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For information

UN Report on the Work on the Guidelines on Accounting for Global Value Chains

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This report presents the work done in partnership with national statistical institutions (NSIs), academic institutions, and international agencies in compiling regional global value chains accounts.

The Guidelines on Accounting for Global Value Chains (hereinafter referred to as the *Guidelines*) were prepared by the UN Expert Group on International Trade and Economic Globalization Statistics. The Expert Group was established by the Statistical Commission in 2015 to prepare a handbook on a system of extended national accounts and integrated business statistics to address the challenges that globalization and emerging complex production arrangements pose to compiling macroeconomic and business statistics, including the supporting business registers.[1]

At the Statistical Commission in 2013, the United Nations Statistics Division (UNSD) presented an overview[2] on the work undertaken in the field of international trade statistics, on topics such as integrated economic statistics, linking trade and business statistics, trade and global production, trade in value added, statistics of multinational enterprises and foreign direct investment. The report highlighted the growing concerns regarding the limitations of current trade and business statistics to inform the policy debate. While there are many international task teams working on these measurement problems in various areas of international trade and economic globalization, the Commission recognized[3] the need for an overarching framework and systematic coordination and recommended the creation of the Expert Group on International Trade and Economic Globalization Statistics (hereinafter referred to as the Expert Group).

The *Guidelines* are the result of various consultations of the Expert Group, which held two meetings in New York in 2016, a meeting in Luxembourg in 2017 and a meeting in Rome in 2018. For the preparation of the *Guidelines*, an Editorial Board was established, comprising the Chair of the Expert Group (Michael Connolly, Central Statistics Office, Ireland), a lead editor (Steve Landefeld, UNSD consultant) and the UN Statistics Division. Initial drafts of the chapters were prepared by Members of the Expert Group and the Editor. The *Guidelines* were circulated for global consultation in January and February 2019. Thirty responses were submitted during the global consultation, which were generally favourable and complimentary of the work of the Expert Group.

The *Guidelines* were presented in their draft version to the fiftieth session of the Statistical Commission in March 2019. The original draft chapters and other research material, which provide more detail on certain topics, will be posted online as a compendium to the handbook to provide further reference material.

The *Guidelines* provide a framework for the measurement of global value chains (GVCs), which consists of a multi-country supply and use table and related institutional sector accounts and framework for integrated business, trade and investment statistics. They further build on existing

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[1] See E/2015/24, chap. I.C, decision 46/107. https://unstats.un.org/unsd/statcom/46th-session/documents/statcom-2015-46th-report-E.pdf.

[2] Report of the Secretary-General, E/CN.3/2013/7. https://unstats.un.org/unsd/statcom/44th-session/documents/doc13/2013-7-TradeStats-E.pdf.

[3] See Decision 44/106 in E/2013/24. https://unstats.un.org/unsd/statcom/44th-session/documents/statcom-2013-44th-report-E.pdf.

standards, guidelines and research, in particular the work undertaken under the auspices of the Economic Commission for Europe (ECE), the Organization for Economic Cooperation and Development (OECD) and the Statistical Office of the European Union (Eurostat).

More specifically, the *Guidelines* provide a national perspective on globalization on the basis of a GVC model that describes the regionally-integrated decomposition of industry-specific GVCs in a multi-country supply chain of goods, services and institutional arrangements. Doing so allows for an integrated presentation of production, income, assets and liabilities by partner country for those GVC industries that play a significant role in the national economy, resulting in GVC-specific, multi-country supply and use tables and related institutional sector accounts, or GVC satellite accounts. The *Guidelines* also make clear that, within the overall framework, countries can flexibly (in a modular fashion) implement the satellite accounting approach in accordance with their national priorities for entering or upgrading their role in industry-specific GVCs.

By explicitly taking into account the increasing importance of GVCs, the GVC satellite accounts as presented in the *Guidelines* will better inform public policies and business decisions on issues related to, for example, growth and productivity, domestic and foreign share of the value-added generated, trade policy, domestic and foreign labour and capital used in the production of goods and services. The *Guidelines* will also be helpful to a wide range of compilers in offering alternative solutions, such as microdata linking, data exchange and sharing, indirect estimates using existing data and the use of mixed data for the compilation of GVC satellite accounts.

The final *Guidelines* contain the following five parts:

(a)   "Accounting for global value chains", which defines GVCs and lays out in what ways existing economic statistics are not suited for measuring GVCs, as well as the policy needs that GVC accounting can address. This part discusses the key measurement issues related to globalization, including the allocation of domestic and foreign value-added share by country, double-counting, bilateral asymmetries and the need for a national perspective on the multi-country production processes of multinational enterprises and GVCs.

