ASIAN DEVELOPMENT OUTLOOK 2014 UPDATE

ASIA IN GLOBAL VALUE CHAINS

Benno Ferrarini, Macroeconomics Research Division
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ASIAN DEVELOPMENT BANK
Today’s presentation

1. Asia’s rise in GVCs

2. Benefits and risks associated with GVC participation

3. Overcoming limited access to GVCs
1. Asia’s rise in GVCs
Falling trade costs and the ICT revolution spurred cross-border production networks...

Before fragmentation

Large integrated factory

After fragmentation

PB = production block
SL = service link

Source: Kimura and Obashi 2011.
...and “trade in value added”

The value added embodied in gross trade flows are decomposed by combining data on input trade with national input-output tables.
Global production networks in 2008
GVC evolution from 1995...

1995

Figures show the value added domestically in countries' gross exports, based on the OECD-WTO TIVA database (accessed 15 September 2013). Only the top 5% of bilateral trade flow connections are shown. A force-directed algorithm is applied to lay out the data as network maps. The size of the nodes indicates relative magnitude of countries' gross exports. The width of the arrows indicates the intensity of value-added transfers. Green nodes denote countries with the highest share of value added domestically, at least 80%. Orange nodes denote 60%–80% of value added domestically, and pink nodes 40%–60%.

ARG = Argentina, AUS = Australia, AUT = Austria, BRA = Brazil, BEL = Belgium, CAN = Canada, CHL = Chile, CZE = Czech Republic, DEN = Denmark, FIN = Finland, FRA = France, GER = Germany, GRE = Greece, HKG = Hong Kong, CHINA, HUN = Hungary, IND = India, IND = Indonesia, IRE = Ireland, ISR = Israel, ITA = Italy, JPN = Japan, KOR = Republic of Korea, LIT = Lithuania, LUX = Luxembourg, MAL = Malaysia, MEX = Mexico, NET = Netherlands, NOR = Norway, OECD-WTO TIVA = trade in value added indicator of the Organisation for Economic Co-operation and Development and the World Trade Organization, PH = Philippines, POL = Poland, POR = Portugal, PRK = People's Republic of China, RUS = Russian Federation, SAU = Saudi Arabia, SIN = Singapore, SPA = Spain, SWE = Sweden, SWI = Switzerland, SVK = Slovakia, TAP = Taipei, China, THA = Thailand, TUR = Turkey, UKG = United Kingdom, USA = United States of America, VIE = Viet Nam.
to 2005...
to 2008
Vertical Trade in 2010/11

Network Trade Index in 2010/11

\[ NTI_{ij}^{s} = \frac{c_{ij}^{s}}{\sum_{j} c_{ij}^{s}} \frac{p_{i}^{s}}{\sum_{i} p_{i}^{s}} \]

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Based on the OECD STAN Bilateral Trade Database by Industry and End-Use Category, accessed 08/15/2013.

The map is rendered in Cytoscape 3.0.2 with an edge-weighted force-directed algorithm.

In sum, GVC trade expanded rapidly in the past 2-3 decades...

(share of world trade)

Note: Forward and backward linkages
and East and Southeast Asia emerged as a world manufacturing hub
2. Benefits and risks associated with GVC participation
GVC production has boosted the economies of those involved...

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Real GDP per capita growth</th>
<th>Industry-level employment growth</th>
<th>Industry level output growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>GVC trade (growth)</td>
<td>0.12***</td>
<td>0.10***</td>
<td>0.19***</td>
</tr>
<tr>
<td></td>
<td>(0.037)</td>
<td>(0.016)</td>
<td>(0.042)</td>
</tr>
<tr>
<td>GVC-B trade (growth)</td>
<td>0.03</td>
<td>0.08***</td>
<td>0.13***</td>
</tr>
<tr>
<td></td>
<td>(0.029)</td>
<td>(0.016)</td>
<td>(0.035)</td>
</tr>
<tr>
<td>GVC-F trade (growth)</td>
<td>0.09**</td>
<td>0.03**</td>
<td>0.10***</td>
</tr>
<tr>
<td></td>
<td>(0.039)</td>
<td>(0.015)</td>
<td>(0.030)</td>
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<tr>
<td>R²</td>
<td>0.65</td>
<td>0.66</td>
<td>0.41</td>
</tr>
<tr>
<td>Number of observations</td>
<td>221</td>
<td>221</td>
<td>1,236</td>
</tr>
</tbody>
</table>

* = significant at 10%, ** = significant at 5%, *** = significant at 1%, ( ) = standard error, GDP = gross domestic product, GVC = global value chain; GVC trade comprises two parts: GVC-B trade = foreign value added used in domestic exports and GVC-F trade = domestic value added used in destination country exports; R² = coefficient of determination.

Notes: ADB estimates using the data from the trade in value added indicator of the Organisation for Economic Co-operation and Development and the World Trade Organization, and employment data from the World Input-Output Database. The dependent variable is annualized growth between periods (1995, 2000, 2005, 2008, and 2009). All estimates include year and country fixed effects, while the industry-level employment and output growth estimates also include industry fixed effects.
GVC contagion risk is real but limited

- Shocks to a GVC partner need not become an economy-wide shock at home, as flexible labor and capital markets can contain the effects.

- Shocks can become opportunities for nimble GVC members.
3. Overcoming limited access to GVCs
Few countries in Central, South Asia or Pacific have found their GVC niche, due to:

Quality of roads

Quality of air transport infrastructure

Number of required documents to export, 2014

LPI score: Logistics quality and competence

CEA=Central Asia
EAA=East Asia
PAA=The Pacific
SEA=Southeast Asia
SOA=South Asia
Asia is well positioned to deepen, broaden, and upgrade its role in global production networks

Falling trade costs allowed cross-border production to emerge, but more can be done:

- Low, predictable tariffs are necessary to connect to GVCs
- Lower transport costs may reduce trade costs even more than tariff reductions
- Process and product standards must not become barriers to trade
- Small and medium enterprises (SMEs) need special attention to join to global networks
Thank you for your attention

The report and ADB/EE book are free for download:
