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**South-South Integration and the SDGs:
Enhancing Structural Transformation in Key Partner
Countries of the Belt and Road Initiative**

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Indonesian Global Value Chain Policy: Learning From China's Experiences

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Abstract

Indonesia's participation in the global value chain has mostly declined in the last ten years. As China is currently the world's GVC centre, Indonesia sees this as an opportunity to learn more from the country. Many aspects of the Chinese government policies pay attention to GVC, and this is the best lesson for Indonesia. Since the 1980s, China has had several fundamental elements in the development of its GVC, ranging from utilizing free trade and deregulating FDI policies, as well as strengthening supporting infrastructures with adequate institutional government support. China policy includes operating free trade areas and building core competitiveness in technological and commercial capabilities. The evolution also supports this through the development of partnerships between domestic and global companies, including cooperation with export oriented MSMEs and the broader market. Another aspect of this law is strengthening its R&D while still prioritizing technology transfer from global companies to domestic companies. The evolution is supported by local workers and employers, following the requirements of the future industry demands. Since it becomes necessary to create policies with varying characteristics that support the development of GVC Indonesia, strengthening regulations for FDI as well as reducing its various obstacles becomes essential. Of high importance is the provision of financial support and tax incentives for business actors as well as the need to form partnerships between foreign investors and domestic business actors—especially MSMEs—through FDI. Another form of support is through improving the international quality and standards with the support of human resources, especially in the field of technology. Thus, private R&D centres with enough support in the form of incentives and the obligation to provide infrastructure become pre-investment requirements. For this reason, the consolidation of various GVC policies in government policies requires the commitment from business actors, the central government, and local governments, including academics.

Key words: Indonesia, China, GVCs, Transformation and FDI

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Introduction

China is one of the world's Global Value Chain (GVC) centres today. As the world's assembly hub, China's exporters integrated with GVC. Aside from comparative advantages, the rapid growth and expansion of China's worldwide exports are closely associated with GVC (Xing, 2015). Moreover, as China has become the manufacturing centre of many global business operations, any disruption to China's output is expected to bring an impact to somewhere along its regional and global value chains (UNCTAD, 2020). Consequently, with the supporting factors, since 2013, China has surpassed the United States to become the world's largest trading nation (Peng & Zhang, 2020). Also, during this pandemic, China is one of the countries that is recovering quickly while other countries are also recovering their economy.

Since Indonesia's growing trade with China in the last ten years, it has become an inseparable part of China's GVC. In 2019, China was the leading destination country for Indonesia's non-oil and gas exports, with a contribution of 16.61%. Imports also have the most considerable contribution, namely 29.86%. The total trade between Indonesia and China is worth US \$ 72.8 billion, where Indonesia is still in a deficit of US \$ 16.98 billion (Ministry of Trade, 2020). The deficit will increase, considering that Indonesia has many weaknesses in its exports in relations with its product competitiveness, the decline in the domestic industry and continual decline of import tariffs. High levels of imports of raw and auxiliary materials retained for the benefit of domestic industries.

One solution to the situation above is for Indonesia to improve its GVC. Not only in terms of its participation, but other various supporting factors have to be considered, from its integration in the world trade to the upgrading its export-oriented companies. The improvements that Indonesia's products produced can be utilized by many countries. Opportunities for product diversification are growing, both in terms of forwarding linkage and backward linkage. Indonesia can also target intermediate products and focus on being a part of production where they already have a comparative advantage so that they can create high value-added products, new technology and knowledge, although only in a few components (Low and Tijaja, 2013).

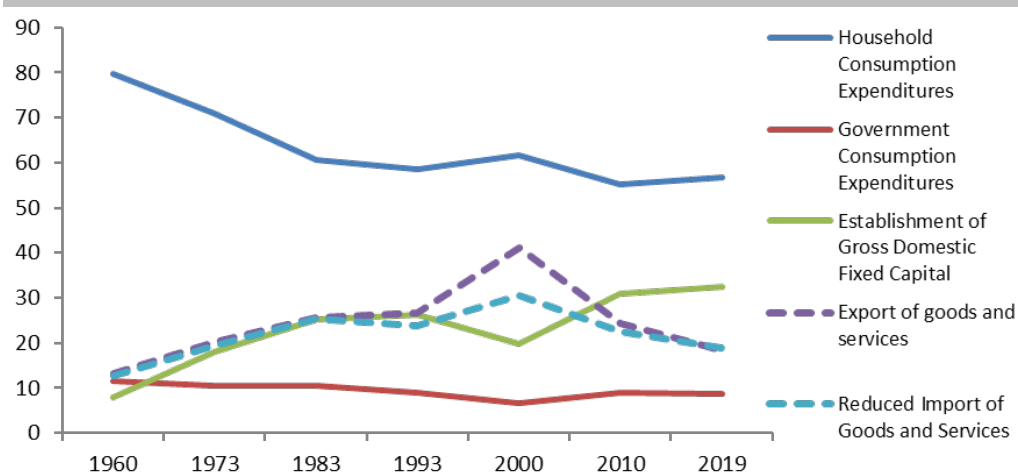
Learning from China is one way for Indonesia to improve its GVC. Not only because China is Indonesia's leading trading partner, but the interest in improving Indonesia's economy in the long term is the most crucial part. There exists a consensus in the literature that the involvement of a country in the GVC is crucial in bringing economic growth, employment, poverty reduction, and increased productivity. Participation in the GVC provides local enterprises with better access to information, open new markets, and create opportunities for rapid technology learnings and skills acquisition (World Bank, 2020, Ignatenko, et al., 2019). Countries can also benefit from participation in the GVC through various channels, such as productivity spill over sourced from intermediary trade, learning through interacting, accessing new markets, and enhancing positions in higher value-added activities (Yanikkaya and Altun, 2020).

This paper aims to discover the policies that underlie the development of GVC in Indonesia and their challenges. What initiative China has taken as one of the world's GVC centres as well as lessons that Indonesia can take for the future development of its GVCs. The GVC policy is also inseparable from the trade facilitation policy, considering that the two of them are bound to one another. Accordingly, this paper also examines several trade policies where their various factors are closely related to increasing Indonesia's participation in the GVC.

1. Indonesia Trade Policy and Facilitation

Trade, particularly exports and imports, is one of the crucial components in the Indonesian economy, especially since the 1960s until now. Although consumption is still the largest contributor to the economy (see Figure 1), the role of exports and imports has been growing since the beginning of the industrialization in the 1970s until the economic recovery period in 1997/1998 and 2000 where the role of exports was 40, 98 per cent fewer imports that were 30.46 per cent. However, the role of export and import eventually experienced a deep decline until 2019 where the role of exports in the GDP was only 18.41 per cent fewer imports that were at 18,9 per cent (BPS, 2020). The decline in the contribution of exports in recent years by the decline in prices of several primary commodities of Indonesia, such as coal, CPO, and crude oil.

Figure 1: Distribution of GDP at current prices according to expenditure 1960-2019 (Percent)



Source: BPS (2020)

Indonesia's trade policy started from its independence in 1945 to 1966, which was filled with the spirit of nationalism with an inward-looking, anti-foreign policy so that its trade policy was closer to autarky. In the following period, which was from 1967 to 1974, changes towards a more outward-looking policy through seeking foreign sources of financing and overseas export markets. During this period, barriers to foreign direct investment (FDI) and exports and imports. This trade policy continued in the next period from 1974 to 1985 by strengthening infant industries by protecting the domestic industry from domestic foreign-owned industries. Meanwhile, in the 1986-1992 period, the government launched several policies to encourage foreign investment and increase exports through export promotion policies. This policy is by market-oriented policies such as deregulation, debureaucratization, privatization and trade liberalization (Panennungi. 2018). To date, trade liberalization has increased since Indonesia joined the ASEAN Free Trade Agreement (AFTA) in 1992 and the WTO in 1994/1995. Furthermore, the 2004-2014 period marked the beginning of an era of non-tariff measures that developed to anticipate tariff reduction with the expansion of AFTA in China, Korea, Japan, and several other countries as well as the development of the Preferential Trade Agreement (PTA) / Free Trade Agreement (FTA) / Comprehensive Economic Partnership Agreement (CEPA). In the next 2015-2019 period, the export promotion policy with an economic policy package consisting of FDI liberalization, the implementation of the National Single Windows to automate export and import licenses

in more than 21 ports/airports, mainstreaming non-tariff measures, and expanding bilateral and regional trade cooperation.

