

UNIVERSITY OF THE PHILIPPINES
CENTER FOR INTEGRATIVE AND DEVELOPMENT STUDIES
**PROGRAM ON ESCAPING THE MIDDLE-INCOME TRAP:
CHAINS FOR CHANGE**

UP CIDS DISCUSSION PAPER • 2021-04

Restructuring global value chains in the post-pandemic world

The evolving role of
China and what it means
for the Philippines

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Restructuring global value chains in the post-pandemic world

The evolving role of China and what it means for the Philippines

Adrian R. Mendoza¹

ABSTRACT

This paper revisits the issues of reshoring and diversification of China-centric production networks amid the growing momentum for making global value chains (GVCs) more resilient, flexible, and robust following the disruptions caused by the COVID-19 pandemic. What is the current structure of global production and how important is China's role in it? What are the risks and benefits of diversifying GVCs away from Chinese manufacturing hubs? The answers to these questions are important to understand what the current shakeup in GVCs means for the Philippines.

KEYWORDS

COVID-19, global value chains, supply chain disruption, reshoring, diversification, Philippines, China

¹ The author is Assistant Professor at the UP School of Economics. The author thanks the Program on Escaping the Middle-Income Trap: Chains for Change (EMIT C4C) of the University of the Philippines Center for Integrative and Development Studies (UP CIDS) for the financial support for this research. • Email address: armendoza3@up.edu.ph

Introduction

The COVID-19 pandemic is a global crisis like no other. The exponential spread of SARS-CoV-2 across national boundaries forced countries to close borders and enforce hard lockdowns in infected communities. Not only did these restrictions limit the mobility of individuals, they also disrupted economic activities in a wide range of sectors. At the extreme, many industries were temporarily paralyzed by economic sudden stops due to uncertainties surrounding occupational safety, input sourcing, and availability of logistics services. Production organized within global value chains (GVCs) was severely affected as the pandemic transformed efficient supply networks into a management and coordination nightmare. Manufacturers strongly connected to China-dependent GVCs were particularly hit, with China being the first epicenter of COVID-19 outbreaks and one of the earliest sites of citywide lockdowns and large-scale factory shutdowns. These hard stops, albeit temporary and short-lived, sent shockwaves across the world economy since China plays a central role not only in “Factory Asia,” but also in many globally-operated industries. Not long after, many multinationals suspended or downsized their operations in major American and European markets partly due to the extraordinary challenges of sourcing and transporting inputs and final goods through pandemic-hit supply chains.

Although systemic shocks to international production networks are not unheard of, the unprecedented duration and scope of the current disruption highlight the inherent risks of global interconnectedness and of too much reliance on limited offshoring partners. While strong GVC linkages can enhance efficiency through ultra-specialization and knowledge spillovers, they also provide an ideal channel for the rapid transmission and magnification of global demand and supply shocks.² Cigna and Quaglietti (2020), for instance, estimated that

2 The collapse of world trade in 2009 was mainly traced to demand shocks from Europe and the United States (US) that adversely affected global production through a complex web of trade transactions. In 2011, the flooding in Thailand and the tsunami in Japan caused severe disruptions in East Asia's automotive

GVC linkages could amplify the effect of negative shocks on world trade by an additional 25 percent of the losses from direct bilateral transactions. Their empirical analysis also suggests that industries and countries upstream to China, especially those in Asia, were hit hard by lockdowns in early 2020 and the subsequent weakening of China's industrial activities.

The internet is awash with stories of companies freezing their operations due to the pandemic-induced supply chain disruptions, particularly in Asia. A survey by the Shanghai Japanese Commerce and Industry Club in February 2020 showed that 54 percent of their respondents experienced supply chain disruptions, while 23 percent said they have no alternative sourcing and production plans in case of extended shutdown (Nakafuji and Moriyasu 2020). Hyundai had to close its plants in South Korea in February due to shortages of parts coming from China (Park 2020). Faced with a similar problem, Nissan, Toyota, and General Motors temporarily stopped production at their respective Japanese, Chinese, and South Korean facilities (*BBC News* 2020; Tajitsu 2020; Wayland 2020). Across the Pacific, Ford, Volkswagen, and Fiat Chrysler were also forced to close their North American and European factories in February and March (Mirodout 2020b; Nakafuji and Moriyasu 2020). In the early stages of the pandemic, the logistics sector was particularly hit by strict containment measures, border closures, and reduced cargo traffic to and from the busiest ports in East and Southeast Asia (Anjumohan 2020). Distance did not insulate companies in the United States, as the Institute for Supply Management reported that 60 percent of its surveyed firms experienced delayed orders from China (Lambert 2020).

The extreme difficulty of cross-border sourcing and coordination amid debilitating shocks in important production centers reignited debates on reshoring and diversifying the global manufacturing base away from traditional hubs like the eastern coast of China. In

and electronics value chains. This paralyzed production and resulted in several months of negative export growth in the region (Mendoza 2020).

a February 2020 survey of more than 2,600 Japanese companies, 37 percent said that they were already looking to procure from non-Chinese sources amid the COVID-19 crisis. In April 2020, the government of Japan responded by earmarking USD 2.2 billion to help Japanese companies relocate their Chinese factories to other hosts in Southeast Asia or bring production back home (Reynolds and Urabe 2020).³ Two months after, South Korea also announced its tax incentives and subsidies for reshoring companies (Stangarone 2020). In the European Union, there are also calls for building supply chains that are resilient, diversified, and less dependent on China (Crawford and Martin 2020). Several large multinationals have actually started to migrate some production activities to lower-cost alternatives in Asia. For instance, Taiwanese firm Foxconn announced in July 2020 that it intends to invest USD 1 billion in India as part of Apple's "quiet and gradual shift" away from China (Phartiyal and Lee 2020). Hasbro, a giant American toymaker, signified its interest in Vietnam and India as target substitutes to reduce the share of its Chinese-originated products to just 50 percent of total output by the end of 2020 (Whitten 2020). Samsung and LG Electronics packed up early, with portions of their respective smartphone and appliance supply chains strategically moved to Vietnam years before the pandemic hit. In fact, Samsung's Vietnamese facilities already produce half of the total Galaxy phones in the world (Onishi 2020). Recent reports also indicate that the South Korean giant targets to further diversify its supply base in India. Google and Microsoft appear to be on the same bandwagon, with plans of finding new production sites for their respective smartphone and computer businesses (Ting-Fang and Li 2020).

To be fair, the merits of diversifying away from Chinese manufacturing hubs were already being debated by researchers and supply chain managers long before the pandemic happened. In fact, reshoring and migrating from China have been regular topics inside

3 USD 2 billion of this fund has been allocated for firms that will be reshoring production back to Japan.

corporate board rooms in recent years, especially at the height of the trade wars and geopolitical tensions between China and the US. The severity of the COVID-19 crisis only made it urgent and inevitable. However, like many other business decisions, the relocation of manufacturing facilities and restructuring of supply chains are easier said than done. The considerations are complex and the costs can be outrageously high.⁴ For instance, which GVC segments should be migrated? What should be the time frame of the transfer? More importantly, which candidate location is best suited to the company's requirements (e.g., in terms of skills, domestic supply base, infrastructure, business environment, and political stability)? What kinds of investments must be made in the new host country? As suggested by the Samsung experience, these decision points need decisive and strategic short-run actions anchored in a long-term game plan.

This paper revisits the issues of reshoring and diversification of China-centric production networks amid the growing momentum for making GVCs more resilient, flexible, and robust. The next section first sketches the current structure of GVCs, and then examines China's role in the global manufacturing system. The third section surveys the theoretical and empirical literature on the benefits and risks of reshoring and diversifying GVCs, especially away from China. The fourth section discusses what the current shakeup in GVCs means for the Philippines, including the risks and opportunities presented by this trend. The last section ends with general conclusions and some policy insights.

GVCs and the rise of China as the “world's factory”

Amid the heated trade disputes between China and the US a few years ago, one popular internet meme joked that former US President

4 A recent estimate by the Bank of America suggests that it would require USD 1 trillion over a five-year period for all non-Chinese manufacturers to repatriate their operations in China (Smith 2020).

Donald Trump's red "Make America Great Again" cap has a "Made in China" tag attached to it. While this may not be entirely accurate,⁵ the viral social media post perfectly describes the current structure of global production and China's central role in it. Since the 1980s, manufacturing has been increasingly organized within GVCs, with firms in scattered locations performing fragmented and highly specialized functions. Accordingly, a wide range of goods, from snacks and shirts to electronic devices and cars, can actually be branded as "products of the world" since they are essentially manufactured using inputs and technologies sourced from different countries. Certain regions such as East and Southeast Asia emerged as major hubs for input manufacturing and assembly. For instance, Apple's smartphones and tablets contain parts and components from Germany, Japan, South Korea, Brazil, and Taiwan (Antràs 2014). These are then consolidated and assembled by Foxconn in China based on product blueprints provided by the headquarters in Silicon Valley. Hence, Apple products are aptly labeled "Designed by Apple in California. Assembled in China."⁶

Apple is not the only multinational with an extensive production network that passes through major manufacturing hubs in China. In fact, the country has become an important host for many foreign companies that have relocated a substantial portion of their operations to take advantage of China's low wages, as well as its central position in East and Southeast Asian supply chains. For instance, a KPMG report in 2014 showed that the majority of *Fortune* 500 companies have commercial presence in China, either in the financial districts

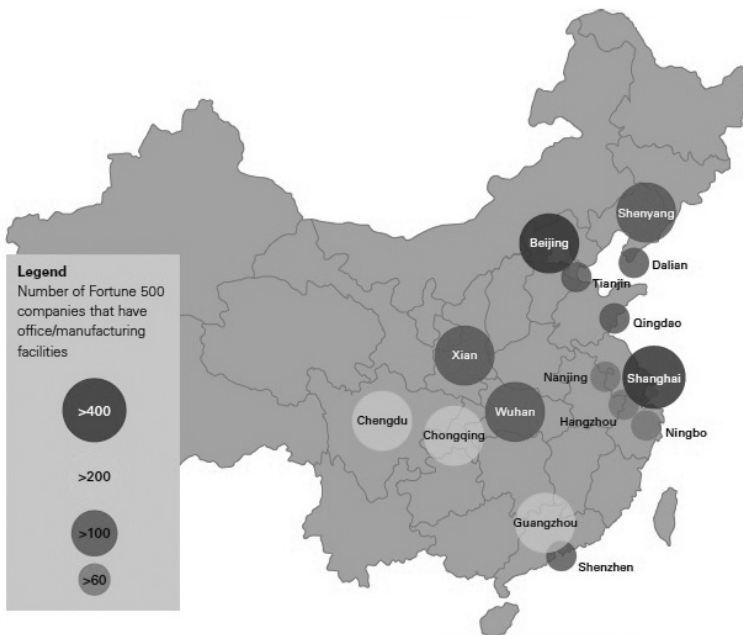
5 According to a report by Dunn (2020), the official caps are manufactured in California but there are unofficial Trump merchandise items imported from China through online platforms.

