AMNE) are typically based on the enterprise unit. Furthermore, the enterprise is also a preferable unit for linking trade and business registers.

20. Using the enterprise as a unit would also allow for a far better integration of the description of producing goods and services in supply and use tables, and the description of income and finance in institutional sector accounts. Considering the increasing role of income and finance in recent decades, in particular showing up during the economic and financial crisis, and the interaction between the "real" economy and the financial economy, such integration could significantly benefit research and policy. Also, for example, the part of domestic value added generated by foreign controlled enterprises, that in the end actually adds to the disposable income of residents could be analysed in more detail, thus adding to the analysis of Trade in Value Added.

21. In addition to the above considerations regarding statistical units and classifications of activities and institutional sectors, one may need to consider the compilation of international accounts for multinational enterprises. Looking at the national part of a globally operating enterprise with internationally fragmented production processes may be somewhat similar to looking at the trump or the left leg of an elephant, and analysing these parts as if one is dealing with a complete animal. One starts to question whether national accounts data shouldn't be much more targeted at trying to create an image of the complete animal. Only then it may be possible to get an enhanced insight in the operations of such enterprises, the allocation of its production process across the world, its contributions to the various economies in which it is present, its profitability (before and after tax), and the financing of its operations. Initially, this could be done as a set of supplementary tables, in addition to the standard core set of national accounts.

22. One may also need to think about ways to further integrate this line of reasoning, and consider recording multinational enterprises as truly supranational entities, in some respects similar to international organisations. Doing so, multinationals may be treated as a separate "country". Probably, this proposal is much too far-fetched momentarily. It certainly needs quite some further thinking through all of its consequences. There may also be alternative ways to integrate international accounts for multinationals in the system of national accounts. Practical considerations, such as who would assume responsibility for the compilation of these data, also need to be considered more carefully. That being said however, creating worldwide accounts for multinational enterprises would certainly support the analysis of multinationals' behaviour and indirectly also research and policy for national economies. For the time being, it seems more realistic to compile supplementary tables with integrated data for multinational enterprises, using available global data on multinational enterprises supplemented with national data on units belonging to multinationals, as previously suggested.