Typologies of global production and value chains

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Presentation Plan

- Background
- Overview of global value chains
- Criteria for identifying economic activity
- Types of global production arrangements
- Issues
- Summary
Background TF Global Production

• Mandate
  • Established under the Conference of European Statisticians (CES) and reports to CES Bureau and SG on National Accounts
  • Coordinates with ISWGNA/AEG
  • Consults with OECD NAWP / BOPCOM/ UNECE Group of Experts

• Members
  • Canada, Finland, Ireland, Israel, Italy, Mexico, Netherlands, Norway, Sweden and United States
  • Eurostat, IMF, OECD, UNECE, UNSD and WTO
Background

• Task Force on Global Production (TFGP)

• Main objectives:
  • Guidance on unresolved conceptual issues arising from 2008 SNA and BPM6
  • Guidance on implementation aspects
  • A Guide with recommendations to be finalized by the end of 2014
Global Value Chains

• Global Value Chains - Globalization in action
• Globalisation at its heart is about flows: flows of materials, goods, information, knowledge, finance and people.
• Global Value Chains are the basis of such flows.
• The design, configuration and coordination of such chains to achieve maximum business performance are central to the role of MNEs.
GLOBAL VALUE CHAINS

• Global value chains make it possible to bring together all the raw materials & components that combine to make a product or service; to deliver it into use through distribution systems; to support users on a 24 hour basis; and to recover and integrate residue into a waste stream.

• These chains span the world, so that even mundane items now commonly involve the coordination of flows of goods, information, finance and people across several continents while navigating customs crossings, security screenings and identity verification.

• A global value chain may involve American designers, Indian software writers, Asian manufacturers and European system integrators and support provision
### Global value/supply/production chains

<table>
<thead>
<tr>
<th>End-tier supplier</th>
<th>First-tier supplier</th>
<th>Second-tier supplier</th>
<th>Lead firm</th>
<th>Retail outlets</th>
<th>Consumers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sourcing raw material</td>
<td>Conception, design and product development</td>
<td>Production</td>
<td>Marketing, distribution, sales, after-sales support</td>
<td>Disposal and recycling</td>
<td>Global production chain</td>
</tr>
<tr>
<td>Raw material network</td>
<td>Component network</td>
<td>Final product</td>
<td>Marketing network</td>
<td>Global supply / value chains</td>
<td></td>
</tr>
</tbody>
</table>
A simple supply chain

1. R&D / Design
2. Raw Materials
3. Intermediate Inputs
4. Semi-finished Goods
5. Final Good Assembly and packaging
6. Warehouse
7. Retail / Delivery
8. Customer Service
9. Marketing Services
10. Logistics Services
11. Financial Services
12. Quality Control Services

Supply chain management activity
Life of a DVD Player | How the tech supply chain makes the world’s gadgets

1. Minnesota-based **Best Buy** decides how many DVD players it wants, orders from Toshiba...
2. Toshiba tells factories-for-hire in China to crank up production...
3. Those Chinese factories-for-hire order chips from Zoran Corp. ...
4. Zoran tells its own subcontractors, including TSMC, to get busy making more chips...
5. TSMC, in Taiwan buys factory equipment from Applied Materials ...
6. In California, Applied Materials shops for specialty machine-tool services...
Why create a typology?

• A framework to classify the activities of the units participating in GVC and give guidance on recording of their transactions according to current international guidelines
• Tests the typology on real case studies
• Elaborate on the boundary between the different types of Global Production arrangements
Economic Ownership

• Economic ownership at each stage of production process important
  – Material inputs
  – Outputs
  – Intellectual property
Classification of Economic Activity

• Economic ownership of material inputs is decisive
  – If principal owns material inputs then principal is classified as a manufacturer
  – If principal does not own material inputs then is classified as a merchant (trader)
Typology of Global Production Arrangements

- Arrangements Related to Goods
  - Transformation of materials owned by others
  - Merchanting
  - Factoryless manufacturing (including branding)
- Arrangements Related to Services
  - Fragmenting, IPPs
  - Fragmenting, excluding IPPs
  - Subcontracting
- Arrangements Unrelated to Primary Inputs
  - Direct investment enterprises not directly engaged in goods production
  - Direct investment enterprises not directly engaged in services production
Developing Typology

