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Navigating turbulent waters: The Philippines' global value chains experience amid trade wars

by

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Abstract

In light of recent pronouncements of tariff hikes in the United States (US) and the retaliatory responses of major economies such as China, Canada, and Mexico, this paper revisits the global value chains (GVC) experience of the Philippines amid the trade tensions between China and the US from 2018 to 2019, especially within the context of the intricate web of trade linkages in East and Southeast Asia. The inter-country input-output analysis confirms that the tariff wars generated shocks that adversely affected the GVC and overall trade performance of bystander economies in East and Southeast Asia that are not directly involved in the trade conflicts but are strongly connected to the disputing parties. Sectors directly and indirectly contributing value added to American and Chinese exports hit by tariff hikes expectedly suffered the most. However, the impact was asymmetric. Country-sector pairs with higher contribution to Chinese exports to the US were more likely to experience negative growth of overall exports in 2019. But no similar effect was traced to higher exposure to US exports to China. Moreover, the impact on the Philippines was less severe compared to bigger East and Southeast Asian economies, probably due to the country's relatively weaker direct linkages to Chinese and American GVCs. Given these results, the paper discusses the effects of distortionary tariff wars within the broader context of interconnectedness, multilateralism, and power dynamics in GVC-dominated world trade. The paper argues that restoring the stability of global trade policy is necessary to renew confidence in the world trading system and reduce the lingering uncertainty created by pre-pandemic trade conflicts. The paper also highlights some potential challenges and opportunities for the Philippines amid the resurgence of the tariff wars in 2025.

Keywords: global value chains, trade wars, inter-country input-output analysis, East Asia, Southeast Asia, Philippines

JEL: F10, F13, F14, F60

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1. Introduction

The Philippines has one of the stronger global value chains (GVC) linkages in Southeast Asia. Based on estimates from the Asian Development Bank Multiregional Input-Output Table (ADB-MRIOT), the country ranks sixth in the region in terms of total GVC trade in 2019 (see Figure 1).[2,3] Relative to gross exports, Philippine GVC-related trade reached 47.6 percent in 2019, next only to Singapore, Malaysia, and Vietnam. The country's GVC transactions are mainly concentrated in manufacturing activities, particularly backward transactions (i.e., imported value added) in electronics, food, beverages and tobacco, machinery, and metal products. However, the services sector has a larger forward participation relative to manufacturing, indicating a strong local value adding potential. Primary sectors remain the least GVC-integrated segment of the domestic economy. In terms of trading partners, East Asia, the United States (US), and ASEAN-6 are the Philippines' major sources of imported value added.[4] On the other hand, China, the US, Germany, the United Kingdom (UK), Japan, and France are the biggest destinations of value added indirectly exported by the Philippines (i.e., those incorporated in other countries' exports).

Given the strong GVC linkages with East Asia and the US, the Philippines had considerable exposure to the global economic turbulence caused by two major events. First, the US-China trade conflict not only escalated geopolitical tensions but also produced adverse effects on economies deeply involved in international production networks (Bellora and Fontagné 2019). The tariff wars, which affected around 70 percent of US-China bilateral exports in 2018 (Evenett and Fritz 2018), increased production costs in GVCs directly through higher prices of imported inputs, and indirectly via the amplification effect of the complex web of supply linkages in GVCs. According to the World Trade Organization (WTO),

[2] The ADB MRIOT is an inter-country input-output table with 35 sectors and covers 62 countries which collectively accounted for 90 percent of world GDP. The analyses in this paper were based on the built-in ADBI MRIOT in the icio package in Stata.

[3] This paper follows the definition of GVC-related trade in Belotti, Borin, and Mancini (2020), which is the sum of backward and forward participation. The backward component pertains to the imported value added content of a country's exports while the forward component measures the domestic value added incorporated in another country's exports. As described in Mendoza (2021a), gross exports can be decomposed as follows:

$$u_N E_{s*} = \underbrace{\underbrace{DAVAX_{s*} + IAVAX_{s*} + REF_{s*}}_{\widehat{DVA_{s*}}} + DDC_{s*}}_{\widehat{DC_{s*}}} + \underbrace{FVA_{s*} + FDC_{s*}}_{\widehat{FC_{s*}}} \quad (1)$$

where $u_N E_{s*}$ is the gross exports of country *s*, $DAVAX_{s*}$ is value-added exports (VAX) directly absorbed in the immediate destination, $IAVAX_{s*}$ is VAX indirectly re-exported to third countries, REF_{s*} is called reflection or the portion of VAX that is ultimately absorbed by country *s* itself, DDC_{s*} is domestic double counted, FVA_{s*} is foreign value added, and FDC_{s*} is foreign double counted. The sum of $DAVAX_{s*}$, $IAVAX_{s*}$, and REF_{s*} is collectively referred to as DVA_{s*} or the domestic value added in gross exports. The sum of DVA_{s*} and DDC_{s*} is called the domestic content of gross exports (DC_{s*}) while the sum of FVA_{s*} and FDC_{s*} is called the foreign content of gross exports (FC_{s*}). The total GVC-related trade of country *s* is defined as:

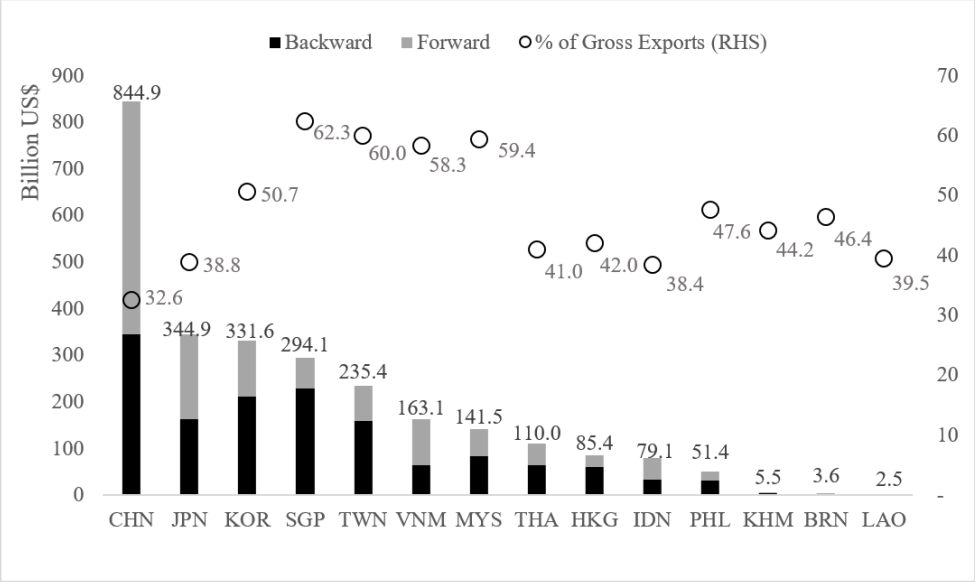
$$GVC_s = \sum_{r \neq s} (u_N E_{sr} - DAVAX_{sr}) \quad (2)$$

where $u_N E_{sr}$ is the total bilateral exports of country s to country r. In other words, GVC-related trade excludes the portion of the bilateral exports of country s to country r that is immediately absorbed by the latter. Underlying this formula is the definition of GVC trade as involving transactions that crossed borders more than once (Belotti, Borin, and Mancini [2020]). A country's overall GVC participation rate can be calculated by dividing GVC_s by $u_N E_{s*}$. Further, a standard practice in the literature is to decompose GVC_s into backward and forward GVC trade. The backward component loosely corresponds to the imported content of exports and is mainly comprised of FVA_{s*}. The forward component pertains to the portion of domestic production of country *s* that was first exported to country *r* then processed and re-exported. Note that $IAVAX_{s*}$ and REF_{s*} in Equation 1 fall under this category.

[4] ASEAN-6 pertains to the six biggest economies in the Association of Southeast Asian Nations (ASEAN), namely Indonesia, Thailand, Philippines, Singapore, Malaysia, and Vietnam.

the trade wars caused US imports from China to decline by 12.5 percent in 2019, while Chinese imports from the US shrank by 19.7 percent in 2019. The International Monetary Fund (IMF) also estimated that the trade wars potentially lowered global GDP by 0.8 percent in 2020. Second, the COVID-19 crisis disrupted economic activities in a wide range of countries and sectors, especially those heavily dependent on global production networks (e.g., electronics and automotive). In particular, strict virus containment measures impaired logistics and supply chains due to disrupted factory operations during the early stages of the pandemic. Bleak consumer and business optimism also dragged global demand for GVC-traded goods and services. Consequently, Philippine merchandise exports contracted by 10.1 percent in 2020, following two years of weak growth amid the trade wars.