In the 2020-2024 period, the government has two central policies to secure exports to developing more. First, developing and securing export destination markets through a strategy of securing an export share in main markets (a redefinition of traditional markets), increasing diversification of export products, and expanding export destinations to prospective markets (a redefinition of non-traditional markets). Second, increasing negotiations and the use of international trade cooperation agreements. The strategy applied is to increase trade agreements with trading partner countries; and increasing the effectiveness of the Preferential Trade Agreement (PTA) / Free Trade Agreement (FTA) / Comprehensive Economic Partnership Agreement (CEPA) (Ministry of Trade, 2020).

The first policy above is targeted at 20 traditional market countries, such as China, America, Japan, and Saudi Arabia, while the target of 20 non-traditional countries includes Britain, France, Canada, and Myanmar. The challenge is that the diversification of Indonesian products in exports has remained stagnant, or even has the tendency to decline. The percentage of high-tech export, such as aerospace products, computers, pharmaceuticals, scientific instruments, and electric machines declined from 12.03% of total manufacturing exports in 2010 to 8.01 per cent in 2018. At the same time in 2018, Vietnam has reached 40.15%, China reached 31.4%, Malaysia reached 52%, and Thailand reached 23% (World Bank, 2020). In other words, Indonesia still relies on its exports of natural resources, namely coal, palm oil, base metals, and natural gas (BPS, 2020).

In the second policy, which is increasing the effectiveness of trade agreements, until 2019, Indonesia has had at least 14 PTA / FTA / CEPA agreements with Japan, Pakistan, Chile, EFTA, Australia, and Mozambique as well as agreements within the ASEAN scope with ASEAN itself, Japan, India, Australia, and New Zealand (AANZ), China, and Hong Kong (Ministry of Trade, 2020). The fundamental purpose of this agreement is to increase market access by reducing tariffs and to find solutions to trade barriers between these countries.

However, only 9 out of those agreements—which include agreements with Japan, Pakistan, Chile, as well as within the ASEAN scope including, ATIGA, ASEAN-India, ASEAN-Japan, ASEAN-Korea, ASEAN-China, and ASEAN Australia-New Zealand (AANZ)—has been optimized. The underutilization of the agreement is due to a lack of information and knowledge received by exporters about the trade agreement facility (Ministry of Trade, 2020). For example, the exporters cannot quickly fulfil the Certificate of Origin (COO) requirements in a short period. Not to mention, the socialization carried out by the government on the various facilities provided by the trade agreement is relatively limited.

Another challenge in trade facilitation is the balance to open tariff posts which may still be closed by many countries. One case, for instance, was in 2015: Indonesia opened almost 92% in goods and received 94% of the total tariff posts of China. Based on Indonesia's commitment to ACFTA, China still closed 28 downstream products in the ten-digit HS in the ACFTA agreement. China has not opened its downstream sector, while Indonesia has. The situation is not much different in Indonesia's commitment to AKFTA, where Indonesia has opened almost 92% of goods and obtained 90% from South Korea (Ministry of Trade, 2015). Hampers Indonesia's participation in the integration of existing value chains in China and Korea.

Trade facilitation also requires adequate infrastructure, particularly international ports. Currently, the government is improving the quality and capacity of seven international ports, namely Belawan / Kuala Tanjung (North Sumatra Province), Tanjung Priok (DKI Jakarta Province), Kijing (West Kalimantan Province), Tanjung Perak (East Java Province), Makassar (South Sulawesi Province), Bitung (North Sulawesi Province), and Sorong (West Papua Province). This infrastructure improvement efforts include increasing the depth of the port, the length of the pier, and the performance of loading and unloading. The construction of this international port to anticipate the saturation level of the port of Tanjung Priok (DKI Jakarta Province), which currently serves 60% of the export and import loading and unloading activities in Indonesia.

The challenges faced in international port infrastructure, apart from the issue of budget availability, is the issue of the effectiveness of ports, where the support for economic activities is minimal. The challenge is that the gap in cargo availability between the western and eastern regions of Indonesia is still high. In eastern Indonesia, the Port of Bitung (North Sulawesi Province) supported by the fishing industry and the copra processing industry, in which the volume is still minuscule. A similar situation exists in the Port of Sorong (Papua Barat Province), where the nickel processing industry, palm oil processing, forest products and plantations are involved. The implication is that these ports bring more products from other regions or countries, rather than bringing products from local regions. The relatively small volume as a result of low economic activity will result in inefficiency in the management of international ports.

To accelerate the trade facilitation process, Indonesia has also developed the Indonesia National Single Window (INSW) institution which began in 2018 and has been in preparation for a long time, namely since 2007. The policies implemented by this institution include: (i) providing the function of independence to INSW to be able to develop an electronic system of services and control of export-import, customs, and ports throughout Indonesia; (ii) supervise export-import activities deemed to have the potential to become illegal trading; (iii) build single risk management for the smooth flow of goods and reduce dwelling time, and (iv) as the competent authority in the integration of the ASEAN Single Window and safeguarding the implementation of the FTA. This policy aims to strengthen the authority of INSW to support logistical efficiency and the smoothness of export and import (Ministry of Economic Affairs, 2017). Indonesia's logistics costs are relatively high in the Asian region at 24.6% in 2014 while Vietnam's logistics costs reach 20% of GDP, Thailand 15% of GDP, and China at 14% of GDP. Meanwhile, logistics costs in Malaysia, the Philippines and India account for 13% of GDP, Taiwan and South Korea are 9% of GDP, while Singapore and Japan are 8% of GDP (Frost and Sullivan in Kata Data, 2019).

However, the challenges faced also include non-technical control factors, for example, the existence of regulations that limit the use of data between agencies, or regulations that only facilitate document-based manual processing procedures without electronic processing procedures (Singgihnugroho, 2020). In its implementation in the field, there also exist technical obstacles, especially at the International Airport as the largest cargo airport in Indonesia. The number and capacity of its officers are still lacking in carrying out the operation of the NSW Airportnet, including controlling the input of data and adjusting incoming data from the warehouse, maintaining, and upgrading information systems and dual employment status. There is no SOP (Standard Operational Procedure) and SMP (Standard Maintenance Procedure) for the maintenance of the airport system. Consequently, the facilities and equipment in the NSW office are not functioning. The increasingly advanced development of technology is not in line with

the capabilities of existing equipment/computers, interconnection, and equipment at the NSW Airportnet office and warehouse (Yuliana and Setyodi, 2019).

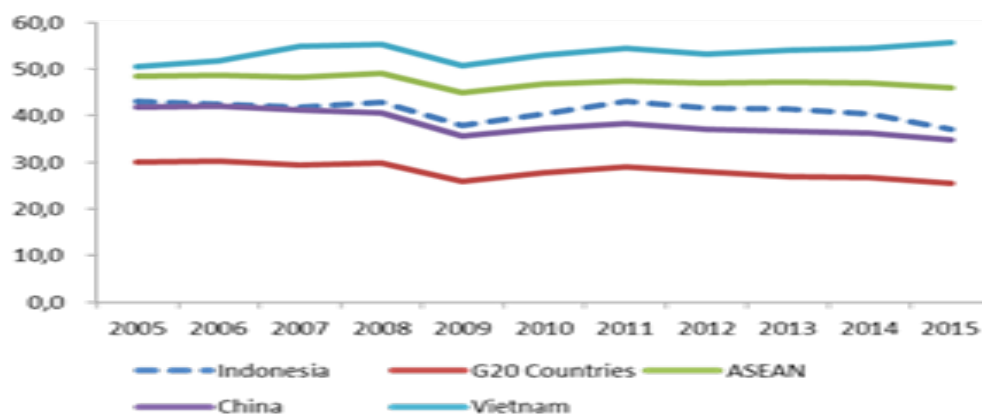
2. Indonesia GVC and Challenges

The policy regarding GVC has started since the entry of FDI into Indonesia since the 1970s, mainly from Japan. Various industries were being developed at that time, such as the electronic industry to fulfil household needs, for example, radio, television, and other communication equipment. The automotive industry is also growing, especially cars and motorbikes, and even aeroplanes. In its development, FDI has also advanced since Indonesia opened the Batam Free Trade Zone in the 1980s as a production base for various industrial products in which the prominent investors came from Singapore. This area as a spill over for investment into Singapore by building a manufacturing centre in Batam. From its development to date, FDI has spread to almost all of Indonesia, although the nation's manufacturing activity in Java Island compared to other regions in Indonesia.