6 This is actually in compliance with the Federal Trade Commission's guideline that "a product advertised as Made in USA be 'all or virtually all' made in the US" (FTC 1998). Otherwise, the contribution of the American manufacturer should be explicitly stated to avoid misleading claims (e.g., "60% US Content," "Made in USA of U.S. and imported parts," "Couch assembled in USA from Italian Leather and Mexican Frame," "Hand carved in U.S. — Wood from Philippines," "Software written in U.S. — Disk made in India," etc.).

of Beijing and Shanghai or the economic zones that surround them (see Figure 1 below). A recent estimate suggests that China hosts more than half million foreign-invested firms (Lardy 2019). The earliest foreign investors in China populated traditional low-tech industries that produced consumer goods like textiles, garments, footwear, furniture, and toys (Chun 2016). However, rapid technological and skills upgrading over the last three decades attracted a flock of global companies that operate extensive supply chains for high-tech products such as computers, mobile phones, and cars. The transformation of China into a sophisticated GVC-driven manufacturing hub is nothing short of remarkable. In 2006, foreign multinationals already accounted for 84 percent of China's processing exports, up from 45 percent in 1992 (Moran 2011). This indicates a strong GVC

Figure 1

Location of *Fortune* 500 companies in major Chinese hubs



Source: CBRE, cited in KPMG 2014, 9

integration given that processing trade is the practice where inputs and components are imported then manufactured and assembled before re-exporting for further processing. This sourcing arrangement is prevalent in high-tech sectors such as consumer electronics and automotive, since their products use modularized parts and components.

China's phenomenal rise as a GVC powerhouse is underpinned by a combination of domestic and external factors. The country's strategic proximity to industrial Asian economies with strong affiliations to American and European markets (i.e., Japan and South Korea) made it a strong candidate for certain outsourced functions. In particular, the large pool of relatively low-cost but trainable labor gave China a comparative advantage in intricate but labor-intensive activities such as component manufacturing and assembly (Lardy 2019). Furthermore, the country's large domestic market attracted multinationals to set up local networks for downstream operations. China's policy shift towards greater openness also contributed to the dramatic expansion of its production and export base. After launching its policy of "reform and opening" (*gaige kaifang*) in 1978, China took decisive steps to build special economic zones and several industrial cities in the east coast in order to boost exports and attract foreign investors (Chun 2016). The 1990s was characterized by intensive tariff liberalization, with average applied rates dropping from 39.7 percent in 1992 to 15.4 percent in 2001 according to World Bank data. China's accession to the World Trade Organization (WTO) in 2001 and its closer economic integration with East and Southeast Asia through the Association of Southeast Asian Nations (ASEAN)–China Free Trade Agreement and the ASEAN+3 initiative further strengthened the country's regional and global trade linkages. A business-friendly environment, especially inside economic zones, attracted the foreign investments, technology, and managerial skills that helped transform Chinese factories into efficient and sophisticated manufacturing facilities with large capacities to serve domestic and cross-border supply chains. Aggressive policies supporting domestic research and development (R&D) and innovation did not only solidify China's key position in

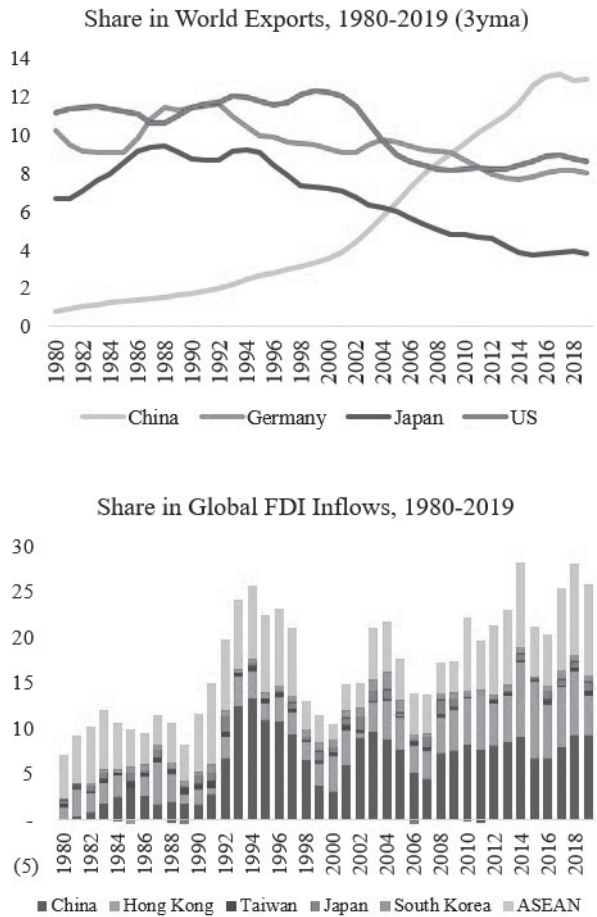
the global production line, these also ramped up the accumulation of new technological capabilities that powered China's upgrading to more complex value chain segments.

China's ascent in the GVC ladder over the last three decades has been remarkable. Within ten years after its WTO membership, China overtook Japan, the US, and Germany to become the largest exporter in the world (see Figure 2 on the next page). Based on WTO data, the country's merchandise exports increased from USD 18 billion (around one percent of global exports) in 1980 to USD 2.5 trillion (13.2 percent) in 2019. It also saw a surge of incoming foreign direct investments (FDIs), given that these have become conduits for building or expanding international supply chains. From USD 57 million (0.10 percent of global FDI inflows) in 1980, investments coming in to mainland China surged in the 1990s, peaking at 13.25 percent of the world total in 1994. As of 2019, the country remains as the biggest recipient of foreign investments in East and Southeast Asia, with FDI inflows amounting to USD 141.2 billion or 9.17 percent of the world total.

China's export basket has also grown more diversified and sophisticated, with its medium- and high-tech exports reaching close to 93 percent of manufactured exports in 2018 according to World Bank data. Figure 3 (on page 11) shows that China's EXPY and complexity indexes—two indicators of export basket sophistication—has been approaching the level of advanced economies.⁷ This upward trend may be traced to the country's massive spending in product and process innovations. Based on data from the United Nations Educational, Scientific and Cultural Organization (UNESCO n.d.) as of 2018, China's gross expenditures in R&D (GERD) amounted to 2.18 percent of gross domestic product (GDP), one of the highest in

7 Hausmann, Hwang, and Rodrik (2007) defined EXPY as the productivity level associated with a country's export basket. Economic complexity is measured based on the diversity and ubiquity of exports, where ubiquity indicates how many countries are able to produce a particular good (Hidalgo and Hausmann 2009).

Figure 2
China's ascent as the top exporter and FDI destination in the world



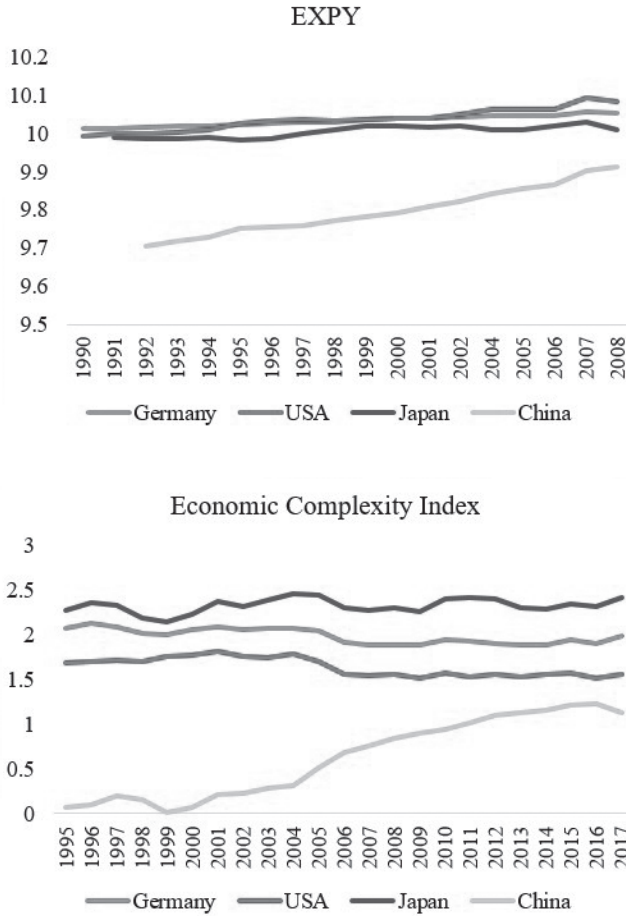
Sources: WTO n.d., UNCTAD n.d.

the world.⁸ This is also a significant jump from its GERD to GDP ratio of 0.56 percent in 1996. Global firms such as Intel, General Electric,

8 For countries with available data in 2018, the ones with bigger GERD to GDP ratios than China are Israel (4.95 percent), South Korea (4.81), Sweden (3.34), Japan (3.28), Austria (3.17), Germany (3.09), Denmark (3.06), US (2.84), Belgium (2.82),

Figure 3

Rising sophistication of Chinese exports



Sources: World Bank n.d.b, OEC n.d.

IBM, Microsoft, Proctor & Gamble, Johnson & Johnson, and Pfizer reportedly operate R&D facilities in China (Chun 2016).

Finland (2.77), and France (2.20). Note that these are all classified as high-income economies.