Figure 1. GVC trade in East and Southeast Asia, 2019



Source: Author's application of the methodology of Belotti, Borin, and Mancini (2020) using the ADB MRIOT 2019.
Note: No available data for Myanmar. The backward component pertains to the imported value added content of a country's exports while the forward component measures the domestic value added incorporated in another country's exports. See Footnote 3.

The tariff wars exposed the dangers of abandoning the rules-based trading system in favor of "power-based" bargaining[5]. First, it generated excess volatility in world trade due to the unpredictable protectionist trade policies imposed by major exporting countries. Second, the uncertainty created by distortionary trade policies is being magnified through the interconnectedness of firms and countries in GVCs. In particular, trade wars disrupted global production networks through heightened transaction costs, higher import prices, and increased production costs amplified through intricate back-and-forth supply chain linkages in GVCs. This shows that trade wars between two giant economies such as China and the US can cause serious damage even to firms and consumers with no direct linkages to the conflicting parties. A major consequence of the current GVC shakeup is the growing demand for supply chains that are robust and diversified (Mendoza and Villafuerte 2023). At the forefront of this restructuring are big multinationals and governments of developed countries that are actively seeking to move production facilities either back home or to alternative locations (e.g., via "nearshoring" and "friendshoring"). For example, the European Union (EU), Japan, and South Korea previously announced fiscal incentives for companies that will repatriate their Chinese operations or relocate to new hosts (Crawford and Martin 2020; Reynolds and Urabe 2020; Stangarone 2020). Some global lead

[5] A phrase loosely borrowed from Mattoo and Staiger (2019).

firms (e.g., Apple, Foxconn, and Samsung) have started to gradually shift production from China, with neighboring countries in Asia as their new hosts.

While US and Chinese tariffs have plateaued after peaking in 2020, recent pronouncements by re-elected US President Donald Trump decree a new wave of tariff increases said to be the largest since 1993 (Clausing and Lovely 2025). In particular, Trump imposed a 25 percentage point (ppt) increase in tariffs on a long list of imported goods from Canada and Mexico, while a 10 ppt tariff increase was levied on imports from China. These tariffs affect a wide range of goods—from agricultural commodities and mining products to consumer goods and essential manufacturing inputs (see Figure 2). As a retaliatory response, Canada initially announced 25 percent tariffs on US$30 billion worth of imports from the US, while China imposed additional 10-15 percent tariffs on imported coal, liquefied natural gas, crude oil, and farm equipment from the US (Gillies and Sánchez 2025; Ruwitch 2025). Mexico also announced its plan to impose countermeasures.

Figure 2. US Imports Affected by Trump's First Wave of Tariff Hikes in 2025

Sources: Contreras and Lovely (2025), Contreras, Lovely, and Yan (2025)

While the disputing countries are expected to bear the brunt of these harmful measures (such as welfare losses due to higher consumer prices and reduced quality and variety of available products), studies show that bystanders in past trade wars were also adversely affected. This supports the view that trade wars in the age of globalized manufacturing can inflict serious damages not only on the parties directly involved but also on peripheral economies, especially through the amplification mechanism generated by trade and investment channels in GVCs. For example, Abrenica, Guzman, and Gochoco-Bautista (2019) noted that the welfare losses incurred by the Philippines from the US-China trade wars were

compounded by the intricate production linkages in East and Southeast Asia. Nevertheless, Fajgelbaum et al. (2021) also documented a positive type of "bystander effect" wherein some countries (whose exports are substitutes to the goods targeted by the US-China tariff wars) experienced growth in the exports of those products not only to China and the US, but also to the rest of the world. Freund et al. (2024) also observed that while there is US-China bilateral trade decoupling based on 2017 to 2022 data, US imports from China are replaced with imports from developing countries that are deeply integrated in China's supply chains.

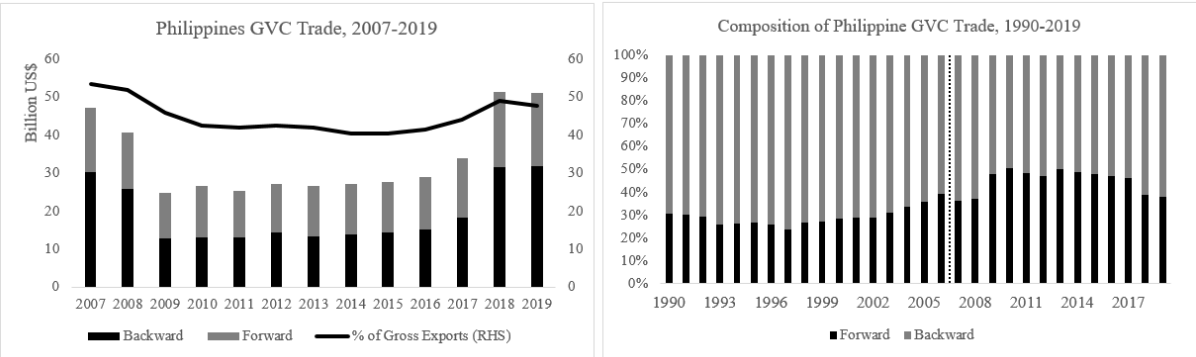
Against this background, this paper revisits the Philippines' GVC experience at the height of the trade tensions between China and the US from 2018 to 2019. In particular, this study traces the nature of the Philippines' GVC participation to understand the country's potential vulnerability to trade conflicts, especially within the context of the GVC landscape in East and Southeast Asia. Its purpose is threefold: first, to assess the breadth and depth of the Philippines' actual exposure to GVC disruptions due to tariff wars; second, to provide a reference point for the potential impact of the resurgence of US-led tariff wars in 2025; and third, to identify strategies for policy actions at the domestic and regional levels. Given the lingering effects of the pre-pandemic US-China trade tensions, a timely assessment of its impact on the GVC performance of the Philippines and the rest of East and Southeast Asia provides insights useful in formulating appropriate long-term strategies for reform as well as short-term policy responses, especially given the re-emergence of US-led trade conflicts. The paper also aims to identify potential opportunities that the Philippines may take advantage of amid the escalating tariff wars.

The rest of the paper is organized as follows. The second section discusses the nature of the country's GVC participation, especially within the context of the intricate web of trade linkages in East and Southeast Asia. This helps gauge the country's potential exposure to trade wars via the GVC channel. The third section assesses the exposure of Philippine sectors to US-China trade tensions via the GVC channel. In particular, it explores empirically the potential exposure of the Philippines (vis-à-vis ASEAN) to: 1) the tariffs imposed by China on imports from specific American sectors and 2) tariffs imposed by the US on imports from specific Chinese sectors. The fourth section analyzes the empirical results within the broader context of GVC interconnectedness, multilateralism, and power dynamics in the world trading system. The section also provides some prospects and policy recommendations, especially from the perspective of ASEAN and the Philippines. The last section contains some concluding remarks.

2. Overview of the Philippines' Participation in Global Value Chains

Based on earlier data from the UNCTAD EORA database, Figure 3 suggests that Philippine GVC trade was tracking a steady upward trend prior to the global financial crisis. However, after a deep plunge in 2009, the country's GVC performance has since been erratic.

Figure 3. Philippine GVC trade, 1990-2019

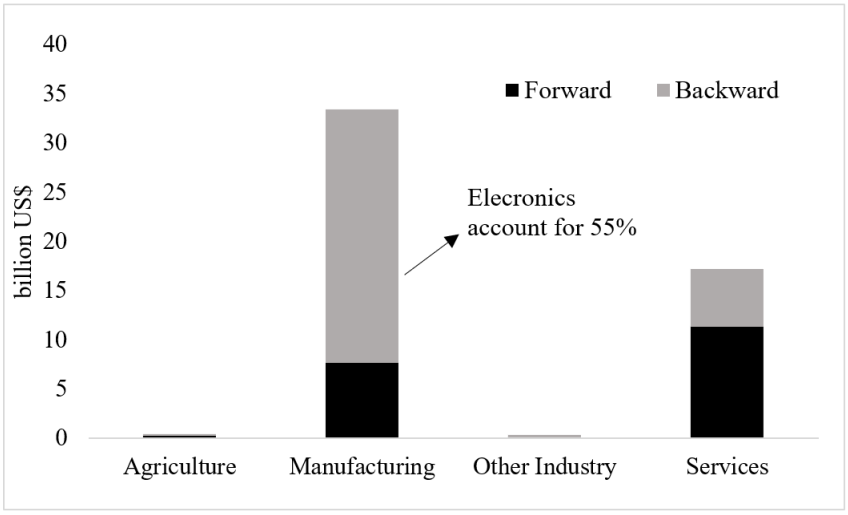


Source: Author's application of Belotti, Borin, and Mancini (2020) using the ADB MRIOT from 2007 to 2019.

