



# Handbook on Accounting for GVCs

## Part I: Introduction

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# Part I: Introduction

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- A. Introduction to Global Value Chains
- B. Global Value Chains in Perspective
- C. The Global Value Chain Framework
- D. Analytical and Policy Framework for Global Value Chains
- E. Key Features of GVC Accounting & Integrated Business Statistics

Based on:

- *UNECE: The impact of Globalization on National Accounts*
- *GVC Handbook draft Chapter 1*
- *GVC Handbook draft Chapter 9 from Stat Canada*
- *GVC Handbook draft Chapter 14 from Steve Landefeld & Deborah Winkler of World Bank*
- *Global Value Chain Development Report 2017, International Bank for Reconstruction and Development/The World Bank, Chapter 1 by Satoshi Inomata*
- Gary Gereffi “Global Value Chain Analysis: A Primer”





# Introduction to Global Value Chains

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## The “unbundling” of production:

The parts and components that make up a final product, being either a good or service, are increasingly produced in different countries



### GVC definition:

“The full range of activities that firms and workers perform to bring a product from its conception to end use and beyond, including...research and development, design, production, marketing, distribution and support to the final consumer. The activities...can be contained within a single firm or divided among different firms.”

- Current macroeconomic, business and trade statistics need to better capture these complex cross-border activities and risks associated with the growing interconnectedness of national economies
- The impact on employment, income, trade and productivity



# Brief history of International Trade Theory

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## Heckscher–Ohlin model

- Markets are perfectly competitive
- Producers operate at constant returns to scale
- An industry consists of homogeneous producers and countries have identical production technology
- Countries trade only final products



## New Trade Theory

Explained intra-industrial trade between countries with similar technology and resource endowments (due to increasing returns to scale & love of variety)

## Bernard and Jensen

Firm-level microdata showed heterogeneity in firm productivity between exporters & non-exporters

## Melitz/New-Trade Theory

Explains the coexistence of heterogeneous firms within an industrial sector based on fixed costs of exporting and a firm's endogenous selection on market entry or exit

## Globalization & GVC studies

- Production processes sliced into segments across international boundaries based on where they can be performed most efficiently
- Focus on production & trade of intermediate goods & services and value-added of tasks

## GVC studies

- Impacts of offshoring on domestic factor income and welfare
- Firms' efforts to optimize production networks
- How value added structure affects firm's organization & international production networks



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*NSOs already produce a wealth of information on the activities of economic actors participating in GVCs - international trade, economic performance, foreign investment, and employment*

## **So why do we need better statistics?**

- Existing information not often presented in a way that permits understanding of the role and impact of GVCs on a given economy or within global economy
- Existing macroeconomic accounting frameworks describe the relationships between one industry and another within a given economic territory, but are **not able to illustrate the international linkages**
- Standard macroeconomic account tools are organized around *products, industries and sectors*, while the more applicable organizing framework to explain a GVC are **business processes and activities**
- National statistical compilers **only see parts of firms' global activities**





# Approaches to measuring GVCs

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- One approach is extending existing SNA production, distribution and use of income, capital, financial, and price and volume accounts to detail the international contributions, both in *aggregate and by industry*
- Based on expanding national supply-use and I-O tables utilizing:
  - ❑ *MNE surveys*
  - ❑ *surveys for Balance of Payments purposes*
  - ❑ *tax data on international financial and non-financial flows and ownership*
  - ❑ *integrated business statistics*
  - ❑ *reconciled trade statistics*
- Would provide more homogenous information, such as **breakdowns by type of ownership** (e.g., foreign or domestically owned MNEs, foreign or domestic affiliates) and maybe **by trading status** (e.g., export orientation)



# Extended SNAs and multi-country IOTs

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- Extended global supply and use tables, or multi-country input-output tables, such as **OECD's TIVA accounts** or **World Input-Output Tables (WIOT)**, would complement such extended SNAs.
- Because such tables contain information on supply–use relations between industries and across countries, it is possible to identify the vertical structure of international production sharing.
- Cover entire set of industries that make up an economic system, enabling measurement of cross-border flows for country or region.
- Theoretically, such analysis has the capacity to track the value-added generation process of every product in every country at every production stage.



## Some limitations to multi-country I-O analyses

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- Do not show value-added of a **specific task** or **nature of specific transactions, business processes/functions**
- Transactions are recorded on a domestic basis and so production activities are circumscribed **by territorial borders** rather than by the nationality that the produced goods are associated with
- Assumptions are made about **the allocations of imports between final demand and intermediate uses** in industries
- **R&D and marketing** usually counted in research or wholesale trade sectors though also part of manufacturing
- **Statistical unit** of imports is typically the enterprise rather than the establishment, which is used in conventional SUTs
- In multi-country context – difficulty of resolving **bilateral trade asymmetries**





Using firm-level data on specific industries and final products of an MNE is likely to produce more accurate data on specific industries and MNEs

- Focus on a specific product or group of products within a GVC
- Can complement and benchmark macro-based GVC extensions
- Among a group of key partner countries
- Countries choose to focus on particular GVCs and partners
- 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.
- Developed within, and can be linked to, the SNA accounts
- Would not overburden or reduce the accuracy or consistency of core accounts
- Would allow for adding flexibility and highlighting flows and interactions that may not be visible with a more structured and aggregated set of extended SUTs



# The GVC accounting framework

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- **Industry-specific Supply and Use Tables** delineated in standardized presentations of products and industry classifications.
- The coordination and governance of GVCs can be described using the **institutional sector accounts of the System of National Accounts**.
- Extended Institutional sector accounts provide an economic overview of **the distribution of value added and related income across the different countries** through transactions in goods, services, income, assets, and liabilities with breakdown by affiliate/non-affiliate firms



# GVC framework of integrated business

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- Global enterprise profiles and business registers should identify **cross-border control and ownership** established by the lead firms in their firm networks
- Impact on firm level statistics and indicators on employment, income, productivity and international trade **within the GVCs** as compared to firms **not participating in the GVCs**
- Will allow for tailored collaboration between partner countries in analyzing **bi-lateral asymmetries**
- Development of **global enterprise registers** and establishing **early warning systems** for large statistical impact events



# Analytical and Policy Framework of GVCs

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- The flows of goods, services, people, ideas, and capital are **interdependent and must be assessed jointly**
- **Gross bilateral trade balances hide significant import content**, including foreign and domestic value added
- **Protectionist measures can** (i): lower the competitiveness of domestic lead firms that rely on imported inputs; (ii) tax domestic value-added that is embodied in imports; and (iii) lead to higher consumer prices if lead firms pass-through costs
- **Economic development** can occur through economic upgrading and densification
- New policy framework depends critically on statistics classified into **business functions rather than aggregated industrial sectors.**



# Further Improvements To Be Made

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- Ensure **coherence** of substantive matter with the other sections
- Ensure consistency of **terminology** with other sections
- Potential areas of elaboration:
  - More detail on **related efforts**, such as two UNECE handbooks, Extended SUTs, TiVA, APEC TiVA, FIGARO, digital trade development of TEC data, modes of supply, balanced trade (goods and services)
  - Possibly a **snapshot of the inter-country tables** that are being proposed (as prelude to part II)
  - More precise **definition of GVC?**
  - **Others?**



*Thank you!*