China's growing influence in the international arena is the natural consequence of its extraordinary transformation into a large economy located at the core of regional and global production networks. As

Table 1

Global spillovers (% of output) of a 10-percent exogenous increase in China's output

Region	1995	2015
North and South America		
United States	0.21	1.26
Canada	0.37	2.39
Mexico	0.26	1.25
Brazil	0.12	2.69
Chile	0.84	9.47
Europe		
Germany	0.27	2.45
France	0.17	1.54
United Kingdom	0.19	1.09
Italy	0.22	1.17
Russia	1.32	3.57
Asia and the Pacific		
Australia	0.68	6.28
India	0.14	1.23
Japan	0.47	3.41
South Korea	1.56	9.72
Hong Kong	4.55	4.55
Taiwan	3.11	18.27
Indonesia	0.92	3.28
Malaysia	1.27	9.68
Philippines	0.58	6.49
Singapore	1.48	7.12
Thailand	0.78	7.15
Viet Nam	0.87	5.08

Source: Author's calculations using OECD ICIO tables

illustrated in Table 1 (on the opposite page), the global spillovers of China's economic performance have intensified dramatically from 1995 to 2015. Using the OECD's inter-country input-output (ICIO) tables, the economic spillovers from China are calculated using the following formula:

$$\mathbf{s} = \mathbf{V}(\mathbf{I} - \mathbf{A})^{-1} \mathbf{d}$$

where \mathbf{s} is the vector of spillovers, \mathbf{V} is the diagonal matrix containing value added share in output per country, $(\mathbf{I} - \mathbf{A})^{-1}$ is the Leontief inverse, and \mathbf{d} is the vector of demand shocks. Owing to the globalization of production, these spillovers are being amplified by the interdependence of countries and industries, directly through bilateral trade relations and indirectly via complex webs of supply linkages within GVCs.

Four important observations from Table 1 are worth noting. First, China's activities can generate a significant splash in the global economy, with non-trivial effects that can be felt even in Europe, North and South America, and Australia. Second, China has gained a considerable economic influence on developed countries. For instance, the spillovers to G7 economies increased by five to nine times from 1995 to 2015. A ten-percent exogenous increase in China's output can generate spillovers in the US equivalent to 1.26 percent of its output. Twenty years ago, the impact would have been so much weaker, amounting only to 0.21 percent of US output. Table 1 also shows that a similar change in China's output has stronger effects in Canada, Germany, France, Japan, and other regional leaders like Australia, Russia, Chile, and Brazil. Third, China's spillovers to India are surprisingly weak, despite the big jump from 1995 to 2015. Fourth, Chinese spillovers are largest in East and Southeast Asia, owing to the strong GVC linkages within the region. Most notably, China's close integration with South Korean (e.g., Samsung and Hyundai) and Taiwanese (e.g., Foxconn, Acer, and Asus) value chains are very evident in the magnitude of their spillovers: 9.72 percent and 18.27 percent, respectively. The commercial and trade linkages between Chinese and ASEAN-6 (i.e., Indonesia, Malaysia, Philippines, Thailand,

Singapore, and Vietnam) production networks have also expectedly thickened given the strong reliance of Southeast Asian industries on inputs and components from Chinese suppliers, as well as China's downstreamness in many regional value chains.⁹ Within ASEAN-6, the average spillovers from China in 2015 is 6.47 percent of output, up from 0.98 percent in 1995. Malaysia and Indonesia have the largest and smallest sensitivity to China's economic performance, respectively. For the Philippines, the spillovers increased eleven-fold from 1.48 percent in 1995 to 7.12 percent in 2015.

Using the same logic, an adverse shock on China's economy can produce a global impact more severe than twenty years ago. As we have experienced during the COVID-19 pandemic, the exponential spread of coronavirus first wreaked havoc in a wide range of domestic industries in China, then seriously impaired global production lines due to the delays or shortages of inputs and raw materials and cancellation or reduction of orders. For instance, initial Asian Development Bank (ADB) estimates in March 2020 forewarned that output losses could amount to 0.404 percent of world GDP in the scenario of extended travel bans (i.e., six months) and a two-percent decline from the respective no-outbreak levels of consumption and investment in China (Abiad et al. 2020). East and Southeast Asia, and the island nations of Maldives, Fiji, and Sri Lanka were projected to be worst hit. In addition to trade and GVC linkages, travel and tourism are the other channels through which weak Chinese demand may be propagated throughout the Asia-Pacific region.

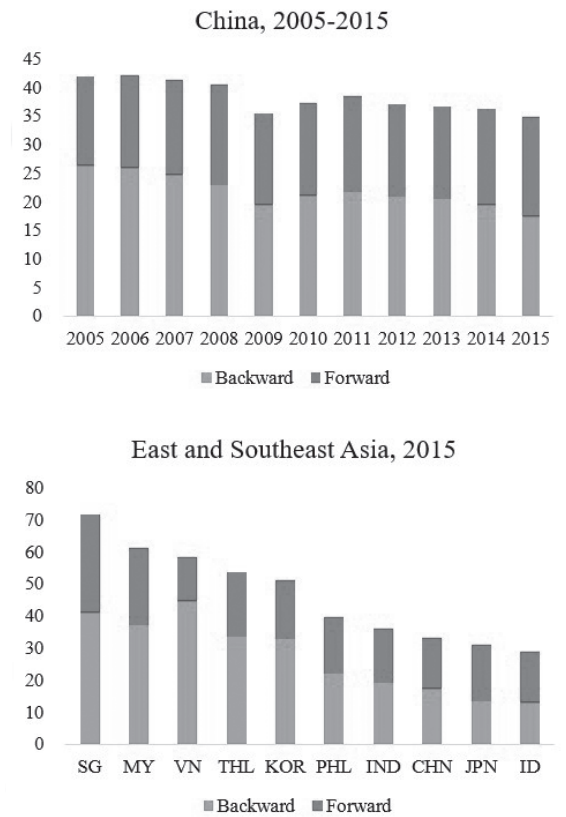
The dynamics between China's domestic and foreign supply chains has also been changing. A recent study by Garcia-Herrero and Nguyen (2019) suggests that while the world is becoming more connected to China, the country itself seems to move toward greater domestic vertical integration. This implies that while global production networks

9 Relatively downstream producers, industries or countries are closer to the final stage of production.

have increased their dependence on China, the manufacturing sector in China has relied less on foreign inputs.¹⁰ According to their estimates, foreign value added share in Chinese exports declined by around 2.3 percentage points between 2014 and 2018. During the same period, China has increased its exports of intermediate inputs. Chinese value added to other country's exports also grew by around 2.2 percentage points. These findings are consistent with Figure 4 (on the next page) which indicates that China's backward GVC participation (i.e., foreign value added in Chinese exports) has been steadily declining since 2005, while forward participation (i.e., Chinese value added embedded in other countries' exports) has been slightly increasing. Estimates by the Organization for Economic Cooperation and Development (OECD 2018b) also show that the services component of Chinese exports increased from around 29 percent in 2005 to 35 percent in 2015. These trends indicate that China has clearly upgraded the capabilities and sophistication of its domestic industries. While this is positive development, one potential downside of this asymmetric GVC relationship between China and the rest of the world is that countries have increased their exposure to domestic Chinese shocks on which they have very little control. The global economic slump caused by COVID-19 shows that the impact can be devastating.

10 This may be rooted in China's long term vision of developing self-sufficient supply chains, especially in the technology sector. For instance, in 2014, the government announced the China Integrated Circuit Industry Investment Fund or the "Big Fund" to nurture the domestic semiconductor industry. Amounting to 138.7 billion yuan (USD 19.8 billion), the fund targets to have 70 percent of the semiconductors produced by Chinese companies be locally manufactured. The fund also aims to develop Chinese memory chip makers that can rival the capacity and technologies of current global leaders such as Samsung Electronics, Kioxia, SK Hynix, Western Digital, Micron Technology, and Intel (Ting-Fang and Li 2020). These strategies are broadly in line with "Made in China 2025," a state-led policy that aims to transform China into a dominant power in high-tech manufacturing, especially in priority sectors such as new-generation information technology; advanced numerical control machine tools and robotics; aerospace technology, including aircraft engines and airborne equipment; and biopharmaceuticals and high-performance medical equipment (Kania 2019).

Figure 4
GVC participation index of China (2005–2015) and East and Southeast Asia (2015)



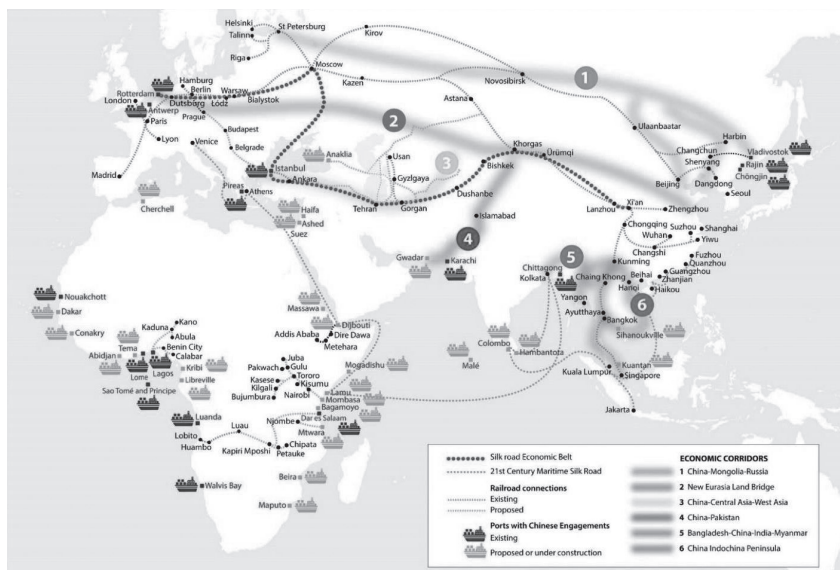
Source: OECD n.d.b

Beyond East and Southeast Asia, China is also looking to further expand its economic ties in other continents. In Central and South America, the country has existing FTAs with Chile, Peru, and Costa Rica, while negotiations with Panama and Colombia are underway.¹¹

11 See Ministry of Commerce, People's Republic of China, "China FTA Network," accessed December 18, 2020, http://fta.mofcom.gov.cn/english/fta_qianshu.shtml.