Note: The values are expressed in constant 2018 prices. The backward and forward decomposition from 1990 to 2006 is based on the UNCTAD-EORA GVC data. The backward component pertains to the imported value added content of a country's exports while the forward component measures the domestic value added incorporated in another country's exports. See Footnote 3.

Four recent trends are worth mentioning. First, while forward GVC trade was the key growth driver of Philippine GVC trade in the early 2000s, its share has been relatively stagnant since 2010. This may be an indicator of weak domestic upgrading as manifested in the flat trend of the Philippines' value added contribution in foreigners' exports. In fact, the share of forward participation even decreased in 2018 and 2019 based on the ADB-MRIOT data (see Figure 3). Second, Philippine GVC transactions remain largely characterized by strong backward participation which implies that imported components still have a significant share in the country's gross exports while the growth of domestic value creation has been limited. Since 2016, backward transactions have been increasing both in terms of value and share in total GVC trade. Third, GVC participation as a percent of gross exports contracted after the 2008 global recession and remained flat in the succeeding years. This is broadly in sync with the observed deglobalization phase that the world economy entered into after the global financial crisis. Prior to the trade wars, increasing backward GVC trade supported a short period of resurgence from 2016 to 2018. Lastly, the growth of Philippine GVC trade (in constant 2018 prices) has slowed down significantly since the start of the tariff wars, from 51.2 percent in 2018 to -0.5 percent in 2019. This indicates that the country, even as a mere bystander, was not immune to the adverse impact of the trade conflicts.

Figure 4. Philippine GVC transactions in 2019, by major sectors (billion US$)



Source: Author's application of Belotti, Borin, and Mancini (2020) using the ADB MRIOT 2019.

The country's GVC participation is still strongest in manufacturing, which accounted for around two-thirds of the total transactions in 2019 (see Figure 4). This suggests the tariff wars targeting manufactured exports will have a largest impact on the Philippines. The remaining one-third is mostly traced to services. The GVC activities of Philippine manufacturing are dominated by backward participation, especially in electrical and optical equipment whose gross exports in 2019 contained 64.1 percent imported value added. This is significantly higher than the national total, in which backward GVC trade accounted for 29.7 percent of gross exports in 2019. The other manufacturing sectors that incorporated large shares of foreign value added in their respective gross exports are: textile and textile products (32.9%), leather, leather products, and footwear (38.3%), petroleum (46.7%), chemical products (49.0%), rubber and plastics (41.8%), nonmetallic minerals (44.4%), metal products (65.9%), machinery (52.6%), and transport equipment (41%). The high foreign content in these exports indicate a strong dependence on imported inputs, either due to the lack of local suppliers that can meet the

required quantity and quality, or due to the preference of multinational lead firms for foreign suppliers that they have established linkages with.[6] In any case, the high share of backward participation may partly reflect the weak linkages of Philippine GVC sectors with local supply chains and the limited capability of domestic suppliers to contribute larger value added in Philippine exports.

In contrast to the strong backward participation in manufacturing, the GVC linkages of agriculture and services are largely forward transactions. In fact, services accounted for more than one-half of the country's forward GVC trade in 2019. Compared to manufacturing's 23.1 percent, forward GVC trade accounted for 56.6 percent and 65.8 percent of the respective GVC trade of the agricultural and services sectors. This implies that these sectors are mainly linked to production networks via indirect exporting of value added. In particular, wholesale and retail trade, financial intermediation, real estate, education, renting of machinery and equipment, and other business services accounted for more than three-quarters of their respective sectors' GVC transactions.

Table 1. Philippine GVC trade by sector, 2019

Sector	Forward		Backward	
	US$ million	% of sectoral gross exports	US$ million	% of sectoral gross exports
All sectors	19,407.9	18.0	32,039.2	29.7
1: Agriculture, hunting, forestry, and fishing	250.9	14.0	201.8	11.3
2: Mining and quarrying	108.5	27.3	73.3	18.4
3: Food, beverages, and tobacco	2,165.7	12.6	2,985.0	17.4
4: Textiles and textile products	126.7	8.6	484.8	32.9
5: Leather, leather products, and footwear	13.1	6.3	79.1	38.3
6: Wood and products of wood and cork	44.6	12.1	82.2	22.2
7: Pulp, paper, paper products, printing, and publishing	100.6	20.5	139.2	28.4
8: Coke, refined petroleum, and nuclear fuel	101.3	16.2	291.7	46.7
9: Chemicals and chemical products	224.0	16.5	665.7	49.0
10: Rubber and plastics	123.3	18.5	278.0	41.8
11: Other nonmetallic minerals	244.7	10.7	1,016.8	44.4
12: Basic metals and fabricated metal	395.9	11.1	2,358.2	65.9
13: Machinery, nec	146.9	4.4	1,765.8	52.6
14: Electrical and optical equipment	3,718.5	16.4	14,564.3	64.1
15: Transport equipment	261.5	13.3	805.3	41.0
16: Manufacturing, nec, recycling	53.2	8.5	211.3	33.9
17: Electricity, gas, and water supply	7.2	44.9	2.3	14.3
18: Construction	12.2	2.4	156.8	30.2

[6] The semiconductor and automotive sectors are good examples. According to Frederick and Gereffi (2016) and Sturgeon et al. (2016), these GVC-oriented industries are dominated by multinationals that mostly rely on their own international network of subsidiaries, affiliates, and "follow sourcing" suppliers for three major reasons. First, it is more convenient to maintain old relationships with past suppliers than to find new local partners. Second, there is a limited domestic supply base to begin with. Lastly, local suppliers often lack the capability to meet the specified quality and/or do not have the capacity to produce the required volume.

19: Sale, maintenance, and repair of motor vehicles and motorcycles, retail sale of fuel	0.8	22.6	0.6	14.8
20: Wholesale trade and commission trade, except of motor vehicles and motorcycles	112.8	26.6	37.9	8.9
21: Retail trade, except of motor vehicles and motorcycles, repair of household goods	1,164.9	27.7	322.1	7.7
22: Hotels and restaurants	621.2	6.3	1,694.8	17.3
23: Inland transport	62.5	15.0	133.1	31.9
24: Water transport	26.6	22.2	38.6	32.2
25: Air transport	63.9	8.5	329.9	43.8
26: Other supporting and auxiliary transport activities, activities of travel agencies	695.0	30.3	433.7	18.9
27: Post and telecommunications	235.6	22.0	171.0	16.0
28: Financial intermediation	258.0	23.7	75.4	6.9
29: Real estate activities	28.2	36.5	3.8	5.0
30: Renting of mach. & eqpt. And other business activities	7,495.4	29.1	2,307.0	9.0
31: Public administration and defense, compulsory social security	105.3	14.9	42.5	6.0
32: Education	25.2	25.0	7.3	7.3
33: Health and social work	6.4	7.3	13.5	15.5
34: Other community, social, and personal services	407.3	28.0	266.7	18.3

