Services in Global Value Chains

An Initial Analysis of Regional Trends in Services Value Added

APEC Workshop
Advancing Regional Economic Integration in the GVC Era
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What is ITC?

ITC is a trade-related technical assistance agency under the joint auspices of United Nations Conference on Trade and Development (UNCTAD) and the World Trade Organisation (WTO).

Within the United Nations system, ITC is the niche development partner focused on support for SME competitiveness to achieve export success in developing countries.
Overview of Contents

• **Rise of Services** in the global and regional economy
  - GVCs = B2B trade in intermediates
    – Measured by *trade in value-added* (TiVA) data
    – “Servification” of the economy

• Emergence of **Services GVCs**

• TiVA data: insights for **APEC**

• TiVA data: role played by **Chinese Taipei’s services industries** in GVC participation

• Trade and industry **policy implications**

• Insights for APEC **regional economic integration**
Services Value-added as % of GDP 2009

Source: ABAC 2011

Viet Nam
United States
Thailand
Chinese Taipei
Singapore
The Russian Federation
Philippines
Peru
Papua New Guinea
New Zealand
Mexico
Malaysia
Korea
Japan
Indonesia
Hong Kong, China
China
Chile
Canada
Brunei Darussalam
Australia
APEC Average
Employment in Services

Source: ABAC 2011.
Development Trajectory

Source: World Bank (2011)
same story per capita
Services are driving development

• Source: World Bank (2009), *The Service Revolution in South Asia*, Figure 1.3-4, p. 41
New services development model

• Services-led growth has mushroomed in South Asia, where there has been an explosion of business services, seemingly independent of manufacturing. Outsourcing offers new development opportunities.
• Countries are shifting towards services sooner, at a lower per capita GDP than had been the case in the traditional development trajectory.
• Services can provide an alternative engine for development, enabling some latecomers to ‘leapfrog’ the traditional approach.
Services sector growing fastest in LDCs

<table>
<thead>
<tr>
<th></th>
<th>Average Growth Rates 2000-2010</th>
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<tbody>
<tr>
<td><strong>LDC</strong></td>
<td>13.06%</td>
</tr>
<tr>
<td><strong>LIC</strong></td>
<td>9.97%</td>
</tr>
<tr>
<td><strong>LMIC</strong></td>
<td>7.06%</td>
</tr>
<tr>
<td><strong>MIC</strong></td>
<td>3.66%</td>
</tr>
<tr>
<td><strong>HIC</strong></td>
<td>5.43%</td>
</tr>
<tr>
<td><strong>World</strong></td>
<td>4.86%</td>
</tr>
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</table>

![Chart showing the growth of the services sector value added (% of GDP) from 2000 to 2010 across different income groups.](chart.png)
Contribution of services exports to GDP
GVCs; B2B trade in intermediates

- International trade can no longer be understood in terms of export or import of finished goods or services produced by one firm, at one location, in one country and thereafter delivered to an unrelated party in another country.
- Production of goods and increasingly of services involves a combination of intermediate inputs including services activities, sourced globally, to make up a finished output for the final consumer market.
- Any business function can become a core competence, or be outsourced (to another separate provider). Most can also be offshored (i.e. outsourced to an offshore location), leading to new competitive opportunities for both country and firm level specialization.
- Supply chain activity is everywhere but has been most pronounced in geographically integrated regions, such as the European Union and East Asia.
There is a strong regional dimension to the GVC phenomenon, which the TiVA data allows us to picture more clearly.
B2B trade in intermediates is twice as important as trade in final products (and has been for a long time).

World Trade by End Use 1990-2010

Source: Sebastien Miradout, OECD, 2011 (export flow)
There is lively debate on likely future industry trends, but general evidence suggests that industry continues to internationalise, the production process continues to fragment across borders and the GVC phenomenon is here to stay.

Boeing has transformed itself into a systems integrator and has outsourced an increasing proportion of its aircraft production.

