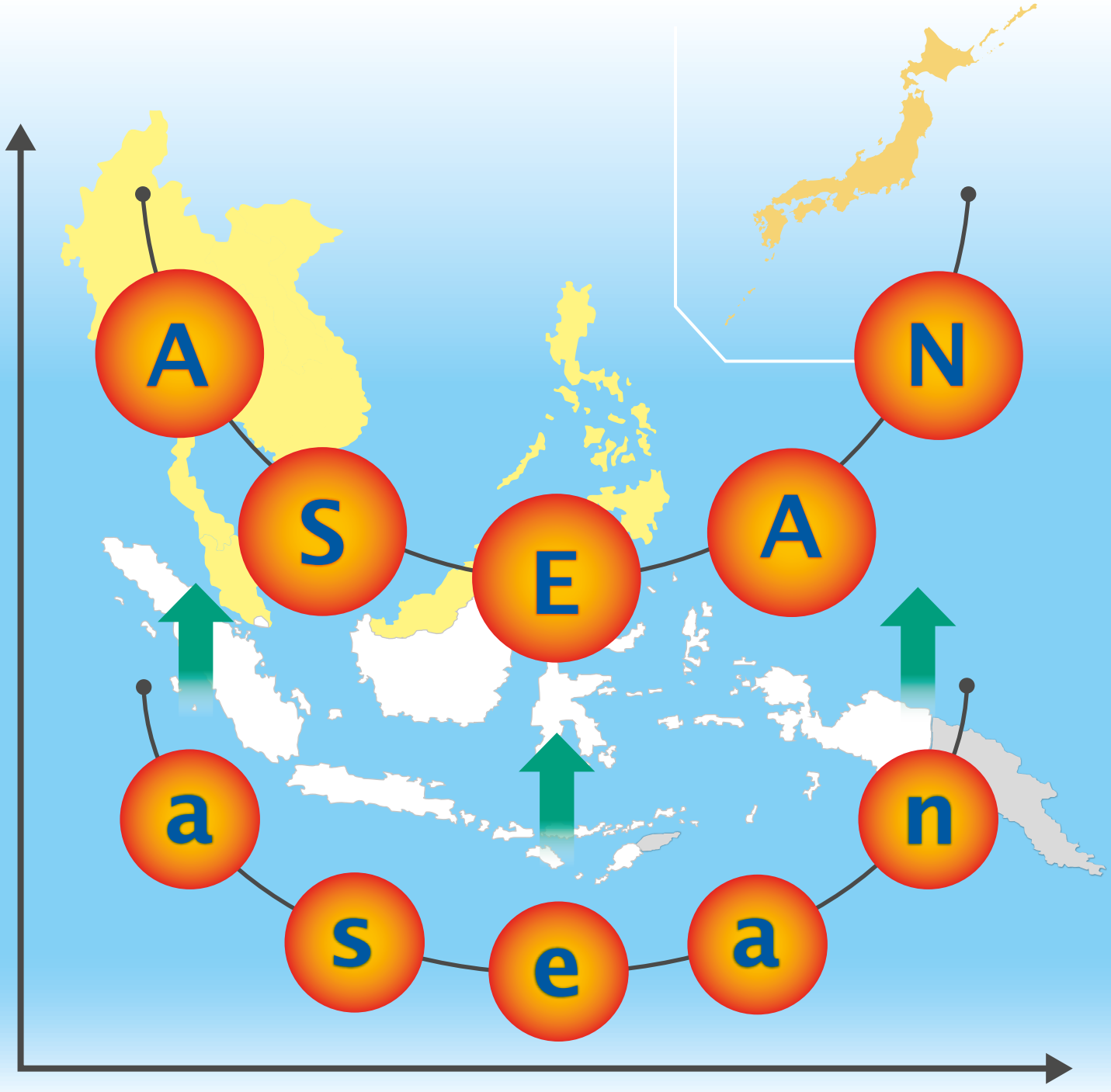
Global Value Chains in ASEAN
Indonesia

PAPER 4
JUNE
2021



ASEAN-JAPAN CENTRE

国際機関 日本アセアンセンター

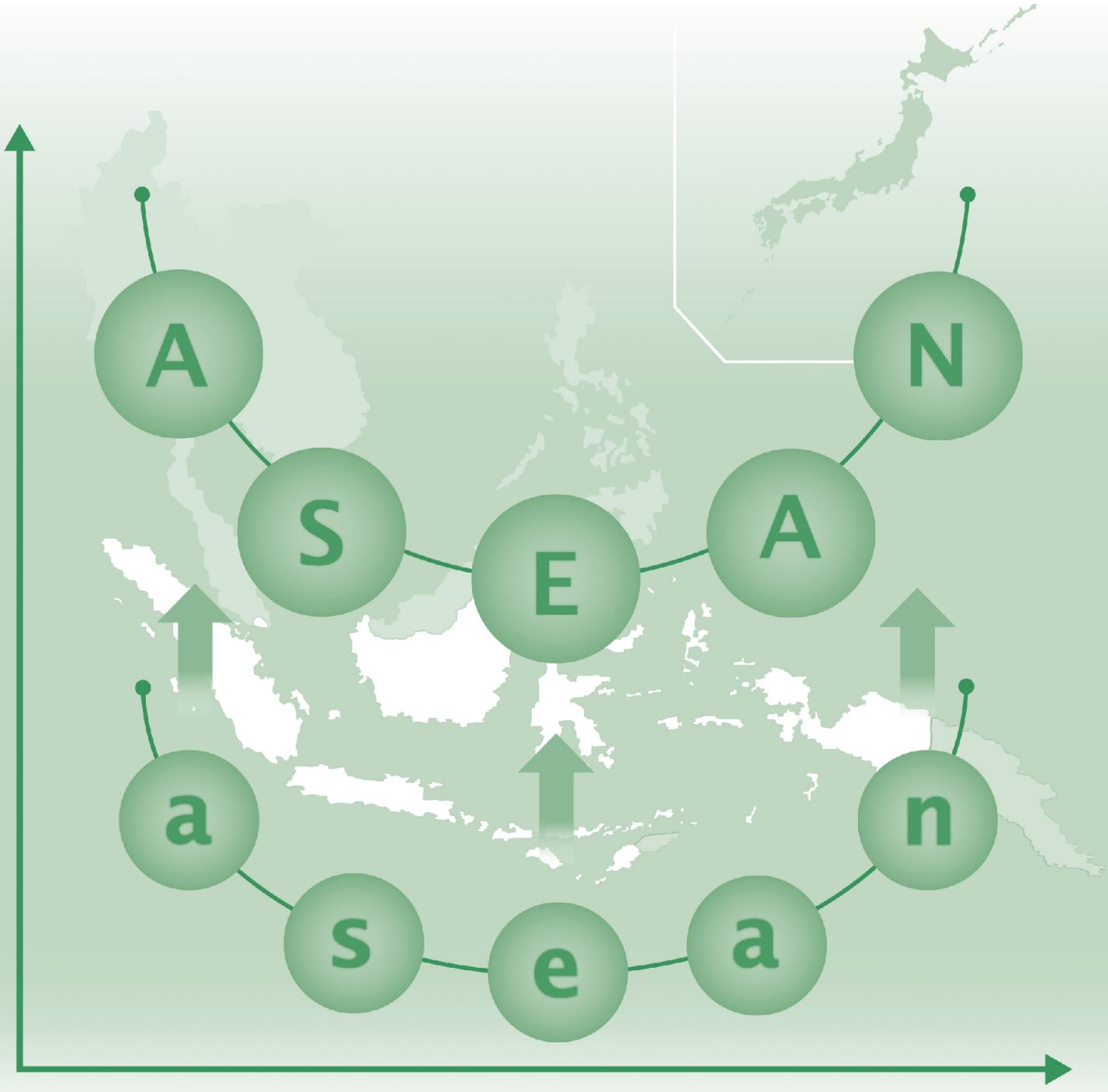
For inquiries, contact ASEAN-Japan Centre
(ASEAN Promotion Centre on Trade, Investment and Tourism)

1F, Shin Onarimon Bldg., 6-17-19, Shimbashi,
Minato-ku, Tokyo 105-0004 Japan
Phone/Fax: +81-3-5402-8002/8003 (Office of the Secretary General)
+81-3-5402-8004/8005 (Research and Policy Analysis (RPA) Cluster)
+81-3-5402-8116/8005 (Capacity Building (CB) Cluster)
+81-3-5402-8006/8007 (Trade and Investment (TI) Cluster)
+81-3-5402-8008/8009 (Tourism and Exchange (TE) Cluster)
+81-3-5402-8118/8003 (PR)
e-mail address: info_rpa@asean.or.jp
https://www.asean.or.jp

Paper 4 / June 2021 / Global Value Chains in ASEAN: Indonesia

Global Value Chains in ASEAN
Indonesia

PAPER 4
JUNE
2021



ASEAN-JAPAN CENTRE

国際機関 日本アセアンセンター

NOTES

The terms "country" and "economy" as used in this study also refer, as appropriate, to territories or areas. The designations employed and the presentation of the material do not imply the expression of any opinion whatsoever on the part of the ASEAN-Japan Centre concerning the legal status of any country, territory, city, or area or of the authorities, or delimitations of frontiers or boundaries.