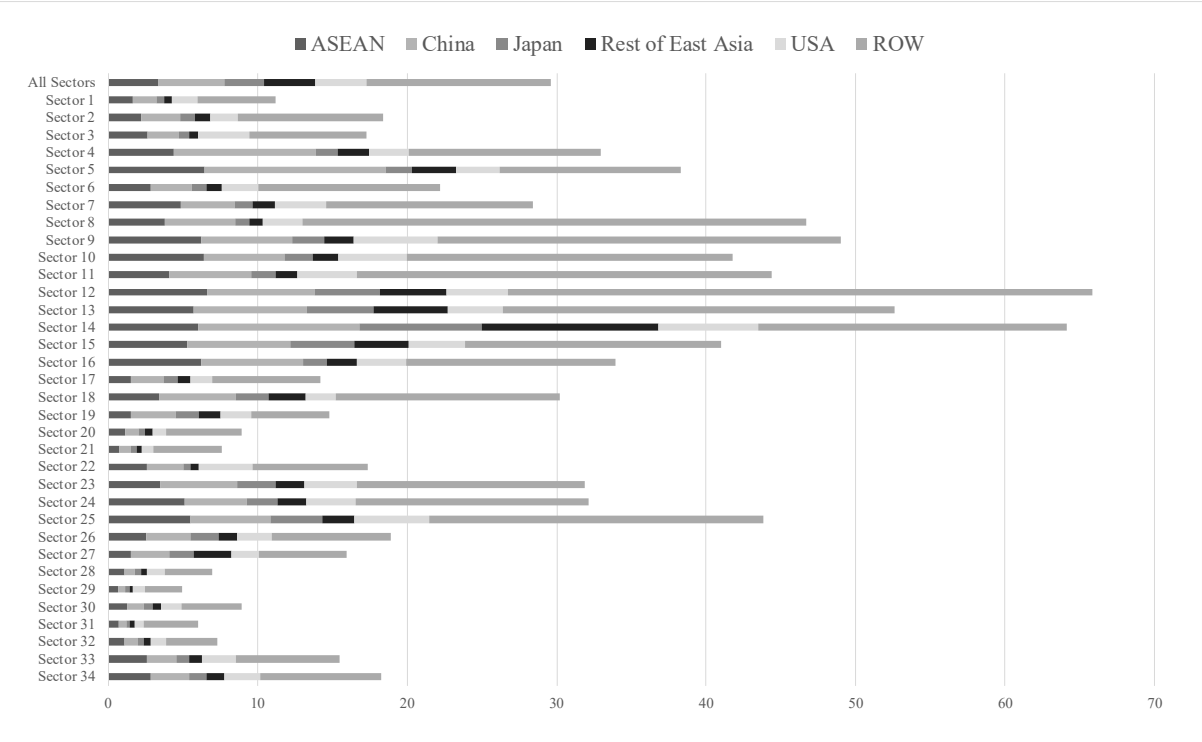
Source: Author's application of Belotti, Borin, and Mancini (2020) using the ADB MRIOT 2019.

While Philippine GVC trade has a significant regional component, the bulk of the country's indirect exports of value added remains global in nature. Only 41.1 percent of Philippine value chain activities in 2019 was transacted within East and Southeast Asia. This can be broken down as follows: 11.9 percent with ASEAN, 11.3 percent with China, 7.9 percent with Japan, and 9.9 percent with other East Asian economies (i.e., Hong Kong, South Korea, and Taiwan). The US accounted for an additional 8.9 percent. The other important GVC linkages of the Philippines are with Germany, the Netherlands, Ireland, and the UK. The presence of these linkages to global and regional economic centers highlight the Philippines' potential exposure to shocks to regional supply chains (e.g., due to US tariffs on Chinese products) and to demand risks from developed countries.

Focusing only on backward participation, Figure 5 confirms that East and Southeast Asia are a major source of foreign content for the Philippines, especially in manufacturing. In particular, more than half of foreign value added in the exports of textiles and textile products, leather, leather products, and footwear, and electronics originated from within ASEAN and East Asia. This means that the Philippines maintains a strong dependence on imported intermediate inputs from the region. Therefore, trade wars and supply chain disruptions in East and Southeast Asia will most likely be propagated in the Philippines via the web of intermediate trade linkages in the region. However, it is worth noting that the Philippines is not equally exposed to potential shocks, both positive and negative from all countries of the region. Indonesia, Malaysia, Singapore, Thailand, and Vietnam are responsible for 97 percent of the Philippines' imported value added from ASEAN. In addition to direct exposure to the US-China trade conflicts, the Philippines may also be affected indirectly by spillovers from these ASEAN neighbors. However, the country's GVC linkages with and exposure to spillovers from other countries

of the region are still very weak. The Philippines still has a lot of untapped market potentials in Cambodia, Myanmar, Laos and Vietnam (and probably vice versa). Moving forward, this should be an important focus of regional policies that promote a strong GVC presence rooted in expansive intra-regional supply linkages and economic cooperation.

Figure 5. Foreign value added share in Philippine gross exports in 2019, by sector and origin



Source: Author's application of the methodology of Belotti, Borin, and Mancini (2020) using the ADB MRIOT 2019.
Note: See Table 1 for sector descriptions. No data for Myanmar. "Rest of East Asia" comprises Hong Kong, South Korea, and Taiwan.

In terms of total GVC trade, the Philippine sectors most directly linked to China and the US are electrical and optical equipment, metals, machinery, renting of machinery and equipment, and other business services. Textiles and textile products, chemicals and chemical products, nonmetallic minerals, and transport equipment are moderately exposed. In contrast, the sectors least directly connected to China and the US are in services. Within manufacturing, the least exposed are leather, leather products, and footwear, wood and related products, paper and paper products, and petroleum.

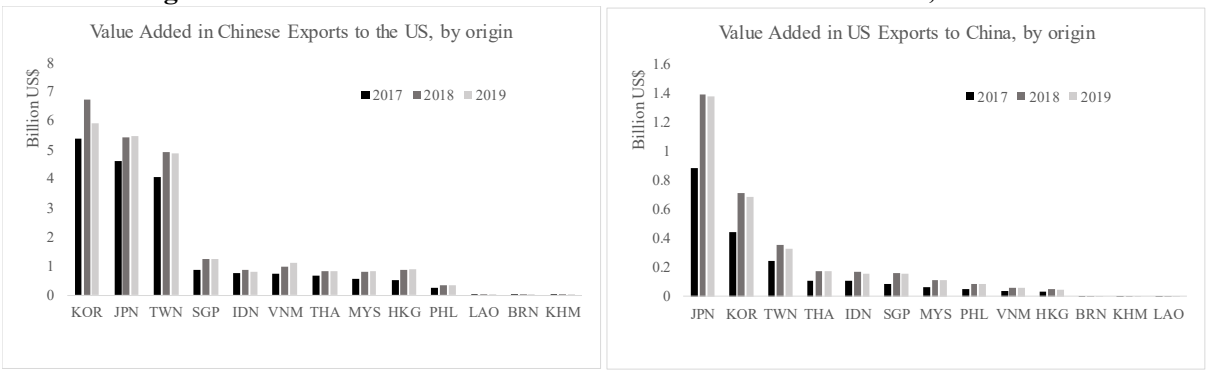
3. Philippine Exposure to the US-China Trade War

In this section, I applied the methodology of Belotti, Borin, and Mancini (2020) to estimate the potential exposure (via the GVC channel) of the Philippines to the US-China tariff wars in 2018 to 2019. In particular, I used the ADB-MRIOT to answer the following questions:

1. What is the potential exposure of the Philippines to the tariffs imposed by China on imports from specific US sectors?;
2. What is the potential exposure of the Philippines to the tariffs imposed by the US on imports from a specific Chinese sector?; and
3. What are the effects of these exposures on the Philippines' GVC and overall trade performance?

This exercise complements existing studies (e.g., Abiad et al. (2018) and Abrenica, Guzman, and Gochoco Bautista (2019)) by assessing the GVC impact of the US-China trade conflicts based on actual inter-country input-output data from 2017 to 2019. Data from 2020 onwards were not used to exclude the disruptions caused by the COVID-19 crisis. This study also adds to the still limited empirical literature on the impact of the US-China tariff wars on economies such as the Philippines and the rest of ASEAN that are not directly involved but strongly exposed to the trade conflict.

Figure 6. Value added contribution to US-China bilateral trade, 2017-2019



Source: Author's application of the methodology of Belotti, Borin, and Mancini (2020) on the ADB MRIOT 2017 to 2019.
Note: the values are in current prices. No available data for Myanmar.