<table>
<thead>
<tr>
<th>Aircraft Model</th>
<th>Outsourcing Proportion</th>
</tr>
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<tbody>
<tr>
<td>737 Classic</td>
<td>10% outsourced</td>
</tr>
<tr>
<td>747 series</td>
<td>20% outsourced</td>
</tr>
<tr>
<td>787 Dreamliner</td>
<td>80% outsourced</td>
</tr>
</tbody>
</table>

SOURCE: International Association of Machinists and Aerospace Workers; Boeing; Reuters; McKinsey Global Institute
<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processors</td>
<td>€34,6%</td>
</tr>
<tr>
<td>Memories</td>
<td>€15,3%</td>
</tr>
<tr>
<td>Integr. circuits</td>
<td>€32,6%</td>
</tr>
<tr>
<td>Display</td>
<td>€22,4%</td>
</tr>
<tr>
<td>Camera (5 mp)</td>
<td>€17,3%</td>
</tr>
<tr>
<td>Other parts</td>
<td>€59,11%</td>
</tr>
<tr>
<td>Licenses</td>
<td>€21,4%</td>
</tr>
</tbody>
</table>

**Value added in Nokia’s support functions, €169,31%**

(Excl. Operating profit & assembly listed below)

**Nokia’s operating profit, €89,16%**

**Final assembly, €11,2%**

**Distribution, €19,4%**

**Retailing, €60,11%**

**Source:**
ETLA, The Research Institute of the Finnish Economy
China assembles all iPods, but it only gets about $4 per unit — or just over 1% of the US retail price of $300

451 parts that go into the iPod

- Hard Drive by Toshiba → Japanese company, most of its hard drives made in the Philippines and China; it costs about $73 - $54 in parts and labor -- so the value that Toshiba added to the hard drive was $19 plus its own direct labor costs
- Video/multimedia processor chip by Broadcom → American company with manufactures facilities in Taiwan. This component costs $8.
- Controller chip by Portal Player → American company with manufactures. This component costs $5.
- Final assembly → done in China, costs only about $4 a unit

The unaccounted-for parts and labor costs involved in making the iPod came to about $110

The largest share of the value added in the iPod goes to enterprises in the United States → $163 of the iPod’s $299 retail value in the United States was captured by American companies and workers, breaking it down to $75 for distribution and retail costs, $80 to Apple, and $8 to various domestic component makers.

The bulk of the iPod’s value is in the conception and design of the iPod. That is why Apple gets $80 for each of these video iPods it sells, which is by far the largest piece of value added in the entire supply chain. Apple figured out how to combine 451 mostly generic parts into a valuable product.
Swedish National Board of Trade: “servicification”
The example of Sandvik - Heavy Tools Manufacturer

Picture 1: Services needed for effective supply chain and delivery of goods
Services are “embodied” indirectly in goods exports

Source: OECD Trade and Agriculture Directorate
Indirect domestic services content has increased across all industries, rising on average from 16% in 1995 to 21% in 2009. Noticeable increases were in Food, Textiles and apparels and Wood & paper, for all of which indirect services content increased by 50% or more – but are still below the global average.
In contrast, indirect foreign services content has remained more stable between 1995-2009, averaging 10%. Largest contractions in foreign services content were in: mining (-30%) and machinery (-16%). Largest growth in foreign services content was in: basic metals (19%) and in Taiwan’s largest export industry Electrical equipment (11%).
Emergence of Services Value Chains

- This is a more recent phenomenon, but globalisation is bringing about a similar transformation in services as took place in manufacturing.
- Telecommunications reforms and the application of digital technology to a widening range of business services is driving a rapid emergence of supply chains in services, often better known as services outsourcing or BPO.
- Traditionally, services providers were constrained by their inability to capture, store and possess the value of the intangible. There were few opportunities to create step by step “pathways” to market as services tend to be delivered and consumed simultaneously.
- The application of information technology has radically changed this; there is now a constant quest in the services sector to segment out any business function in which knowledge can be commoditised and packaged as a “product”, and where ownership can be established, production can be scaled up and trade can take place separately from production.
- The innovative business process transformation is involving SMEs as well as creating globally integrated services firms.
- Services intermediates (generally known as knowledge-intensive B2B business services) are now the fastest growing component of world trade today.
services outsourcing trebled in value 2005-10