The following symbols have been used in the tables:

- Two dots (..) indicate that data are not available or are not separately reported.
- A dash (–) indicates that the item is equal to zero or its value is negligible.
- Use of a dash (–) between dates representing years, e.g., 2015–2016, signifies the full period involved, including the beginning and end years.
- Reference to "dollars" ($) means United States dollars, unless otherwise indicated.

List of papers under the project on global value chains in ASEAN by the ASEAN-Japan Centre

The current paper is the thirteenth in a series of 16 papers on global value chains in ASEAN. The other 15 papers have been published or are forthcoming.

Paper 1. A Regional Perspective (first published in September 2017; revised in January 2019)
Paper 2. Brunei Darussalam (published in February 2018)
Paper 3. Cambodia (published in March 2019)
Paper 4. Indonesia
Paper 5. Lao People's Democratic Republic (published in March 2021)
Paper 6. Malaysia
Paper 7. Myanmar (published in February 2021)
Paper 8. Philippines (published in July 2017)
Paper 9. Singapore (published in August 2018)
Paper 10. Thailand (published in March 2019)
Paper 11. Viet Nam (published in May 2020)
Paper 12. Automobiles (published in January 2020)
Paper 13. Electronics (published in March 2021)
Paper 14. Textiles and clothing (published in March 2020)
Paper 15. Agribusiness (published in March 2020)
Paper 16. Tourism (published in March 2018)

Prepared by Upalat Korwatanasakul (Waseda University) and Adiasri Putri Purbantina (Pembangunan Nasional "Veteran" Jawa Timur University) under the direction of Masataka Fujita (AJC). The authors wish to thank the staff members of the AJC for their contribution. The manuscript was edited by Tora Estep and typeset by Laurence Duchemin. Errors and omissions are only those of the authors and should not be attributed to their organizations.

ACRONYMS AND ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
COE	centre of excellence
DVA	domestic value added
DVX	domestic value added incorporated in other countries' exports
FDI	foreign direct investment
FVA	foreign value added
GDP	gross domestic product
GERD	gross expenditure on research and development
GVC	global value chain
IPC	international patent classification
NIS	national innovation system
R&D	research and development
RVC	regional value chain
SME	small and medium-sized enterprise
STI	science, technology, and innovation
TNC	transnational corporation

KEY MESSAGES

- Despite being the world's tenth largest economy, Indonesia has experienced slow economic growth and thus fallen into the middle-income trap.
- In 2019, Indonesia manifested a significant share of domestic value added in exports (DVA) at 88 per cent (or an exceptionally low share of foreign value added in exports at 12 per cent).
- Unlike developed economies, the high share of DVA in Indonesia raises concerns because its manufacturing activities have been concentrated in lower tiers of production, which require minimal levels of imported input and foreign technology.
- As a contributor of basic inputs such as raw materials and low-technology intermediate goods, Indonesia has actively participated in regional and global production networks, specifically in the downstream part of chains.
- Participating in global value chains (GVCs) may benefit Indonesia, especially in terms of economic growth, and is facilitated by foreign direct investment.
- Yet, GVC expansion in Indonesia is not fully maximized, particularly in its manufacturing sector. The weak technological capability of its indigenous manufacturing firms is considered a main challenge.
- While increasing the government budget on research and development is crucial, more strategic policies with a focus on indigenous manufacturing firms and integrated cooperation among the government, research institutes, and indigenous firms would be the priority.

Despite its large economy and domestic market, Indonesia has experienced slow economic growth and thus fallen into a middle-income trap.

Indonesia is the world's fourth and the Association of Southeast Asian Nations' (ASEAN's) most populous nation, with a majority of its population under 30 years old, and the world's tenth largest economy with rich natural resources. Following the 1997–1998 Asian financial crisis and the 2008 global financial crisis, growth of the gross domestic product (GDP) of Indonesia remained around 5 per cent and was $1.1 trillion in 2019. The moderate growth rate, however, is leading Indonesia, along with the other middle-income countries in ASEAN, into a middle-income trap.

To escape the trap, structural change is needed, in which upgrading manufacturing would be the key driver of sustained, long-term growth. The manufacturing sector generates jobs and thus enables more people to benefit from economic growth (United Nations Industrial Development Organization, 2015). The current economic structure does not allow the manufacturing sector to play a key role in economic development. The input-output table for Indonesia shows that the manufacturing sector accounts for only one fifth of the total value added created in Indonesia (equivalent to GDP), even smaller than the primary sector in 2015 (table 1). Major manufacturing industries in other ASEAN countries, such as electrical equipment and electronics and automobiles, apparently occupy small positions in the Indonesian economy with 1–2 per cent of total value added. The manufacturing sector creates small value even though this sector is twice the size of the primary sector in terms of output (table 1).

The input-output table reveals the structural weakness of the economy and identifies the industries where more value addition is necessary. The ratio of value added to output for the manufacturing sector is again one half that of the primary sector, and it is low in many other industries, including textiles and clothing, machinery, fabricated metals, rubber products, and electronics. Unless these industries become more value-creating industries, Indonesian growth will be hampered.

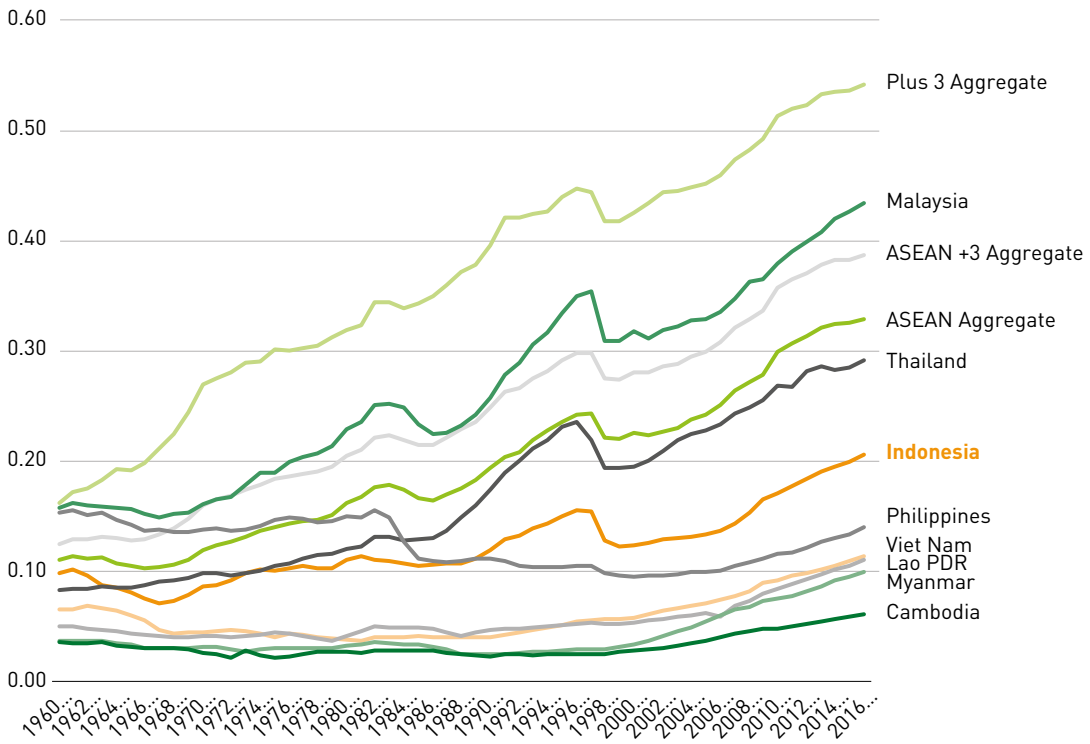
Indeed, compared with other upper-middle-income countries, such as Malaysia and Thailand, Indonesia has maintained the lower-income level (figure 1) and has the slowest growth in manufacturing value added (figure 2). This means that at the middle-income stage, Indonesian economic growth is not well sustained by its indigenous manufacturing sectors. The expansion of global value chains (GVCs) is a good opportunity to improve the technological capability of indigenous manufacturing firms, which is considered one of the keys to escaping from the middle-income trap.