Figure 5

The six economic corridors of China's Belt and Road Initiative



Source: OECD 2018a, 69

The country also has existing agreements with several OECD members like Australia, New Zealand, Iceland, and Switzerland, while FTAs with Canada and Norway are on the drawing board. For Africa, Europe, and the rest of Asia, China launched the ambitious plan for building a modern-day Silk Road through the Belt and Road Initiative (BRI) (see Figure 5 above). First announced in 2013, the BRI's main objectives include increasing trade and investment among BRI-participating countries, establishing free trade zones along the Silk Road, strengthening trade infrastructures in the BRI corridors, enhancing financial cooperation to fund these infrastructures, gaining access to natural resources, and deepening cultural exchanges (OECD 2018a). The initiative is expected to stimulate trade creation, especially in countries along the corridors where connectivity is less problematic. Spillovers to BRI outsiders are also possible through exports and imports from BRI participants with strong trade linkages with China and the United States (*ibid.*). From China's perspective, the BRI will

not only broaden and deepen its economic and political footprints, but it will also boost China's upgrading in global supply chains. In the short run, new trade infrastructures will help ease the excess capacity of domestic industries by opening new markets for Chinese products (*ibid.*). This may also support the upgrading of Chinese industries as less productive BRI members assume the traditional role of Chinese manufacturers in low value-adding activities. In the long run, sustained investments in technology, physical connectivity, energy, and trade facilitation within the BRI bloc will help build an expansive platform for intercontinental production and trade, with China assuming the leading role. A recent study by Wu, Hou, and Xin (2020) provides initial empirical evidence that the BRI will significantly promote the GVC participation of BRI members, especially developing countries. Lu et al. (2018) also found that improving the connectivity within the BRI, particularly in terms of rail and road intensity, will have the strongest impact in South and Southeast Asia. Nevertheless, the trade volume in non-BRI regions, such as the EU, will also increase. The spillovers are expected to be weaker in North and South America, Japan, and Australia.

The foregoing discussion traced China's remarkable rise as an important player in global trade. Greater openness and strategic policy choices did not only facilitate its closer integration to the rest of the world, but these also cemented China's central position in global production networks. Over the past three decades, the cross-border linkages through which GVC spillovers from China are propagated have grown stronger albeit asymmetrically, with the biggest impact concentrated in East and Southeast Asia. However, the heavy reliance of global production on Chinese manufacturing hubs has its disadvantages. As prominently demonstrated by the COVID-19 crisis, seemingly minor and remote issues at the GVC core can inflict catastrophic shocks on the entire global production system. For many countries and multinationals, this highlights the attractiveness of reshoring and diversification of GVCs, especially away from traditional hubs like China. But is a large-scale exodus from China feasible? The next section discusses the theoretical and empirical literature for

reshoring and GVC diversification. What are the merits and risks of these strategies given the current dominance of China in global production networks?

Reshoring and GVC diversification: Theory and evidence

In a very loose sense, reshoring is the reverse process of offshoring, which is the common practice of multinational corporations to move some production activities to foreign countries with certain locational advantages (e.g., low wages, natural resources, indigenous technology). In other words, offshoring means outsourcing some functions to suppliers and affiliates in foreign countries. Its opposite, reshoring, involves bringing previously offshored tasks back home.¹² In many cases, the offshored activities are concentrated in labor-intensive production segments that often operate on standardized manufacturing processes and non-core organizational knowledge. Accordingly, the direction of offshoring for these kinds of tasks is normally from advanced economies to developing countries that often host large pools of cheap labor. This implies that the basic offshoring decision can be guided by the following rule: offshore if the projected savings are at least as large as the cost of fragmentation (Mendoza 2019). Implicit in the previous description of offshoring is the ability to disintegrate the production process into discrete parts, which then can be distributed in foreign locations. Historically, this arrangement was not always feasible. Before the emergence of GVCs, many production activities had to be performed close to each other in order to economize on the costs of moving inputs, equipment, people, and information. However, during what Baldwin (2014) calls the “second unbundling,” cross-border fragmentation of production grew in scale, scope, and complexity due to technological changes that significantly reduced the costs of coordination over great distances. In particular, the arrival of powerful computers, reliable internet, and efficient telecommunication systems in

12 In recent literature, reshoring has taken other names such as backshoring, re-localizing, and renationalization of GVCs. These events are also related to the recent trends of de-globalization and international divestment.

the 1980s allowed firms to organize physically distant production stages without substantial loss in quality and efficiency. The overall reduction in transport costs due to new investments in infrastructure (e.g., railways, road networks, and ports) and state-of-the art technologies in shipping and logistics resulted in the faster and safer distribution of large volumes of goods over longer distances. Expectedly, the extent of fragmentation tends to be limited by the speed and cost of moving parts and components within the value chain. Unbundling becomes less attractive when it is very expensive to maintain the physical connectivity of scattered suppliers. In fact, Jones and Kierzkowski (1990) suggest that fragmentation is only viable when the savings from offshoring exceed the additional costs of linking distant production stages. This explains why international outsourcing did not immediately start in the era of high shipping and transaction costs, despite the traditionally large wage gaps between developed and developing countries.

Parallel reforms in trade and investment policies also encouraged firms to expand their international operations. In particular, intensive trade liberalization since the 1980s coincided with the rapid growth of fragmentation and global outsourcing. The proliferation of regional trade agreements also encouraged more production sharing as countries multilaterally decide to relax various tariff and non-tariff trade barriers that hamper the efficient flow of inputs across borders. Understandably, offshoring is not a lucrative option in a high-barrier regime since the multiple border crossings of semi-processed goods can act as a propagation mechanism that magnifies total trade costs. Recent policy reforms push for stronger international linkages through trade facilitation measures (e.g., customs automation, single window, simplified documentary requirements, and streamlined customs procedures) that aim to reduce the costs of performing trade transactions. Efficient trade facilitation is particularly important for GVC activities that are vulnerable to delays and disruptions caused by supply uncertainties.

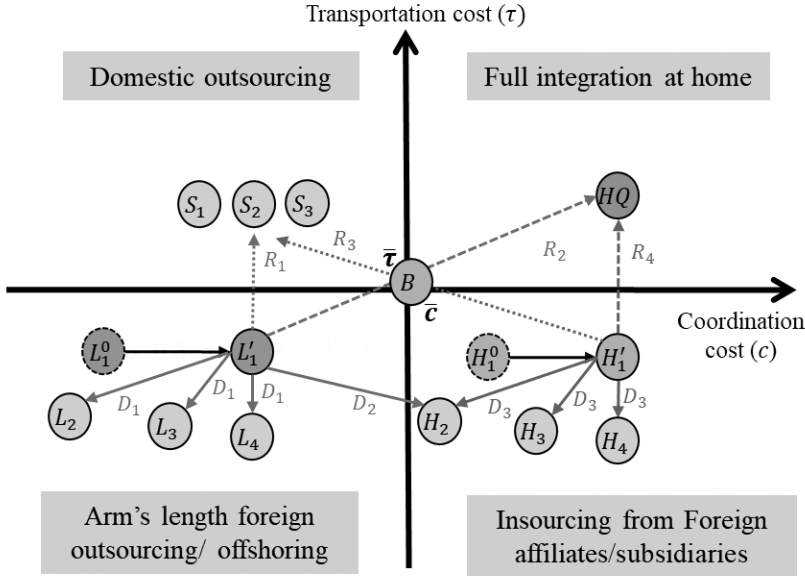
The important role of transport and transaction costs in the patterns of fragmentation and offshoring is consistent with the efficiency-seeking motive for internationalization. This behavior

usually arises when a firm wants to exploit factor cost differentials across countries, diversify risks by assigning activities to producers that possess the capabilities to handle the tasks more effectively, and take advantage of geographic variations in consumer tastes and demand patterns (Mendoza 2019). Although a firm's multinational activities may be driven by other motives (e.g., resource seeking, market seeking, and asset seeking), Dunning and Lundan (2008) suggest that cost-driven efficiency seeking explains much of the division of labor within international production networks. The United Nations Conference on Trade and Development (UNCTAD 2006) also noted that exploiting potential cost-cutting advantages and preserving or expanding global market shares are still the main objectives of a large number of FDIs and international mergers and acquisitions.

Consistent with efficiency-seeking, an increase in the level or volatility of transport and coordination costs may discourage further offshoring. In extreme cases, multinationals may even be forced to relocate or repatriate certain activities that are no longer cost-saving under the current offshoring condition. This is in line with the observation of Fratocchi et al. (2015) that cost factors, especially of logistics and labor, are the most important motivations for reshoring back to US and Europe. Based on 139 cases of reshoring from China to the US, Zhai, Sun, and Zhang (2016) also concluded that reshoring is more likely for efficiency-seeking offshoring than market-seeking ones. Figure 6 (on the next page) illustrates some scenarios in which reshoring and relocation makes business sense from the perspective of efficiency-seeking multinationals. It should be noted that the cases shown are only illustrative and in no way exhaustive. The figure is based on previous discussions by Baldwin (2014) and by Jones and Kierzkowski (1990) which note that the extent of outsourcing, both domestic and abroad, depends on the conditions set by transport and transaction costs. The simple framework also assumes that there are existing levels of transport and transaction costs ($\bar{\tau}$ and \bar{c} , respectively) below which offshoring becomes a practical option since the savings exceed the cost of fragmentation. With respect to these thresholds, different combinations of transport and coordination costs may give

Figure 6

A simple illustration of reshoring and locational diversification in GVCs



Source: Author's illustration

rise to various outsourcing arrangements. The upper quadrants are functions performed at home, while the lower quadrants are done abroad. Moreover, the left quadrants are sourced from outside the boundaries of the firm, while the right quadrants are functions kept within the multinational organization. Relative to $\bar{\tau}$ and \bar{c} , very low coordination cost but high transport cost will encourage outsourcing to domestic suppliers S . Very low transport cost but high coordination cost is likely to result in offshoring to foreign branches, subsidiaries, and affiliates. Finally, very low transport and coordination costs will give rise to arm's length offshoring to independent foreign suppliers.