GVC-related exports from China to the US declined by 2.2 percent in 2019, a reversal of the 36.4 percent surge in 2018. Similarly, GVC-related exports from the US to China contracted by 4.3 percent in 2019, negating the 43.3 percent increase in the previous year. Figure 4 illustrates the direct spillover effects of this slowdown across the East and Southeast Asian region. With the exception of Vietnam which posted a 14.1 percent increase in value added contribution to Chinese exports to the US in 2019, the rest of the region experienced either negative growth (e.g., South Korea, Indonesia, and Taiwan) or a marked slowdown. In particular, the growth of Philippine value added in Chinese exports to the US decelerated from 28.3 percent in 2018 to just 1.1 percent in 2019. However, the country is an exception in terms of growth of value added in US exports to China. Only Brunei, the Philippines, and Vietnam registered positive growth of value added in American exports to China in 2019, while the rest of the region suffered considerable losses (e.g., Cambodia, Indonesia, and Taiwan). Figure 4 suggests that GVC activities in East and Southeast Asia stalled partly as a consequence of the disruptive effects of tariff shocks on production networks. But some countries seem to have benefitted from the resulting reconfiguration of supply chains in the region. For example, Vietnam has been a favorite relocation site of many American and Japanese multinationals planning to diversify away from China (Mendoza 2021b).

The results of the sectoral input-output analysis for the Philippines and the rest of East and Southeast Asia are summarized in Table 2. The sectors of interest are highlighted based on several documentations of the US-China tariff wars (e.g., Bellora and Fontagné (2019) and Bown and Kolb (2021)). To recap, the major events in this tariff war episode are summarized below:[7]

- January 2018: Trump approved the global safeguard tariffs on imported solar panels and washing machines. Two affected countries, South Korea and China, filed separate disputes at the World Trade Organization (WTO) in May and August 2018, respectively.
- March 2018: Trump announced fresh tariffs on imported steel (25%) and aluminum (10%). This mainly affected Russia, China, and Japan. In June 2018, the tariffs were extended to cover

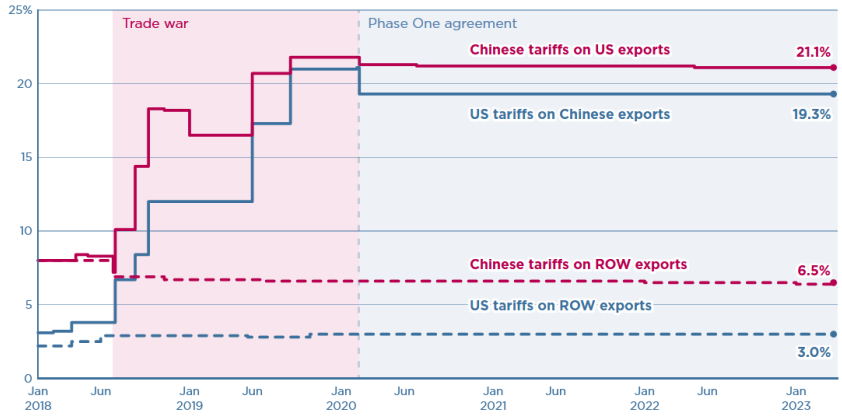
[7] Details regarding US trade disputes with other countries are excluded. For the complete details, see Bown and Kolb (2021).

initially exempted parties such as Canada, Mexico, and the European Union (EU). These parties retaliated shortly after.

- April 2018: China retaliated by imposing tariffs on several American products such as aluminum waste and scrap, pork, fruits and nuts.
- April 2018: China imposed preliminary tariffs on American sorghum exports. This was lifted in May 2018 after negotiations.
- July 2018: China and the US implemented the "first phase" of their respective June 2018 tariff lists. The American list covered around US$50 billion worth of intermediate inputs and capital goods imports from China. The Chinese list covered around US$50 billion worth of agricultural and food products, vehicles, mineral fuels, consumption goods, and medical equipment from the US.
- July 2018: The US announced subsidies to farmers negatively affected by the tariffs.
- August 2018: China and the US implemented the "second phase" of their respective June 2018 tariff lists.
- September 2018: The US implemented new tariffs covering US$200 billion worth of imports from China. This included intermediate goods such as computer and auto parts, and consumer goods such as telephone equipment, computers, furniture, and lamp. In response, China imposed new tariffs on US$60 billion worth of American goods such as intermediate inputs and capital equipment.
- May 2019: The US raised the tariff rates from 10 percent to 25 percent on goods included in its September 2018 action. In August 2019, China retaliated by raising the tariffs on goods equivalent to 60 percent of its US$60 billion list in September 2018.
- January 2020: The US expanded the tariffs on steel and aluminum products which mostly affected imports from Taiwan, Japan, the EU, and China.
- February 2020: The "Phase One" deal between China and the US took effect.
- April 2020: The US tightened export controls to prevent entities in China, Russia, and Venezuela from buying American technologies that are essential to national security. The US previously restricted the access of Chinese firms Huawei and its affiliates to US technologies.
- December 2020: The US restricted the export of semiconductor designs, equipment and software to the Chinese firm Semiconductor Manufacturing International Corporation.

Figure 7 summarizes the evolution of US and China's tariff rates imposed on each other as a result of the trade tensions that escalated in 2018. The figure shows that average US tariffs on Chinese imports increased sevenfold between January 2018 and January 2020, while Chinese tariffs on US imports almost tripled during the same period. The tariff hikes stopped after the "Phase One" deal, under which China committed to import an additional US$200 billion worth of American goods.

Figure 7. US-China tariff rates toward each other and rest of world



Source: Bown (2023)

Table 2. Growth of value added contribution to US-China sectoral trade, 2019

Sector	US Exports to China			Chinese exports to US		
	PHL	Rest of ASEAN	Rest of East Asia	PHL	Rest of ASEAN	Rest of East Asia
All sectors	1.3	-1.4	-2.6	1.1	4.6	-4.4
Agriculture, hunting, forestry, and fishing	-22.2	-25.9	-28.3	-1.8	-4.5	-5.0
Mining and quarrying	0.0	1.6	-3.5	-7.1	-9.7	-6.7
Food, beverages, and tobacco	2.6	2.4	-1.3	4.2	0.3	0.1
Textiles and textile products	2.0	4.2	-0.8	0.0	-1.1	-0.1
Leather, leather products, and footwear	2.5	6.8	0.2	9.1	5.0	1.4
Wood and products of wood and cork	0.9	1.6	-3.1	0.0	-2.3	-3.8
Pulp, paper, paper products, printing, and publishing	0.9	1.8	-2.3	0.0	-1.8	-1.5
Coke, refined petroleum, and nuclear fuel	-10.6	-10.0	-13.8	10.6	-1.6	1.2
Chemicals and chemical products	-1.1	-0.6	-3.6	1.1	-0.6	0.8
Rubber and plastics	-0.6	0.3	-2.2	0.0	0.2	1.2
Other nonmetallic minerals	-0.6	0.9	-3.5	2.9	-0.3	0.4
Basic metals and fabricated metal	-3.5	-2.3	-6.6	-4.1	-4.8	-5.4
Machinery, nec	-4.5	-2.1	-8.5	-5.1	-4.0	-3.1
Electrical and optical equipment	2.2	6.7	-4.3	-2.6	-1.0	-3.3
Transport equipment	-5.1	-2.7	-6.8	-51.5	-71.4	-85.4
Manufacturing, nec, recycling	2.6	5.3	0.7	-4.0	-5.6	-5.5
Electricity, gas, and water supply	0.0	3.2	-5.2	0.0	-12.5	-7.1
Construction	-	-	-	-	-	0.0
Sale, maintenance, and repair of motor vehicles and motorcycles, retail sale of fuel	-	-	-	-	0.0	-7.7
Wholesale trade and commission trade, except of motor vehicles and motorcycles	-	-	-	-20.0	-8.0	-8.3
Retail trade, except of motor vehicles and motorcycles, repair of household goods	-	-	-	0.0	-5.6	-6.4
Hotels and restaurants	-	-	-	0.0	-5.5	-6.3
Inland transport	0.0	1.0	-1.6	-3.2	-6.7	-4.7
Water transport				0.0	-5.0	-5.0
Air transport	2.6	2.0	1.0	4.0	-0.8	-0.5
Other supporting and auxiliary transport activities, activities of travel agencies	-	-	-	0.0	-5.9	0.0
Post and telecommunications	-	-	0.0	0.0	-3.4	-4.1
Financial intermediation	-	-	1600.0	0.0	-5.4	-5.5
Real estate activities	-	-	-	-	-	-
Renting of M&Eq and other business activities	1.4	4.0	-3.7	-0.2	-5.0	-5.7
Public administration and defense, compulsory social security	-	-	-	0.0	-3.7	-3.3

Education	-	-	-	0.0	-2.9	-3.4
Health and social work	-	-	-100.0	0.0	0.0	0.0
Other community, social, and personal services	0.0	5.2	-1.4	-2.6	-5.9	-5.4

Source: Author's application of Belotti, Borin, and Mancini (2020) using the ADB MRIOT 2018 and 2019.
Note: "Rest of ASEAN" excludes Myanmar due to lack of data. "Rest of East Asia" is comprised of Kong, Japan, South Korea, and Taiwan.

