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Joint Globalization Task Team (GZTT)

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G.7 Global Value Chains and Trade in Value Added

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Globalization has led to changes in production processes with production fragmented across economies in a production chain between resident and non-resident firms—the basis of global value chains (GVC). Policy demand for more statistical information on GVCs has grown significantly over recent years. This guidance note (GN) examines how production fragmentation has deepened the divergence between gross flows, as recorded by traditional international trade statistics, and the data on production and final demand as accounted for in value added statistics. To better account for interlinked core production activities and supporting services activities, the GN does not recommend any changes to the core System of National Accounts 2008 (2008 SNA) *and the* Balance of Payments and International Investment Position Manual, sixth edition (BPM6) *concepts. The GN[2] recommends (i) including descriptions of GVCs and TiVA in the next set of manuals and supporting the development of supplementary information for GVC analysis; (ii) supplementary information to remain voluntary "encouraged" items and not be embedded into the recommended sets of statistics, considering countries' varying degrees of statistical capacity and scarce resources; and (iii) International Organizations to maintain the statistical infrastructure to produce Inter-Country Input-Output tables (ICIOs) to create indicators on GVCs or other indicators relevant for users and policy analyses..*

SECTION I: INTRODUCTION TO THE ISSUE

1. **Globalization–the economic integration of countries around the world–adds complexities to the traditional interrelations between economies.** Better accounting for globalization was a major part of the last update of the *2008 System of National Accounts* (*2008 SNA*), and *Balance of Payments and International Investment Position Manual, 6th edition* (*BPM6*). Due to reductions in transportation costs, the information technological revolution, lower production costs and more open economic policies, production processes of a final product are increasingly fragmented across national economies in a production chain between resident and non-resident firms. The parts and components that make up a final product, being either a good or service, are increasingly produced in different countries; what has been termed the "unbundling" or "fragmentation" of production. Therefore, intermediate goods and associated services may cross national borders several times before they are assembled and sold as a final product in the market or delivered to a third party. Moreover, international trade in goods and services is increasingly intra-firm trade, often organized and led by large multinational enterprises (MNEs) or enterprise groups. Global value chains (GVCs) and Trade in value added (TiVA) indicators are designed to better inform policymakers by providing new insights into the commercial relations between nations.

[1] Prepared by Ms. Jennifer Ribarsky (GZTT Secretariat, IMF), Ms. Nancy Snyder (UNSD), and Ms. Jennifer Withington (Statistics Canada). The Guidance Note benefitted from comments by Ms. Padma Hurree-Gobin (GZTT Secretariat, IMF) and Ms. Maria Borga (DITT co-chair, IMF). The GN was also reviewed by the Globalization Task Team (GZTT) members. The work was undertaken under the supervision of Messrs. Michael Connolly and Branko Vitas (co-Chairs of the Task Team).

[2] A summary of the discussion on this GN at the joint AEG/Balance of Payments Committee meeting of March 2022 is available here.

2. **GVCs, coordinated and headed by lead firms, represent interlinked core production activities and supporting services activities to produce a final product.** GVCs consist of the full range of activities that firms, and workers do to bring a product (good or service) from its conception to its end use. This includes activities such as research and development, production, transportation and distribution, marketing and sales, and after-sales services to the final consumer.[3] While one cannot fully see the activities of GVCs in conventional national accounts statistics, a GVC satellite account uses a bottom-up approach that looks at a specific GVC production chain within the framework of national accounts. TiVA statistics also provide a more comprehensive view of the interlinkages and dependencies but uses a top-down approach.

3. **National data can only map the national value chain; the GVC satellite account and TiVA statistics take the whole value chain into account by considering the value added by each country in the production of goods and services that are consumed worldwide.** While national input-output analysis produced within the framework of national accounts provide a rich description of value chain linkages across industries within a given country, they usually stop at the border. They contain limited information on how exports are used abroad, and, in particular, they provide limited information on the production process (and indeed country/countries of origins of the imported goods). At the same time, business census and surveys and customs data contain important details about firm-level input sourcing and export participation which are important (but not enough by themselves) to know engagement in GVCs. At both the macro (input-output) and micro (firm) levels, conventional data sources lack the information needed to map out the entire global production process and measure GVC linkages.

4. **The fragmentation of production has, therefore, deepened the divergence between gross flows, as collected and recorded by traditional international trade statistics, and the contribution those flows make to GDP and the balance of payments, as accounted for in TiVA or the GVC satellite account-based statistics.** The prevalence of GVCs has raised several key questions over time: What part of a country's exports can be ascribed to value added produced at home or abroad? How can we allocate this value added across the different bilateral and sectoral trade flows? Which markets absorb this production as final demand? What share of imports are consumed in production and subsequently embodied in exports? To what extent is a country's production affected by macroeconomic shocks emanating from other countries? How can it be affected by trade policies implemented in a given country on a given industry, and/or vis-à-vis certain partners?

5. **Indicators on GVCs, such as TiVA indicators, aim to address these questions and increase our understanding of the process of globalization by providing insights into the value added by each country and industry in the production of goods and services that are traded and consumed worldwide.** Indicators on GVCs are typically derived from Inter-Country Input-Output tables (ICIOs), which are created by combining national supply and use tables (SUTs) or input-output tables (IOTs) with international bilateral merchandise and services trade statistics, to develop a complete global matrix of country-by-industry input-output tables.

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[3] Gereffi, Gary and Fernandez-Stark, Karina, *Global Value Chain Analysis: A Primer,* Second Edition, The Duke Center on Globalization, Governance & Competitiveness, July 2016. *Last phrase:* "in a local economy, or among a group of countries" *was added by the UN Guidelines on Accounting for Global Value Chains: Satellite Accounts and Integrated Business Statistics authors.* https://dukespace.lib.duke.edu/dspace/bitstream/handle/10161/12488/2016-07-28_GVC%20Primer%202016_2nd%20edition.pdf?sequence=1

6. **Against this background, the main scope of this guidance note (GN) is to briefly discuss the options to better highlight GVC activity within the current framework of the SNA and BPM by providing extensions or more granular (detailed) data.** The GN does not recommend any changes to the core concepts but rather discusses what additional information is needed to aid analysis. The options to aid analysis discussed in this GN include (i) the TiVA indicators, (ii) the GVC satellite account, (iii) the eSUTs, and (iv) other useful information, including supplemental data, that the BPM can provide as inputs into the analysis.