Figure 6 illustrates a scenario where there is a general increase in the cost of coordinating GVC functions offshored to foreign locations. The first case, a shift from L_1^0 to L_1' , indicates that certain policy changes, technological shocks, or *force majeure* events made coordination with arm's length offshoring partners in L_1 (for instance,

China) very costly. In this scenario, the multinational may be expected to search for suppliers in new foreign locations; that is, a foreign diversification strategy D_1 towards locations L_2 , L_3 , or L_4 (e.g., India, Vietnam, Mexico). Only when this option becomes infeasible will the multinational consider other outsourcing arrangements. For instance, it may choose to still offshore to a foreign affiliate when transport costs are tolerable (i.e., strategy D_2). Reshoring either to domestic suppliers (i.e., strategy R_1) or back to the headquarters HQ (i.e., strategy R_2) are extreme scenarios where fragmentation has become prohibitively costly or when there are no alternative suppliers in foreign locations. For instance, at point B , the multinational becomes indifferent between various arrangements since transport and transaction costs are equal to the breakeven thresholds $\bar{\tau}$ and \bar{c} , respectively. The second case, a shift from H_1^0 to H_1' , illustrates a situation where negative shocks lead to a permanently higher cost of operating subsidiaries and affiliates in foreign host H_1 . Similar to the first case, the more sensible option for HQ is to find new hosts where the cost of doing business is manageable and the general environment is more amicable (i.e., strategy D_3 towards hosts H_2 , H_3 , or H_4). For example, corporate decisions about relocating US multinational affiliates from China to Southeast Asia became more urgent at the height of the trade wars that significantly increased the cost of doing business between the two countries. Only in the absence of alternative hosts will the multinational start to consider its reshoring options (i.e., strategies R_3 and R_4).¹³ These predictions are consistent with the findings of Janssen, Dorr, and Sievers (2012) that despite the hype about reshoring, the amount of manufacturing capacity being offshored far exceeded the amount coming back to developed countries. The study also observed that cross-border movements of production activities remained dominated by relocations from high-cost to low-cost countries instead of the other way around. Janssen, Dorr, and Sievers (2012) also foresee that offshored manufacturing

13 Note that these scenarios are for events that cause a permanent increase in coordination cost. The urge to reshore will be significantly weaker in the case of one-time temporary shocks.

capacity, particularly in China, will most likely be reallocated among other low-cost countries rather than reshored.

In general, the decision to reshore may be triggered by severe underperformance which ultimately manifests in the multinational's low or negative net savings from offshoring. These shortcomings may arise from exogenous changes in host countries or from systemic weaknesses within the multinational firm (e.g., managerial mistakes, bad investment decisions, inefficient organizational skills) (Albertoni et al. 2017). In terms of the efficiency-seeking motive, reshoring may be triggered by hidden costs that were not considered when the firm first decided to offshore. For instance, a multinational may have underestimated the weight of political instability, policy distortions, inefficient government, deficient infrastructure, and disaster risks when it decided to move certain production activities into a foreign location. In this case, reshoring may be viewed as a corrective measure for a bad offshoring decision in the past (De Backer et al. 2016). Mismatch between the multinational's home and host countries may also generate large adjustment costs that would have made offshoring unattractive in the first place. Differences in regulatory frameworks, large cultural distances, and wide technological gaps are important considerations that can be easily overlooked or miscalculated during the initial stages of the offshoring process. For example, inferior internet infrastructure and red tape in the foreign location may be hard to observe during the decision-making stage. Yet, these can cause coordination failures that ultimately disrupt the synchronized activities within GVCs. From the efficiency-seeking perspective, these unforeseen issues may inflate transaction costs such that even the savings from cheap labor and inputs are not enough to justify offshoring.

Changing cost structures in the host and home countries may also increase the incentives of a firm to relocate. For instance, a faster increase in wages relative to labor productivity in the foreign location translates to an overall increase in production costs (*ibid.*). Among American firms, Fratocchi et al. (2015) noted that narrowing cost differentials between host and home countries is an important motivation for reshoring. Put differently, Korean firms cited high production costs

at home as the most important hurdle to reshoring (Kim 2020). In addition, failure of the host government to invest in infrastructure, energy, technology, and education may eventually make the current location uncompetitive. Unmet quality or capacity requirements may also drive reshoring. In fact, Dachs and Zanker (2014) documented that quality control motivated the majority of backshoring activities in Europe between 2010 and 2012. Zhai, Sun, and Zhan (2016) also found a similar pattern among 139 cases of American firms reshoring from China between 2009 and 2015. However, as Figure 6 suggests, these developments do not automatically lead to reshoring but may only trigger a multinational to find new feasible locations abroad. For instance, rising wages in China triggered textiles and wearing apparel GVCs to relocate manufacturing activities in lower-cost locations such as Cambodia, Vietnam, and Bangladesh. A more empirically supported cost-driven motive for reshoring is related to the emerging application of automation, robotization, and 3D printing in developed countries. This is consistent with Dachs and Zanker's (2014) observation that reshoring to Europe is more prevalent in high-tech sectors. The growing application of labor-saving industrial robots in manufacturing activities has made labor costs differentials less relevant in the offshoring decision (De Backer et al. 2016). The evidence from recent empirical studies support this view. For instance, Kugler et al. (2020) show that workers in Colombian sectors that exported the most to the US may be losing employment due to the reshoring of robotized jobs back to the US. Similarly, Faber (2020) finds that US robots have a significant negative impact on exports and employment in Mexico. From the efficiency-seeking perspective, a widespread mechanization of production processes may incentivize multinationals to repatriate manufacturing activities in the future when the technology can already handle mass production at comparable cost and quality.

Over the last decade, reshoring has attracted the attention of various stakeholders due to its economic and political implications. Consolidation of production within the national boundary means minimal exposure to foreign regulations and customs rules, reduced risks of disruptions in the movement of people and goods, and

potentially shorter and more manageable supply chains (Strange 2020). In developed countries, policymakers have been actively encouraging multinationals to bring manufacturing activities back home based on the belief that reshoring will result in a surge of investments and jobs in the domestic economy. Many governments even rolled out ambitious long-term plans and incentive packages to support their reshoring campaigns. For instance, De Backer et al. (2016) noted that backshoring is a key feature of the European Strategy Program 2020 which aims to increase the share of manufacturing in GDP to 20 percent and ultimately achieve an “industrial renaissance” in Europe. In the US, President Trump’s “Make America Great Again” campaign includes aspirations to bring the manufacturing operations of American multinationals, particularly in China, back home. However, the available empirical evidence suggests that the projected gains, especially on employment, may be overstated. For example, when the offshored tasks are low-skilled and standardized, reshoring them into automated domestic factories may not create large employment opportunities at home. This is consistent with Fuster, Lillo-Bañuls, and Martínez-Mora’s (2020) finding that reshoring into Spain from 2008 to 2010 had insignificant impact on manufacturing and services employment. At best, repatriation of manufacturing may only bring back capital and managerial skills, but not necessarily factory jobs (De Backer et al. 2015).

Reshoring is also viewed as a possible solution to the excessive exposure of firms and countries to adverse external shocks that can paralyze GVC operations. Recent events such as the global financial crisis in 2008–2009, the tsunami in Japan and flooding in Thailand in 2011, and the industrial shutdowns due to COVID-19 containment measures illustrate that firms and countries heavily involved in offshoring and GVC activities are also vulnerable to the volatility created by supply chain disruptions. As already described in the first section, lockdowns in major GVC hubs due to COVID-19 wreaked havoc in many portions of international production networks. Proponents of reshoring argue that relocation of key production processes can minimize these downside risks by weakening the foreign

linkages through which global uncertainties may be transmitted into the domestic economy. A less extreme strategy involves nearshoring wherein the offshored tasks are moved to another foreign location that is nearer to the home country (e.g., a US multinational moving its offshored factory from China to Mexico). This effectively makes GVCs regional rather than global. The regional rebalancing of GVCs may make production networks shorter and compact, and therefore, exposed to fewer external uncertainties that can sabotage the efficient functioning of supply chains.

However, Miroudot (2020a) argues that the idea that domestic-oriented production is more resilient than internationalized production is not supported in the risk management literature. The main reason for this is that firms actually lose flexibility by relying on local supply chains that are themselves not immune to internal and foreign shocks. For instance, domestic manufacturers still face the risks of heightened trade barriers and disrupted logistics network when production remains heavily dependent on imported inputs after reshoring. Arriola et al. (2020) added that exposure to supply chain risks does not automatically translate into actual economic losses, especially when firms and countries know how to handle them. Altomonte et al. (2012) also show that while countries connected to GVCs experienced deeper contractions during downturns, they also recovered faster after the crisis. This implies that building more shock-proof supply chains does not mean abandoning the global scope of it. In fact, the OECD (2020) suggests that relocating supply chains may actually result in high costs and higher volatility of output given the fewer options for adjustments when shocks hit. A recent study by Bonadio et al. (2020) also show that COVID-19 has a bigger negative impact on world GDP under the scenario of renationalized supply chains. This is due to the fact that eliminating foreign sourcing increases reliance on domestic inputs, which are also constrained by shortages and local lockdowns. Arriola et al.'s (2020) simulations indicate that most countries would become less efficient and less stable by relocating GVCs. In terms of welfare, they also show that relocation will be costlier for countries downstream in the value chain.