On the aggregate level, Philippine value added in US-China trade only grew marginally in 2019. This was a significant slowdown from the double digit increase recorded in the preceding year. A closer look at the sectoral breakdown shows that the tariff wars had heterogeneous effects across industries. Nevertheless, the impacts broadly reflect the types of tariffs imposed by the US and China on each other. Philippine value added in American exports to China registered nontrivial declines in primary sector and resource-based exports which are the main targets of Chinese duties. Most notably, Philippine value added in American agricultural exports to China plunged by 22.2 percent in 2019. The rest of East and Southeast Asia also endured heavy losses in the sector. Philippine value added incorporated in American petroleum and metal exports to China suffered 10.6 percent and 3.5 percent cuts in 2019, respectively. The other significantly hit sectors are machinery and transport equipment which also faced higher Chinese tariffs.

The effects of the trade disputes on Philippine value added in Chinese exports to the US are felt over a wider range of primary and high-tech manufacturing sectors, owing to the comprehensiveness of the tariff measures imposed by the US on Chinese products and to the established GVC linkages between China and the Philippines in a wide range of sectors. Philippine value added in Chinese exports of transport equipment to the US suffered the biggest plunge of 51.5 percent in 2019. However, the rest of ASEAN and East Asia experienced even bigger contractions in the sector. This may be explained by the shock of the US tariffs being propagated and magnified through the strong automotive supply chain linkages in the region. Philippine value added in China's metal exports to the US, the subject of Trump's early tariff hikes, also declined by 4.1 percent. Relatedly, Philippine value added in China's mining and quarrying exports to the US fell by 7.1 percent. Machinery and electronics, a top Philippine export item, dropped by 5.1 percent and 2.1 percent, respectively.

In services, the most heavily affected Philippine sectors are wholesale trade, inland transport, renting of machinery and equipment, and other business services that provide indirect inputs to Chinese exports to the US. This may be traced to these sectors' auxiliary role in linking domestic supply chains (e.g., logistic services, input aggregation from lower tier suppliers, and back office support) to Chinese production networks.

Four important generalizations can be drawn from the preceding discussion. First, mere bystanders are not immune to the indirect effects of tariff wars, especially when the main parties involved are big economies and/or are influential players in the bystander's own GVC network. Second, peripheral economies strongly connected to the conflicting parties are more exposed to the shocks caused by the tariff wars. In particular, Table 2 shows that the impact is expectedly more severe in East Asia than ASEAN given the former's stronger affiliation with both American, Chinese, and European production networks. Third, the less severe impact on the Philippines compared to bigger East and ASEAN economies may be traced to the country's relatively weaker linkages to Chinese and US value chains. Lastly, Philippine sectors strongly connected to Chinese and American products affected by tariff hikes expectedly suffered the most. In general, the analysis suggests that tariffs levied on imports from a specific country is also effectively imposed on the inputs used to produce those goods, some of which are sourced from third-country suppliers. This means that in the age of international production networks, tariff wars necessarily produce global ripple effects that propagate through the backward and

forward GVC linkages of the countries originally targeted by the tariff wars. The more central the GVC positions of the disputing countries, the larger will be the potential disruptions to world trade.

To generalize the above observations, I run simple logistic regressions using the following binary indicators as dependent variables:

- $Y_1 = 1$ if a particular sector j in country i's value added in Chinese exports to the US experienced negative growth in 2019;
- $Y_2 = 1$ if a particular sector j in country i's value added in American exports to China experienced negative growth in 2019; and
- $Y_3 = 1$ if a particular sector j in country i's gross exports experienced negative growth in 2019.

For Y_1, the main explanatory variable of interest is a particular value added share in China's exports to the US. Similarly, for Y_2, the main explanatory variable of interest is a particular country-sector pair's value added share in American exports to China. For Y_3, both explanatory variables are tested for their effects on the overall export performance of a particular country-sector pair. Positive and significant coefficients of these variables indicate that country-sector pairs strongly linked to US-China bilateral trade, albeit indirectly, are more likely to contract at the height of the tariff wars in 2019. To capture the spillover effects of a country-sector pair's wider GVC participation, the share of GVC-related trade in gross exports is also used as an explanatory variable. To increase the number of observations, sectoral data from East and Southeast Asia were used in the regressions. A dummy variable for East Asia is added to assess the average performance of these economies relative to ASEAN. For all explanatory variables, 2018 values are used to reduce the risk of reverse causality. The results are summarized in Table 3.

Table 3. Logistic regressions for the probability of contracting in 2019, marginal effects

	logit[P($Y_1 = 1$)]	logit[P($Y_2 = 1$)]	logit[P($Y_3 = 1$)]
VA share in Chinese exports to US in 2018 (ln)	0.08**		0.24***
	(0.21)		(0.05)
VA share in US exports to China in 2018 (ln)		0.13***	0.07
		(0.03)	(0.07)
GVC-related trade/gross exports in 2018 (ln)	0.10	0.27***	-0.17*
	(0.58)	(0.08)	(0.09)
East Asia	0.18***	-0.09	0.19**
	(0.35)	(0.06)	(0.08)
Sector controls	Yes	Yes	Yes
n	252	203	256
Wald's χ^2	71.75***	64.29***	65.83***
Pseudo R-squared	0.28	0.43	0.27
χ^2 for goodness-of-fit test	229.34	190.66	261.71

*p < 0.10, **p < 0.05, ***p < 0.001

Source: Author's estimates based on data derived from ADB MRIOT.

Note: Y_1 (Y_2) is a binary indicator equal to 1 if a particular country-sector pair's value added in Chinese (US) exports to US (China) contracted in 2019. Y_3 is a binary indicator equal to 1 if a particular country-sector pair's gross exports contracted in 2019. The economies included in the regressions are all ASEAN members (excluding Myanmar), Hong Kong, Japan, South Korea, and Taiwan. Figures in parentheses are robust standard errors.

The regression results confirm that particular country-sector pairs with broader exposure to the trade conflict are more likely to experience negative growth in their value added contribution to US-China bilateral trade in 2019. Country-sector pairs with high contribution to US-China GVC trade were more likely to experience negative growth in both value added to Chinese exports to the US and US exports

to China. Further, column 3 shows that the trade disputes negatively affected not only the GVC transactions directly related to China-US bilateral trade but also the overall export performance of country-sector pairs in 2019. In particular, country-sector pairs with higher value added share in Chinese exports to the US were more likely to experience negative growth in gross exports in 2019. However, no similar effect was observed for the value added shares in US exports to China. This may be partly traced to the stronger affiliation (i.e., geographic and economic proximity) of East Asia and ASEAN economies with Chinese production networks than with the US. In addition, this may also be explained by the broader coverage of US tariff measures imposed on China and other East and Southeast Asian countries than vice versa.

Overall GVC participation rate has varying effects across models. In particular, country-sector pairs with higher GVC participation rates were more likely to experience negative growth in value added contribution to American exports to China in 2019. This means that wider exposure to GVCs exacerbated the growth performance of value added incorporated in American exports to China. There is no similar effect observed for the value added shares in Chinese exports to the US. These divergent results may be partly explained by the "GVC distance" of a particular country-sector pair from American and Chinese supply chains. Regional inputs reach China through shorter and more direct trade channels. In contrast, the value added contribution of East Asian and ASEAN producers most likely enter US production through a longer and more complex web of supply chain linkages that extend beyond the region. This also indicates that the sectors' GVC linkages outside the region may be ultimately linked to the US market. Therefore, despite the reduced dependence of East Asia and ASEAN on the US as a direct destination of exports, the preceding results show that trade shocks originating from the US can generate considerable spillovers that can be propagated in the region through GVC linkages. Nevertheless, the third column shows the value of diversification as overall GVC participation rate helped buoy the growth of gross exports despite the US-China trade conflict. This supports the argument that wider GVC participation may serve as a risk-spreading strategy in the face of external shocks that hit certain sectors or markets only.