Table 1. **Value added and output of Indonesia, by sector/industry, 2015**

Sector/Industry	Value added at basic prices	Output at basic prices	Value added structure (share of total)	Output structure (share of total)	Ratio of value added to output
	$ million		Per cent		
Primary	**180 512**	**272 430**	**21.7**	**16.7**	**0.66**
Agriculture, forestry, and fishing	115 216	167 004	13.8	10.2	0.69
Mining and extraction of energy-producing products	45 508	72 482	5.5	4.4	0.63
Mining and quarrying of non-energy-producing products	15 548	25 053	1.9	1.5	0.62
Mining support service activities	4 241	7 891	0.5	0.5	0.54
Secondary	**178 124**	**550 242**	**21.4**	**33.6**	**0.32**
Food products, beverages, and tobacco	55 967	157 514	6.7	9.6	0.36
Textiles, wearing apparel, leather and related products	12 652	52 285	1.5	3.2	0.24
Wood and products of wood and cork (except furniture)	5 776	14 235	0.7	0.9	0.41
Paper products and printing	6 499	21 591	0.8	1.3	0.30
Coke and refined petroleum products	23 723	73 688	2.8	4.5	0.32
Chemicals and pharmaceutical products	15 537	38 725	1.9	2.4	0.40
Rubber and plastics products	6 365	32 558	0.8	2.0	0.20
Other non-metallic mineral products	6 174	13 394	0.7	0.8	0.46
Manufacture of basic metals	6 677	20 172	0.8	1.2	0.33
Fabricated metal products, except machinery and equipment	5 094	19 645	0.6	1.2	0.26
Computer, electronic, and optical products	8 407	30 423	1.0	1.9	0.28
Electrical equipment	3 286	7 895	0.4	0.5	0.42
Machinery and equipment n.e.c.	2 761	16 793	0.3	1.0	0.16
Motor vehicles, trailers, and semi-trailers	15 735	34 511	1.9	2.1	0.46
Other transport equipment	595	8 876	0.1	0.5	0.07
Other manufacturing; repair and installation of machinery and equipment	2 874	7 937	0.3	0.5	0.36
Tertiary	**475 098**	**812 582**	**57.0**	**49.7**	**0.58**
Electricity, gas, water supply, sewerage, waste, and remediation services	12 204	23 038	1.5	1.4	0.53
Construction	87 173	173 141	10.5	10.6	0.50
Wholesale and retail trade; repair of motor vehicles	113 701	157 413	13.6	9.6	0.72
Transportation and storage	42 884	90 909	5.1	5.6	0.47
Accommodation and food services	25 295	58 265	3.0	3.6	0.43
Publishing, audiovisual, and broadcasting activities	5 769	19 208	0.7	1.2	0.30
Telecommunication	22 051	34 703	2.6	2.1	0.64
IT and other information services	2 247	4 306	0.3	0.3	0.52
Financial and insurance activities	34 439	53 256	4.1	3.3	0.65
Real estate activities	24 262	27 298	2.9	1.7	0.89
Other business sector services	14 092	19 535	1.7	1.2	0.72
Public administration and defence; compulsory social security	33 343	44 273	4.0	2.7	0.75
Education	28 738	33 232	3.4	2.0	0.86
Human health and social work	9 104	15 640	1.1	1.0	0.58
Arts, entertainment, recreation, and other service activities	18 408	56 976	2.2	3.5	0.32
Private households with employed persons	1 389	1 389	0.2	0.1	1.00
All industries	**833 734**	**1635 254**	**100.0**	**100.0**	**0.51**

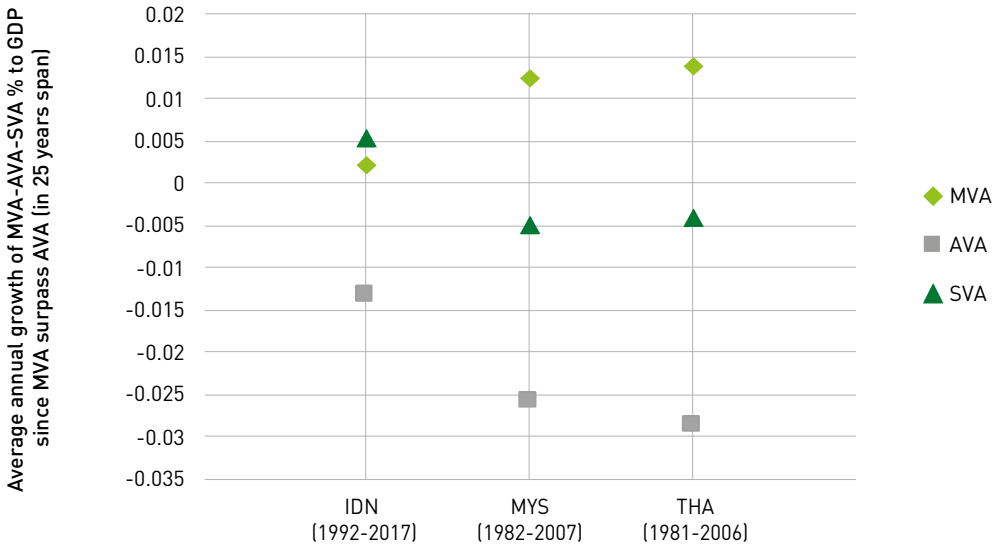
Source: OECD Input-Output Table (www.stats.oecd.org).
Note: n.e.c. = not elsewhere classified. IT = information technology.

Figure 1. **GDP per capita of Indonesia and other ASEAN countries relative to United States**
(United States = 1)



Source: AJC, based on Maddison Project Database version 2018 (Bolt et al., 2018).
Notes: ASEAN + 3 refers to 10 ASEAN members plus the People's Republic of China, Japan, and the Republic of Korea.

Figure 2. **Structural transformation of Indonesia relative to Malaysia and Thailand**



Source: AJC, based on World Development Indicators, 2018a, 2018b, 2018c.
Notes: MVA refers to manufacturing value added; AVA refers to agricultural value added; and SVA refers to service value added.

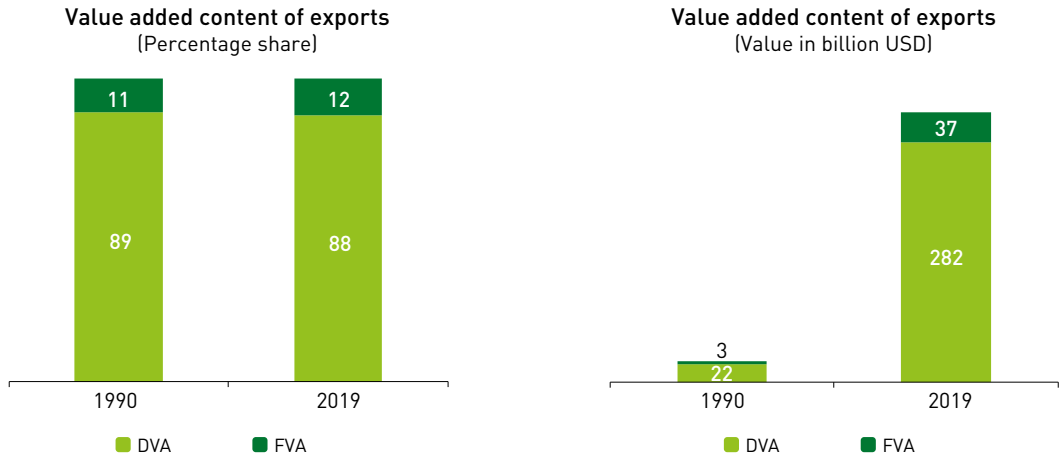
In 2019, Indonesia manifested a significant share of domestic value added in exports (DVA) at 88 per cent (or an exceptionally low share of foreign value added in exports (FVA) at 12 per cent).