SECTION II: EXISTING MATERIAL

7. **Notable progress has been made towards a better understanding of the nature of global production.** Several handbooks, guides, and statistics have been published since the last update of the international standards to better address the statistical challenges.[4] Significant progress has been made on the development of multi-country or regional input-output tables; for example, the Organization for Economic Cooperation and Development (OECD)-World Trade Organization (WTO) TiVA initiative launched in 2012,[5] Full International and Global Accounts for Research in input-Output analysis (FIGARO),[6] The Asian Development Bank,[7] World Input-Output Database (WIOD),[8] the Asia-Pacific Economic Cooperation (APEC)-TiVA,[9] the North American TiVA initiative,[10] and the OECD Expert Group on Extended Supply and Use Tables (eSUTs). Building on these initiatives to address the GVC-related classifications and the integration of the economic, environmental, and social dimensions of globalization, the United Nations (UN) guidelines on *Accounting for Global Value Chains: GVC Satellite Accounts and Integrated Business Statistics* (*GVC Handbook*) were developed as an extension of the *2008 SNA* framework.

8. **The national accounts and balance of payments framework provide an excellent source of information on domestic production by industry and international transactions that can be leveraged.** The SNA and BPM are useful frameworks for additional information helpful in building the bridges between the detailed international trade statistics and accounting frameworks that can improve the quality of ICIOs, eSUTs, GVC satellite accounts, and TiVA statistics. The GN builds on the recommendations of two recent initiatives to improve GVC analysis that utilize the underlying international statistical standard frameworks: (i) the OECD Expert Group on eSUTs[11] and (ii) the International

[4] In 2011, the United Nations Economic Commission for Europe (UNECE) published "*The Impact of Globalization on National Accounts*" to help compilers understand how globalization affects the NAs. The 2015 UNECE "*Guide to Measuring Global Production*" strengthens practical and conceptual guidance on global production activities and addresses emerging data needs to better explain the macroeconomic implications of globalization.

[5] TiVA initiative was launched in 2012. https://www.oecd.org/industry/measuring-trade-in-value-added.htm

[6] https://ec.europa.eu/eurostat/web/esa-supply-use-input-tables/figaro

[7] https://mrio.adbx.online/

[8] http://www.wiod.org/home

[9] http://www.apectivagvc.org/

[10] https://www.usitc.gov/publications/332/working_papers/na-tiva_white_paper_for_posting_2-26-2018.pdf

[11] The OECD Expert Group on e-SUTs was created in 2014. https://www.oecd.org/sdd/na/OECD-Expert-Group-on-Extended-Supply-Use-Tables.htm

Monetary Fund's (IMF) Committee on Balance of Payments Statistics (Committee) Working Group on Balance of Payments Statistics relevant for GVCs (WG-GVC).[12]

SECTION III: OPTIONS CONSIDERED

9. **The GN discusses different options that can be integrated within the current SNA and BPM framework.** Within the SNA, the development of (i) Trade in Value Added (TiVA) indicators, (ii) GVC satellite account, and (iii) extended supply and use tables (eSUTs) are considered. To better understand GVCs at a global production level, within the BPM, supplementary cross-border statistics detailed by geography or product are considered beneficial.

TRADE IN VALUE ADDED (TIVA)

10. **The TiVA initiative addresses the double counting implicit in gross flows of trade.** TiVA measures flows related to the value that is added (compensation of employees, other taxes on production and operating surplus) by a country in the production of any good or service that is exported. Figure 1A in Annex II provides a simple example. It is important to note that the underlying accounting framework used to estimate TiVA also provides a framework to address other global phenomena, such as carbon and other resource footprints, as well as measures of employment supported by trade (Trade in Employment).

11. **Measuring trade in value added terms brings a new perspective, impacting trade policy, competitiveness, upgrading and innovation, and the management of global systemic risk—the recent COVID-19 crisis has highlighted the challenges of GVCs and associated macro-economic shocks.** A better understanding of value added trade flows provides additional tools for policymakers. For trade, growth and competitiveness, better understanding how much domestic value added is generated by the export of a good or service in a country within GVCs is crucial for development strategies and industrial policies. Some countries have capitalized on GVCs by developing comparative advantages in specific parts of the value-chain. It allows a better insight on the impact of the services industry on trade flows as well. Conventional gross trade statistics are not able to reveal the foreign content of exports and so there is a risk that policies protecting industries where gross statisics reveal a comparative advantage may decrease the competiveness of those very same domestic industries, and indeed other industries including other exporters and upstream industries in the supply chain that rely on imports subject to protectionist measures. Furthermore, looking at trade from a value added perspective better highlights how upstream domestic industries contribute to exports, even if those same industries have little direct inernational exposure.

GVC SATELLITE ACCOUNT

12. **The *GVC Handbook* (2019) highlights the role of a GVC satellite account approach that can be used to better identify and articulate a GVC for a specific product or group of products produced within a GVC.** The GVC satellite account is comprised of GVC-specific SUTs, either national or multi-country, based on an enterprise-centered approach, consisting of integrated and more detailed business statistics and information on business lines and business functions, and GVC-specific

[12] BOPCOM 19/04 - Final Report of the Working Group on Balance of Payments Statistics Relevant for the Analysis of Global Value Chains

institutional sector accounts. Accordingly, it will include production, earnings and employment, income and investment (both capital and financial), and give information on balance sheets and transactions. This level of detail is not readily available in the existing accounting presentations at the level of sectors or sub-sectors that contain the activities of significant GVCs in an economy.

13. **More specifically, national and/or multi-country GVC-specific accounts would be compiled from national SUTs with a common breakdown of industries and products produced within a GVC.**[13] The scope of the GVC, or identification of the participating firms in the supply chain of the GVC, must first be determined by the compiling institution(s). The decision to include only direct suppliers or to also include indirect suppliers will depend on analytical usefulness and availability of data. The integration of information starts from the compilation of national SUTs with a common breakdown of industries and products. The breakdown at industry level explicitly identifies the relevant International Standard Industrial Classification (ISIC) divisions/groups for the GVC. Similarly, the breakdown at the product level explicitly identifies the GVC-relevant products.[14] However, there is significant additions required for a comprehensive GVC analysis as outlined in the previous paragraph.