GVC, as a particular approach, is formally legally contained in the strategic plan document of the Ministry of Trade 2015-2019 (Ministry of Trade, 2015). GVC as part of a strategy in increasing export market share in prospective markets (market creation) which can encourage the technology transfer process through partnerships with local business actors and increase the competitiveness of national products. However, this policy is no longer a priority in the 2020-2024 period even though in the national development planning document, the meaning has shifted to a global production chain by strengthening the industrial structure by improving the investment climate and trade openness (Ministry of Industry, 2020). Policy inconsistencies should be a concern considering that the global value chain is still essential in various world agencies, including the world bank, the WTO, and other institutions.

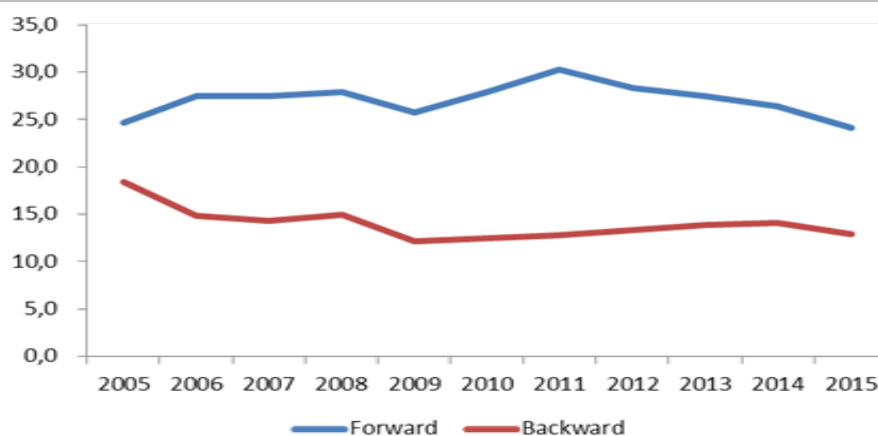
This attention is also crucial, given that Indonesia's participation in global value chains is decreasing. OECD data (2020) shows that Indonesia's participation index in 2005 was 43.0, but in 2015 it was 37.1. Other cases in the ASEAN region where there is a higher GVC development at 45.9, then developing countries at 41.4 and developed countries at 41.4. The decline in GVC in Indonesia generally occurs in the backward linkage compared to the GVC forward linkage. The role of foreign inputs in each of Indonesia's export products is decreasing. Participation decline will have an impact on Indonesia's exports in world trade demand, especially when Indonesia's trading partner countries experience an increase in demand.

Figure 2: GVC Participation (Forward + Backward)



Source: OECD Tiva Database (2020)

Figure 3: GVC Indonesia – Forward and Backward



Source: OECD Tiva Database (2020)

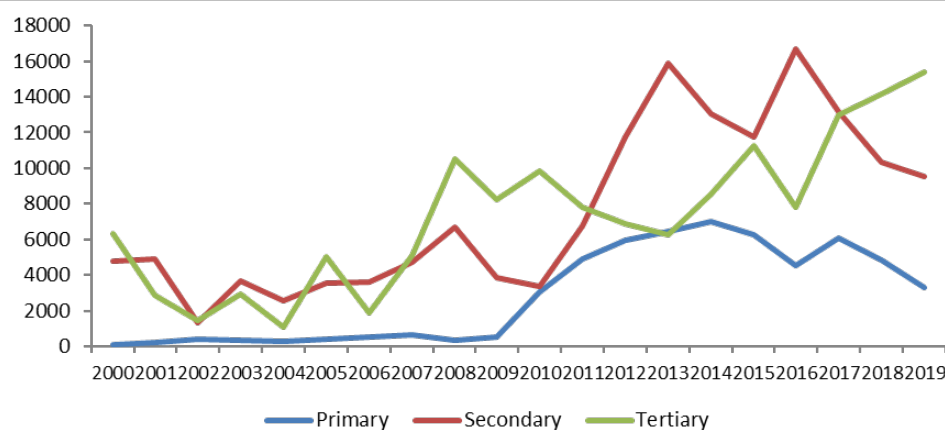
One reason is that Indonesia's involvement in the global value chain is generally still dominated by low technology industries for industrial raw materials (Ahmad et al., 2018). Industries in this group are labour-intensive industries, and their raw materials come from natural resources from Indonesia. This industry has a comparative advantage as a supplier of raw materials, such as mineral products, chemicals and allied industries, plastics/rubbers, wood and wood products, metal (Ministry of Trade, 2015). On the other hand, imports in the form of auxiliary materials from medium-low and medium-high technology industries are higher than their export value. Indicates that the need for imports is to produce final goods and tends to be mostly used to meet domestic needs, such as machinery, chemicals, metals, radio and television, electronics, and vehicles. The implication is that the drive to reach a higher value chain is difficult to obtain, given that it is more dominant for domestic interests than for exports.

The above situation has occurred since the 1970s and continues to date, where natural resource-based exports still dominate the national economy (Resosudarmo, 2005). The primary commodities in which it relies on are gas, coal, copper and other minerals, palm oil, rubber, and other horticultural commodities. For example, for mining commodities, the domestic value-added (DVA) content of its exports is 86% (2009)—well above the OECD average and the fifth highest in the G-20. With a high average DVA, Indonesia's trade-in dominant value added is also marked by exports of natural resources and raw materials used by small foreign value added (FVA) in their exports (Arvani and Winanti, 2004). Indonesia's type of participation in the GVC is commodity-based even though

in the 1990-2015 period, it transformed into a limited type of manufacturing (World Bank, 2019).

Participation of the GVC with the low FDI in Indonesia compared to other countries, such as China, Vietnam, and the world. In the 2005-2019 period, the average FDI inflows to Indonesia was 2% of GDP. Meanwhile, China has 2.9% of GDP, Vietnam is 6.1% of GDP, the Lao PDR is 5.7% and the world average of 3% (World Bank, 2020). This FDI tends to require raw materials from abroad with better quality in order in the international market (Naully et al., 2020). This raw material has been the highest point for Indonesia's GVC. Because of this, the government has for more than two decades issued export promotion policies through domestic foreign investment. However, the realization of Indonesia's FDI in the last several years has pivoted towards the tertiary sector (electricity, gas and water, construction, trade and repair, hotels and restaurants, transportation, warehouse and telecommunications, housing, industrial estates and offices) rather than the secondary sector (Food, textile industry, leather goods and footwear industry, wood industry, paper and printing industry, chemical and pharmaceutical industry, rubber and plastics industry, non-metal mineral industry, primary metal industry, metal goods, non-machines and their equipment, machinery industry, electronics, medical instruments, electrical equipment, precision, optics and clocks as well as the motor vehicle and other transportation equipment), as seen in Figure 4. The secondary sector, which is dominated by industry, has a higher forward and backward linkage compared to the primary and tertiary sectors.

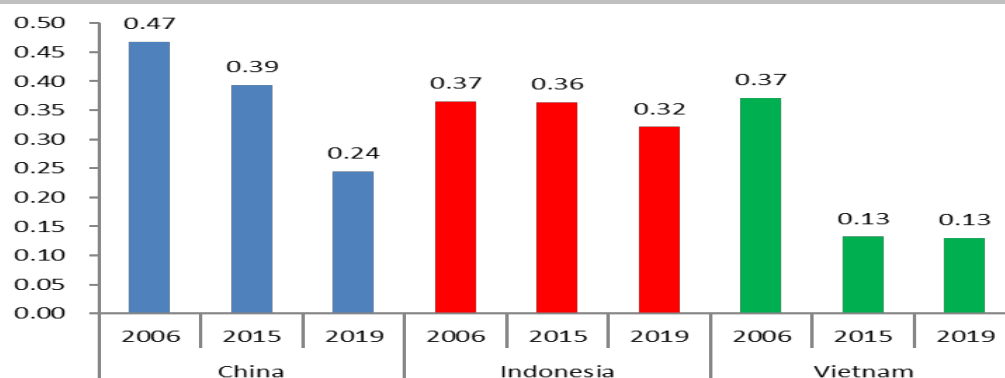
Figure 4: FDI Investment Realization Based on Primary, Secondary and Tertiary Sectors (Million US\$)



Source: Indonesia National Coordinating Board (2020)

There are considerable challenges in increasing FDI. Based on FDI Regulatory Restrictiveness Index (OECD, 2020) data, Indonesia's commitment to free trade agreements is still restricted, as shown in the chart below. The World Bank (2020) states that Indonesia's regulatory restrictiveness is relatively high compared to middle and high-income countries. Compare this with China, which, although initially more closed-off than Indonesia, opened up much more quickly. Even Vietnam has a much more open economy, where we can see that the level of participation of Vietnam in the Global Value Chain is far above Indonesia's. This opportunity will at least be taken advantage of by Indonesia's competing countries, especially Vietnam, to increase investment in their countries so that the opportunities for increasing GVC are much more significant. Barriers to FDI in Indonesia encompasses the disharmony between regulations in the investment sector and sectoral laws or regional government laws, including labour regulations.