The fastest growing six sectors averaged annual growth rates ranging from 25-58%. BPO and ITO continue to dominate, although new niche areas, including engineering grew fast, and KPO fastest.
Mapping Selected Countries in the Offshore Services Value Chain

India

Philippines

Czech Republic

Chile
Example of a Services Supply Chain

- Human Resources: Manila, Philippines
- Procurement Operations: Shenzhen, China
- Back Office Services: Dalian, China
- Help Desk and Customer Service: Brisbane, Australia
- Accounts Payable: Shanghai, China
- Accounting: Kuala Lumpur, Malaysia
What do Services Value Chains look like?

Tasks along the Pathway to Market:
- Front Office: Customised Problem solving
- Middle Office Innovation Lab
- Back office: ITO/BPO/KPO, Call centres, Accounts, HR
- Middle Office Product Design
- Front Office: Client Relationships & Diagnostics

Knowledge-intensity

non linear system

feedback loops

enabling factors

What do Services Value Chains look like?
Measuring Trade in Value-Added

In 2011, the WTO and IDE/JETRO pioneered the way with a ground-breaking study on “trade in tasks” which showed how the emergence of GVCs radically challenges the concepts behind traditional measurements of trade flows. The study highlighted the fact that as trade in intermediates becomes more important, traditional trade statistics become less meaningful, as they fail to reflect value-added (ie the value of exports minus imported inputs).

Understanding current patterns of production and trade, and the economic significance of APEC economies’ participation or lack of participation in GVCs, requires analysis using the new WTO/OECD Trade in Value-Added (TiVA) data released in 2012.
OECD/WTO TiVA data

• TiVA data tracks the source of value that is added by each country/industry in the production of goods or services for export, avoiding double counting and revealing the role of imports in exports.

• TiVA database provides a breakdown of gross exports by industries and source.
  - **Domestic Value Added**
    - Direct (pure services exports e.g. transport services, business services, financial intermediation)
    - Indirect (originating from domestic services intermediates)
    - Re-imported domestic services value added
  - **Foreign Value Added** by source country

• The data base covers large aggregated industry groups; in the services sector it covers ISIC 45 (*construction*), ISIC 50 to 55 (*wholesale and retail trade, hotels and restaurants*), ISIC 60 to 64 (*transport and storage, post and telecommunication*), ISIC 65 to 67 (*financial intermediation*), ISIC 70 to 74 (*real estate, renting and business activities*) and ISIC 75 to 95 (*community, social and personal services*).

• Not all countries have input/output tables on which this data is based. Country coverage is therefore limited.
Chinese Taipei has highest GVC participation rate.
For Chinese Taipei domestic value added in exports was 58% in 2009, significantly lower than the OECD average of 70% and the APEC average (74%) and lower than in 1995: This reflects a very high degree of integration with the global and regional economy.
Declining trend in domestic content of exports
Domestic Value Added as % of Gross Exports: BRICS, EU27, OECD, Rest of World, ASEAN 8
Share of Foreign Value Added in gross exports by region, 2010

- Transition Economies: 13%
- South America: 14%
- Caribbean: 21%
- Central America: 31%
- Latin America and Caribbean: 21%
- West Asia: 16%
- South Asia: 11%
- East and South-East Asean: 30%
- Asia: 27%
- Africa: 14%
- Developing Economies: 25%
- APEC: 26%
- Japan: 18%
- United States: 11%
- European Union: 39%
- Developed Economies: 31%
- Global: 28%

Developing country average
The foreign value added content is highest in exports of: *Chemicals and minerals* (54%), *Electricity, gas and water supply* (47%) and *Electrical equipment* (45%). Foreign value added content of exports increased across most industries between 1995-2009, apart from *Food* (-9%), *Electrical Equipment* (-1%) and *Textiles and apparel* (-1%). Export industries that have experienced the highest growth in foreign content are: *Mining* (109%) and *Electricity gas and water supply* (84%). Overall growth was 16%, significantly higher than the average growth rate of 4% across all other APEC economies.
OECD: Sector Shares of Exported Domestic Value Added