Low value added created in the economy and low levels of income have a common cause. Many other ASEAN countries have grown dynamically because of the success of participating in production networks established in ASEAN by foreign transnational corporations (TNCs), while Indonesia has been less involved in regional or international production networks, or regional value chains or GVCs. This is typically observed in the data relating to GVCs (box 1).

The high share of DVA in gross exports from Indonesia does not necessarily mean that the value of the country's products is high, rather, this is because Indonesian exports include few foreign materials (inputs and parts and components). Thus, the share of DVA remains high at nearly 90 per cent over the past three decades, though the volume of DVA increased from $22 billion to $282 billion during the same period (figure 3).

In contrast, the share of FVA is worryingly low at 12 per cent in 2019 as compared with that of other developing countries in the region, e.g., Malaysia (36 per cent) in 2019 and Thailand (31 per cent) in 2018. However, the volume of FVA rose from $3 billion in 1990 to $37 billion in 2019. With greater dependence on foreign intermediate goods and technology (higher FVA), Indonesia could raise domestic productivity, the volume of DVA, and in turn gross exports in total. Both the volumes of DVA and total gross exports increased 13 times with an annual growth rate of 9 per cent. The lower FVA share is a result of the low level of foreign direct investment (FDI), as seen later in this paper. Thus, foreign investment and technology are necessary in the initial stages of industrialization, while, in the long run, industrial and technology upgrading is needed to maintain a satisfactory amount of value added (Korwatanasakul, 2019).

Figure 3. **Value added exports from Indonesia, 1990 and 2019**



Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Notes: DVA = domestic value added; FVA = foreign value added.

Box 1. **GVC terminology used in the ASEAN-Japan Centre paper series**

A country's exports comprise domestically produced value added and imported (foreign) value added that is incorporated into the country's exported goods and services. Furthermore, exports can either go to a foreign market for final consumption, or they can be intermediate inputs to be exported again to third countries (or back to the original country). GVC analysis accounts for both foreign value added in exports (the upstream perspective) and exported value added incorporated in third-country exports (the downstream perspective). The indicators used in this paper and the other 15 papers in this series include

1. **Foreign value added:** FVA indicates what part of a country's gross exports consists of inputs that have been produced in other countries. The foreign value added share is the share of the country's exports that do not add to its GDP.
2. **Domestic value added**: DVA is the part of exports that is created in country, i.e., the part of exports that contributes to GDP. The sum of foreign and domestic value added equals gross exports. Domestic value added can be related to other variables as follows:
   - As a share of GDP, DVA measures the extent to which trade contributes to the GDP of a country.
   - As a share of global value added trade (the "slice of the value added trade pie"), it can be compared with a country's share in global gross exports (relative value capture from trade).
3. **Value added incorporated in other countries' exports (DVX)**: This indicates the extent to which a country's exports are used as inputs to exports from other countries. At the global level, the sum of this value and the sum of foreign value added are the same.
4. **GVC participation** indicates the share of a country's exports that is part of a multistage trade process, by adding DVX to the foreign value added used in a country's own exports. Although the degree to which other countries use exports for further export generation may appear less relevant for policymakers, as it does not change the DVA contribution of trade, the participation rate is a useful indicator for the extent to which a country's exports are integrated into international production networks.

The GVC participation rate corrects the limitation of the foreign and domestic value added indicators in which countries at the beginning of the value chain (e.g., exporters of raw materials) by definition have a low foreign value added content of exports. It gives a more complete picture of the involvement of countries in GVCs, both upstream and downstream.

GVC indicators can also be used to assess the extent to which industries rely on internationally integrated production networks. Although the literature presents several complex methods to measure GVC length, the degree of double counting in industries, conceptually, can serve as a rough proxy for the length of GVCs. Data on value added trade by industry can provide useful indications of the comparative advantages and competitiveness of countries and hence form a basis for development strategies and policies.

Source: Adapted from UNCTAD (2013).

Unlike developed economies, the high share of DVA in Indonesia raises concerns because its manufacturing activities have been concentrated in lower tiers of production, which require minimal levels of imported input and foreign technology.

Southeast Asian countries hold strategic positions in the middle of the global production network (global value chain). Since the 1980s, the manufacturing sector in these countries, particularly the upper-middle-income ASEAN countries (i.e., Indonesia, Malaysia, and Thailand), has benefitted from the expansion of TNCs from Northeast Asian economies (e.g., Japan, Republic of Korea, Taiwan Province of China). Since 2007, ASEAN has been building a regional economic framework (i.e., the ASEAN Economic Community) with global production network expansion at its centre. Since 1990, manufactured exports from ASEAN countries have benefitted from global value chain expansion.[1] The share of foreign value added remained significant in 2017, particularly within its medium-technology manufacturing subsectors (e.g., electronics, automotive). Unlike other ASEAN countries, despite high dependence on foreign input and technology, the Indonesian share of FVA in exports remains low.

The manufacturing sector in Indonesia is still relatively underdeveloped, and weak indigenous manufacturing technological capabilities are a great concern. The sector is not yet in the same league as is in Malaysia and Thailand, whose FVA share in exports is generally high. Therefore Indonesia must clearly rely on foreign investment and technology. Nevertheless, Indonesia has an excessively low FVA share in exports at 12 per cent, compared with the 88 per cent DVA share, which is explained by the large domestic market and high concentration of local producers in lower tiers of production. Imported input and technology are mainly used to produce manufacturing goods locally that are fed to the domestic market rather than the international markets, because the domestic market is tremendous in size (274 million people) and has growing potential (growing middle class). In other words, foreign input and technology are not utilized to produce goods for exports. Hence, foreign input and technology do not count towards the share of FVA in exports.

However, the exports of products such as parts and components contribute considerably to the high share of DVA in exports (or low FVA share). Local suppliers are mainly placed in lower tiers of production, which involve labour-intensive production activities, requiring minimal levels of imported input and foreign technology (low FVA). Thus, local procurement of inputs and domestic labour employment play a significant role in creating DVA in exports. Industries such as automobiles and electrical equipment and electronics epitomize this situation.[2] For instance, automobile exports are limited because locally produced automobiles are largely for domestic consumption. Thus, a large share of exports from the automobile industry is from locally manufactured auto parts and components with high DVA generated from local materials and labour, rather than finished products, i.e., automobiles (Korwatanasakul and Intarakumnerd, 2020). The high share of DVA in Indonesia thus raises concerns rather than implies prospects as its manufacturing sector is stuck at a low-technology level.

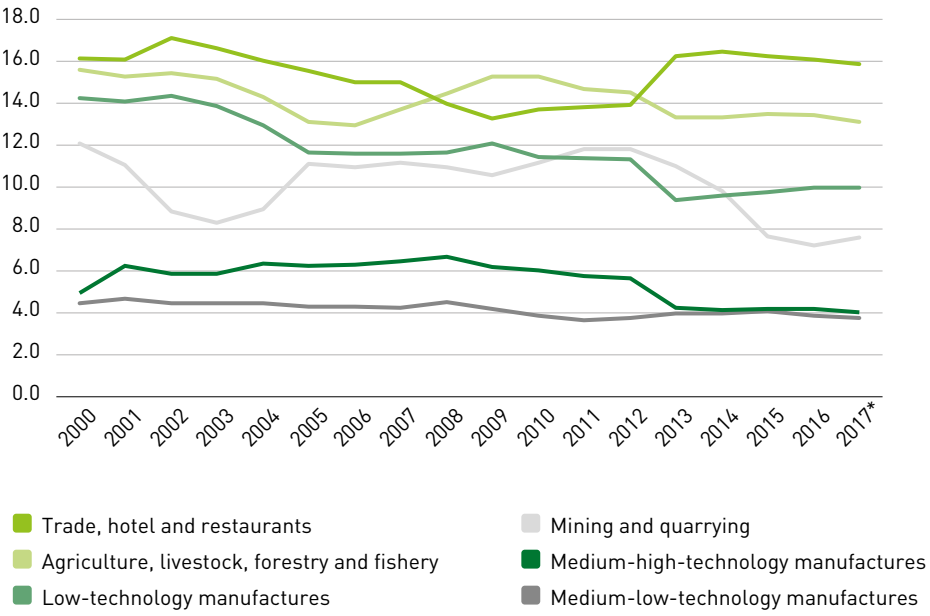
In the age of global production network expansion and GVCs, ASEAN is one of the most dynamic regions hosting TNCs in the medium-technology manufacturing sector. Yet, the Indonesian manufacturing sector has been concentrated in lower tiers of production at a low-technology level as the country continues to rely on its agricultural and other primary sector (table 1). From 2000 to 2017, particularly after the 2008 commodity boom, the share of agriculture in GDP increased, while the share of total non-oil and gas manufacturing declines. The low-technology manufacturing

[1] For further discussion of the ASEAN Economic Community; middle-income traps; and science, technology, and innovation policy in Indonesia, Malaysia, and Thailand, see Purbantina (2019b).