14. **A global enterprise can organize its core production activities (production of goods and services to be sold in the market) in a number of different business lines.** Such an enterprise could be a lead firm for various GVCs in different specific industries. Therefore, business, trade and investment data for a GVC satellite account would need to be collected from the business line of a global enterprise to allow for the correct data specification of the industry-specific GVCs controlled by the lead firm. The enterprise or enterprise group would be able to delineate the statistical units in each of its business lines and further by each business function. The activities of the lead firm are recorded in the country of its residence. In addition, in order to reflect the governance structure in the SUTs, there should be a further breakdown of the firms in the ISIC categories that corresponds with the business functions of a GVC undertaken in the economic territory to reflect if the firm is foreign-controlled or nationally-controlled and if the firm is part of the GVC or not. Table 1 illustrates the breakdown applied to the firms within a given GVC-relevant ISIC.[15]

Table 1. GVC-Relevant ISIC Categories

ISIC			
Foreign-controlled		Nationally-controlled	
GVC-related	Non GVC-related	GVC-related	Non GVC-related

[13] Also, among a group of key partner countries in the case of a multi-country GVC-specific account.

[14] In the case, for example, of the automotive GVC, the industry breakdown will explicitly identify the following activities: ISIC 291—Manufacture of motor vehicles; ISIC 49–53—referring to Distribution and logistics; ISIC 62–63—referring Information and communication technology (ICT) services; ISIC 69–70—referring to Administrative and management functions; ISIC 71—referring to Engineering and related technical services; ISIC 72—referring to Research & development; ISIC 73—referring to Marketing, sales and after-sales services; ISIC XXX—referring to ISIC classes for all the intermediate products in the scope of the GVC.

[15] The ISIC classification itself does not distinguish between foreign or domestic ownership. This information would be collected at the firm level and then grouped together by ISIC division/class.

15. In a similar way, the list of standardized products explicitly identified in the GVC-specific accounts reflects the GVC-related products which include the final product of the GVC and the intermediate goods and services that are used to produce the final product. Finally, because of the multi-country nature of the GVCs, the trade of these products between the GVC-partner countries would also be explicitly shown.

16. **The GVC satellite accounting framework is a flexible approach that can be implemented depending on a country's needs and interests without overburdening or reducing the accuracy or consistency of the central SNA framework.** Specifically, a country chooses the most economically important and/or policy relevant GVC(s) within their own country and among their main trading partners (in the case of a multi-country GVC-specific SUT). Moreover, GVC satellite accounts may comprise only one or several GVC-specific SUTs of interest, but preferably will also include the GVC-specific institutional sector accounts. (Annex III)

17. **Countries can choose to focus on the most relevant GVCs for their economy based on their relative importance in terms of value added to the national economy, international investment and trade relations, and/or to address specific policy questions.** GVC satellite accounting aims to address the implicit homogeneity assumption among firms by deconstructing their contributions in the fragmented production process across multiple countries. Large firms, for example, capitalize on economies of scale whilst affiliated firms may also have different production processes and different cross-border trade relationships than non-affiliated firms. It is important to note that while there is a strong connection between an extended multi-country SUTs and a GVC-specific SUTs, in many ways a GVC-specific SUTs is a natural extension of an extended SUTs integrated into a global ICIO table, in that it focuses a lens on a specific set of products produced in a GVC.

EXTENDED SUPPLY AND USE TABLES WITHIN SNA FRAMEWORK

18. **More granularity within the SNA framework using the extended supply and use tables (eSUTs) also help aid GVC and TiVA analysis.** The OECD launched its Expert Group on Extended Supply and Use tables in 2014 to address a number of issues that could help improve the quality of TIVA statistics, notably those related to assumptions of homogeneity in production functions of firms highly integrated into GVCs and those that were less well integrated, as also described above in the section on GVC satellite accounts. In addition, eSUTs also provide a mechanism to address issues related to trade in income, which address challenges concerning the value added generated by MNEs and the potential for this income to be repatriated to parents (i.e., to better reveal the full benefits, and beneficiary countries of international trade and investment). Ahmad (2018), provide a detailed description of the importance of eSUTs in addressing these questions, including examples of the many countries that have implemented them since the creation of the OECD Expert Group.

19. **ESUTs are flexible, containing a number of possible extensions.** Extensions range from simple extensions that show estimates of the origin (imports) and destination (exports) countries of products, more details on goods for processing transactions (manufacturing services on physical inputs owned by others) and re-exports (if import flow tables are not also provided), to more ambitious breakdowns by size-class of firm (statistical unit), by trading status (e.g., export orientation) or by control

(e.g., foreign controlled or domestic entities that are part of an MNE group);[16] similar to those described above under the GVC satellite accounts. In addition, they also include extensions to link the production accounts to the generation of income accounts, employment statistics, and carbon dioxide (CO_2) and other greenhouse gas emissions to address issues related to trade in income, employment, and embodied CO_2.

20. **Various eSUTs extensions can capture important differences in the input and output structure of different types of producers in the same industry that are currently absent from conventional input and output tables.** Under this approach, as with other satellite accounts, countries would implement them according to their own priorities and resources. Indeed, it is important to note that a central premise of eSUTs is for countries to develop them in a way that is most relevant to their specific needs, circumstances, and data availability (Annex IV). The objective being to create an integrated accounting framework that can link, often disparate, data sources, such as structural business statistics, trade by enterprise characteristics, foreign affiliate trade statistics, and trade data into a coherent framework. Equally important to note is the emphasis on parsimony in construction (i.e., it is not necessary to breakdown all activities into more homogeneous groups). Like GVC satellite accounts, the emphasis need only be to focus on core activities.[17] For example, countries could focus on industries and/or products where extra granularity is needed as Hagino and Kim (2021) demonstrated in the extended input and output tables constructed for Japan. If there is no foreign presence in a given industry, then there is no granularity to be added.