Figure 5: FDI Regulatory Restrictiveness Index



Source: OECD (2020)

The decline in participation in the GVC is also strongly influenced by the policy of strengthening the use of domestic components (TKDN) without being accompanied by efforts to transform the import substitution industry. The policy of developing an import substitution industry so that dependence on raw/auxiliary materials from other countries is decreasing (Ministry of Trade, 2020). Data shows that almost 72.5% are raw/auxiliary materials, while capital goods are 16.70% and consumption is 11.11% (BPS, August 2020). The challenge is that in general, FDI, which is predominantly owned by foreigners, tend to use imported auxiliary materials for export purposes (Naully et al., 2020). The significant relationship between the investor's country of origin and the tendency to use imported raw materials from their country of origin. Investors hope that the FDI invested will bring benefits to increasing exports from their country to FDI-receiving countries. Also, the increasing variety of inputs has a much higher effect on exports than the increase in input values. Input from developed countries has a more significant influence on exports, especially from technology and the quality of their input products (Peng and Zhang, 2019). Although the TKDN policy will more or less increase domestic added value, it will have a consequence that Indonesia's participation in the GVC is getting smaller. A study conducted by Arianti (2008) confirms that the elasticity of imported raw materials is higher than domestic raw materials in several sectors such as footwear, chemicals, electronics as well as motor vehicles and motor vehicle components. The lack of information on local raw materials that have the same standards as imported raw materials and the after-sales service of local input producers is less encouraging than those provided by competitors from other countries.

On the other hand, the level of competence and quality of Indonesian logistics services as a whole is still relatively low compared to other countries. Indonesia's logistic performance index data in 2018 was 3.1 (out of 5), while other countries, such as China at 3.59, Vietnam at 3.4, Thailand at 3.41, and Malaysia at 3.3, as Indonesia's competitors, are still higher. Indonesia's ability to participate in regionally and internationally needs much improvement. Reliable logistics is needed to integrate GVCs and provide opportunities for more significant trade impact (Arvis et al., 2018). However, the ability to connect to global logistics depends on a country's infrastructure, service markets and trade.

Besides, even though the government is trying to do local businesses—especially MSMEs—participate in increasing the participation of GVCs as a supporting cluster for large businesses, in reality, the involvement of MSMEs is still low, especially in exports. Data shows that only 14.4% of the export value is contributed by MSMEs, while the rest is large enterprises (Ministry of SME's and Cooperative, 2019). Partnership efforts

between MSMEs and large businesses are also minimal, which is only 6.95% (BPS, 2016). The challenge is the difficulty of products of small and medium enterprises in meeting the quality and product safety requirements required by trading partner countries. This difficulty by the lack of information received by MSMEs regarding quality and safety standards in export destination countries, the process of certification of export product standards being relatively an enormous cost burden for MSMEs, and limited skilled resources in pre-and post-production handling. Besides, the limitations of standard infrastructures, such as testing equipment in regions, have not been optimal in supporting the process of implementing product standards for SMEs.

The R&D capabilities of companies in Indonesia has an impact on the declining of participation. In general, they rely on patented R&D results from abroad. The implication is that the product innovation process is inefficient, consumes more time, and the products produced are less diversified. Also, the national R&D budget is lower than other countries, which is only at 0.22% of GDP, while Thailand is 1.00% of GDP, Vietnam is 0.5% of GDP, Japan is 3.2% of GDP, and China is 2.18% of GDP (World Bank, 2020).

This limited research budget, which is spread across many ministries/agencies and does not focus on strategic research fields, results in low benefits of the research budgets. On the other hand, the contribution of the private sector/industry is still minimal, and the private sector/industry does not respond to the results of innovative research. Carried out by domestic researchers from tertiary institutions or science and technology institutions, as well as three-party partnerships (government-universities / institutions science and technology-industry) for research and development activities are not optimal (Alhumami, 2018).

Aside from efforts to increase Indonesia's participation in the GVC participation, efforts to increase the GVC are the most crucial part. The process of upgrading is undertaken by business actors independently, including process upgrading, product upgrading to functional upgrading. On the other hand, the government provides facilitation. However, both due to regulations that have not regulated at the company level, budget constraints, so that as an organization, the authority to carry out upgrading is also left mainly to district/city governments which have limited numbers of personnel and capabilities in doing the scaling up. Consequently, various activities related to GVC carried out by business actors not being integrated into a complete set of policies and action plans.

Apart from the participation of GVC, upgrading is a serious concern considering that not many Indonesian products are in the form of middle and high technology but rely more on natural resources (low technology). For this reason, many upgrading processes in Indonesia based on the size of the company. Large companies tend to be able to transform production according to market demand. Large companies have the resources to invest in new technology. Meanwhile, micro, small, and medium enterprises tend to experience delays and find it more difficult to take risks, except for new companies that have been up to date with technological developments. Especially in today's digital era, this is easy to do.

In the case of automotive in Indonesia as a large company, the upgrading process is carried out formally through changes to the organizational structure. Formal organizational schemes are carried out through an independent division or development department to ensure quality standards and manufacturing processes. Also, flexibility in adapting to local manufacturing conditions and technologies gives them the option to deploy and utilize existing facilities with limited adaptability. The use of technology,

such as full robotic and semi-automation, is applied when market demand requires a rapid expansion of facilities (as in the case of new factories in Indonesia and Thailand). To strengthen this process, a strong relationship with suppliers is essential for the full implementation of the Toyota Production System (TPS) at local production sites (Arfani and Dewanta, 2018).

The upgrading process also requires access to significant funding, especially for investment in production technology. However, access to funding sources also lacks, especially for Small Medium Enterprises. In Indonesia alone, in March 2020, only 19.68% of SMEs could access credit while the rest accessible by large businesses (Bank Indonesia, 2020). SMEs have several characteristics that make them unattractive to commercial banks; Small companies, by their very nature, are less likely than large companies to hold the collateral that the bank needs to make sound lending decisions. SMEs in developing countries also usually do not have formal credit histories, business plans, and other forms of documentation required by banks to assess their credit risks (World Bank, 2017).

Apart from the issue of access to financing services, another challenge is the relatively high, non-competitive interest rates. IMF data for March 2020 shows the loan interest rate in Indonesia is 9.91%, while other countries, such as China 4.35%, Thailand at 3.56%, Vietnam at 7.98%, the United States 3.78 %, Malaysia 4.40% (IMF, 2020). High-interest rates make it difficult for companies, chiefly SME's, to secure the funding they need to operate and expand their business (Wang, 2016).

The condition of upgrading products also varies. In industries with a large enough export market, there lies an immediate product upgrading process. The automotive industry is one of them. Although using a shared platform and powertrain in a vehicle model marketed in the ASEAN region, variations and product specifications are still considered to add value to the product. Special and unique additional features to the automotive. Examples include mini-fridges for Thai consumers and glass holders for US consumers in a one-ton pickup truck (Arfani and Dewanta, 2018).

In the case of the textile industry, upgrading through product mix cannot be produced to meet changing market demands. This failure is due to the adoption of new technologies that are relatively lagging behind other countries so that productivity at the company level is lower (Pane, 2019). Similar conditions also occur in the batik industry, the type of equipment and technology used by craftsmen hardly changes significantly, both in the process of making batik and the preparation of batik motif designs (Mangifera, 2015).