While the COVID-19 crisis has uncovered the downside risks associated with global interconnectedness, the available evidence does not provide a strong economic case of reshoring either. The existing literature instead suggests that GVCs should be recalibrated to become more diversified, flexible, and resilient. Building resilience and flexibility means improving the capacity of firms and governments, especially in developing countries, to manage supply chain risks during and after disruptions (Miroudot 2020a). This needs investments in powerful information systems that can handle the complex tasks of constantly updating supply chain maps, monitoring real-time movements within international production networks, stress testing, identifying potential sources of disruptions, and being agile to propose strategies for various emergency situations. However, Miroudot (2020b) points out that resilience is different from robustness or the ability to remain in operation during a crisis. The latter may be more important in organizing GVCs for essential goods and services (e.g., food and medical supplies during a pandemic). Regardless, it is crucial that supply chain resilience and robustness be not equated with reshoring and GVC dismantling as these could lead to bad corporate and policy choices, especially the ones motivated by nationalist and protectionist sentiments. Diversification should also figure as an important strategy towards achieving these two goals. As illustrated by recent supply chain disruptions caused by natural disasters and pandemics, concentrating the bulk of manufacturing activities in a single country or region can expose global production networks to the risks of delays, shortages, and even shutdowns. As a risk-spreading measure, GVC lead firms tend to diversify the locations of their suppliers and production facilities. However, excessive diversification may be inefficient when the scale economies associated with agglomeration and specialization are not fully realized due to redundancies within the value chain.¹⁴

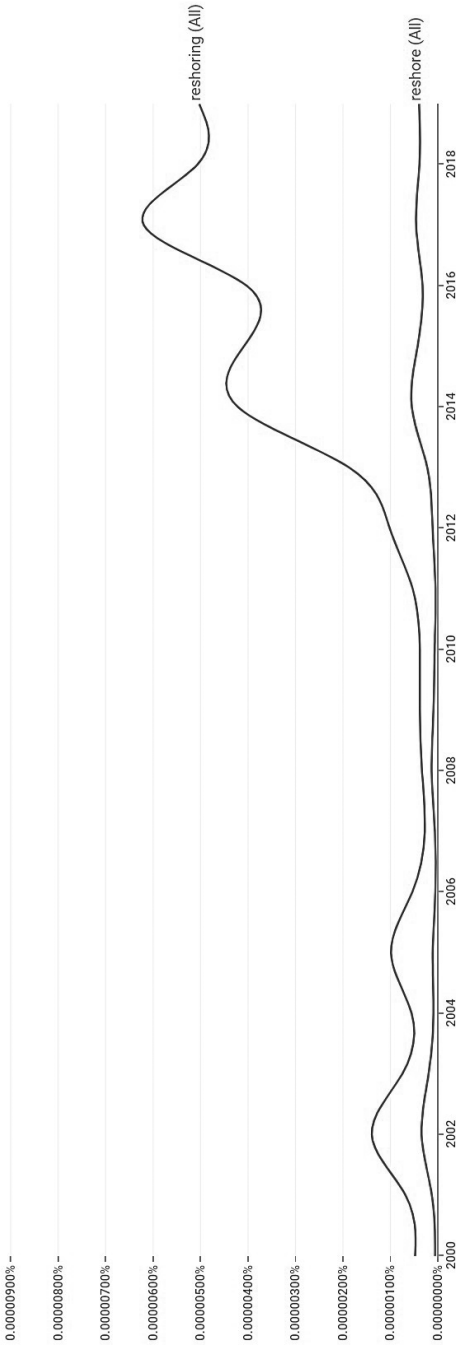
14 For instance, Miroudot (2020a) cited some evidence that supply chains that rely on single sourcing recovered faster after disruptions than supply chains with diversified suppliers. This may be explained by the commitment of suppliers in long-term relationships to mitigate risks and address the causes of disruptions.

Maintaining backup suppliers and facilities is also costly especially when the contingencies they are being kept for rarely happen. This tradeoff suggests that GVC firms should strike a balance between being cautious and being functional. The good kind of redundancy should give supply chains additional flexibility during disruptions in certain segments. For instance, this strategy worked for Samsung when its Vietnam facility temporarily absorbed the production of high-end phones while its South Korean factory was closed during the early months of the pandemic (Miroudot 2020a). Similarly, Hyundai scaled up its production in Vietnam while manufacturing in Beijing was suspended (Kim 2020).

The available evidence (e.g., De Backer et al. 2016) suggests that while reshoring is not a myth, it is not a global phenomenon either. Instead, this may be a natural event within dynamic GVCs that are constantly adjusting to the evolving realities in the global environment.¹⁵ A likely pattern suggested by the literature is that reshoring, nearshoring, and GVC diversification become attractive options during crisis periods. For example, Delis, Driffield, and Temouri (2019) found that the wave of reshoring in the past decade was triggered by the global financial crisis in 2009. This is consistent with Figure 7 (on the next page) which indicates that the popularity of the terms “reshoring” and “reshore” shot up after 2009. Therefore, current talks about repatriating multinational activities from China amid the COVID-19 crisis are not unexpected given that lead firms, suppliers, and governments have been challenged to redesign GVCs that are more robust and resilient. However, whether or not these plans materialize requires more careful analysis. The short-run likelihood of massive reshoring from China to developed countries is very small. Such homecoming requires costly adjustments (e.g., moving capital and/or cheap labor back home, building new facilities, hiring and training local employees) that multinationals may not be willing to

15 For instance, Lardy (2019) noted that multinationals leaving China has been happening for decades, especially among firms with offshoring strategies that did not work out.

Figure 7
Rising popularity of “reshoring” and “reshore” in Google Books after the global financial crisis in 2008–2009



Source: Google Books Ngram Viewer n.d.

incur, especially since the majority of manufacturing hubs in East and Southeast Asia have already normalized and vaccination is ongoing. The fiscal incentives offered by governments are also relatively small compared to the amount of investments that multinationals must make upon reshoring. For instance, South Korea's initial offer of up to USD 40 million relocation assistance is significantly lower than Samsung's recent USD 8 billion domestic fab investment alone (Stangarone 2020).

In general, business response to government reshoring campaigns has been lukewarm. For instance, despite the ramped up effort of South Korea to bring back previously offshored production, many multinationals are not enthusiastic as they try to avoid rigid labor market and environmental regulations and high production costs at home (Kim 2020). In fact, a recent survey in June 2020 show that seven out of ten South Korean companies in China are not willing to return home.¹⁶ Instead, some anecdotal evidence point to South Korean firms' growing interest in Southeast Asia, especially Vietnam (*ibid.*). Similarly, an August 2020 survey by the American Chamber of Commerce in Shanghai indicate that 75 percent of the surveyed US firms plan to stay in China, especially market-seeking companies that target the growing middle class in the country. On the other hand, only four percent out of more than 200 respondents intend to move back to the US. The remaining manufacturers plan to either relocate partly within China and partly to non-US locations (7 percent) or shift their operations to other countries, particularly in Southeast Asia (14 percent) (PwC China 2020). Southeast Asia is also the top destination of planned redirected investments from China, followed by Mexico and India (AmCham Shanghai and PwC 2020). Japan has had more success, with its USD 2 billion incentive package attracting an initial batch of 57 firms (e.g., Iris Ohyama, Saraya, Sharp, Shionogi, Terumo, Kaneka) to move their Chinese operations back home. However, some 30 firms operating in Southeast Asia will also receive assistance under

16 Out of the thousands of South Korean firms operating China, only 80 have moved part of their production back home since 2013 (Kim 2020).

the Program for Strengthening Overseas Supply Chains (JETRO 2020a).¹⁷

The foregoing discussion suggests that large-scale reshoring and relocation of multinational GVC activities in China are highly unlikely in the immediate future given that China remains an attractive location for offshored manufacturing and an important end-market for global consumer brands.¹⁸ It will also take many years and large sums of money to replicate the manufacturing capacity that China has built over the last four decades. However, building supply chains that are flexible and diversified has gained urgency as a result of the disruptive effects of COVID-19 and the US-China trade wars. This suggests that geographic diversification of GVCs towards locations outside China may be expected in the short and medium run.¹⁹ According to the UNCTAD (2020), this provides an opportunity for other developing countries to attract multinational investors and increase participation in global production networks. In particular, numerous business write-ups indicate that Southeast Asia stands to benefit from the ongoing restructuring of GVCs, given that multinationals planning to diversify away China usually eye the region as their target relocation site. This is not surprising, as the region's proximity to China and its established linkages with East Asian, American, and European value chains make it a strong alternative to Chinese manufacturing hubs. Multinationals are particularly attracted to Southeast Asia's large pool of cheap but skilled labor, huge natural resource endowments, rising technological capabilities, relatively stable

17 At the height of the US-China trade wars, some Chinese manufacturers decided to offshore not to US and Western Europe territories but to sites near their target American and European markets (e.g., Mexico and Serbia) (*Nikkei Asia* 2018).

18 In fact, FDIs continue to pour into China despite the trade wars and pandemic. As of November 2020, new foreign investments in China already reached 94 percent of the 2019 total (*Bloomberg* 2020). This is partly attributed to investors' positive response to China's resilience during the COVID-19 crisis.

19 Another likely form of diversifying China-centric GVCs in the medium to long run may be driven by China itself; that is, the relocation of labor-intensive Chinese manufacturing to non-Chinese facilities as China upgrades to high-tech and high value-adding GVC functions. This is in line with the vision of the BRI.

macroeconomic and political environment, and general openness to foreign trade and investments. But where in Southeast Asia? Given the region's economic diversity and the fierce competition for foreign investments,²⁰ multinationals may be expected to narrow down their choices in order to reduce search costs. The challenge for countries vying to benefit from the ongoing shake-up in GVCs is how to package themselves as attractive options relative to China and relative to their regional peers.

What does the diversification of China-centric GVCs mean for the Philippines?

While Southeast Asia is often picked by multinationals as a target site for redirected investments, diversification, or relocation of their manufacturing facilities in China, it must be noted that investors are particularly interested in Malaysia, Thailand, and Vietnam. The Philippines, on the other hand, is rarely mentioned. For instance, Table 2 (on the next page) lists the first 30 takers of the financial incentives offered by the Japanese government to companies wanting to pursue production base diversification and supply chain resilience in Southeast Asia.²¹ Only two accepted applicants plan to pursue projects in the Philippines. In contrast, 15 firms or 50 percent declared Vietnam as their proposed project site. It is also interesting to note that the activities to be conducted in Vietnam are very diverse, ranging from traditional and labor-intensive products (e.g., medical masks, face

20 This is best illustrated by Indonesian President Joko Widodo's statement that "[w]e want companies from China, of course, but also Japan, South Korea, Taiwan, the U.S., and anywhere else in the world to move here" (Jibiki 2020).

21 According to JETRO (2020a, 1), "the program envisages a variety of corporate initiatives for strengthening supply chain resilience including support for construction of additional manufacturing plants and enhancement of production/logistical efficiency by utilizing digital technologies." In particular, the financial support will "cover expenses for the introduction of facilities and equipment, demonstration projects, and feasibility studies related to the supply of goods and materials through global supply chains with a high degree of concentration of the production bases" (ibid.).