Finally, the marginal effects of the East Asia dummy are positive and statistically significant in the first and third models. This partially supports the earlier observation that East Asian economies are hit harder by the tariff wars compared to ASEAN. This result is also consistent with Figure 6 which shows that South Korea, Japan, and Taiwan have the largest exposure to disruptions in US-China bilateral trade. [8]

4. Discussion

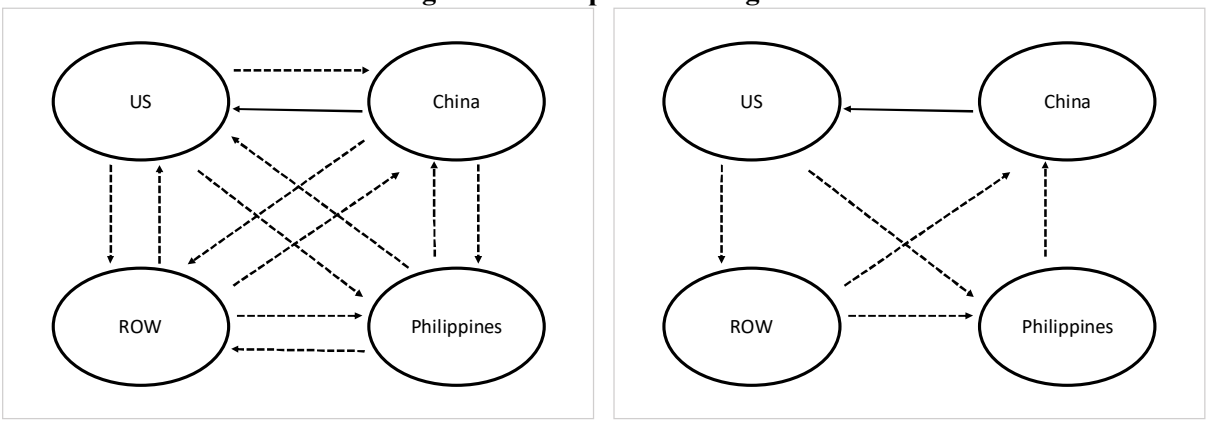
The results presented in the preceding section are consistent with what many studies have warned us about: there are no clear winners in trade wars, especially in the age of globalization. The basic flaw of traditional protectionism is that it remains narrowly focused on shielding domestic sectors from foreign competition while local producers themselves have long explored foreign resources to their advantage. Therefore, hurting industries abroad can be counterproductive when local firms are heavily dependent on foreign suppliers. Protectionism in the age of GVCs is bad policy. They distort the efficient flow of goods and services within production networks which can result in supply disruptions and shortages in inputs and final goods. As Bellora and Fontagné (2019) put it, engaging in trade wars in the age of GVCs is like "shooting oneself in the foot." Tariff hikes may impair the target foreign sectors but it may also backfire and cripple the domestic industries that the tariffs wanted to protect. A number of studies have already shown that this is indeed the case. Tariff wars cause trade disruptions that are propagated throughout entire global production networks. GVCs amplify these distortions while the deleterious effects often go beyond the intended targets. For example, Mao and Görg (2020) found that not only did US tariffs on Chinese imports backfire on American producers, they also increased the

[8] Cali (2018) also found that Taiwan's GDP was the most severely hit in East and Southeast Asia.

cumulative tariff faced by third countries importing American products, particularly close trading partners such as the EU, Canada, and Mexico.

To illustrate this point, the left panel of Figure 8 shows a simple representation of the web of supply linkages in GVCs. Suppose that the US directly exports intermediate goods to China while China exports final goods to the US. However, many of these products were made using inputs from different parts of the world. For instance, American exports may have been produced using inputs directly imported from China and the Philippines while other materials were sourced from the rest of the world. However, these direct imports may contain inputs from other countries as well. For example, American imports from China may have used inputs from the Philippines and the rest of the world. It may even contain inputs that China previously imported from the US itself. This complex flow of intermediate goods across borders creates a perfect channel through which systemic shocks spread and magnify through GVCs. Therefore, disruptions caused by natural disasters, pandemics, and tariff wars can generate spillovers even to countries and sectors that are not directly involved. Take the US-China trade tensions for example. The right panel of Figure 8 illustrates the value chain of a particular Chinese export to the US. It contains direct inputs from the Philippines and the rest of the world. However, these inputs have contents indirectly imported from the US. Therefore, a decision by the US to impose tariffs on this "Chinese product" can produce ripple effects through China's production linkages with its suppliers. While China is the only *de jure* target of tariff hikes, its foreign suppliers (and their suppliers and their suppliers' suppliers) will also be indirectly affected depending on how strong their GVC linkages are. Not surprisingly, US tariffs on Chinese exports may hurt domestic American firms that are directly and indirectly contributing value added to Chinese products.[9] Competitiveness may also deteriorate in local industries that rely heavily on the taxed imported inputs (Bellora and Fontagné 2019). Ultimately, consumers may suffer from welfare losses due to lower income and higher prices (Amiti, Redding, and Weinstein 2019).[10] In addition, tariffs also narrow the options of domestically available products. This proves that trade restrictions are counterproductive since the tides of globalization will somehow lead the repercussions back home.

Figure 8. A simple GVC diagram



Source: Author's illustration.
Note: Broken and solid black arrows indicate cross-border flows of intermediate inputs and final goods, respectively.

[9] For instance, shortly after China imposed agricultural tariffs in 2018, Trump announced a US$12 billion subsidy for US farmers inadvertently hit by the trade wars.
[10] Amiti, Redding, and Weinstein (2019) found that the incidence of US tariffs on Chinese products was fully absorbed by American consumers. Clausing and Lovely (2025) estimated that Trump's first wave of 2025 tariffs (imposed on imports from Canada, Mexico, and China) would cost the median US household more than $1,200 per year.

While the escalated tariff wars between China and the US is a major blow to multilateralism, no less than the two countries themselves demonstrated that costly trade tensions can be avoided through greater engagement in bilateral and multilateral negotiations. For instance, China's additional tariff imposed on US sorghum exports in April 2018 was quickly reversed in May 2018 after the speedy dispute resolution. Similarly, additional tariff measures originally planned by the Trump administration towards the end of 2019 were called off in order to give way to "Phase One" negotiations with China. During the entire run of the trade wars from 2018-2019, there have been many disputes filed at the WTO, not only by China and the US, but also by other affected parties such as the EU, South Korea, Mexico, and Thailand.[13] This suggests that rules-based multilateral mechanisms still play a relevant role, especially for smaller economies that can't directly retaliate. This is an important reminder for the Philippines and the rest of small trade players in ASEAN to heighten regional efforts to advocate reform in multilateral trade rules —one that is adaptive to the evolving GVC-dominated world trade order. The ongoing trade tensions also show that the region's central position in Factory Asia makes it susceptible to distortionary shocks generated by events that it is not directly involved in. Bagwell, Staiger, and Yurukoglu (2018) found that developing and emerging economies are among the biggest losers from the abandonment of the rules-based system. Therefore, it is in the region's best interest to push for multilateral trading rules that recognize trade in value added, production sharing, and GVC spillovers as new realities in the current global environment. Wu (2019) suggests that a good first step would be to update the nearly 20-year old WTO rule book which was written before the phenomenal rise of China and GVCs as important features of 21st century trade. Restoring the stability of the global trade policy is necessary to renew confidence in the world trading system and reduce the lingering costs of uncertainty created by the trade wars. A credible policy regime is important since it preserves a predictable trading environment on which current transactions and future investments are anchored. Threats to this stability such as trade wars weaken the safeguard provided by the rules-based trading system (Handley and Limão 2019).