Additionally, another challenge in product upgrading is also a relatively high increase in wages that follows. Although wage increases have decreased in the last ten years, the growth in wages of the Indonesian manufacturing industry is still relatively high compared to several competing countries of Indonesia, namely around 7.7% in 2020, while Vietnam is at 7.0%, China is 5.4% and Thailand 3.7% (Jetro, 2020). For the clothing industry, an increase in wages in Indonesia will result in the relocation of factories to areas where wages are lower due to difficulties in competing in terms of costs and the pressure for wage increases is getting bigger (TPSA, 2018).

In product upgrading, there is a gap between the standard of domestically produced goods and requirements from trading partner countries. Exporters generally use the Indonesian National Standard (SNI) as a reference. However, trading partners not only adopt international standards such as CODEX, ISO, IEC, and others but also adopt the

existing provisions and parameters in private standards and other standards (Ministry of Trade, 2013). On the other hand, not all export players have used SNI as the primary reference or guide for product quality and safety standards. Business actors refer to the quality and safety criteria required by importers in trading partner countries. Some business actors also consider that SNI is not compatible with the standards applied by trading partners.

In functional upgrading, some industries carry out marketing process that limited on mechanisms that depend on buyers abroad, such as pottery products (Risianti and Debora, 2018). However, in advanced industries, such as automotive products, overseas-based holding companies have taken a leading role in the technical development and market intelligence functions by regularly linking their work and business with other subsidiaries/affiliates. Functional upgrading includes consultations carried out in the R&D aspect for production development (Arvani and Dewanta, 2018).

Even so, there are still considerable challenges, such as the case of the pottery industry, that the lack of mastery of technology and information in market access means that they cannot develop the market further and only depend on existing buyers (Risianti and Debora, 2018). In this case of rattan furniture and batik shirts, these mostly found on the downstream side. The product manufacturing process requires special skills so that design changes as a result of market demand cannot promptly.

3. Learning from China's Experiences

In the current pandemic era, it has given a big shock in terms of demand and supply for various world products. The shock happened because of physical restrictions, the decline in various production centre areas to the disruption of international transportation to prevent the spread of the Covid-19 virus. The real impact is that trading volume will slow down. The WTO even estimates that the volume of world trade will decline, experiencing a contraction of between 13% and 32% (WTO, 2020). The most significant implication is that world economic growth will also contract by 4.4% (IMF, 2020).

Many countries affected by Covid-19 and connected to China's global value chain will also disrupt. Unfortunately, China also loses intermediary products. It goes even further than this will have repercussions to producers and consumers in countries further up and down the product value chain (Weforum, 2020). Therefore, strengthening regional value chains should be a priority for developing countries to diversify risk, reduce vulnerability, increase resilience, and foster industrial development (Fortunato, 2020).

Learning from China is also essential considering that in a pandemic, China's economy in 2020 expected to continue to grow by 1.9% and 8.8% in 2021 (IMF, 2020). The following explanations are some of the crucial keys to the development of GVC in China and serve as lessons for Indonesia to face disruption in the pandemic era and the future economic recovery.

3.1. Facilitate the insertion of domestic firms into international production networks

Driving the insertion of local companies into international production networks brings numerous advantages. Opportunities to increase efficiency becomes more significant, as increased competition in domestic and international markets forces firms to become

more efficient and focus on reducing costs. Spreading production stages across different countries allows a person to achieve the necessary production cost savings because some of the required inputs such as labour, natural resources, and intermediate goods and services, may be available in some countries at a lower price than in an international company's home country. Also, technology transfer from international companies can provide opportunities for domestic companies to produce a variety of products, from low to high quality, so that they can be tested and marketed in their home country and foreign markets. Technology transfer provides more opportunities in market development not only in developing countries but also in developed countries (Marengo and Ercolanetti, 2016). For domestic companies, joining the national production network means that it plays a role in helping its country achieve economic development where there is an increase in income, more sustainable use of resources, and a more stable political situation.

In China, the main factor in the entry of local companies into the international production network is the liberalization of free trade and FDI that began since 1978. In free trade, tariff reduction plays a role in facilitating the insertion of domestic companies in the international company network. Aside from streamlining imports and exports of world-class goods and services to increase competitiveness and productivity, there has also been an increase in market access for Chinese exports through institutional arrangements, namely its participation in the WTO in 2001, in bilateral to multilateral free trade agreements (Xing, 2015).

Meanwhile, for the development of FDI, China started by making various regulatory changes in the country in 2015. Several policies for the development of FDI, such as; (i) recognition of intellectual property rights by which companies will be increasingly able to take advantage of laws in their favour if copyright violated; (ii) the right to formulate industry standards where the Central Government has guaranteed that in the future, companies in an industry will have the same rights to set new standards and that these standards will apply equally to foreign and domestic companies; (iii) equal treatment of foreign and international companies at the pre-establishment / investment stage; (iv) an expropriation whereby the government takes over the company's assets, but the state will not take over any foreign-owned investment. However, with certain conditions, the government must provide fair compensation to companies; (iv) lack of variable interest entity (VIE) restriction to overcome policy gaps in several industries where foreign investments are prohibited from entering; (v) provide foreign exchange guarantees whereby foreign investors' profits, capital contributions, capital gains, asset disposals, liquidation proceeds, technology transfer royalties, and legal compensation in China can be freely transferred outward or inwardly; (vi) reducing the negative list of investments so that more investment will enter China, especially in industries that are deemed sensitive; (vii) broader and equal access for foreign and domestic companies in the procurement of government goods and services; (viii) local government commitments whereby local governments may not violate rights, impose additional requirements, impose market entry or exit requirements, or interfere with the operations of foreign companies; (ix) corporate governance and decision-making flexibility where shareholders hold the highest authority, like most modern companies, leadership and legal positions can be freely appointed by investors, increasing the flexibility of decision-making with their respective bargaining powers, where previously every major decision of the foreign-owned company must be decided unanimously (FDI China, 2020).

The schemes offered in this FDI are quite flexible, namely equity joint ventures, cooperative joint ventures, or wholly foreign-owned enterprises (WFOE). Equity joint venture (EJV) is when a limited liability company is a company that is established by one

or more foreign investors, together with one or more Chinese investors. Profits and losses distributed on a pro-rata basis with the contribution of each investor's capital. A cooperative joint venture (CJV) has a similar scheme with EJV but can combine as either a limited liability company or a non-legal entity based on a contract. Consequently, provides more flexibility in terms of cooperation, distribution of obligations and benefits, and investment returns. All of them are foreign-owned companies (WFOE)—international companies that are wholly owned by foreign investors. This flexibility allows local companies to have more opportunities for cooperation with international companies (Withers Worldwide, 2019). Includes issuing an Industry Guide Catalog that provides certainty about the types of investment in the country in the categories that are encouraged, permitted, restricted, and prohibited (Marengo and Ercolanetti, 2016). This catalogue provides a scale of priority for international companies to select sectors and the availability of well-established domestic companies.

From the institutional side, the policy to attract foreign investment was carried out by the Ministry of Trade (MOFCOM), which has powerful authority by issuing management guidelines for foreign investment in 2009. This document redefined foreign investment, simplified procedures, and authorization, and gave companies the authority for more significant decision making (Huang and Wikes, 2011). The cooperation process, namely that state-owned entities (SOEs) managed by the central government, must apply for authorization to MOFCOM, and local companies must apply to the local branch of MOFCOM. In the next process, MOFCOM is responsible for legalizing investments by central government SOEs. The completeness of the approval based on investment application, business license, contract and bylaws, authorization certification from the relevant department; and reporting forms for merger/collaboration activities. Other investments can be approved by MOFCOM (for centrally managed companies) and its local branches (for other companies) by merely submitting an application form. This approval procedure takes five working days to 90 working days, depending on the nature and total investment of the project. If there is a cancellation of the foreign partnership agreement, a faster procedure with ensue to reduce uncertainty for MOFCOM and local MOFCOM branches (Sinowing Law, 2020). This explanation depicts that there is a centralized institution that regulates and monitors investment, including cooperation between state-owned companies, local companies, and international companies.

From the financial support side, in 2004, the Ministry of Finance and Ministry of Trade of China issued a particular funding support facility scheme to reimburse pre-investment costs for companies. These companies are those that are involved in investing abroad and utilizing foreign resources to develop economic and technical cooperation, especially those that require large-scale resources. This facility is for eligible projects, including oil resources and non-metallic and metallic resources. The Chinese government provides special funds to support Chinese companies involved in foreign investment, cooperatives in the forestry and fisheries sectors, labour, overseas R&D, and others. Financial support also provided to the industrial area, such as Value Added Tax (VAT) returns, tax exemptions and reductions, and R&D tax reductions. For example, tax incentives that are predominantly oriented towards industrial estates and aim to promote R&D and innovation in the industry can enjoy a tax exemption of at least two years and then at least three years with a tax reduction of 50 per cent (Jiang, 2016).