BALANCE OF PAYMENTS STATISTICS

21. **Balance of payments statistics are an integral part of GVCs helping to construct both GVC satellite accounts and TiVA indicators.** *BPM6* provides a very useful framework for additional information that would be helpful in bridging detailed trade statistics and accounting frameworks to improve the quality of ICIO tables that are the basis for GVC analysis and TiVA estimates.

22. **The WG-GVC paper released in October 2019 has identified a list of balance of payments components, building on the *BPM6* framework that would be useful in improving indicators used in the analysis of GVCs** (Annex V). The WG-GVC also acknowledged that while the balance of payments statistics identified are part of the current balance of payments accounting framework and often explicitly referenced in *BPM6*, they typically involve auxiliary tables or supplementary items or more detailed (geographic or product) breakdowns than those recommended in the standard reporting form of the *BPM6*.[18] The Working Group also recommended developing additional guidance that can help identify merchanters and factoryless goods producers, which is discussed as part of the updates of the

[16] See the GZTT guidance note G.2 "Treatment of MNE and Intra-MNE Flows" for a definition of MNE and a discussion of control.

[17] However, countries are encouraged within the OECD Expert Group to design their information systems to support the development of full eSUTs as a way of future proofing the tables.

[18] For example, the report recommended that economies compile the supplementary breakdown of travel identified in the *BPM6* standard components. CATT GN C.1 proposes and update of this supplementary breakdown.

international statistical standards—Guidance Note C.4 jointly developed by the Current Account Task Team (CATT) and the Globalization Task Team (GZTT).[19]

23. **Concerning MNEs, their transactions are of interest because they are key actors in globalization by managing many GVCs and by enabling the exchange of goods and services, knowledge and technology, and capital across borders.** Therefore, the WG-GVC also stressed that identifying MNEs in the current account is critical and can help address the treatment of income.[20] Value-added consists of the return to capital (i.e., operating surplus) and labor (i.e., compensation of employees). While the return to labor is expected to largely remain in the host economy, the profits (i.e., return to capital) of the direct invest enterprise ultimately accrue to the foreign parent. In addition, domestic MNEs will benefit from the profits they receive from their foreign affiliates. The WG-GVC proposed a further breakdown of the current account to better highlight MNE activity (Annex V, Table 3A). Recent work undertaken by the CATT and the Direct Investment Task Team (DITT) incorporates the WG-GVC recommendations for the update of the international standards.[21]

SECTION IV: RECOMMENDED APPROACH—CONCEPTUAL ASPECTS

24. **No conceptual changes are required to the central SNA and BPM framework to account for GVCs.** The conventional gross international trade flows should remain as the featured measures of cross-border trade because of their important role in calculating a country's overall trade balance and GDP (e.g., net exports are calculated as gross exports less gross imports). The existing bilateral gross trade flow statistics are timely, long-standing, useful for a wide range of statistical and analytical purposes, and well reported by countries around the world. The gross flows are a prerequisite in constructing the GVC satellite account and TiVA estimates. Furthermore, the TiVA approach has no impact on a country's overall trade balance and therefore no impact on GDP as calculated as the sum of final expenditures. In effect, TiVA expands the set of trading partners to include other countries in the GVC and reallocates a country's overall trade balance among its trading partners. In the value-added approach, measures of exports and imports would each be smaller, but net exports overall would be the same.

25. **TiVA estimates, eSUTs, and the GVC satellite account provide policymakers useful information relevant for GVC analysis.** TiVA estimates can be viewed as a macro approach that requires a massive international effort to link country/regional SUTs with international trade statistics. eSUTs can help improve on these estimates through a focus on targeted aggregations that better address challenges around homogeneity assumptions. Similarly, a GVC satellite account can be viewed as a more targeted bottom-up approach focusing on a GVC for a specific product/industry or group of products/industries produced within a GVC.

[19] See GN C.4 "Merchanting and Factoryless Producers; Clarifying Negative Exports in Merchanting; and Merchanting of Services".

[20] Transactions in income.

[21] CATT GN C.2 makes recommendations for identifying MNEs in the current account that mirror those in the WG-GVC report. DITT GN D.6 makes recommendations for the identification of the ultimate investor that could be used in implementing the proposed breakdown of the current account for direct investment income.

26. **From a national perspective, there are several ways that national statistical offices and authorities could measure GVCs within the context of the existing SNA.** One approach is extending the existing SNA production, distribution, and use of income, capital, financial, price, and volume accounts to detail the international contributions to the national economy, both in the aggregate and by industry. And indeed, many countries are now beginning to develop these competencies through the introduction of eSUTS [22] and GVC satellite accounts.[23] Another approach is to combine existing SNA data (SUTs and IOTs) with international trade data to compile "national TiVA", where imports and exports in the SUTs and IOTs are split by country. Statistics Finland,[24] Statistics Netherlands[25] and more recently the United States Bureau of Economic Analysis (BEA) made progress in this direction.

27. **Detailed balance of payments (BOP) statistics are also needed for GVC analysis.** In 2019, the Committee supported the WG-GVC recommendation that additional details could be sought through the development of a reporting template for GVC data.[26] Based on the results from a stock taking survey, the recommended reporting template may comprise the following: total value of re-exports and main product and/or partner breakdown; total value of goods acquired/sold under merchanting and main products and/or major trading partners (encouraged item); reconciliation table between international merchandise trade statistics (IMTS) and balance of payments goods statistics along the lines of *BPM6* Table 10.2; and product and partner breakdown of total trade in goods on a balance of payments basis and geographical breakdown of Extended Balance of Payments Services (EBOPS) categories. Since the 2019 Committee meeting, the IMF and OECD prepared a reporting template that is included in CATT GN C.2.[27]

28. **Furthermore, the WG-GVC recommended a framework to highlight the role of MNEs[28] in the current account, covering both trade in goods and services and direct investment (DI) income.** For MNEs, the WG-GVC proposed a framework to provide supplementary data that highlight their role in the current account including (i) supplementary data incorporating Trade by Enterprise Characteristics (TEC) for total exports and imports of goods and services with the breakdown by domestic MNEs, foreign-controlled enterprises, and other domestic enterprises using new trade statistics; and (ii) proposing extensions to direct investment income distinguishing receipts and payments by ultimate