[2] For further discussion, see the ASEAN-Japan Centre's reports on GVCs in automobiles and GVCs in electronics.

subsectors dominate the manufacturing sector, while the medium-technology manufacturing subsectors have not grown significantly over the past two decades (figure 4).

Figure 4. **Share of Indonesian GDP at current market prices by selected industrial origin, 2000–2017***



Source: Purbantina (2019a).
* The 2017 data are provisional.

As a contributor of basic inputs such as raw materials and low-technology intermediate goods, Indonesia has actively participated in regional and global production networks.

In 2017, the gross exports in value added of the low-technology secondary sector and the primary sector amounted to $78 and $59 billion, respectively, ranking first and second among all sectors (table 2). These two sectors contribute significantly to the Indonesian economy as they account for almost half of total DVA in exports (48 per cent or $124 billion). Table 2 also emphasizes that the production of Indonesian exports barely uses foreign input and technology. The FVA share of manufacturing sector exports is as low as 17 per cent, indicating that the manufacturing exports are concentrated in products that require few imported intermediate inputs and technology. That is, the manufacturing sector specializes in labour-intensive production activities and mainly produces low-technology-intensive goods for export. Additionally, the low FVA share in exports signifies low backward GVC participation (backward linkage).[3]

[3] Backward GVC participation (backward linkage) refers to the situation in which an economy imports foreign inputs to produce intermediate or final goods and services for export. The backward linkage is measured by the share of FVA in gross exports, where the foreign value-added content of exports is analogous to vertical specialization (Korwatanasakul et al., 2020).

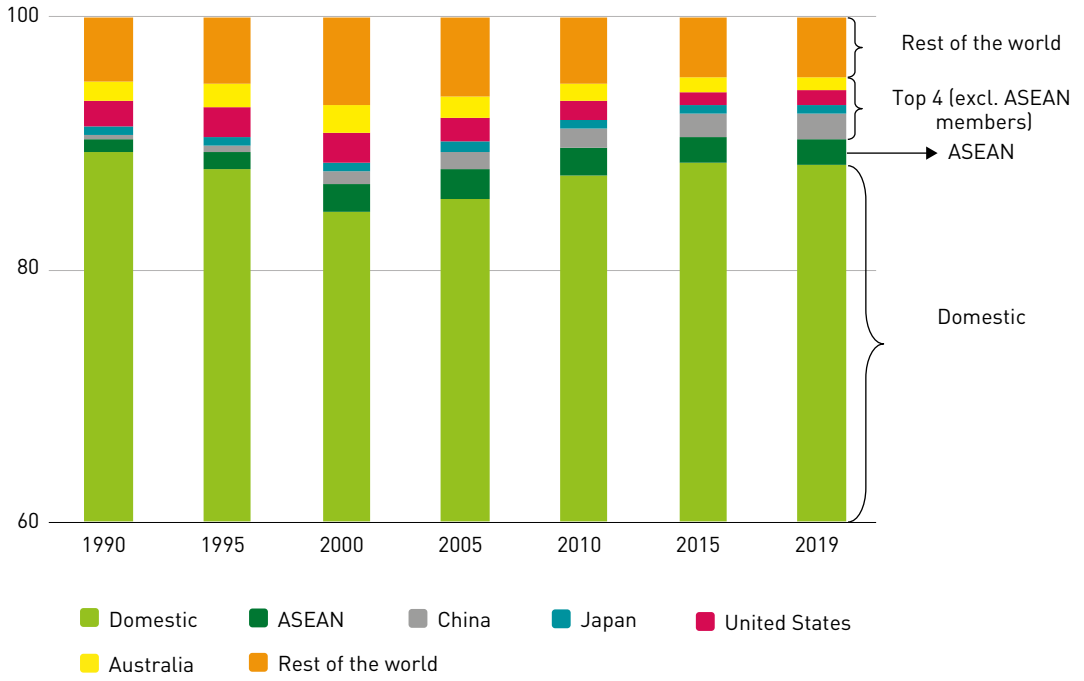
Table 2. **Structure of value-added exports from Indonesia, by sector/industry, 2017**
(Millions of dollars and per cent)

Sector/industry	Gross exports	Domestic value added (DVA)	Foreign value added (FVA)	FVA share in exports (%)
Total	**290 041**	**254 998**	**35 043**	**12.1**
Primary	**59 208**	**57 717**	**1 491**	**2.5**
Agriculture, hunting, forestry, and fishing	11 326	10 867	459	4.1
Mining, quarrying, and petroleum	47 882	46 850	1 032	2.2
Secondary	**176 019**	**146 742**	**29 277**	**16.6**
A. Low-technology	***78 360***	***66 337***	***12 023***	***15.3***
Food, beverages, and tobacco	15 602	14 603	998	6.4
Textiles, clothing, and leather	26 931	21 930	5 001	18.6
Wood and wood products	29 974	25 113	4 861	16.2
Publishing, printing, and reproduction of recorded media	927	795	132	14.2
Other manufacturing	4 926	3 896	1 031	20.9
B. Medium-low-technology	***51 033***	***43 850***	***7 183***	***14.1***
Coke, petroleum products, and nuclear fuel	14 478	12 937	1 541	10.6
Chemicals and chemical products	16 451	14 046	2 405	14.6
Rubber and plastic products	5 441	4 464	978	18
Non-metallic mineral products	3 727	3 331	395	10.6
Metal and metal products	10 936	9 072	1 864	17
C. Medium-high-technology	***45 395***	***35 507***	***9 888***	***14.1***
Machinery and equipment	6 487	3 478	3 009	46.4
Electrical and electronic equipment	36 329	29 857	6 472	17.8
Motor vehicles and other transport equipment	2 578	2 172	407	15.8
D. High-technology	***1 231***	***1 048***	***184***	***14.9***
Precision instruments	1 231	1 048	184	14.9
Tertiary	**54 807**	**50 536**	**4 271**	**7.8**
Electricity, gas, and water	75	71	5	6.4
Construction	688	605	83	12
Trade	11 746	11 171	576	4.9
Hotels and restaurants	6 728	6 459	269	4
Transport, storage, and communications	16 886	14 638	2 248	13.3
Finance	5 972	5 767	205	3.4
Business activities	677	662	15	2.2
Public administration and defence	80	76	5	6.1
Education	1 059	967	91	8.6
Health and social services	261	248	13	5
Other services	10 635	9 873	762	7.2

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: Gross exports refer to the sum of domestic value added and foreign value added. For the definition, see box 1.

However small FVA is, several foreign countries participate in supplying foreign materials. Each foreign country accounts for 1–2 per cent of gross exports (figure 5 and annex table 1). ASEAN members as a group and China are relatively large foreign suppliers, while Japan and the United States play a small role in providing inputs to Indonesian exports. Unlike other ASEAN countries, Australia plays a larger role in FVA.