Infrastructure is also key to the success of trade facilitation in China. Infrastructure is needed to strengthen business, reduce transaction costs, increase market access, and increase the efficiency of other productive factors (World Bank, 2018). Moreover, infrastructure also plays a significant role in the economic cooperation and integration

in the East Asian Countries region (Yu, 2017). One of China's infrastructure programs is the Belt-Road Initiative (BRI), which channels a massive flow of Chinese direct foreign investment into infrastructure projects involving railroads, roads, and ports into 65 developing countries, especially in the surrounding Asian region—which connects China to significant markets in Europe and the Sub-Saharan African economy. BRI also becomes a significant source of mineral and agricultural exports to China and a growing export market for Chinese goods and services (Duke Kunshan University, 2015).

The central infrastructure of concern is the port where China relies mostly (90%) on sea transportation (UNCTAD, 2015). Annual imports of all cargo types to China grew by 1,510 million tons (equivalent to 49 per cent of world imports growth) between 2008 and 2018. Nearly half of the expansion of global maritime trade over the past decade attributed to China. In 2018, maritime imports to China accounted for about a quarter of maritime trade and half of the trade-in dry bulk commodities. China is also a key player in the container trade, given its role as the world's factory (UNCTAD, 2019). For China, this is very important considering the results of OECD research show that for goods ready for export or import, each additional day required reduces trade by about 4 per cent (UNCTAD, 2015). Port facilities, such as docks, warehouses, harbour depth, loading and unloading access to port management much support the efficiency and effectiveness of sea transportation. Port facilities have a significant impact on the efficiency and effectiveness of sea transportation, thus supporting the logistics network in the value chain.

The Chinese government has also streamlined various free trade areas, both Free Trade Zones (FTZs), Special Economic Zones, Export Processing Zones, and the like. There are currently 12 large FTZs employing 4 per cent of the workforce and handling goods which represent around 17 per cent of total Chinese imports. These areas allow easier access to investment, such as the ease of import duty-free, storage and re-export, the ease of converting RMB on capital accounts to a low limit of ownership for the establishment of foreign banks and financial leasing companies. This area promotes economic development and employment by supporting international trade so that the linkage of domestic and international companies becomes integrated. The FTZ can break the "chain effect" of tariffs on intermediate products and be exempted from duty when re-exported or can enter the market at a favourable price. In regions such as FTZs, SEZs and EPZs, there are minimal administrative restrictions, reduced income taxation, and easier access to global markets (Jiang, 2016).

The Chinese government facilitates its domestic companies to cooperate with developed countries through partnerships in terms of building core competitiveness in technological and commercial capabilities such as, in the automotive industry, the steel industry, to the shipbuilding industry. Domestic companies are also encouraged to learn and absorb as much knowledge and technology as possible by foreign companies. Initially, the domestic company produces low-tech products with domestic and foreign markets. However, it gradually reaches the medium technology level, with companies in Korea and Japan upgrading it with high technology and sending it back to China for production and sale. After some time, there is a dependence on inputs from Korean, Japanese and American international companies, which after being assembled in China are then resold in their markets or shipped abroad (Marengo and Ercolanetti, 2016). The current implication is that many Chinese companies see developed countries as partners, significantly to increase investment in increasing R&D, brands, technology, and other factors.

3.2. Evolution of production capacities of national firms

The evolution of the production capacity of national companies carried out to improve the value chain and reduce their dependence on the production of manufactured goods assembled by multinational companies, specifically for products with high added value. Also, the aim is to increase the economic value chain by producing better products, increasing business efficiency, and entering industries that require more skills. These are necessary and important strategies for increasing the global competitiveness of an economy (Porter, 1990). Evolution is generally carried out by improving processes through better technology or more efficient production systems, improving products through moving to more sophisticated product lines (up the supply chain), functional enhancements by acquiring new functions or increasing the skill level of activities, and enhancements between sectors through movement into new activities (Wong, 2012).

Several essential things influence evolution in China. Mainly, it influenced by choice of the type of partnership between a domestic company and a foreign company that increases production capacity progressively. In some cases, domestic companies, such as Heir, have taken a more effective way of entering into the international market as contracted producers for foreign brands by producing low value-added products, such as assembling inputs provided by international companies. Haier followed fairly linear steps, starting from being an assembler and gradually developed into a complete-packaged manufacturer of an original equipment manufacturer (OEM) contract, then an original design manufacturer (ODM) and finally a globally recognized original brand manufacturer (OBM). The company also made acquisitions with companies outside of China to test the quality of its products. This method brings about the fast turnover experienced by the company concerning its position in the global value chain (Marengo and Ercolanetti, 2016).

On the other hand, Lenovo company took a different approach—thanks to the computer industry-specific structure issued by the Chinese authorities, the company entered partnerships with multinational companies to carry out sales, distribution, and service activities for them. Company is following a very solitary way starting from the downstream activities of the global value chain, in which in other industries, are usually monopolized by leading companies because of the high added value that is highly likely to be provided by them. As it evolves, the company set aside its manufacturing activities for many years to focus on building a broad distribution and service network. However, since 1996, the company has accumulated sufficient capabilities by absorbing it from its foreign partners and finally launched its own branded products on a large scale and quickly climbed the market to become the leading Original Brand Manufacturer in China and Asia Pacific (Marengo and Ercolanetti, 2016).

Evolution has happened by increasing manufacturing competitiveness. Lu (2015) observes that among the four most "competitive" economies in electrical equipment manufacturing (China, America, Germany, and Japan), China displayed a rapid growth in its competitiveness while the other three economies lose their "competitiveness" over time. In 2009, China showed very high "competitiveness" (25.21%) compared to other countries, comparable to Japan's position in 1995. This competitiveness starts from industries with low added value and then moved to high added value industries. In the process, this competitiveness is built with various supporting policies, starting from the enactment of the work contract law, increasing labour costs, and increasing the cost of environmental protection for the company. The Chinese government also provides more

convenience and support for the development of labour-intensive industries, in financial support, easing the burden on companies and providing employment services (Zhao, 2020).

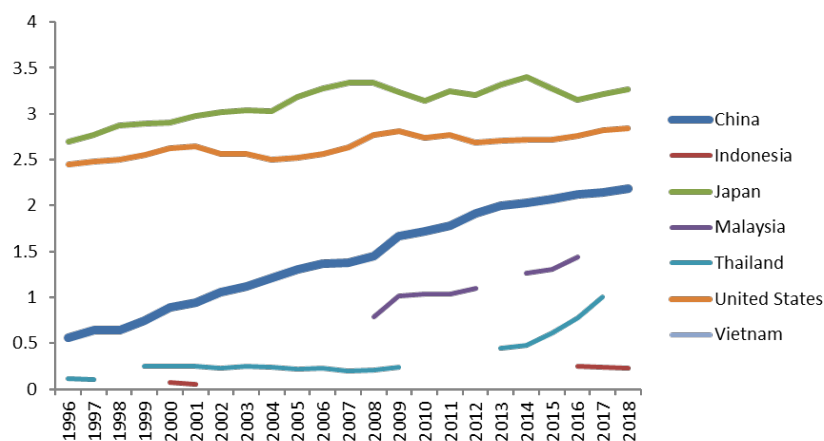
Evolution also occurred due to the role of small and medium enterprises (SMEs). SMEs represent more than 90 per cent of enterprises in the country and contribute more than 60 per cent to its GDP, more than 70 per cent for patents, and accounts 80 per cent of its national employment. The number of SMEs is estimated to be more than 38 million in 2019. In Beijing alone, there were more than 3,100 industrial SMEs that generated an annual income of more than 2.8 billion US dollars in 2017 (Ma, 2019). SME's involvement in GVC is crucial, considering that it can elevate industry capabilities by meeting international standards and requirements as well as increasing production by working with leading global companies (Hong, 2015). In several periods, the Chinese government gave policies of legal status, protection of rights and interests, development of finance to expand market access. Apart from that, the government also diversified its policies in financing, taxation, guarantees, innovation, and services. Even in the Law of the People's Republic of China on the Promotion of Small and Medium-sized Enterprises, the government has specifically paid particular attention to the development of innovation in SMEs (Luo et al., 2019). Besides, the Chinese government decided to reduce the target reserve requirement ratio and readjust the tax policy in early 2019 to have attracted more investors in SMEs. Additionally, strengthening the e-commerce platform for SMEs is also carried out to expand their income source (Ma, 2019).