[22] Some country examples include Fetzer, J. et al (2018) *Accounting for Firm Heterogeneity within U.S. Industries: Extended Supply-Use Tables and Trade in Value-Added Using Enterprise and Establishment Level Data* https://www.nber.org/papers/w25249 and National Institute of Statistics and Geography (INEGI, 2020) *Extended Supply and Use Tables. Case of Mexico* https://www.cepal.org/sites/default/files/presentations/mexico-inegi-extended-supply-use-tables.pdf

[23] See Central Statistics Office, Ireland (2021) *Food and Agriculture: A Value Chain Analysis* https://www.cso.ie/en/releasesandpublications/fp/p-favca/foodandagricultureavaluechainanalysis/foodanddrink/

[24] E.g., https://pxnet2.stat.fi:443/PXWeb/sq/68e3bde0-c987-4bf9-a977-a8001e898bf4

[25] https://www.etsg.org/ETSG2015/Papers/515.pdf

[26] For the summary of discussion of the Committee 2019 meeting, see here.

[27] See Annex IV in CATT GN. C.2 "Goods, Services, and Investment Income Accounts by Enterprise Characteristics".

[28] The GZTT GN. G.2 provides a definition of MNE.

controlling parent (UCP)[29] (i.e., resident and non-resident ultimate investors). Table 2 summarizes the proposed framework to provide supplementary data that highlight the role of MNEs in the current account (the proposed framework is presented in Annex V Table 3A).

[29] The DITT GN D.6 "Ultimate Investing Economy/Ultimate Host Economy and Pass-through Funds" proposes to streamline the concepts for ultimate investor (UCP/UIE/UHE) used in the standards. Notably, the UCP concept used in this GN would be consistent with the UIE concept under the proposed "Winner Takes All (WTA)" approach.

Table 2. WG-GVC Proposal to Highlight the Role of MNEs in the Current Account

Item	Source data
Total Exports and imports of goods and services (balance of payments basis)	Balance of payments
By domestic MNEs	TEC for goods and Services
By foreign-controlled enterprises	
Other—domestic enterprises	
DI income (receipts and payments)	Balance of payments
By resident ultimate controlling parent	Balance of payments /DI
By non-resident ultimate controlling parent	Balance of payments /DI

29. **The additional data provided within the framework of the SNA and BPM will help improve the quality of ICIO tables, eSUTs, GVC analysis and TiVA estimates.** A further breakdown of DI income that distinguishes income receipts and payments based on the residency of the ultimate owner of the MNE could significantly improve the interpretive and analytical power of TiVA estimates to better understand how countries benefit from their integration in GVCs.[30] Furthermore, eSUTs and more detailed data within the balance of payments can improve the quality of current TiVA estimates by better capturing the underlying heterogeneity within activities. Indeed, the current OECD TiVA database includes important breakdowns for Chinese and Mexican data, with breakdowns between processing and non-processing firms in the case of China and breakdowns between global-manufacturers (i.e., exporting and typically foreign owned) and non-global-manufacturers for Mexico.

SECTION V: RECOMMENDED APPROACH—PRACTICAL ASPECTS

30. **The additional details provided within the framework of the SNA and BPM to measure GVCs would require considerable resources dedicated to data collection and linking.** Techniques for harmonizing and better integrating existing data (based on new IT systems, data exchange, micro-data linking, central business registers, and administrative and other big data) can be done at a lower cost than expansions of existing data collection systems that would also increase respondent burden.

31. **eSUTs build on national supply and use tables and input-output tables,** through the integration of more detailed data provided via MNE surveys, surveys for balance of payments purposes, tax data non-financial flows and ownership, integrated business statistics, and reconciled trade statistics, among others. This provides a more holistic and integrated view required to better understand the complexities and interactions of globalization.

[30] For example, Statistics Netherlands (2021) estimated that 16 percent of domestic value added in trade ultimately ends up abroad because MNEs transfer profits abroad.

32. **A GVC satellite account would be based on existing firm-specific micro-data; publicly available micro-data; existing input-output coefficients; and existing, or newly collected, information on governance and business functions.** A GVC satellite account approach, therefore, builds on the eSUTs principle of disaggregation of production structures by zooming in on national interests for particular traded products related to specific industries such as in agriculture, manufacturing, and services. These products and industries can be grouped by GVC industries for which standardized product classifications can be adopted for international comparison and inter-country collaboration purposes between major trading partners in specific GVC industries such as in horticulture, automotive, apparel and textile, electronic and other industries.

33. **Integrated business statistics are important foundational statistics.** Integrated business statistics will facilitate an assessment of the impact of GVCs on firm-level key variables, such as employment, income, productivity, and international trade as compared to firms not participating in the GVCs. Through the profiling of firms, the statistical infrastructure is established to better target the integrated data collection of the firms based on the understanding of the interdependencies between cross-border transactions in goods, supporting services, and income and in positions of assets and liabilities between partner countries. It is critical in this regard that countries develop national statistical business registers that go beyond their national boundaries to include links to foreign parents and affiliates. There are several ongoing data exchange efforts at the international and regional levels such as the establishment of common business registers for MNE groups.[31] These registers can assist economies in understanding the global links for MNE units in their country; facilitate the data sharing among countries; and be used as public data sources for building their own registers. This will allow for tailored collaboration between partner countries in analyzing bi-lateral asymmetries.

34. **Given that varying degrees of statistical capacity exist across countries, it will be important that economies, for which GVCs are material, adopt the most beneficial approach to capture this activity.** While a cost-benefit analysis will be helpful, the recommendation is to leave to the national compilers and policy makers to decide on which (i) breakdowns are the most appropriate for developing GVC satellite accounts or eSUTs, and (ii) approach to implement to ensure a sufficiently comprehensive set of statistics. However, if national compilers to do not produce a consistent view across countries, there may be a risk that information will be fragmented and; therefore, not provide data users a sufficiently comprehensive and comparable set of statistics.