Strengthening further the intra-regional trade and economic cooperation in ASEAN and East Asia is relevant more than ever. Given that economies in the region are interlinked by overlapping production networks and therefore exposed to common global shocks, there is a strong incentive to consolidate efforts and act collectively as a major stakeholder in global policy setting. This is particularly strategic in a scenario suggested by Mattoo and Staiger (2019) where trade negotiations with hegemons is inevitable in a world order dominated by power-based tariff bargaining instead of a rules-based regime built on the pillars of most favored nation and reciprocity. In this case, cooperation among member economies is important to boost collective bargaining power and prevent unilateral participation in welfare-reducing deals. Against this background, the region should pursue more joint investments in physical, institutional, financial, and technological infrastructures to even out large disparities in the capabilities and competitiveness across countries. Stronger policy support is also needed to improve trade facilitation, market access, and market matching in the region to soften the adverse effects of supply chain disruptions. In the long run, this may forge stronger regional coordination that is founded on shared gains and consolidated efforts in the face of common shocks. However, as in most multilateral arrangements, enforcing credible commitments is a tough challenge.[14]

Blanchard (2019) argues that since the organization of GVCs is determined by efficiency and market-seeking motives, distortions such as trade wars may induce multinational corporations to restructure their supply chains. In the short run, firms may simply redirect their orders towards suppliers not affected by the tariffs (Abiad et al. 2018). In the long run, firms may establish new production bases in

[13] In the 2025 episode of the tariff wars, Canada and Mexico agreed to postpone by 30 days the imposition of tariffs on American products after agreeing to have negotiations with the US (Rappeport, Stevis-Gridneff, and Mega 2025).

[14] ASEAN's economic and political heterogeneity also poses a major challenge in reaching a unified regional strategy. For instance, Abrenica, Guzman, and Sabarillo (2024) argue that some economies have an incentive to align with one of the two disputing countries (i.e., China or the US).

"more stable" locations as a risk-spreading strategy. Others may opt to shorten their supply chains by reshoring (i.e., repatriating outsourced production stages) and nearshoring (i.e., moving outsourced production stages to offshore locations closer to home). Another recent option is friend-shoring or ally-shoring where a country offshores only to locations with low geopolitical and economical risks. Several reports have documented actual or planned relocation of firms from China to other sites such as ASEAN, India, and Mexico due to the added layers of tariff and transaction costs created by the trade wars. For instance, the Japan External Trade Organization's 2019 Survey on the International Operations of Japanese Firms documented 110 Japanese multinationals that have transferred or plan to transfer their production bases in China due to the difficulties caused by the tariff wars (JETRO 2020). The ASEAN Investment Report 2019 also documented an increase in the manufacturing foreign direct investments in ASEAN partly due to the gradual shift of production capacity from China, triggered by structural factors (e.g. rising labor costs in China) and exacerbated by the tariff wars. This trend further accelerated when East Asian production hubs were hit by supply chain disruptions caused by COVID-19. However, while Southeast Asia is often eyed as a target site of investments and manufacturing activities redirected from China, many of these relocations prioritize Singapore, Vietnam, and Thailand as new hosts. The Philippines, on the other hand, is rarely cited. This can be traced to the latter's eroding regional competitiveness, especially as a host of sophisticated manufacturing processes (Mendoza 2021b).

Amid these ongoing movements in GVCs, the main challenge for economies in ASEAN and East Asia, particularly the Philippines, is how to maximize the benefits or at least avoid significant losses caused by the changing structure of production networks in the region. For instance, the IMF (2020) noted that despite the close trade ties with both China and the US, the Philippines has not really benefitted from the trade diversion stirred by the tariff wars. This is in contrast to the positive gains experienced by Vietnam and Mexico. Mendoza (2021b) remarked that the Philippines is not the most prepared in Southeast Asia to reap the benefits of the ongoing GVC shakeup in the region. One reason is that the business environment in the country remains difficult due to restrictive policies that hamper market access and competition (IMF 2020). Relative to its regional peers, producing in the country is costly due to more expensive labor and electricity. Transaction costs in the Philippines are also higher, as indicated by the country's lagging performance in logistics, broadband infrastructure, internet speed, and ease of doing business (Mendoza 2021b). Institutional deficiencies and regulatory failures also add to the high cost of doing business by keeping important infrastructures inefficient and underprovided.

The relatively weak GVC position of the Philippines provides an even stronger incentive for the country to forge stronger trade and cooperation with its neighbors. While the Philippines is not expected to reap big short-run gains from the GVC shakeup in Factory Asia, the Philippines may still benefit from the expansion and relocation of some manufacturing hubs to ASEAN. This is possible through the indirect spillovers generated by the strong economic linkages that bind the region. For instance, Mendoza (2021b) found that the Philippines will benefit more if production activities are transferred from China to other ASEAN instead of alternative destinations such as India. This suggests that as a short-run strategy, the Philippines should explore all existing regional linkages such as the trade agreements with key partners (e.g., ASEAN, China, Japan, South Korea, Australia-New Zealand, India) in order to maximize its benefits from the ongoing GVC restructuring in the region. New opportunities such as the Regional Comprehensive Economic Partnership and China's Belt and Road Initiative should also be explored.

5. Concluding Remarks

As new waves of tariff wars unfold in 2025 and beyond, several generalizations and lessons from the pre-pandemic trade tensions may help guide how bystander economies such as the Philippines should navigate turbulent GVCs. The fresh tariff hikes can be expected to have a negative impact on Philippine

exports to the US, China, and ASEAN, unless additional efforts are exerted by the country to capture some gains from the rerouting of trade and investment traffic due to the tariff wars.

The US-China trade tensions in 2018 to 2019 have uncovered three important sources of volatility in the age of GVCs. First, tariff wars between global economic giants can generate negative spillovers that may hurt not only the parties directly involved but also peripheral economies that maintain strong trade linkages with the disputing countries. Due to the intricate web of intermediate transactions in global production networks, distortionary tariffs have the potential to wreak havoc on the efficient flow of goods and services within GVCs. The end results can be catastrophic: supply chain disruptions, higher input and consumer prices, and costly adjustments in investments and productivity. Second, the disregard of the rules-based trading system in favor of power-based tariff negotiations highlights the inadequacies of the current platform in the age of GVCs. Nevertheless, abandoning the rules-based regime completely can be more devastating especially for smaller economies with weak bargaining power. Third, GVCs are highly sensitive to policy incoherence and geopolitical tensions.

Restoring the stability of world trade will be a daunting task, especially with recurring trade wars and geopolitical tensions that disrupt global supply chains. Towards this end, the Philippines and the rest of ASEAN can contribute in three important ways. First, the region should refrain from imposing additional tariff and non-tariff distortions that could exacerbate the adverse shocks generated by the US-China trade tensions. Given its key position in global production networks, additional disruptions within the region will add to the uncertainty currently obstructing GVC operations. The region should instead demonstrate to the global community that the unhampered functioning of global production networks greatly depends on trade facilitation and policy coordination. Second, the region should act collectively to advocate accelerated reforms in the rules-based trading system—one that is adaptive to the evolving global landscape. For example, the increasing importance of trade in services, e-commerce, and production sharing should figure more prominently in future WTO agreements. The rules should also have the flexibility to adjust to technologies that open new trading platforms. Third, the region should take advantage of friend-shoring by doubling its upgrading effort in order to provide an attractive option to multinationals looking to diversify their production base in East Asia. However, achieving this role rests on the region's ability to build GVCs that take advantage of Southeast Asia's economic diversity, and to preserve regional coherence and stability.

What does the ongoing GVC shakeup mean for the Philippines? The country seems to have missed the immediate gains from the reorganization of GVCs that was triggered by the US-China trade wars in 2018-2019 and accelerated by the COVID-19 crisis in 2020. This indicates a lot of unexplored opportunities for the Philippines, especially taking into consideration Cali's (2018) finding that Vietnam and the Philippines have the highest potential among Southeast Asian countries to replace Chinese exports to the US. Underlying the lagging position of the Philippines are the fundamental weaknesses that continue to limit broader participation in GVCs, both in terms of products and trading partners. The narrow focus on low-value adding segments such as assembly and testing may be largely traced to the country's weak capabilities to expand the domestic production base. Limited investments in technology and innovation reinforces the status quo where local manufacturers have very little space for upgrading to more complex activities. Against this background, domestic manufacturing should strive for long-run sophistication by building stronger technological capabilities and nurturing an innovative culture. However, this requires stronger government support. As Abrenica and Sabarillo (2024) argued, responding to the US-China policies may produce welfare gains, while inaction results in welfare losses. In general, the country should adopt a more holistic industrial strategy aimed at building stronger domestic production base, efficient networking of domestic and foreign suppliers, and strategic linking of agriculture, manufacturing, and services. Policies should also prioritize domestic and foreign investments with strong impacts on the country's long-run success in GVCs. An added challenge for the Philippines is that it is trying to catch up within a very dynamic environment. It is important that domestic strategies be anchored on the regional context that is itself evolving very fast. ■

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