Table 2

First batch of accepted applicants to Japan's Program for Strengthening Overseas Supply Chains

Company name	Product	Location
Arctech Co., Ltd.	Parts for semiconductor/medical inspection equipment (precision sheet metal)	Philippines
Akiba Daicast Industry Co., Ltd.	Power module parts	Vietnam
Amtec Co., Ltd.	Disinfectant (for hemodialysis machine)	Thailand
Inoue Iron Works Co., Ltd.	Pharmaceutical manufacturing equipment	Vietnam
Able Yamauchi Co., Ltd.	Medical protective clothing/gown	Vietnam
Hubei Industry Co., Ltd.	Lead wire terminal for aluminum electrolytic capacitors	Malaysia
Sun Alloy Industry Co., Ltd.	Rare metal (cemented carbide)	Thailand
Showa International Co., Ltd.	Long sleeve gown/medical mask	Vietnam
Showa Glove Co., Ltd.	Commercial gloves	Myanmar
Shin-Etsu Chemical Co., Ltd.	Rare earth magnet	Vietnam
Sumitomo Rubber Industries, Ltd.	Nitrile rubber gloves	Malaysia
Taiyo Koko Co., Ltd.	Rare metal	Malaysia
Takeshita Pharmaceutical Co., Ltd.	Medical gown	Philippines
Techno Global Co., Ltd.	Medical face shield	Vietnam
Toyobo Co., Ltd.	Medical product base cloth	Malaysia
Nataka Seiko Co., Ltd. (with Chikuma Precision Industry Co., Ltd.)	Auto parts (engine components)	Thailand
Nikkiso Co., Ltd.	Blood circuit for dialysis	Thailand, Vietnam
NiKKi Fron Co., Ltd.	Parts for production lines such as vaccines and semiconductors (fluororesin diaphragm)	Thailand

Company name	Product	Location
Hashimoto Cross Co., Ltd.	Non-woven mask, medical alcohol wet wipes, medical hair cap	Vietnam
Fujikin Co., Ltd.	Semiconductor manufacturing equipment parts (parts for ultra-precision valve equipment)	Vietnam
Plus Corporation	Medical surgical mask	Vietnam
Flex Japan Co., Ltd.	Medical gown	Indonesia
Pronics Co., Ltd.	Air conditioner parts (motor)	Vietnam
Hoya Corporation	Hard disk drive parts (glass substrate for storage media)	Vietnam, Laos
Matsuoka Corporation	Infection control protective clothing/gown	Vietnam
Maruhachi Cotton Co., Ltd.	Medical gown	Laos
Meiko Electronics Co., Ltd.	Parts for smartphones (electronic circuit boards)	Vietnam
Yokoisada Co., Ltd.	Medical surgical mask	Philippines
Yokowo Co., Ltd.	Automotive parts (in-vehicle antenna)	Vietnam
Riki Co., Ltd.	Medical gown	Thailand

Source: JETRO 2020a

shields, and gowns) to medium- and high-tech manufacturing (e.g., power module parts, parts for ultra-precision valve equipment, glass substrate for hard disk drive, electronic circuit boards for smartphones, in-vehicle antenna). Thailand and Malaysia are the other top project locations, with six and four accepted applicants, respectively.

This turnout is not surprising. According to the result of the Japan External Trade Organization's (JETRO 2020b) 2019 Survey on the International Operations of Japanese Firms,²² 24.5 percent

22 The 2019 survey include 3,563 responses from firms headquartered in Japan and have business interests abroad.

of the 159 cases of actual or planned transfers of production bases pertain to relocation from China to Vietnam. Transfers from China to Thailand accounted for 14.5 percent of all relocation cases. Together, Vietnam and Thailand received 63.9 percent of all Japanese transfers to ASEAN.²³ The two Southeast Asian countries are also the top location of transferred supply sources from China, accounting respectively for 22.4 percent and 8.2 percent of 170 cases of shifted supply sourcing done by Japanese firms in 2019. In general, the momentum for business expansion plans in China has been receding while Vietnam is increasingly gaining attention from Japanese investors. In particular, among Japanese firms planning to expand their international operations, 48 percent cited China as their target location, down from 55.4 percent in 2018. Vietnam came in second place with 41 percent, up from 35.5 percent in 2018. In particular, the share of Japanese investors looking to expand in Vietnam increased significantly in the following sectors: coal and petroleum products, plastics, and rubber products; transport services; IT equipment, and electronic parts and devices; communication, information, and software services; textiles and clothing; food and beverages; and precision equipment. In addition, Vietnam consistently joins China in the three most cited countries where the following functions will be expanded: sales, production of general-purpose and high value-added goods, R&D for new product development, and logistics.²⁴ The drop in the share of international Japanese companies eyeing to expand business in China, especially in the manufacturing sector, is mainly driven by the tariff distortions associated with the US-China trade wars, political/social situation, security issues, intellectual property protection, and rising labor costs. Against the background of supply chain restructuring in the region to ease the US-China trade friction, the increasing attractiveness of Vietnam is traced to its market size and growth potential, clustering

23 There are six cases each of transfers from China to Indonesia and to the Philippines.

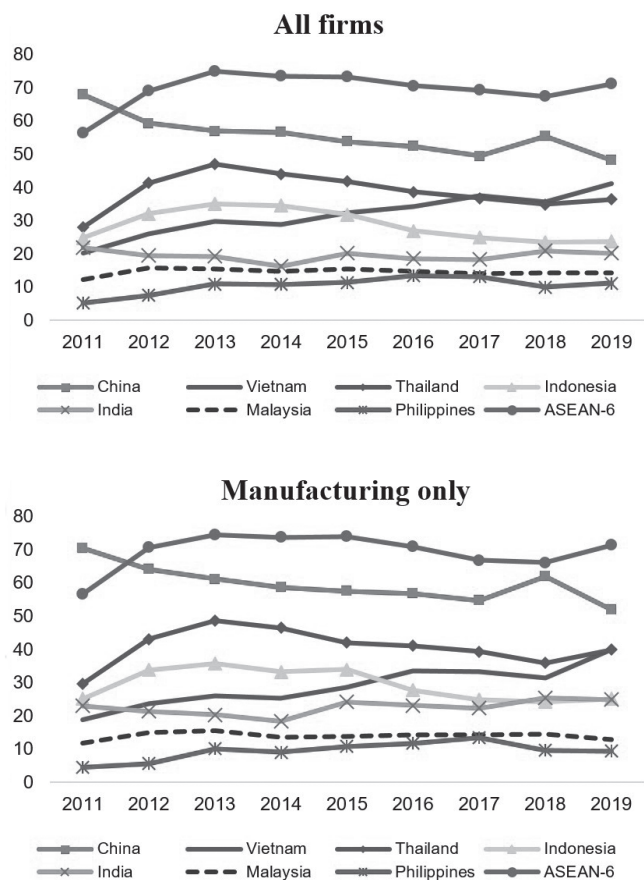
24 Except for R&D for new product development, Thailand consistently joins Vietnam and China in the top three.

of customer firms, political and social stability, personnel quality, availability of low-cost land and offices, ease of local procurement, and an overall improvement in the business environment (JETRO 2020b).

Figure 8 (below) shows that the rising popularity of Vietnam among Japanese investors has been the general trend since JETRO

Figure 8

Share of Japanese firms that currently have an overseas base and are planning to further expand operations, by location



Source: JETRO 2020b

Note: A firm may cite more than one country as target location of international expansion.

started its annual survey in 2011. It is interesting to note that this coincided with the reduced popularity of China as the top preference of Japanese firms planning to expand abroad. In fact, since 2012, ASEAN-6 as a group already surpassed China as the most preferred location of Japanese multinationals' foreign expansion. In addition to market-seeking and efficiency-seeking reasons, Japanese investors' stronger interest in Southeast Asia is also driven by risk aversion, especially amid the ongoing US-China trade wars (JETRO 2020b). The current COVID-19 crisis seems to have intensified this risk diversification motive. However, among ASEAN-6 countries, Figure 8 indicates that the Philippines has been consistently the least preferred location by Japanese firms planning to expand their operations abroad. This is true for both manufacturing and non-manufacturing firms. The main issues cited by Japanese investors in the Philippines include the political and social situations, security issues, infrastructure, collection of bills, natural disasters and environmental pollution, legal system, administrative procedures, and clustering of related industries. However, since many of these concerns are also relevant to Japanese investors in other Southeast Asian locations, the differences between the Philippines and its regional peers, particularly Vietnam, may be attributed to their relative attractiveness. Table 3 (on the opposite page) summarizes the country-specific advantages most frequently cited by Japanese firms. Horizontal comparisons suggest that for the following advantages, the share of Japanese firms attracted to the Philippines is generally lower than its regional neighbors: clustering of customer firms, ease of local procurement, personnel quality, and political and social stability. The first two advantages are related to the capacity of the domestic supply base, the third reflects the quality of skills and human capital in the country, and the last one affects the stability of the domestic business environment. The fact that the Philippines scores relatively lower in these aspects may partly explain the pattern in Figure 8. Note that these are important factors considered by GVC lead firms in their offshoring and geographic diversification decisions.

The relatively weak preference of Japanese firms for the Philippines broadly reflects the country's lagging performance in various pull

Table 3

Share of Japanese firms per country that are attracted by different advantages

Advantage	CN	ID	PH	SG	TH	VN
Market size/growth potential	91.1	86.5	76.2	57.6	73.4	86.1
Labor cost/labor force	13.3	27.3	33.8	—	18.8	40.9
Pro-Japanese feeling	—	26.9	27.9	24.0	47.7	41.5
Communications	10.4	4.7	22.3	29.5	—	—
Clustering of customer firms	28.5	21.4	14.8	17.5	31.3	18.1
Ease of local procurement	20.9	8.2	5.9	—	18.2	8.9
Personnel quality	10.3	6.1	6.7	13.6	10.3	19.6
Land, offices	4.4	8.4	10.3	—	9.7	11.4
Tax system	—	—	4.7	14.3	—	—
Political and social stability	—	6.7	5.1	41.6	12.1	16.7
Living environment	4.5	—	—	20.2	17.4	6.7
Employee retention rate	—	4.5	—	—	—	6.2
Infrastructure	11.3	—	—	20.9	11.9	—
Speedy procedure	—	—	—	17.5	—	—
Technological capability	4.5	—	—	—	—	—
Average	19.9	20.1	20.8	25.7	25.1	25.6

Source: JETRO 2020b

Note: No publicly available data for Malaysia

factors that attract foreign investors. As summarized in Table 4 (on pages 40–41), the Philippines usually ranks lower than Indonesia, Malaysia, Thailand, and Vietnam in various indicators used by multinationals to assess their investment decisions. As a potential target of market-seeking multinationals, the Philippines seems at par with India, Indonesia, and Vietnam's competitive growth performance, rising income level, and large population. However, as a location of offshored manufacturing functions, the country needs to double