35. **For balance of payments statistics, the WG-GVC identified detailed information (such as geographical or product) required at the data source level as items that could be provided to improve the quality of ICIO tables.** The Committee, while endorsing the need for supplemental statistics, also noted challenges in compilation, increasing data requirements, and limited resource availability and called for a prioritization of new data requirements. Acknowledging compilation challenges and considering difficulties for the implementation in countries with low statistical capacity, the proposal for the BPM is to adopt a two-level approach: (i) core or minimum set of items and (ii) encouraged/extensions data that more statistically developed economies are able to report. Recommendations for identifying MNEs in the current account, mirroring the WG-GVC report, as an annual voluntary reporting template of the current account that includes enterprise characteristics have

[31] See GZTT GN G.2 "Treatment of MNE and Intra-MNE Flows" for a discussion on the various initiatives.

already been subject to global consultation as part of GN C.2.[32] Additionally identification of the ultimate investor that could be used in implementing the proposed breakdown of the current account for direct investment income has been proposed and consulted globally as referred in DITT GN D.6.[33]

36. **Resolving issues of asymmetries (by trading partner and by product) is an important step in supporting high quality ICIO tables and TiVA indicators.** Reconciliation efforts at the international and national level remain a high priority for reducing asymmetries. In this respect, the reconciliation between IMTS data and balance of payments data by trading partner is particularly important, not only to assist in identifying where the asymmetries are occurring and helping to resolve the discrepancies but also to make the statistics more transparent to data users. However, the WG-GVC stocktaking survey points to current difficulties in producing these data in most countries (see Appendix Table 2A).

SECTION VI: CHANGES REQUIRED TO THE *2008 SNA* AND OTHER STATISTICAL MANUALS

OUTCOMES

The AEG and Committee at the joint meeting unanimously agreed with all proposals put forward in the GN, namely:

- Include a description of GVCs and Trade in Value Added (TiVA) in the *BPM7* and *2025 SNA*.
- Develop supplementary information for analysis, on a voluntary basis considering countries' varying degrees of statistical capacity and scarce resources, to help motivate greater uptake.
- Within the SNA, to better understand GVC at a global level, the GN favors building: (i) TiVA indicators, addressing the double counting implicit in gross flows of trade, (ii) GVC satellite account, and (iii) more granularity using the extended supply and use tables (eSUTs)
- Within the BPM, supplemental cross-border statistics detailed by geography or product have been proposed and agreed by the Committee in 2019 as part of a reporting template for GVC data collection.
- International Organizations to commit to maintaining the statistical infrastructure to produce Inter-Country Input-Output tables (ICIOs).

37. **The work on globalization, including discussion in several other guidance notes, could support adding a new chapter to the next update of the SNA and BPM.** The editors of the manual should consider how to best incorporate the guidance note. While there are no conceptual changes to the central frameworks, a description of GVCs and TiVA could be included in the next set of manuals as well as the additional data needed to aid such analysis (such as eSUTs or highlighting MNEs in the current account).

[32] See BOPCOM 20/04; BOPCOM 20/04.1

[33] See BOPCOM 20/07; BOPCOM 20/07.1

38. The following *2008 SNA* chapters could be updated or potentially included in a new globalization chapter:

- Chapter 14: The Supply and Use Tables and Goods and Services Accounts
- Chapter 26: The Rest of the World Accounts and Links to the Balance of Payments
- Chapter 28: Input-Output and Other Matrix-Based Analyses
- Chapter 29: Satellite Accounts and Other Extensions

Annex I. Referenced Documents

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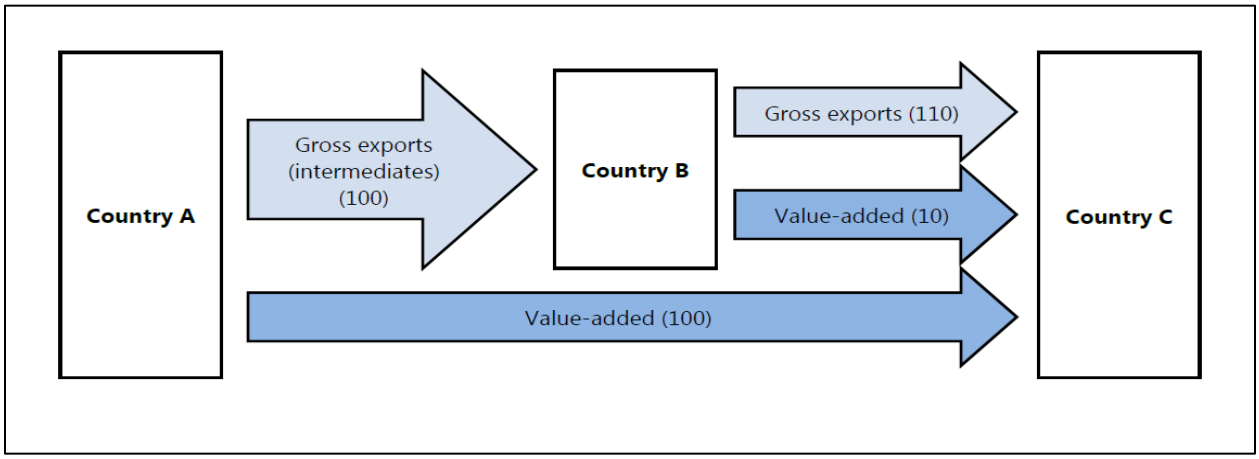
United Nations, European Commission, IMF, Organisation for Economic Co-operation and Development, World Bank, 2009, *System of National Accounts (SNA) 2008* https://unstats.un.org/unsd/nationalaccount/sna2008.asp

_____, 2019, "Accounting for Global Value Chains: GVC Satellite Accounts and Integrated Business Statistics" https://unstats.un.org/unsd/business-stat/GVC/

Annex II. Trade in Value Added

1. Figure 1A is a simple example where Country A exports 100 of goods, produced entirely within A, to Country B that further processes them before exporting them to C where they are consumed. B adds value of 10 to the goods and so exports 110 to C. Conventional trade statistics show total global exports and imports of 210 but only 110 of value added has been generated in their production. Conventional statistics also show that C has a trade deficit of 110 with B and no trade at all with A, despite the fact that A is the chief beneficiary of C's consumption. The TiVA initiative would allow a recalculation of C's trade deficit with B on the basis of the valued added it "purchases" from B as final demand, which reduces its deficit on this basis, to 10, and apply the same approach to A's value added to show C running a deficit of 100 with A. Note that **C's overall trade deficit with the world remains the same at 110**.