Three dimensions to global value chain arrangements (Gereffi, Humphrey, Sturgeon)

– Complexity of information and knowledge required (product and process specifications)
– Degree to which complexity can be mitigated through codification
– Extent to which suppliers have capabilities to meet buyers’ requirements
Governance Types

• Range from market oriented arrangements (principal exerts little control) to hierarchal (principal exerts full control)
• May be helpful in determining how much explicit coordination
• Indication of how much control the principal exerts and associated risk
Typology of Global Production Arrangements

• Objective
  – Establish a framework to analyze complex global production arrangements and fit the arrangements into current interpretations of the international guidelines

• Analytic Framework
  – Two entities: 1) domestic and 2) supplier
  – Describe production arrangement from domestic perspective
  – Breakdown economic activities by country of entity
    • Identify economic ownership of inputs and output
    • Assign economic activities (ISIC, Rev. 4)
    • Distinguish type of output
    • Determine a treatment for international transactions
Outsourcing Parts of Production Abroad
Manufacturing services on physical inputs owned by others

Principal (Domestic Economy)
USA

Supplier (Processor Abroad)
MEXICO

Material inputs
Processing fee

Material outputs

Sales (turnover)

\[\text{= Products}\]
\[\text{= Money}\]
Merchanting

Principal (Domestic Economy) MEXICO

Customer CANADA

Supplier (Manufacturer) USA

Material inputs

Material outputs

Purchasing = Products

Sale (turnover) = Money
Factoryless manufacturing

**Principal**
(Domestic Economy)
USA

**Supplier**
CHINA

- Sale (turnover)
- Production cost (intangible inputs)
- Material outputs
- Product cost (tangible inputs)
- Material inputs

- = Information
- = Products
- = Money

**Material inputs**

**Production cost (intangible inputs)**

**Production cost (tangible inputs)**

**Intellectual property**
Factoryless manufacturing

Ownership of inputs?
Economic activity?

Principal
(Domestic Economy)
USA

Supplier
CHINA

Purchase or processing fee?
Intellectual property

Sale (turnover)
Production cost (intangible inputs)

Material outputs
Production cost (tangible inputs)

Material inputs

Sale (turnover) = Products
Production cost (intangible inputs) = Money

Ownership of inputs?

Material inputs = Information
The Foxconn Empire – Contract Manufacturer

International expansion

Foxconn sites
Selected

Paradubice, Czech Republic
5,000

Chengdu, China
110,000

Zhengzhou, China
192,000

Nitra, Slovakia
Fewer than 4,500

Near Istanbul, Turkey

Chennai, India

Indonesia
Still planning

Shenzhen, China
390,000

Jundiaí, Brazil
6,000
will reach 10,000 by 2016

Houston, Texas

Plainfield, Indiana

California

Juárez, Mexico

Hon Hai Precision Industry*
Share price (T$)

Revenues
$bn

Employees

2003 06 08 10 11

2003 06 08 10 11

Sources: Thomson Reuters Datastream; company

IPP Ownership

US Parent

Cayman Irish registered non-resident- owner of IP

ROYALTIES

Dutch Company – IP Sub licences

Irish Resident Trading Company
Aspects of FGP Production

• FGP retains
  – Technical know-how
  – Product design

• FGP controls
  – Outcome of production process
  – Access and delivery of final outputs to customers

• CME supplies
  – Prespecified goods at predetermined prices
“The Advisory Expert Group on National Accounts:...Agreed that factoryless producers — supplying intellectual property capital and marketing services, and controlling the production process while using contract manufacturers to produce goods — are to be considered goods producers and should not be classified in distributive services
Issues

• At AEG 2014 TF presented two papers
  – Economic ownership of IIP? How to identify the economic owner?
  – Factoryless Goods Producers - how we classify their transactions and the activity?
• Challenge of recording trade on a change of economic ownership basis – how?
• Production abroad - How to measure?
TF Next Steps

• Finalization of the Guide and Global Consultation
• Testing and evidence to support proposals - medium term
• Future work or research agenda
  • Price and volume measures for specific products
  • International Data Pooling - data exchange
  • Brands and other IP related issues