Figure 5. **Value added exports from Indonesia, by domestic, ASEAN, and other top four foreign country value added creators, 1990–2019**



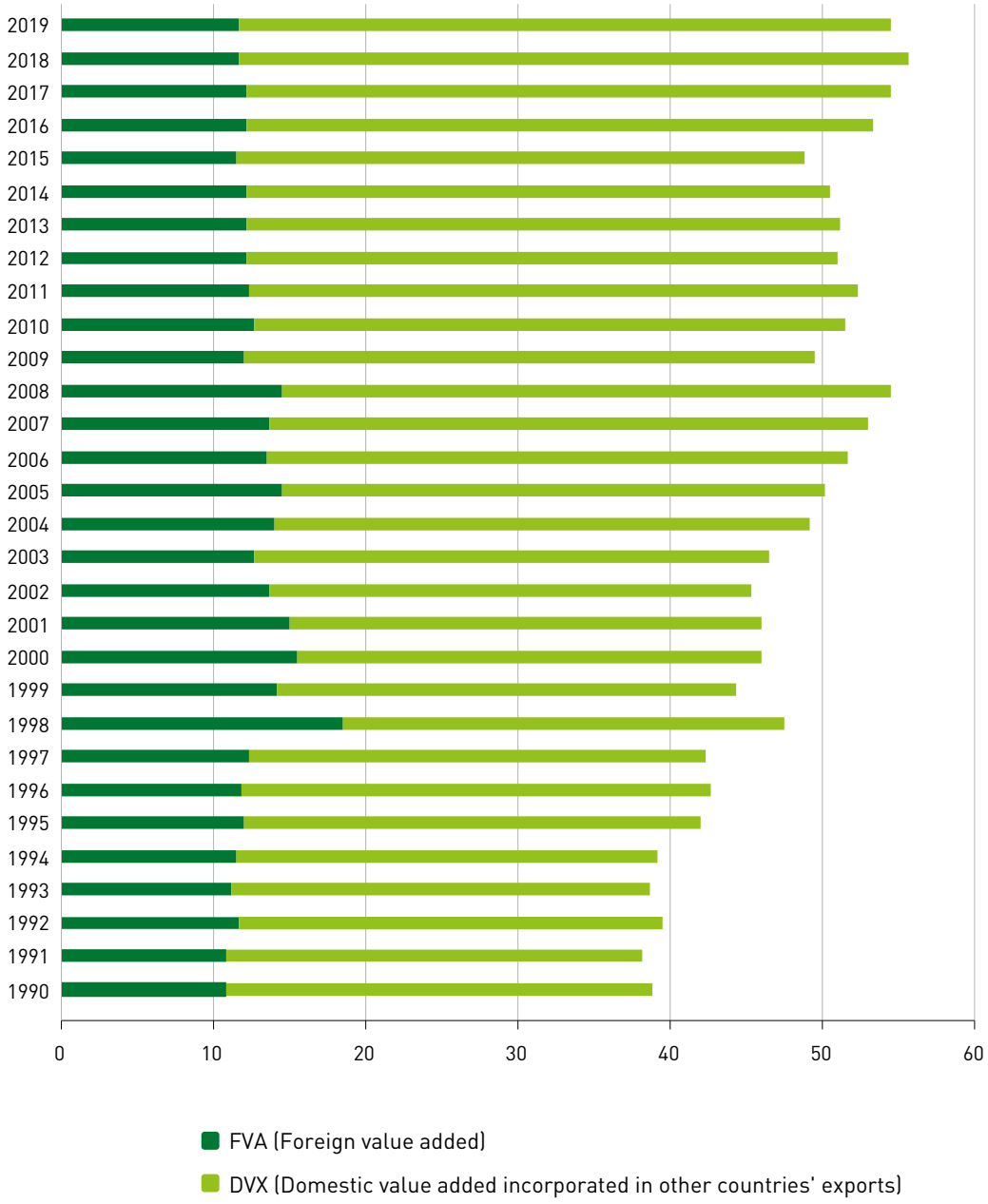
Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Despite the low FVA share in exports, the trend in Indonesian GVC participation, led by forward linkage, has been positive.[4] The country's GVC participation, particularly that in forward GVC participation, increased substantially during 1990–2019 (figure 6 and table 3). The DVX incorporated in other countries' share in exports rose from 28 per cent in 1990 to 43 per cent in 2019, which mainly comes from the export of raw materials and low-technology-intensive intermediate goods. Indonesian regional value chain (RVC) participation has also increased over time because the country's competitiveness depends on well-established regional production networks in which raw materials and intermediate goods, such as non-metallic mineral products and electrical and electronics parts and components (figure 7), tend to be traded within the region. Indonesian intraregional trade is

[4] Forward GVC participation (forward linkage) occurs when exporting domestically produced intermediate goods or services to a first economy that then re-exports them through the value chain to third economies embodied in other goods or services for further processing. The forward linkage is captured by the share of domestic value-added incorporated in the third countries' exports (indirect value-added exports, or DVX) in gross exports (Korwatanasakul et al., 2020).

roughly as important as non-intraregional trade where RVC participation (18 per cent) accounts for one third of GVC participation (55 per cent) (table 3). This tendency arises because the main industries involved in GVCs are in the low-technology manufacturing sector, which tends to feed intermediate inputs regionally. Figure 7 also shows that the services sector, particularly electricity, gas, and water, plays an important role in RVCs as it facilitates trade and production within regional production networks.

Figure 6. **GVC participation in Indonesia, 1990–2019** (Per cent)



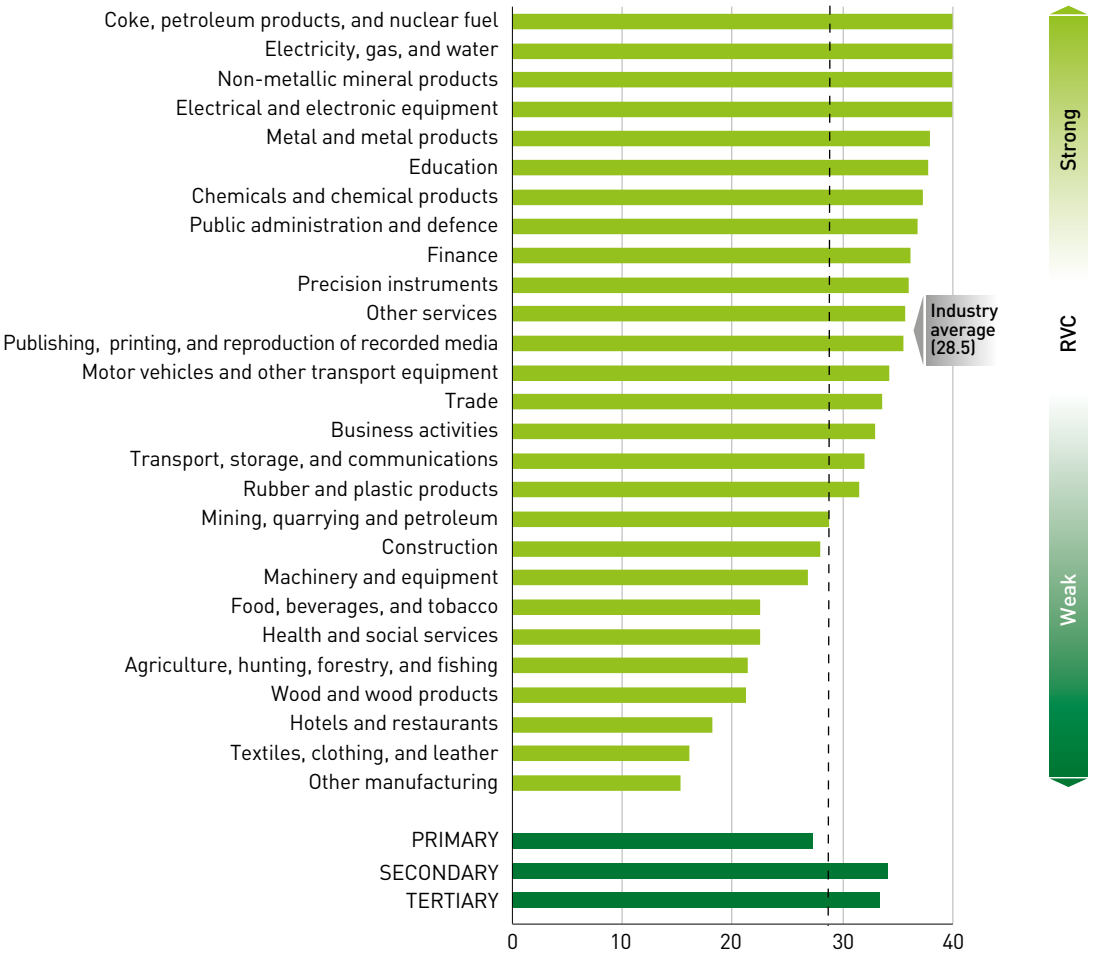
Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Table 3. **GVC and RVC participation in Indonesia, 1990–2019** (Per cent of total exports)

