How global or regional are value chains in East Asia?

Evidence from an input-output analysis in total industries, textile, electronics, and automobile sectors

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Outline

1. Research problem
2. Research design: examining the value chains for production
3. Findings
4. Summary and implication
Research problem (1/3)

How global or regional are value chains in East Asia? Total industry, textile, automobile and electronics 1995 – 2015

➢ Export-led industrialization
  1960s-1990s: Regional-globalization (Japan-led FG Model)
  1990s-2010s: Global-regionalization (the role of US and China)

➢ Input-output data: investigating domestic, regional, and global connectivity

➢ Implications for trade policy
Research problem (2/3)

Why focus on East Asia?

➢ Great contrast between weak regionalism and strong production linkages
➢ Hybridization of domestic, regional, and global production forces
Research problem (3/3)

1. DVA and FVA: How international are value chains for each East Asian economy?

2. Origins of FVA: Where do FVA of each economy come from?
   • mostly within the region (ASEAN and Northeast Asia)?
   • or more global (NAFTA, EU-28, and rest of the world)?
Research design (1/4)

Product-level production decomposition of final products

\[
g(\text{tier 2}) + g(\text{tier 1}) + g(\text{tier 0}) \\
= \$300 + \$150 + \$30 \\
= \$480
\]
Research design (2/4)
Sector/economy-level production decomposition of final products

Los, Timmer and Vries (2015)
• GVC backward decomposition of production
• Different from trade decomposition - Koopman et al. (2014, AER)
• Leontief equation
  \[ g = g(\text{tier}0) + g(\text{tier}1) + g(\text{tier}2) + \ldots \]
  \[ = \hat{V}(I + A + AA + \ldots) Y \]
  \[ = \hat{V}(I - A)^{-1}Y \]
  \[ = \hat{V}BY \]
Research design (3/4)
Data transformation

Production of final goods and services by economy/sector

Backward decomposition of production

DVA
FVA

Regional value-added
Northeast Asia
ASEAN

Global value-added
NAFTA
EU-28
ROW
Research design (4/4)
Data source

OECD-Inter-Country Input-Output Database

- Economy dimension
  Northeast Asia 5: China, Taiwan(China), Hong Kong(China), Japan, South Korea
  Southeast Asia 6: Singapore, Indonesia, Malaysia, the Philippines, Thailand, and Viet Nam

- Sector dimension
  Sector in general & textile, electronics and automobile

- Benchmark years
Findings (1/4) How international?
Features found from DVA and FVA ratios by sector/economy

FVA: Northeast Asia < ASEAN
Sector in general < textile, electronics, and automobile
NIEs presenting inverted-U shape

DVA
FVA(WORLD)
total industry FVA ratio
textile FVA ratio
electronics FVA ratio
automobile FVA ratio

0% 10% 20% 30% 40% 50% 60% 70% 80%
0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000 9,000 10,000 11,000
1995 2005 2015
CHN JPN KOR TWN HKG IDN PHL THA MYS SGP VNM

10
Findings (2/4) How regional?

Intra-regional: ASEAN, NEA and ASEAN+NEA

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Notes: ↑/↓ (< 5%); ↑↑/↓↓ (5%-15%); ↑↑↑/↓↓↓ (>15%)
Findings (3/4) How global?

Extra-regional: NAFTA, EU-28, rest of world

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Made in Viet Nam: 1995 and 2015

VNM 1995

- DVA, 78%
- FVA, 22%
- NEA, 10.34%
- NAFTA, 1.54%
- EU-28, 3.37%
- ROW, 3.08%
- ASEAN, 3.87%

VNM 2015

- DVA, 63%
- FVA, 37%
- NEA, 19.39%
- NAFTA, 2.26%
- EU-28, 3.37%
- ROW, 7.62%
- ASEAN, 4.07%
Findings (4/4)

Sectoral features

• Textile: China-centred and globally dispersed

• Electronics: concentrated in ASEAN+3

• Automobile: more domestically-oriented; ASEAN members tend to source more within the sub-region
Summary and implications (1/2)

How global or regional are value chains in East Asia?
Economy-sector level

- The extent of internationalization: FVA similarity: firstly ↑ and then ↓
  difference: turning points

- Complexities in global, regional and domestic connectedness
  ?: ASEAN+3
  ↑↑↑: Rest of the world
  ↓↓↓: EU-28; NAFTA
Summary and implications (2/2)

The value chains in East Asia are global as well as regional.

Linking up to RVCs can be an important avenue for developing economies in East Asia to build domestic productive capacity and integrate into the wider GVCs.

- Textile
- Electronics

Develop multitrack trade policies with multilateral, regional, and bilateral negotiation fronts and use these agreements to push for needed domestic reforms.
Thank you!
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