Figure 1A. Double Counting in Gross Flows of Trade



Source: *UNECE Guide to Measuring Global Production* (2015)

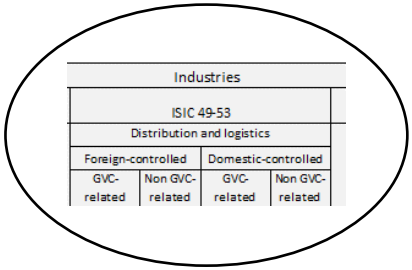
Annex III. GVC Specific SUTs

1. See the UN guidelines on Accounting for Global Value Chains: GVC Satellite Accounts and Integrated Business Statistics for more details and the full set of extensions.

Table 1A. GVC Specific SUTs by Business Functions and Standardized Products

Supply Table at basic prices

		Industries											Imports				
		ISIC 1	...	ISIC 291 Manufacture of motor vehicles	ISIC 49-53 *Distribution and logistics*	ISIC 73 *Marketing, sales and after-sale services*	ISIC 62-63 *ICT services*	ISIC 69-70 *Administration and management*	ISIC 71 *Engineering and related technical*	ISIC 72 *Research and development*	...	Output	Total	from Country B	from Country	from RoW	Total supply at basic prices
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
PRODUCTS	.... (1)																
	.... (2)																
	CPC 837 Market reseach etc. (3)																
	... (4)																
	CPC 4911 - Motor vehicles (5)																
	... (6)																
	... (7)																
	.... (8)																
	Total (9)																
Adjustm	(10)																
	Direct purchases abroad by res (11)																
	Total (12)																



Use Table at basic prices

			Industries											FINAL USE								Total use
			ISIC 1	...	ISIC 291 Manufacture of motor vehicles	ISIC 49-53 *Distribution and logistics*	ISIC 73 *Marketing, sales and after-sale services*	ISIC 62-63 *ICT services*	ISIC 69-70 *Administration and management functions*	ISIC 71 *Engineering and related technical services*	ISIC 72 *Research and development*	...	Output	Final consumption expenditure	Gross capital formation	Exports				Total	
																Total	to Country B	to Country C	to RoW		
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
PRODUCTS	....	(1)																			
	....	(2)																			
	CPC 837 Market reseach etc.	(3)																			
	...	(4)																			
	CPC 4911 - Motor vehicles	(5)																			
	...	(6)																			
	...	(7)																			
	....	(8)																			
	Total	(9)																			
Adjustm		(10)																			
	Direct purchases abroad by res	(11)																			
	Total	(12)																			
GVA	Compensation of employees	(13)																			
	Other taxes less subsidies on production	(14)																			
	Consumption of fixed capital	(15)																			
	Net operating surplus/net mixed income	(16)																			
	Gross operating surplus/gross mixed income	(17)																			
	GVA	(18)																			
	Total input at basic prices	(19)																			

		Industries										
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Gross capital formation by asset type	(1)											
Capital sock by asset type	(2)											
Labour by relevant breakdown	(3)											
TEC Indicators (??)	(4)											
number of enterprises	(5)											
size enterprises by size class	(6)											

Annex IV. Extended Supply and Use Tables the *2008 SNA*

1. **The OECD Expert Group on Extended Supply-Use Tables created in 2014 [34] proposes extensions to the *2008 SNA* SUTs framework (*2008 SNA,* Chapter 14) that could improve users' ability to better understand the impact of globalization on the domestic economy.** The underlying principle is to generate greater homogeneity in the types of activities shown by breaking down industries onto firm-level aggregations that better reflect homogeneity in production functions and in particular in the use of imports and generation of exports, for example breakdowns such as by ownership status (*foreign-owned affiliates, domestic MNEs with affiliates abroad, and domestic firms with no affiliates);* size-class; export orientation; or trade status (e.g., processor/non-processor; operating within or outside an export fee zone).

Figure 2A. "Ideal" Breakdown of Columns and Rows in Supply-and-Use Tables

Foreign Owned												Domestically owned MNE												Domestic Owned											
With high Export orientation 'Exporters'						With low Export orientation 'Non-Exporters'						With high Export orientation 'Exporters'						With low Export orientation 'Non-Exporters'						With high Export orientation 'Exporters'						With low Export orientation 'Non-Exporters'					
Low import orientation			High import orientation			Low import orientation			High import orientation			Low import orientation			High import orientation			Low import orientation			High import orientation			Low import orientation			High import orientation			Low import orientation			High import orientation		
S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L

2. **An important point to note in the development of eSUTs is that not all activities may need to be decomposed,** as noted in Ahmad (2018) and in the Expert Group's Terms of Reference. How countries develop eSUTs that meet the statistical challenges presented by globalization necessarily depends on national circumstances—driven by the statistical capacity and the policy demands. The GZTT recognized this by also suggesting breakdowns of GVA by relevant industries according to domestic MNEs versus foreign-controlled affiliates of foreign MNEs.

[34] See terms of reference at https://www.oecd.org/sdd/na/OECD-Expert-Group-on-Extended-Supply-Use-Tables.htm

Annex V. Balance of Payments Components Identified by the WG-GVC

BALANCE OF PAYMENTS COMPONENTS IDENTIFIED BY THE WG-GVC DURING PHASE I THAT ARE RELEVANT FOR GVC ANALYSIS

1. The WG has identified the following items:

(i) All standard components as identified in *BPM6* for the goods account, with a breakdown of the main products involved. This includes in particular: Re-exports; Goods acquired under merchanting; and Goods sold under merchanting

(ii) A reconciliation table between international merchandise trade statistics (IMTS) and balance of payments trade in goods statistics, along the lines of *BPM6* Table 10.2, and to include, where possible, the main products and/or partner countries involved.

(iii) Balance of payments trade in goods statistics, including those identified by Central Product Classification (CPC) or Classification of Products by Activity (CPA), and partner country, consistent with the national accounts statistics used in constructing supply-use tables (SUT) (particularly in countries where transactions related to GVCs and global production arrangements are important).