	FVA: Foreign value added			DVX: Domestic value added incorporated in other countries' exports			Value chain participation	
Year	Total (A) = (B+C)	Created outside ASEAN (B)	Created within ASEAN (C)	Total (D) = (E+F)	Incorporated outside ASEAN (E)	Incorporated within ASEAN (F)	GVC participation (A + D)	RVC participation (C + F)
1990	10.7	9.7	1.0	28.1	22.5	5.5	38.8	6.6
1995	12.0	10.7	1.3	29.9	20.6	9.3	41.9	10.6
2000	15.4	13.2	2.2	30.6	21.4	9.2	46.0	11.4
2005	14.4	12.0	2.4	35.8	24.9	10.8	50.2	13.2
2010	12.6	10.4	2.2	38.8	26.9	11.9	51.4	14.0
2015	11.5	9.4	2.1	37.3	25.5	11.9	48.9	13.9
2019	11.7	9.7	1.9	42.8	27.1	15.7	54.5	17.6

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Figure 7. **How important are RVCs in Indonesia, compared with GVCs, by industry in 2017**
(Percentage share of RVC participation in GVC participation)



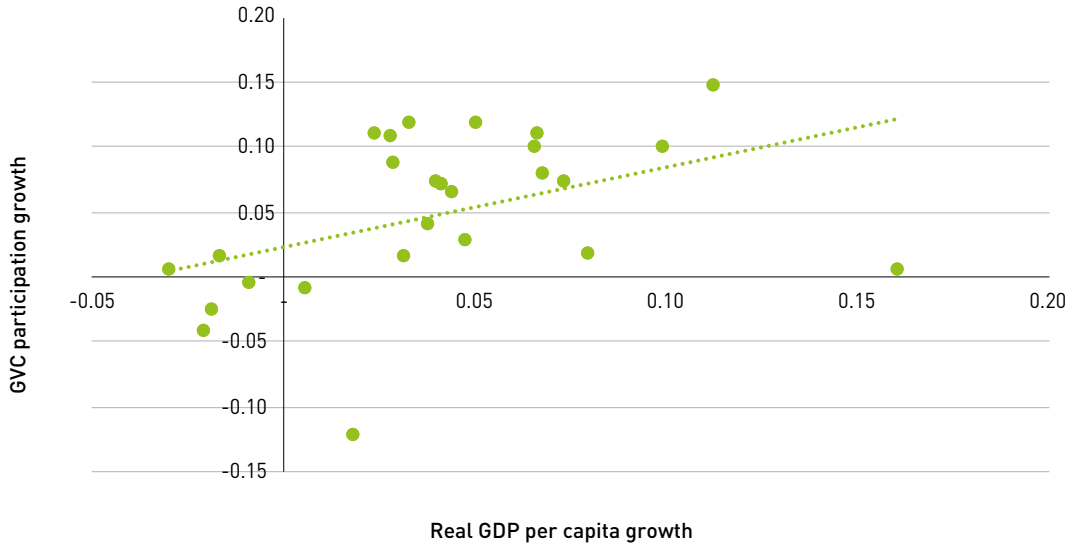
Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: The higher the share of RVC participation in GVC participation is, the more production networks are established in the region. However, for any industry, the degree of participation of countries other than ASEAN members in GVCs is larger than that of ASEAN. Industry classification is at a two-three digit level of International Standard Industrial Classification of All Economic Activities (ISIC).

Participating in global value chains may benefit Indonesia, especially in terms of economic growth, and is facilitated by foreign direct investment.

Figure 8 shows the positive relationship between GVC participation and economic growth, and figure 9 shows the positive association between GVC participation and FDI presence. Higher GVC participation may induce growth through higher trade volume and greater FDI. A country can also benefit from knowledge and technology transfer by actively and strategically engaging in value chains. Conversely, economic growth and FDI may also induce higher GVC participation. The two-way relationships between GVC participation and the economic factors, i.e., growth and FDI, imply the importance of a GVC-oriented growth model, which considers synergistic GVC upgrading and economic development strategies. To escape from the middle-income trap and build a resilient economy, Indonesia may consider adopting this growth model as a policy framework option.

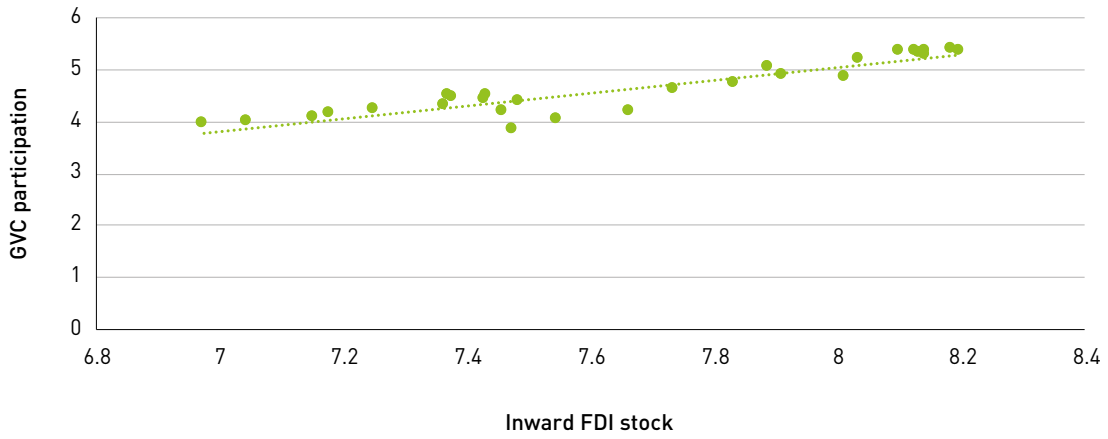
The latest figures for FDI in Indonesia shows that manufacturing accounted for more than 40 per cent during 2014–2019 (figure 10). The manufacturing share decreased relative to that of the services sector in the last few years. A declining share of manufacturing is worrisome from the GVC point of view as it means that the economy is losing opportunities to participate in GVCs established in the region. Furthermore, FDI in that sector is still mostly concentrated in medium-technology manufacturing, such as foods, metal, and machinery manufacturing. This confirms that encouraging FDI alone without ensuring the direction of FDI cannot help Indonesia upgrade in GVCs. The country must strengthen its local industries and market and strategically promote FDI. Policies that encourage the industrial and technological upgrading of the local economy and enhance human resource development, e.g., advanced engineering, design, and research and development (R&D) capabilities are required to drive the country towards a more knowledge-intensive and innovation-driven economy.

Figure 8. **Relationship between GVC participation and economic growth rates in Indonesia, 1990–2018** (Log scale)



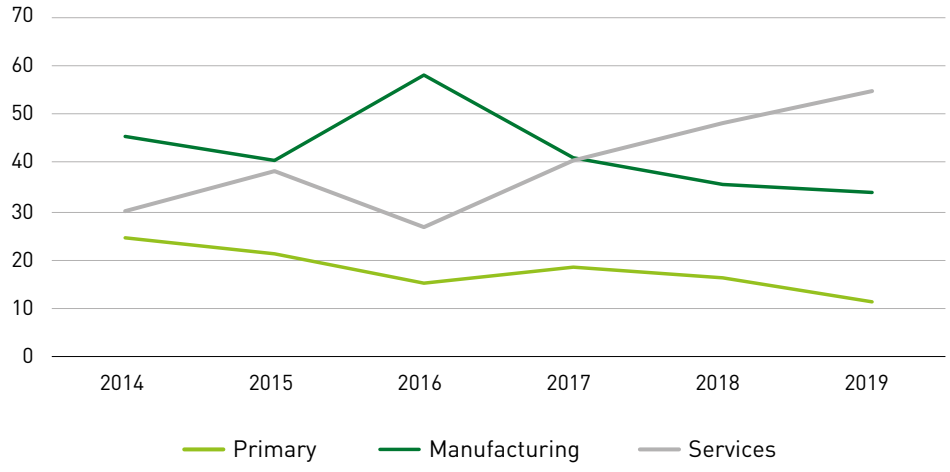
Source: AJC-UNCTAD-Eora database on ASEAN GVCs; GDP data from UNCTAD GlobStat.
Note: 28 observation points.
For GVC participation, yearly differences in the log value of the sum of FVA and DVX, both of which are in millions of dollars, are used, while, for GDP per capita, yearly differences in its log in dollars are used.