(b)   "Global value chain satellite accounts", which includes descriptions of how to define the industrial and geographical boundaries of a GVC, classifications, required data and data sources, and lays out the concepts and data needed to compile GVC satellite accounts and a framework for compiling GVC-specific, multi-country institutional sector accounts and an extended productivity framework using the "KLEMS" model.

This part also provides details and explanations regarding a number of initiatives that have been made in recent years to develop a better understanding of global value chains, including those related to the development of global or regional supply and use tables and input-output tables (e.g., the trade in value-added (TiVA) database of OECD and the World Trade Organization, the tables provided by the Eurostat project "Full International and Global Accounts for Research in Input-Output Analysis"(FIGARO), the World Input-Output Database, and the APEC and the North American trade in value-added initiatives. These initiatives typically provide tables with a relatively aggregated view of GVCs and provide a view of GVCs that reflects the generation of value-added in a value chain on the basis of the activity classification of the firms involved in the chain. While significant efforts

are being made to improve the quality of current TiVA estimates by better capturing the underlying heterogeneity within activities – for example, by focusing on exporting firms and their size and ownership – the Expert Group notes that it will be some time before most countries are able to develop extended supply and use tables and it will take them even longer to develop extended global input-output tables. Therefore, a complementary approach, and the focus of the *Guidelines*, is the development of GVC satellite accounts and associated institutional sector accounts that focus on a specific product or group of products produced within a global value chain among a group of key partner countries.

(c)   "Integrated business statistics", which introduces a framework for integrated business, trade and investment statistics for GVC satellite accounting, with the aim of better understanding the business models and business accounting schemes concretely adopted by global enterprises in their day-to-day activities. The relevant classifications of business lines and business functions are presented, along with the various types of surveys used to collect information on business functions. This part further discusses the need to link and exchange microdata in order to compile GVCs accounts and more fully understand the global activities of multinational enterprises and touches on the reconciliation of bilateral trade asymmetries and efforts to build a global enterprise groups register.

(d)   "Global value chain analysis and policy framework", which demonstrates in-depth how GVC accounting and resulting data can be used to address specific policy questions, particularly, the implications for trade policy, the imposition of tariffs and the negotiation of trade agreements; economic development policy, including GVC upgrading; tax policy; financial regulation; macroeconomic policy; and the impact on labour markets and welfare. This part of the *Guidelines* provides numerous country examples.

(e)   An "Annex", which covers various topics in more detail, including the relationship between GVC satellite accounts and extended supply and use tables, the data framework of multi-country supply and use tables and input-output tables, empirical challenges in compiling GVC accounts (such as estimating for missing data) and other conceptual accounting topics (such as factoryless goods production and transactions in intellectual property products).

The *Guidelines* also identify the following indicators that can be derived from a GVC satellite account:

- value-added indicators (TiVA) for a specific GVC that can benchmark other indicators; e.g., domestic value-added in exports and imports and foreign value-added in domestic exports
- Relative proportions of business functions (classified by ISIC and CPC) involved in the production of the GVC and which are related to exports
- Role of core and support functions in the GVC
- Compensation of employees involved in the GVC by business function
- The GVC-related intermediate and final products (goods and services) supplied (by the domestic economy in the single country GVC satellite account case and by each country in the GVC for the multi-country satellite account case)
- Comparisons between those firms in the GVC with those not in the GVC related to their productivity and economic activity

- Level and sources of intermediate consumption of goods and services used in the GVC
- Exports of the GVC-related products (by business function)
- Amount to which the GVC-relevant goods and services are supplied by nationally-controlled or foreign-controlled firms
- In the multi-country GVC satellite account case, the GVC-related products (goods and services) imported from each country
- In the multi-country GVC satellite account case (where the rest of the world can be reasonably estimated with proxies), the proportion of each country's supply of goods & services to the entire (global) GVC
- In the multi-country GVC satellite account case, identification of where each type of firm in the GVC is located: (i.e., Lead Firm and Affiliated Supplier (either Controlled *[Subsidiary (controlled)]*, Non-controlled *[Associates (influenced)], or* Non-affiliated supplier)
- In the multi-country GVC satellite account case, country in which the R&D / IPP resides in the GVC
- Other net taxes on production related to the GVC
- Consumption of fixed capital related to the GVC
- Operating surplus, net, related to the GVC
- Value added at basic prices related to the GVC (within the domestic economy for the single-country GVC satellite account and for the multi-country case, foreign and domestic value added in imports and exports related to a GVC- specific industry)

Areas for future work include further elaborating on the relationship between business line and industry classifications and institutional sector classifications relevant for GVC; analysis of GVCs' implications for employment, working conditions and labour rights; and analysis of tariffs' effects on household income and employment. UNSD is working toward the implementation of the GVC satellite accounts in countries.

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