AREO 2021 Thematic Chapter: Global Value Chains in the Post-Pandemic “New Normal”

Dr. Hoe Ee Khor
Chief Economist
AREO 2021 Webinar
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Presentation outline

- Recent GVC developments
- ASEAN+3 in post-pandemic GVCs
- Technology and GVCs
- Key Takeaways
With trade and GVCs slowing, COVID-19 shocks further fueled speculations of a reconfiguration

World and ASEAN+3: Annual Trade
(Percent of GDP; Percent of final products)

World and ASEAN+3: Annual Trade
(Percent of GDP; Percent of final products)

ASEAN+3: GVC Participation
(Percent of total exports, 3-year moving average)

Sources: Mireoud and Nordström (2020); UNCTAD; World Bank; and AMRO staff calculations.

Note: Trade refers to the sum of exports and imports. Import intensity of production is defined as the ratio of GVC-related imports to the output of the final products.

Sources: Asian Development Bank; and AMRO staff calculations.
Rising protectionism and the call of reshoring are already shifting GVCs away from host economies.

World Trade Organization: TBT and SPS Notifications and Effectively Applied Tariff Rates
(Percent; Number of notifications)

Selected Economies: Wages
(2005 = 100)

Sources: National authorities via Haver Analytics; and AMRO staff calculations.
Note: TBT = technical barriers to trade; SPS = sanitary and phytosanitary.

Sources: Autor, Mindell and Reynolds (2020).
Note: Data for China and India refer to the average nominal annual wage of all units; for Indonesia, average net wages of employees; for the Philippines, the legislated daily wage rate; for Singapore the average resident monthly earnings of Industry; for Thailand, the average monthly wages per person; for the United States, the minimum hourly wage rate; and for Vietnam, the average monthly earnings.
Reshoring poses a risk to FDI, which has helped increase ASEAN+3’s domestic value-added activity.
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Shifting GVCs away from the ASEAN+3 will prove to be difficult

Demand Side: ASEAN+3’s Large Consumer Market (Percent Share of Urban Consumption Growth, 2015 to 2030)

Supply Side: ASEAN+3’s Well-Developed GVC Ecosystem

China’s supply chains

- Deep ecosystems are hard to quickly replace and replicate elsewhere in a short period, given “stickiness” of GVC investments

Challenge of reshoring

- Neither easy nor straightforward, and requires careful attention that often entail unexpected costs

China and the Rest of the World: Spending on Luxury Goods (Billions of Renminbi)

Sources: United Nations Economic and Social Commission for Asia and the Pacific (2019); and AMRO staff.

Sources: AMRO staff.
Only a few consider a “China de-risking” strategy as key in building supply chain resilience

McKinsey & Company Corporate Survey: Planned Actions to Build Resilience
(Percent of total respondents)

- Dual sourcing of raw materials: 53%
- Increase inventory of critical products: 47%
- Nearshoring and expanding supplier base: 40%
- Regionalizing supply chain: 38%
- Reducing number of SKUs in product portfolio: 30%
- Backup production sites: 27%
- Higher inventory along supply chain: 27%
- Increase number of distribution centers: 15%
- Nearshoring of own production: 15%

Global supply chain leaders survey
- Planning to increase resilience, 95%

Business executives survey
- Increasing resilience even at expense of short-term savings, 44%
- No change in planned investment actions, 79% of MNEs in China
- With planned increase in investments in China, down from 47 percent in 2019, 29% of MNEs in China
- Will commence, continue, or consider a China de-risking strategy, 5.6% of MNEs in China

Notes: SKUs = stock-keeping units. Global supply chain leaders and business executives' surveys from May to December 2020.
Inward relocations remain strong, with foreign firms in China showing increasing interest in ASEAN

**ASEAN+3: Relocation Announcements by Sector, 2020**
(Number of projects)

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**Investment Announcements from China to the rest of ASEAN+3, by Ownership**
(Number of projects)

Sources: Orbis Crossborder; and AMRO staff calculations.
Notes: HQ = headquarters; R&D = research and development. Logistics and distribution include transportation.
Even with the likely reconfiguration, ASEAN+3 remains an attractive location compared to peers

### Heatmap for GVC “Transferability”

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<th>Labor availability</th>
<th>Market size</th>
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<th>IPR protection</th>
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Sources: Asia Regional Integration Center, ADB; International Labour Organization; World Economic Forum; World Bank; World Trade Organization; United Nations International Telecommunication Union; United Nations Population Division; national authorities via Haver Analytics; and AMRO staff calculations.