Table 4
Indicators of pull factors attracting foreign investors

Indicator	China	India	Indonesia	Malaysia	Philippines	Thailand	Vietnam
Market size and growth potential							
Ave. GDP growth (%; 2015–2019)	6.7	6.7	5.0	4.9	6.6	3.4	6.9
GDP per capita (2019, 2017 PPP dollars)	16,030.7	6,694.3	11,976.5	27,814.6	8,976.8	18,460.0	10,110.0
Population (2019, in millions)	1,400.1	1,367.6	266.9	32.6	107.3	69.6	96.5
Human and technological capital							
Labor productivity (2019, 2011 PPP dollars)	32,002	21,181	25,412	61,291	20,433	31,204	11,970
Expected years of schooling (2019)	14.0	12.2	13.6	13.7	13.1	15.0	12.7
PISA Score, Reading (2018)	555	—	371	415	340	393	—
PISA Score, Math (2018)	591	—	379	440	353	419	—
PISA Score, Science (2018)	590	—	396	438	357	426	—
Gov't R&D spending (2015, % of GDP)	2.1	0.7	0.2	1.3	0.2	0.6	0.4
Global innovation index (2020)	52.3	35.6	26.5	42.4	35.2	36.7	37.1
Competitiveness							
Daily minimum wage (as of Jan. 2020, in USD)	9.71	—	6.72	8.97	8.10	10.43	5.70
Logistics performance index (2018)	3.61	3.18	3.15	3.22	2.90	3.41	3.27
Residential electricity prices (March 2019, USD/kWh)	0.08	0.07	0.10	0.06	0.19	0.13	0.07

Fixed broadband download speed (Nov. 2020, in mbps)	154.43	52.02	23.32	91.40	28.69	213.14	60.81
Secure internet servers per million people (2015)	735	389	1,684	6,724	111	1,404	2,597
Ease of doing business index (2019)	31	63	73	12	95	21	70
Global competitiveness index (2019)	73.9	61.4	64.6	74.6	61.9	68.1	61.5
Institutional quality							
Corruption perception index (2019)	41	41	40	53	34	36	37
Rule of law index (2020)	0.48	0.51	0.53	0.58	0.47	0.51	0.49
Ease of establishing foreign business index (2012)	63.7	76.3	52.6	60.5	57.9	60.5	57.9
Strength of investor protection index (2017)	4.5	7.3	5.7	8.0	4.2	6.7	5.3
Average	2.7	4.0	4.5	2.3	5.7	3.6	4.2

Sources of data: Oplas 2019, IEA 2020, ILO n.d., IMF 2020, NWPC 2020, Speedtest 2020, Transparency International 2020, UNDP n.d., WEF 2019, WIPO 2020, WJP 2020, World Bank n.d.a

Notes:

- The reported daily minimum wage of the Philippines is the average of the midpoints for Regions 3, 4, 7, and NCR.
- The reported electricity price of India is for 2018.
- The reported government R&D spending of Indonesia is for 2016.
- For the ease of doing business index, a lower score indicates more business-friendly environment.
- For the corruption perception index, a higher score indicates a cleaner public sector.

its efforts to be able to catch up with the most attractive investment destinations in the region. In terms of quality of human capital, Table 4 indicates that the Philippines generally lags behind Malaysia, Thailand, and Indonesia, while Vietnam is projected to catch up quickly. In fact, Vietnam, like Malaysia and Thailand, already has better R&D and innovation standing than the Philippines. The picture becomes grimmer when looking at the competitiveness of the Philippines as a GVC production hub. As summarized in the table, it seems producing in the country is relatively costly since labor and electricity are more expensive. Moreover, transaction costs are higher in the Philippines, as indicated by the country's lagging performance in logistics, broadband infrastructure, internet speed, and ease of doing business. Based on the indicators of institutional quality, the country's enabling environment also seems less attractive compared to its neighbors.

To the extent that the sentiments of Japanese firms towards China and Southeast Asia reflect the general preferences of multinational investors from other industrialized economies, the Philippines may be expected to benefit less from the current shakeup in East Asian GVCs than its regional neighbors. As scientist Louis Pasteur said, "chance favors the prepared (mind)." Unfortunately, the indicators in Table 4 suggest that the Philippines is not the most prepared in Southeast Asia to take in multinational firms that are looking to diversify away from China. As a simple summary indicator, the countries in Table 4 are ranked for each pull factor then the unweighted average rank per country is obtained (see last row of Table 4). Outside China, Malaysia has the highest average rank, followed by Thailand, India, and Vietnam. Indonesia and the Philippines take the bottom spots. In particular, the Philippines seems the least attractive to foreign investors based on the indicators in Table 4. Reversing the country's position in the medium to long run requires accelerated, decisive, and coordinated actions from government and industry leaders. Given the Philippines' lagging performance, policymakers must avoid reforms whose objectives are vague or trivial. In a very competitive global environment, it is not enough to assess the country's progress against its historical performance only. It is also important that domestic

Table 5

Spillovers (% of output) of a ten-percent hypothetical increase in a country's output

	IN	ID	MY	PH	SG	TH	VN
India	—	0.14	0.21	0.04	0.36	0.12	0.12
Indonesia	1.28	—	0.54	0.19	0.69	0.48	0.26
Malaysia	1.21	1.23	—	0.35	1.32	1.21	0.53
Philippines	0.25	0.22	0.46	—	0.76	0.54	0.23
Singapore	1.50	2.20	2.29	0.55	—	0.98	0.84
Thailand	0.74	0.84	1.07	0.42	0.61	—	1.11
Vietnam	0.43	0.45	0.55	0.19	0.42	0.52	—

Source: Author's calculations based on the 2015 OECD ICIO table

strategies be anchored on regional performance indicators that are evolving very fast themselves.

Despite the grim scenario suggested by the preceding discussion, the Philippines may still benefit from the expansion or relocation of some manufacturing hubs from China to Thailand, Malaysia, and Vietnam. This is possible through the indirect spillovers generated by the strong economic linkages that connect the countries in Southeast Asia. For instance, Table 5 (above) suggests that on the average, the Philippines will benefit more if production activities are transferred from China to other ASEAN-6 economies instead of India. As of 2015, a hypothetical ten-percent increase in the respective outputs of Singapore, Thailand, and Malaysia will generate larger spillovers to the Philippines than a similar expansion in India, Vietnam, or Indonesia. This suggests that as a short-run strategy, the Philippines should make sure that it explores all existing channels such as the ASEAN and ASEAN-India FTAs in order to maximize its benefits from the ongoing GVC restructuring in the region. Nevertheless, the country should still actively pursue policies that will boost its relative attractiveness to foreign investors.

Concluding remarks

Despite the media buzz about multinationals leaving China in droves due to the extraordinary challenges caused by the ongoing trade wars and COVID-19 pandemic, this paper shows that the available theoretical and empirical evidence in support of this trend is actually weak. This means that large-scale reshoring and relocation of multinational GVC activities in China are highly unlikely in the immediate future given that China remains a competitive host for high-tech manufacturing processes and an important market for global consumer brands. China's demonstrated resilience amid the pandemic has also renewed the confidence of foreign investors about the country's ability to manage supply chain disruptions. Notwithstanding, multinationals' heightened risk aversion due to the adverse effects of COVID-19 and the US-China trade wars may cause a geographic diversification towards alternative GVC hubs such as Southeast Asia and India. The available evidence indicates that several transfers from China to Southeast Asia are already underway, with Vietnam, Thailand, and Malaysia as the most preferred destinations. The Philippines, on the other hand, is rarely mentioned as a target relocation site. A closer look at the various pull factors that entice foreign investors shows that the country is relatively less attractive compared to its regional peers. In particular, the data suggest that production and transactions costs are higher in the Philippines. The country's regulatory and business environment is also less competitive.

Thanks to the strong economic, trade, and political linkages within ASEAN, the Philippines may still benefit from the indirect spillovers generated by the relocation of some manufacturing hubs from China to other countries in Southeast Asia. While the potential spillovers are not trivial, the direct economic benefits of attracting a wide variety of foreign multinationals to invest in the Philippines cannot be discounted. On top of the possible increase in output and employment, this may provide opportunities for knowledge transfers and functional upgrading into more sophisticated GVC segments. But as it is, the country appears to have missed the immediate gains from the ongoing reorganization of GVCs in East and Southeast Asia amid the

COVID-19 pandemic. However, this may only be the start of a long-run trend given the rising production costs in China and its ambition to upgrade to more complex manufacturing activities. Therefore, the challenge for the Philippines is how to package itself as an attractive option for future waves of relocations. In addition to traditional tax and non-tax incentives, this requires aggressive and strategic actions to strengthen domestic production capabilities and build a competitive business and regulatory environment. Other countries in Southeast Asia are taking this competition seriously. So should the Philippines, and doubly so given its deteriorating standing in the region. ■

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Established in 1985 by University of the Philippines (UP) President Edgardo J. Angara, the UP Center for Integrative and Development Studies (UP CIDS) is the policy research unit of the University that connects disciplines and scholars across the several units of the UP System. It is mandated to encourage collaborative and rigorous research addressing issues of national significance by supporting scholars and securing funding, enabling them to produce outputs and recommendations for public policy.

The UP CIDS currently has twelve research programs that are clustered under the areas of education and capacity building, development, and social, political, and cultural studies. In addition, the Center also convenes the Local-Regional Studies Network (LRSN), which supports projects of research centers in UP constituent universities.

THE PROGRAM

The **Program on Escaping the Middle-Income Trap: Chains for Change (EMIT C4C)** examines inclusiveness and competitiveness in its research and societal efforts. It currently undertakes research projects in the following areas: big data analytics on manufacturing and exports, action research on agriculture and fisheries value chains, and action research on business for peace—all utilizing inclusive science. Inclusive science provides learning and partnering spaces for the academe, government, civil society, and the private sector to share lessons from development efforts.

The Program takes off from the “Escaping the Middle-Income Trap: Pragmatic Strategies for Inclusive Growth” project, which looked into reasons why only very few countries that have managed to transition from a low-income to a middle-income country status have succeeded in joining the cluster of industrialized and rich economies of the world.

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