3.3. The shift of processing trade flows towards more advanced and technology-intensive sectors

Increasing the flow of trade from low value-added products to high added value requires a large amount of support. A fundamental factor is the willingness of the Chinese government and the private sector in allocating their budget for research and development (R&D). The scale and capacity of a country's technological innovation are positively correlated with its economies of scale because the more expenditure that can use for R&D, the greater the input required for the technological innovation system. Indeed, it provides the necessary conditions for establishing an innovative country (Wang and Hong, 2012). In Figure 6, wherein in 1996, China allocated its R&D budget of 0.56 per cent of its GDP.

Nevertheless, in 2018, the number spiked to 2.1 per cent. The growth of this R&D budget far exceeds that of developed countries, such as America and Japan, though both still have a larger proportion in total compared to China. This large R&D budget spent through various channels such as government-sponsored science parks, university and corporate research, and foreign direct investment programs. This budget has a large enough impact on research institutions, universities, and private R&D institutions to absorb a variety of new technologies brought in from foreign investors as well as those sourced directly from abroad (Zeng, 2017).

Figure 6: Research and development expenditure (% of GDP)



Source: World Bank (2020)

The government also emphasizes the importance of technology transfer from abroad (imports) in the development of its domestic industry. One of the highlights is that the government facilitates many domestic companies to purchase or license technology from foreign companies and research centres (Dobson & Safarian, 2008). It stated in the Regulation on Technology Import and Export Administration of the People's Republic of China in 2002. This regulation regulates the act of transferring technology from outside China's territory into Chinese territory or vice versa through trade, investment, or economic and technical cooperation. With this regulation, technology transfer into China's territory categorized as (i) freely transferable, (ii) restricted and (iii) prohibited technology. It is freely encouraged when trade, investment, economic and technical cooperation occurs in the Chinese territory. Meanwhile, the technology that is prohibited generally imported technology, where at the same time it is free for export. If technology has developed domestically, there is no need for technology transfer from imports.

Meanwhile, the limited technology transfer relates to contractual issues agreed upon by various parties at the time the investment made. The process of transfer of technology which carried out freely is carried out only by "registration" by the Ministry of Trade and the Ministry of Science and Technology. Meanwhile, a technology that is classified as not allowed to be imported and restricted technology requires "approval" from the two ministries (Thalib, 2016). The Chinese government's policy to support R&D that supports technology transfer, namely; (i) imported equipment and supporting technology that is limited to laboratories of foreign investor countries and used for pilot experiments (and not production) are exempt from tariffs and other import taxes; (ii) revenues from technology transfers developed only by foreign investor countries are exempt from sales tax; (iii) a foreign investor country with a technology development fee of at least 10 per cent from the previous year entitled to a 50 per cent discount from the total technology development cost in the company's current year revenue (subject to approval from the taxation authority); (iv) and overseas investing countries with R&D centres in China are permitted to import and sell small quantities of high-tech products for trial in the local market if these goods produced as a result of R&D by the parent company. In 2002, there were approximately 400 foreign investment companies that had R&D centres in China, such as Microsoft, General Electric, Motorola, Intel, General Motor, Honda, Siemens, Nortel, and Volkswagen (Long, 2005).

Human resources play an essential role in increasing the value chain, moving from low value-added activities to high value-added activities along the value chain (Garry and Stark, 2011; Jiang, 2016). Apart from primary education, further education and

vocational education or training programs carried out simultaneously. In areas with industrial centres, local governments collaborate with industry associations and universities in managing certified education and training programs. This collaboration received funding support from the government (UNCTAD, 2015). One of them located in the Yongjia area where there is a scientific and technological innovation centre for the pump and valve industry with the collaboration of Lanzhou Technical University (located in Gansu Province in Northwest China), which has been operating successfully since 2004 (Rasiah, Kon & Vinanchiarachi, 2014). The Chinese government plans to increase the number of highly skilled workers from 114 million people in 2010 to 180 million people in 2020 through investments in education. The government has also launched a series of talent programs to attract elite professionals, particularly those who can take leadership roles in Chinese science and technology. One example is the Thousand Talents Plan, which offers special R&D funds, competitive salaries, housing subsidies, and family resettlement to attract talent from abroad to work in the country (Jiang, 2016). This strategy, in the long term, will increase China's competence in the global value chain by innovating through strengthening the capacity of its human capital.

Table 1: Key Points Global Value Chain Transformation in China

No.	Policy Framework	Key Points
1	Facilitate the insertion of domestic firms into international production networks	<ul style="list-style-type: none"> • Participate in the success of free trade through tariff reductions • Deregulation of FDI policies that support the expansion of domestic foreign investment • Supporting infrastructure is the key to successful trade facilitation • Strengthening institutions that facilitate FDI and business licensing • Making various free trade areas effective • Building core competitiveness in technological and commercial capabilities
2	Evolution of production capacities of national firms	<ul style="list-style-type: none"> • Development of partnerships between domestic companies and global companies • Development of manufactured products with low added value towards high added value • Increasing the role and development of MSMEs that are export-oriented and the broader market
3	The shift of processing trade flows towards more advanced and technology-intensive sectors	<ul style="list-style-type: none"> • Strengthening R&D, in terms of budget and the involvement of the private sector and universities • Technology transfer from global companies to domestic companies • Human resource development for both workers and local entrepreneurs, following the needs of future industrial demands

Source: Authors

3.4. Strategic Policy Framework for Indonesia GVCs

China already has a significant role in GVC in various industries, especially in the electrical equipment, chemicals & minerals, primary metals, textiles & apparel, and machinery industry. The evolution of the GVC that occurred has made China one of the centres of the GVC and world trade. Since many countries are currently dependent on trade, the distribution of added value between countries is getting stronger. Indonesia is also inseparable from this pattern of relations since free trade, and the Chinese FDI has begun to play a more profound role in its economy.

It is strengthening regulations for FDI by reducing various barriers, as shown in China's FDI restrictiveness index data of 0.24, relates to foreign equity restrictions, more straightforward selection, and approval mechanisms for foreign investment, easing restrictions on hiring foreigners as crucial personnel, reducing operational barriers to foreign companies, such as branching out, capital repatriation and land ownership. This obstacle will be related to various provisions stated in the labour law, the investment law, the necessary regulations on agrarian principles in Indonesia. Several initiatives in the revision of these three laws need to be supported by several action plans that can be carried out at the implementation level by ministries/agencies. Other aspects could develop by learning from China to increase Indonesia's FDI, ranging from recognition of

intellectual property rights, provision of rights to formulate industry standards, equal treatment of foreign and international companies at the pre-establishment / investment stage, providing foreign exchange guarantees and the reduction of the list of lists negative investment. There is also a need for broader and equal access for foreign and domestic companies in the procurement of government goods and services and increasing local government commitment and improving corporate governance and decision-making flexibility.

Increasing the participation of Indonesia in the GVC cannot be separated from the various efforts that the government must make in line with the support of various companies in the private sector. Several steps that must take include firstly the development of 13 industrial estates that have built-in Indonesia, with cluster support and development of supporting areas. Like the Free Trade Zones, Special Economic Zones, Export Processing Zones that implemented in China, this region must have its authority in developing investment and industrial centre. These areas need to be encouraged by promoting FDI, adequate infrastructure, human capital, good infrastructure and strengthening the technology base. The area is also encouraged by supporting industries to supply intermediate products that mainly come from MSMEs. Funding support in the form of a tax holiday and tax allowance is also very much needed.

Funding support schemes and incentives are also a significant concern. Not only that it lowers the lending rate significantly (by up to 4.35% in China), but it also provides schemes for various export-oriented companies. For example, it is related to long-term loans by providing guarantees to provide tax exemptions and deductions, both as tax holidays and tax allowances. Although this facility has introduced in Indonesia, its utilization is still suboptimal. It is necessary to look at the provision of tax incentives which mostly oriented towards industrial estates. The necessary funding support, for example, is that the government bears pre-investment costs, particularly land acquisition for industrial locations, energy infrastructure, and infrastructure to the nearest port.