Notes: The overall Transferability index is a simple average of the nine indicators for each economy. The greener the color, the higher its relative z-score and the greater the GVC transferability to that economy or location; the redder, the lower the attractiveness for GVC relocation. See “Which GVC Sectors can be Easily Reconfigured?” in AREO 2021 for details.
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- Recent GVC developments
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The pandemic accelerated the flight to digital, a behavior unlikely to be reversed

**Selected ASEAN+3 Economies: Retail and Online Sales**
(Percent year-over-year, 3-month moving average)

**Number of Active ASEAN Users of Telemedicine Platforms, 2020**
(January 2020 = 100)

Sources: National authorities via Haver Analytics; and AMRO staff calculations. Note: Retail sales exclude online sales.

Sources: Google, Temasek, and Bain & Company (2020); and AMRO staff calculations.
GVCs will increasingly be driven by technology, from production to trade to finance

Technology in Trade and Supply Chain Finance

Manufacturing
- 3D printing
- Robotics
- Automation
- Internet of Things

Shipping and Logistics
- Smart contracts
- E-commerce
- Cloud-based solutions
- Big data analytics
- Artificial intelligence
- Global positioning systems (GPS)
- Internet of Things
- Blockchain

Export destination
- Single Window
- E-documents
- Blockchain

Trade Financing
- Confirming bank used by exporter
- Issuing bank used by importer

Applicable Technology
- Smart contracts
- Big Data analytics
- Artificial intelligence
- Cloud-based solutions (e-docs)
- Machine learning

Source: AMRO staff.
But US–China tech tensions, and global standards competition, could lead to technology bifurcation

United States and China: Selected Tech Measures and Countermeasures

**China**
- Unreliable Entity List (licensing)
- Export restrictions
- “Great Firewall of China”
- Cross-border data transfer restrictions

**United States**
- Export control of technology
- Stringent reviews of foreign investment in technology start-ups
- Domestic regulations banning use of certain equipment
- Licensing for exporting to Chinese firms (Entity List)

Selected Economies: Shares in 5G Standard Essential Patents
(Percent share to total)

- 33.9, China
- 25.1, Korea
- 21.7, European Union
- 13.6, United States
- 4.8, Japan
- 0.8, Others

Sources: Ferracane and Lee-Makiyama (2017); various media articles; and AMRO staff. Sources: AMRO staff.
The semiconductor sector is a significant area of strain

Source: Adapted from Kotasthane and Seth (2020).

Semiconductor Supply Chains

First stage
Integrated circuit (IC) design
EDA (Electronic design automation) software used for IC design has US intellectual property rights and subject to export control
But China has improved its advanced chip design capability

Second Stage
Fabrication/ chip manufacturing
Equipment for chip manufacturing supplied by US firms
China has 2nd generation chip fabrication capability, but high-end chip fabrication uses lithography technology not available domestically

Third Stage
Assembly and testing
Labor-intensive; China making inroads
But Japan dominates materials: silicon wafer, photoresists, essential packaging chemical, among others
The impact of tech bifurcation will take time to be fully resolved

**Short-term Impact of Bifurcated Technology**
- Dual or multiple standards in operation
- Lack of inter-operability of devices
- No seamless connection
- Loss of economies of scale and future R&D

**Long-term Impact of Bifurcated Technology**
- Network effects create a “winner-takes-most” outcome
- Huge benefits for “first mover” and can dictate a global standard
- Technology itself will solve the multiplicity of standards

Sources: AMRO staff.
Key takeaways

• No evidence so far of wholesale reshoring, nearshoring or transfers of manufacturing out of the ASEAN+3 region.

• The region remains an attractive location for GVCs in the case of a reconfiguration, given “sticky” GVC investments.

• The pandemic-induced “flight to digital” could see GVCs powered by new technology, in the areas of trade, logistics and finance.

• Tech tensions can result in technology bifurcation and stymie new innovations, but over time, technology itself can solve the problem of divergent standards.
Thank you.

Contact Us
Add: 10 Shenton Way, #15-08/9, Singapore 079117
Tel: +65 6323 9844
Email: ong.lilian@amro-asia.org
Website: www.amro-asia.org
Growth projections: AMRO 2021 and WEO 2021 (April)

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Sources: World Economic Outlook, April 2021.
Note: e/ = estimate; p/ = projection.