Total services: 53%
Services double in importance

In 2008, services were nearly half of world trade in value added

Source: Escaith (2013)
Services value added in APEC exports is 38%, compared with the global average of 45%, the OECD average of 48%, the BRICS average of 47% and the ASEAN average of 34%. The redline is the global average BOP figure.
For comparison, some non-APEC economies (services % of exported VA)
Comparison with BRICS (services% of exported VA)

- Brazil: 36% 39%
- China: 28% 29%
- India: 40% 57%
- Russian Federation: 36% 35%
- South Africa: 37% 40%
Share of services value added by source, as % of gross exports BRICS
SMEs have a role in GVCs

• The purchasing and investment decisions of lead multinational corporations may have been driving the creation of GVCs worldwide, but the most numerous players, to which activities are outsourced, are SMEs.

• The services supply chain story in particular is about SMEs. Firm size and production scale tend to matter less in services markets than “nimbleness” and project by project flexibility, presenting particular opportunities to smaller firms. OECD evidence that since 1997, more services SMEs have been involved in international alliances than manufacturing SMEs; by 2000, there were nearly 4 times as many services SMEs engaged in international alliances than manufacturing SMEs.

• Benefits of participating in GVCs have not been evenly spread. Trade barriers and regulatory cost burdens impact particularly heavily on smaller firms; they have fewer internal resources and face greater difficulties in access to trade financing, identifying partners for GVC operations; processing international payments and meeting qualifications, licensing and technical standards and procedures.
TiVA Findings: Imports grow exports (protection prejudices export performance)

in both manufacturing and services

Source: Huberth Escaith, WTO 2012

Source: Yose Rizal Damuri, CSIS, 2014
Chinese Taipei: Share of imported intermediate inputs that are exported, by import category, %

Nearly 2/3 of all intermediate imports were re-exported in 2009, a 19% increase since 1995 and notably higher than the OECD average of 44%. The highest proportion of re-exported imports was in Electrical equipment (80%) Chemical and minerals (71%) and, despite a 12% drop since 1995, Textiles and apparels (67%).
Policy thoughts

• Attracting global services supply chain tasks is a policy objective in itself.

• Meanwhile the services sector is deeply interlinked with the goods sectors; the key policy message in “servicification” is that services are so important as intermediate inputs in all other sectors that efficiency in domestic services industries is critical to overall performance in all export sectors.

• A strategy for growth in APEC economies’ industry engagement in increasingly high value-added manufacturing for the global market will require a focus on developing capacity across all the intermediate services inputs.

• The policy challenge is to get the enabling factors right, so that business can move into higher value-added tasks. This requires a dedicated focus on all of the factors being shown in the research literature and emerging from the business community as driving services trade performance.

—One of the best conceptual frameworks for understanding this is the “Smiley Face”, originally drawn by Stan Chih of ACER computers.
Value-added

Innovation Hub

High Value-Added Goods & Services Centre of Excellence

Logistics Hub

Enabling Factors

Standardisation
R&D Innovation
Product Design
Manufacture & Assembly
Transport Logistics
Distribution & Marketing
Brand

Tasks along the Pathway to Market

“Smiley Face”: Role of Services in Goods Value Chains (pre and post manufacture)

“Servicification”: Everyone is in services
Drivers of Services Competitiveness (largely exogenous ie policy driven)

1. **Human Capital** (talent, education, skills, ideas, culture of customer focus)

2. Investment in **Intangible Assets** (corporate IP including business methodologies) and supportive environment for **Innovation**

3. Enabling **Digital** and other **Infrastructure**

4. Quality of **Institutions** & Efficiency of Domestic **Regulation**

5. **Connectedness** with the International Markets (trade & investment reform, standards, mutual recognition)

