FAQ on GVCs: some answers from the Global I-O tables approach

Rita Cappariello,
Economics, Statistics and Research Department

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This presentation reflects the views of the author and are not meant to represent the views of the Bank of Italy.
Outline

• Introduction: the Global Input-Output tables
• Lessons on GVCs from the Global I-O tables approach:
  1. The global trends
  2. The impact on factor content
  3. The effects on the domestic economy
  4. New measures of bilateral trade imbalances
• Conclusions
Global value chains

“...A value chain identifies the full range of activities that firms undertake to bring a product or a service from its conception to its end use by final consumers.“ (Miroudot and de Backer, 2012)

- “1st unbundling in international trade = spatial unbundling of factories and consumers, enabled by steam revolution.

- “2nd unbundling in international trade = unbundling in factors of production“, enabled by the ICT revolution (Baldwin and Lopez-Gonzalez, 2013)...

... in addition to the “traditional” trade of MNEs, now GVCs comprise a new form of “inter-enterprise” trade
• As a result, new phenomena need to be measured, new questions arise and new indicators need to be elaborated …

• …but there is a perception that the data gaps between economic facts and statistics have widened

• …so far, these gaps have been just partially closed
• … the advent of Global Input-Output Tables has largely enriched, at least at a macro-level, the information set to study GVCs

• … in addition to new value-added measures of trade, Global Input-Output tables have provided a complete toolbox to trace value added flows

• … a lot of recent research based on I-O tables is looking at these issues…
Why Global I-O tables are so useful to measure GVCs?

- Example iPod:

```
Consumer

USA
Retail
69
USA
Apple
80
```

```
CHINA
Assembly
5

Japan
Hard drive
96
Korea
Memory
3
USA
Processors
13
Others
Battery
33
```

- Only a Global Input-Output-table can tell the full story!

Source: Linden et al., 2010.
Global Input-Output Table

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Introduction
Data Sources for GVC trade

1. World Input-Output Database (WIOD):
   • 1996-2011 / 59 products / 40 countries (including all EU27 members)
2. Global Trade Analysis Project (GTAP):
   • V8 dual reference 2004 and 2007 / 129 regions / 57 GTAP commodities
3. Trade in Value Added (WTO-OECD TiVA):
   • 1995, 2000, 2009 / 59 countries / Indicators of foreign value added

Additional Sources

• Asian IO tables (IDE-JETRO)
• GIO tables (Yokohama National University)
• EXIOPOL
• EORA (UNCTAD)
• Eurostat consolidated EU table (Eurostat and IPTS)
Global I-O tables: some questions and answers

1) How widespread is international outsourcing and what are the global trends?

2) What is the impact of GVCs on factor content (capital and labor by skill) of production and international trade?

3) What are the implications of global engagement for a domestic economy in generating value added?

4) What happens if we take into account GVCs when interpreting bilateral trade imbalances among EU27 (and euro area) countries?

1. The global trends

- rather widespread across world regions
- increasing across countries and across sectors
Foreign value added in exports in major world regions

Source: Amador, Cappariello and Stehrer (2014)
Foreign Value-Added Shares in 560 GVCs, 1995 and 2008

Source: Timmer, Erumban, Los, Stehrer and de Vries (2014)
Global I-O tables: some questions and answers

1) How pervasive is international outsourcing and what are the global trends?

2) What is the impact of GVCs on factor content (capital and labor by skill) of production and international trade?

3) What are the implications of global engagement for a domestic economy?
   - an increase of high-skilled income
   - a generalized reduction of low-skilled income

4) What happens if we take into account GVCs when interpreting bilateral trade imbalances among EU27 (and euro area) countries?

2. The impact on factor content
Factor Shares in Value Added of 560 GVCs of Manufactures, 1995 and 2008

- a) Capital share
- b) High-skilled labour share
- c) Medium-skilled labour share
- d) Low-skilled labour share

Source: Timmer, Erumban, Los, Stehrer and de Vries (2014)
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3. The impact on the domestic economy

a generalized reduction of DVA
Evolution of “stand-alone exports” and “exports in GVCs”

a) France  

b) Germany  

c) Italy  

d) Spain

Source: Cappariello and Felettigh (2014)
Global I-O tables:
some questions and answers

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4. The impact on trade imbalances
Re-Assessing Trade Balance

SD Intra-EU27 bilateral trade balances

Variance decomposition

Source: Nagengast and Stehrer (2014)

4. The impact on trade imbalances
Conclusions

The advent of Global I-O Tables has partially closed the data gaps between economic facts and statistics. Thus, we can measure some perceptions on GVCs:

- GVCs widespread and increasing across countries and sectors
- Increasing high-skilled income and low skilled income in decline
- Reduction of the impulse of exports for the domestic economies.
- Intra-EU (euro area) imbalances were overestimated and imbalances with extra-EU underestimated
References and useful links


• World Input-Output Database (WIOD): www.wiod.org

• Global Trade Analysis Project (GTAP): https://www.gtap.agecon.purdue.edu/

• OECD-WTO Statistics on Trade in Value Added (TiVA): http://www.oecd.org/industry/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.htm
Thank you for your attention

rita.cappariello@bancaditalia.it