(iv) Supplementary breakdown of the travel item as identified in the *BPM6* standard components.

(v) Geographical breakdowns for trade in services statistics, starting with the 12 main EBOPS categories (and total services trade) and prioritizing breakdowns for more detailed services category according to their relevance and importance in a country's international trade.

THE PROPOSED ITEMS FOR COLLECTION

2. The WG GVC took account of the results of the stock-taking survey when developing the following proposal for items to be included in a data collection. First, it was decided that any item for which 50 percent or more of the respondents indicated that the data were either available and already published or available but not yet published should be included in the proposal. Items for which fewer than 50 percent of respondents indicated the data were available and those that are of particular value for GVC analysis or other policymaking could be included.

3. With regard to the provision of detailed data by main product and/or major trading partner, the proposal aims to help economies prioritize which information would be most relevant for GVC analysis or other policymaking. In addition, economies are encouraged to provide detail by main product and/or by major trading partner first before trying to bring these data together. Detail on specific items, such as re-exports or merchanting, are encouraged for economies for which these items are significant. Economies should also be encouraged to report information to international organizations for their use without them publishing the information provided; this could help allay concerns about the quality of the estimates or confidentiality while still supporting the production and analysis of improved GVC indicators. Table 2A summarizes the proposals for the data collection.

Table 2A. Summary of Proposals for Data Collection

Item	Dimension	Included in the Reporting Template	Comment
Re-exports	Total value	Yes	Availability is close to 50%, and data are very useful for GVC indicators.
	Main products and/or major partners	Yes, but only top products and trading partners, such as top 5	While availability is lower (38%), very useful for GVC indicators, particularly for economies with significant re-exports.
Goods acquired/sold under merchanting	Total gross value	Yes	Availability above 50%.
	Main products or major trading partners	No, but	While the availability indicated in the stocktaking survey does not support collection, economies could be encouraged to provide the estimates used in national accounts.
Reconciliation table between IMTS and trade in goods on balance of payments basis	Total (Table 10.2 in *BPM6*)	Yes	Availability above 50%.
	Main products and/or major trading partners	No	The results of the stocktaking survey point to current difficulties in producing these data in most countries and so are not included in the final list.
Breakdown of total trade in goods on a balance of payments basis	Major trading partners and/or most important products	Yes	Availability above 50%. Priority should be given to trading partners as the survey results indicate this information is more available than product detail.
Geographical breakdown of trade in services	12 main EBOPS categories	Yes	Availability above 50%. Economies should focus first on their most important categories and trading partners.
Supplemental breakdown of the travel services item	Supplemental classification proposed in *BPM6*	No	The results of the stocktaking survey do not justify asking for this item at this time.

4. WG-GVC specifically, developed a framework for incorporating TEC data in the trade in goods and services account and a further breakdown of DI income that distinguishes income receipts and payments based on the residency of the ultimate owner of the MNE.

5. The WG reviewed several frameworks for identifying the transactions of MNEs in the current account that were proposed in the 1990s (see Julius (1990) and National Research Council (1992)) as well as the "Ownership-Based Disaggregation of the U.S. Current Account" published annually by the U.S. Bureau of Economic Analysis. These approaches incorporate information on the local sales and purchases of MNEs into the current account in different ways to provide a complete picture of their sales and purchases of goods and services through both cross-border trade and commercial presence. These approaches draw on information available from the Activities of Multinational Enterprises Statistics or Foreign Affiliates Statistics (AMNE/FATS). However, it was decided that these frameworks posed definitional and conceptual issues in reconciling AMNE/FATS with the balance of payments accounts that could not be adequately addressed by the WG-GVC.

6. The proposed framework provides for additional detail within both the trade in goods and services account and within the primary income account for DI income as shown in Table 3A. The IMF (2019) "Final Report of the Working Group on Balance of Payments Statistics Relevant for the Analysis of Global Value Chains" contains more details of the proposal.

Table 3A. WG-GVC Proposed Framework of the Current Account to Highlight the Activities of MNEs

Line		Source Data
1	Exports of goods and services	BOP
2	Exports of goods and services, total	BOP
3	Goods, BOP basis	BOP
4	By domestic MNEs	TEC
5	By foreign-controlled enterprises	TEC
6	Other—domestic enterprises	TEC
7	Services	BOP
8	By domestic MNEs	STEC
9	By foreign-controlled enterprises	STEC
10	Other—domestic enterprises	STEC
11	Primary income receipts	BOP
12	Direct investment income	BOP/DI
13	*Less: adjustment to convert direct investment receipts to a directional basis*	BOP/DI
14	Outward direct investment income	BOP/DI
15	By resident UBOs	BOP/DI
16	By foreign UBOs	BOP/DI
17	Portfolio investment income	BOP
18	Other investment income	BOP
19	Reserve asset income	BOP
20	Compensation of employees	BOP
21	Secondary income receipts	BOP
22	Imports of goods and services	BOP/DI
23	Imports of goods and services, total	BOP
24	Goods, BOP basis	BOP
25	By domestic MNEs	TEC
26	By foreign-controlled enterprises	TEC
27	Other—domestic enterprises	TEC
28	Services	BOP
29	By domestic MNEs	STEC
30	By foreign-controlled enterprises	STEC
31	Other—domestic enterprises	STEC
32	Primary income payments	BOP
33	Direct investment income	BOP/DI
34	*Less: adjustment to convert direct investment payments to a directional basis*	BOP/DI
35	Inward direct investment income	BOP/DI
36	By resident UBOs	BOP/DI
37	By foreign UBOs	BOP/DI
38	Portfolio investment income	BOP
39	Other investment income	BOP
40	Compensation of employees	BOP
41	Secondary income payments	BOP

Note: The term ultimate beneficial owners (UBOs) has subsequently been replaced by the recommendations discussed in GN D.6. The DITT GN D.6 "Ultimate Investing Economy/Ultimate Host Economy and Pass-through Funds" proposes to streamline the concepts for ultimate investor (UCP/UIE/UHE) used in the standards. Notably, the UCP concept used in this GN would be consistent with the UIE concept under the proposed "Winner Takes All (WTA)" approach.