It is also necessary to develop partnerships between outside investors through FDI and domestic business actors (Ahmad, 2019). It requires strong attention in the investment regulations that apply in Indonesia. However, the requirements for local businesses to form the partnership also need to be prepared, especially in several industries that have the highest demand, for example, electronic equipment, rubber & plastics, general machinery, textile, and furniture (Bappenas, 2017). It is crucial that in the future, there is a business sector that prepared for partnerships with foreign investors. Partnership development should also by a gradual transfer of technology and should be in regulations. Technology transfer can be exempted, limited, or prohibited following the technology required. Partnerships need to be work in the format of the original equipment manufacturer (OEM), original design manufacturer (ODM) and original brand manufacturer (OBM) with targets at companies with the same production base. Starting with obtaining licenses from various global manufacturing companies is an essential first step.

Capacity building for MSMEs should be another focus. Learning from China, MSMEs need to increase their capacity in mastering new technologies that are simple rather than merely high technology. However, the development of product upgrading also expected to innovate so that added value can be workable. Several business fields that can be improved are the furniture industry, the textile industry and textile products, leather and leather products, electronic equipment to chemicals. The business sector

should also be accessible for MSMEs to partner with foreign investors, as mentioned above. Building e-commerce platforms that are business to business (B2B) with assistance, capacity building to more expansive market access facilities also becomes essential. Finally, a particular funding scheme for MSMEs needs to add with an interest that is lower than market interest.

Human resource development, especially in developing expertise in technology, is needed (Tijaja and Faisal, 2014). The government can do this by making changes on the supply side, specifically by making changes in the educational curriculum that is relevant to the industry developed. Vocation in specific fields is also very much needed. Private companies need to be encouraged to provide the required education and skills supported by the support of incentives—such as super deduction tax - for companies that provide education and training. The skills needed in the future must also be dynamic. Skilling, re-skilling and up-skilling are necessary for workers in the industrial sector to produce more skilled workers. It is also necessary to bring in experts from abroad with facilities provided by the government and companies. The government also needs to prepare funding and incentives for industries/research institutes/universities for R&D development, particularly for the development of technology in prioritized industries in Indonesia.

The facilitation of existing companies with international quality and standards is also crucial. Not only the Indonesian national standard (SNI), but with various international standards such as CODEX, ISO, IEC, and others. The development of these international standards accompanied by efforts to guide the Ministry of Industry in collaboration with large export-oriented companies. What is important is the involvement of international company partners and their parent companies from their home countries. The government must prepare tax reduction incentives and other incentives for companies that contribute to international standardization. Export-oriented MSMEs also need to pay attention to international product standardization, considering that only 15% of MSME products have a market for export.

The establishment of R&D centres of private sectors also needs the support of incentives from the government. Also needs to be done to strengthen domestic technology. Foreign investors can develop R&D as well as a production base for several major industries that have the largest market and have the support of natural resources or raw materials in Indonesia. Mostly concerning the electronics, automotive, textile and textile products industries, chemicals, iron and steel, wood, and wood products, as well as the rubber and rubber products industry, coffee, and the nickel industry. Incentives are not only super deduction tax that currently exists. However, there are also more like in China, such as exemption from import duty for equipment and technology materials used, exemption from sales tax from income from technology transfer developed, and a sales tax reduction of at least 10% for investors to reduce import duties on a small number of high-tech products as a trial run in the local market. Private R&D centres can also be linked with technoparks in Indonesia with the same technology field so that technology transfer occurs, allowing universities/research institutions to absorb this technology.

As a measure to reduce logistics costs, that amounts 24% of GDP, Indonesia has no choice but to strengthen its domestic infrastructure. Indonesia must strengthen its maritime infrastructure considering that Indonesia is an archipelagic country, and because it is more cost-efficient for transportation. Starts with expanding its port capacity into facilities of international standard. Some ports must be able to pass large ships weighing 3,000-10,000 TEUs. Currently, the average available port is only 9 -12

meters deep, so it can only stop by ships with a maximum weight of 1,100 TEUs. It is also necessary to procure domestic vessels, considering that the number of fleets produced by the domestic shipbuilding industry only satisfies less than 10% of the demand. Overcoming regional disparities especially with the eastern region, the only way to increase economic activity is by strengthening the industrial base and population mobility permanently in eastern Indonesia. In this way, the infrastructure built will also be more efficient in the long term.

Table 2: Strategic Policy Framework for Global Value Chain Transformation in Indonesia

No.	Policy framework	Key Policies	Potential Impacts
1	Facilitate the insertion of domestic firms into international production networks	<ul style="list-style-type: none"> Reducing various barriers of FDI restrictiveness by the implementation of the revision of labour law Support the development of 13 industrial estates, by promoting FDI, adequate infrastructure, human capital, good infrastructure and strengthening the technology base Design partnership in the format of the original equipment manufacturer (OEM), original design manufacturer (ODM) and original brand manufacturer (OBM) Strengthen of maritime infrastructure into facilities of international standard 	<ul style="list-style-type: none"> Increasing of FDI, especially in 13 industrial estates Number of local and national companies in international linkages broader and export more grow-up Cost of logistic decreasing and efficient to support international firms more invest in Indonesia
2	Evolution of production capacities of national firms	<ul style="list-style-type: none"> Develop technologies to MSMEs that are simple technology towards high technology and linking with industry and market need Building e-commerce platforms that are business to business (B2B) with assistance, capacity building to more expansive market access facilities Facilitate local companies with international quality and standards, such as CODEX, ISO, IEC, and others, including to MSMEs 	<ul style="list-style-type: none"> The capacity of MSMEs increasing to adopt new technology and also the quality of the product more fulfil market demand and international standard. Continuity supply more developed and connected with other regions/countries Numbers of product and national company to follow international trade standard more developed
3	The shift of processing trade flows towards more advanced and technology-intensive sectors	<ul style="list-style-type: none"> Establishment of R&D centres by the private sector with the support of incentives from the government and increasing of government budget Development of the educational curriculum following market demand, mostly vocational curriculum Increasing effectiveness of incentives—such as super deduction tax - for companies that provide education and training Skilling, Re-Skilling and Up-skilling is necessary for workers in the industrial sector 	<ul style="list-style-type: none"> Number of patents following international market more developed, mainly technological product to support export promotion policy Challenging of automation. Supply of labour with global standard increasing Companies are more productive to support more product diversification based on technological change. Quality of human resources more developed, especially industrial workers follows

Source: Authors

4. Conclusion

Indonesia's participation in the global value chain has mostly declined in the last ten years. China, although it initially showed the same symptoms, since the 1980s, it has carried out various evolutions of its value chain so that it currently becomes the centre of the world's GVC. Many things can learn from China, and there are some policy frameworks that Indonesia can use for the development of its GVC in the future. Firstly, "facilitate the insertion of domestic firms into international production networks" by making free trade successful through reducing tariffs and deregulating FDI policies and strengthening supporting infrastructure. This framework is strengthened by government institutions that facilitate FDI and business licensing effectively and efficiently, streamline various free trade areas and build core competitiveness in technological and commercial capabilities. Second, "evolution of production capacities of national firms" is carried out by developing partnerships between domestic companies and global companies, including the development of manufactured low value-added products

towards high added value as well as increasing the role and development of export-oriented MSMEs and the broader market. Third, "the shift of processing trade flows towards more advanced and technology-intensive sectors" which carried out through strengthening R&D while still prioritizing technology transfer from global companies to domestic companies supported by the development of human resources, both local workers and entrepreneurs, following the needs of future industrial demands.

From this situation, a policy framework that carried out in order for the GVC to develop further, through strengthening regulations for FDI by reducing various obstacles is necessary- strengthening the 13 industrial estates that have built needs to be done seriously with various facilities. Another issue of importance is the provision of financial support and tax incentives. The steps above are in line with efforts to develop partnerships between foreign investors through FDI and domestic business actors, especially MSMEs. Facilitation of domestic companies with international quality and standards must in line with efforts to strengthen human resources, especially expertise in technology. It is essential that the establishment of R&D centres by the private sector with adequate incentive support and the obligation to provide infrastructure as a pre-investment requirement for both local and global investors. Departing from this, it becomes crucial for the government to consolidate these various GVC policies in government policies, especially the 2020-2024 period. Government policy requires support and commitment of business actors, central government, and local governments, including academics.

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