6. Organised **Services Business Advocacy** and public/private **Stakeholder Consultation**

7. Deliberate National **Policy Focus**
eg Philippines take-off after telecoms reform

(% growth compared to 1999, 1999=0)
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>India</td>
<td>2400</td>
<td>2,000,000</td>
</tr>
<tr>
<td>China</td>
<td>2000</td>
<td>950,000</td>
</tr>
<tr>
<td>Philippines</td>
<td>2900</td>
<td>380,000</td>
</tr>
<tr>
<td>Mexico</td>
<td>1400</td>
<td>137,600</td>
</tr>
<tr>
<td>Ireland</td>
<td>19500</td>
<td>43,200</td>
</tr>
<tr>
<td>Malaysia</td>
<td>7200</td>
<td>30,000</td>
</tr>
<tr>
<td>Singapore</td>
<td>16500</td>
<td>12,500</td>
</tr>
</tbody>
</table>

The talent pool is the key facilitator

Competitive advantage due to low high skilled manpower costs
Services aspects of APEC action plan to alleviate GVC choke-points, improve GVC resilience and increase the GVC readiness of APEC economies

- Effort at country–specific and all-of-APEC level to undertake cross-sectoral analysis and build understanding of the services insights in the new TiVA data
- Deeper commitment to connectedness with the global and regional market (even more openness to trade, investment, information, people movement)
  - much bigger focus on services
  - attention to “new issues”/ e commerce/ data transfer/ localisation requirements/ competition policy/ movement of natural persons / “industry” policies
- Greater connectivity of standards, including mutual recognition for services providers
- Intensified effort on domestic regulatory efficiency and best practice benchmarking and public private dialogue for GVC enabling environment
  - PECC/EC/GOS meeting proposed for early 2015
  - PECC sees a need for progress on services regulatory better practice; this should be part of the APEC Structural Reform Ministers agenda in 2015
- New mechanisms to help meet GVC trade financing needs, including for services SMEs
- Renewed focus on key ingredients for climbing the value-added ladder (human capital, skills, digital infrastructure, collaboration for innovation)
- Support for (national and regional) mechanisms for services sector stakeholder consultation, especially to give voice to services SMEs
  - ABAC/PECC calls for a first ever regional meeting of Services Coalitions, in first half of 2015
- Regional collaboration among Trade Promotion Organisations to facilitate SME access to GVCs.
One more thought about Chinese Taipei
Chinese Taipei: Services Value added as % of gross exports

- Direct services exports
- Indirect domestic VA
- Foreign services content


- 1995: Direct 6%, Indirect 21%, Foreign 12%
- 2000: Direct 12%, Indirect 12%, Foreign 5%
- 2005: Direct 13%, Indirect 16%, Foreign 7%
- 2008: Direct 16%, Indirect 16%, Foreign 7%
- 2009: Direct 12%, Indirect 17%, Foreign 8%
Total gross exports growth – 83%
  Goods gross exports growth – 76%
  **Services gross exports growth** – 146%

Fastest growing exports:
  financial intermediation (337%)
  other services (211%)
  chemicals (159%)
  electrical equipment (129%)

Total value added growth – 67%
  Goods value added growth – 55%
  **Services value added growth** – 151%

Fastest growing exports:
  financial intermediation (335%)
  other services (198%)
  electrical equipment (131%)
  chemicals (91%)

BOP: In the past decade to 2013, services grew more rapidly at 113% compared with 84% for total exports. *Computer and information services* grew from a very small base at a growth rate over the period of 710%. Also from a small base, *Royalties and licences* grew by 251% over the decade and by 432% over 2008-2013.
Chinese Taipei: TiVA results

The global data shows that on average direct services content share grew 9% over the period 1995-2009. Average share of indirect services content grew 6%. Average share of foreign services share grew 20%.

For OECD countries, the trend is more pronounced. The average share of direct services value added content in gross exports was roughly constant over 1995-2009. But indirect services content in gross exports grew by 9%. And foreign services content grew by 30%.

For Chinese Taipei, the bulk of the growth in services value added in exports has been in direct services exports. In general, there has not been as significant an overall increase in the share of indirect services VA in Taipei’s exports. Big exceptions are in ‘other services’ where indirect services value added has grown by 145%, reflecting increased participation in services B2B trade. And exports of Transport equipment where indirect services VA grew by 63%. But what about the other gods sectors?

Question: Is this a potential alert for Chinese Taipei, in terms of ‘climbing the value added ladder” towards servicification?