Figure 9. **Relationship between GVC participation and FDI presence in Indonesia, 1990–2018** (Log scale)



Source: AJC-UNCTAD-Eora database on ASEAN GVCs and UNCTAD FDI/TNC database (for FDI stock).
Note: 29 observation points. As data for FDI stock in 2019 are not available, data stop at 2018.
For GVC participation, the log of the sum of FVA and DVX, both of which are in millions of dollars, is used, while, for inward FDI stock, its log in millions of dollars is used.

Figure 10. **Realized FDI flows to Indonesia by sector, 2014–2019** (Distribution share)



Source: Indonesian Investment Promotion Center.

Yet, GVC expansion in Indonesia is not fully maximized, particularly in the manufacturing sector. The weak technological capability of indigenous Indonesian manufacturing firms is considered a main challenge.

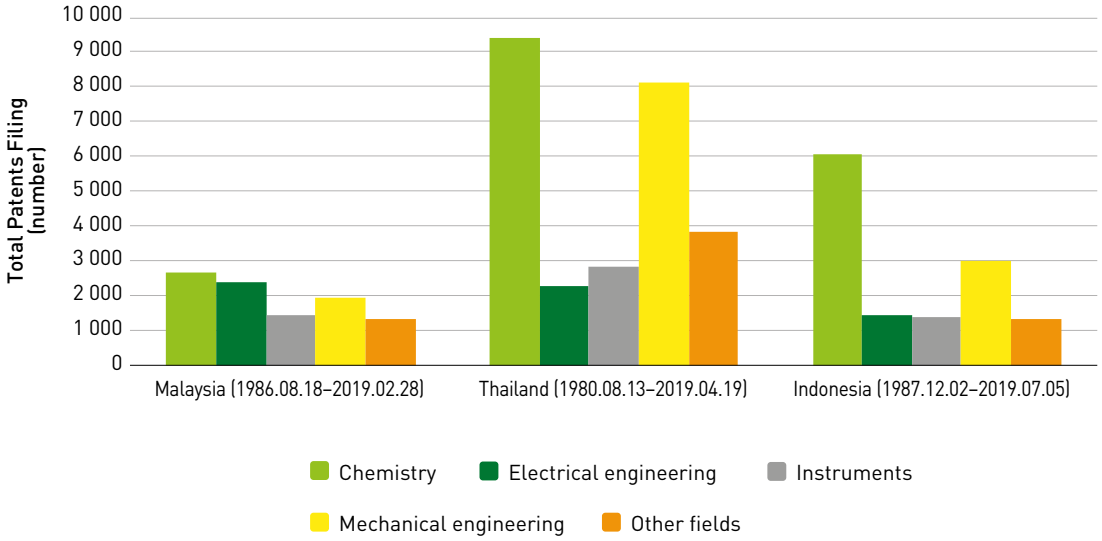
The structure of indigenous Indonesian firms shows that most are small and medium-sized enterprises (SMEs). More than 90 per cent of these SMEs are in the agriculture sector. Based on the latest data, only 16 per cent of total firm establishment in Indonesia was in manufacturing industries by 2016, of these firms 99 per cent are micro-small sized. The composition has not changed much since 2000, when 99.9 per cent of manufacturing firms were small-medium sized (Tambunan, 2007, p. 25).

The maximization of national economic potential does not automatically follow deeper integration into GVCs. The expansion of GVCs might increase indigenous firms' opportunities for exposure to global production networks. Still, these local actors might not have the capabilities to take advantage of such exposure. Requirements such as compliance with international standards, greater managerial and financial resources, and protection of in-house intellectual property may prevent local firms, particularly SMEs, from participating in GVCs (Korwatanasakul and Paweenawat, 2020). At the national level, the value-added creation process becomes the key. This is where the national innovation system's (NIS's) role through effective science, technology, and innovation (STI) policy is vital in maximizing spillover effects. The promotion of technological upgrading by the national government is essential, especially when most indigenous firms are SMEs. Due to their limitations, most SMEs cannot conduct process-innovation activities and often have low technology absorption skills (Harvie et al., 2015; Tambunan, 2010; OECD, 2016).

Most developing countries tend to underestimate the difficulty of internalizing technological spillover without a proactive indigenous innovation effort (i.e., a passive, FDI-dependent strategy). Therefore, throughout the expansion of the global value chain, foreign technology remains a static technology embedded in imported machinery (Fu et al., 2011, p. 1210). Based on the Competitive Industrial Performance Index 2020 by the United Nations Industrial Development Organization, the share of medium-high technology activities in total manufacturing value added in Malaysia, Thailand, and Indonesia in 2018, respectively, was 44 per cent, 41 per cent, and 35 per cent. Their percentages of total manufacturing exports with medium-high technology value added are 66 per cent for Malaysia and 62 per cent for Thailand, while only 29 per cent for Indonesia (UNIDO, 2020). The expansion of GVCs in Indonesia is yet to be followed with an increasing share of medium-high technology manufacturing sectors in GDP (figure 4). Despite that, medium-high technology manufacturing sectors are those that demonstrate the relative high percentage of FVA in exports, whereas the share of Indonesian DVA in exports is higher in low-technology areas such as agriculture, resource-based industry, and services sectors.

Indonesian patent characteristics are like those of Thailand, where most patents filed in national patent offices are in chemistry and mechanical engineering. However, the domination of chemistry patents is more prominent in Indonesia. More detailed patent data from the Indonesian patent office (figure 11) shows that despite the number of patents increasing in the past several years, the technological upgrading needed to proceed to a higher technological level is lacking. For the past 23 years (1993–2016), most Indonesian patents have continued to be issued mostly for agriculture products (international patent classification, or IPC, code A01), including foods (IPC code A23), followed by medical or veterinary science products (IPC code A61) (Purbantina, 2019a). Furthermore, by 2016, most patents owned by the Indonesian government (37.4 per cent) and universities (53.4 per cent) were in agriculture, the food sector, biochemistry, and veterinary science. In addition, the Indonesian National Research Priority Agenda (2015–2044) also states that the Indonesian government will continue to prioritize natural resource–based technology and natural resource–based advanced technology (Purbantina, 2019a).

Figure 11. **Total domestic patent filing at National Patent Office in selected ASEAN countries by technology sector** (Number)



Source: Purbantina (2020).

Notes: The data available do not specify the granted patents. Patent data from each country have different publication coverage (Malaysia: 1986.08.18–2019.02.28; Thailand: 1980.08.13–2019.04.19; Indonesia: 1987.12.02–2019.07.05). The numbers here include all patents filed by domestic inventors and applicants. The data show that one patent can be placed into more than one technological classification. The numbers in this figure are based on the total number of patents for each technology category listed on the ASEAN PATENTSCOPE (2019) search engine. The four technological classifications are based on the ASEAN PATENTSCOPE based on IPC codes attached to the patent. Thus, there might be some technological overlaps.

As technological spillover from foreign firms to indigenous firms is not an automatic process, NIS, which often can be observed from national STI policy, is the bridge between GVC expansion and indigenous manufacturing firms. An efficient and active NIS is the critical element in successful technology catch-up experiences as was observed in China, Japan, Republic of Korea, etc. The low number of patents in high-technology sectors in Indonesia is related to ineffective NIS. Generally speaking, inefficiency in NIS to support indigenous technology upgrading is a weakness of most middle-income countries in ASEAN. This results in low establishment of GVCs in medium- or high-technology sectors in Indonesia.

Other than the number of patents, two types of measurements can be used to evaluate NIS outcomes, i.e., the share of gross expenditure on R&D (GERD) and innovation performance. Indonesia has the lowest share of GERD compared with other middle-income countries in ASEAN, such as Malaysia and Thailand. The share of GERD in 2012 GDP in Malaysia was 1.13 per cent, while the share of GERD in 2015 GDP in Thailand was 0.63 per cent, whereas the share of GERD in 2012 GDP in Indonesia was even weaker in 0.08 per cent (OECD, 2016).

Malaysia, which has the highest economic income level of the three, had already successfully moved from a primary sector to a multisector economy with high-technology manufacturing. One of the indicators is innovation performance as measured by the Global Innovation Index (table 4). Compared with the other middle-income ASEAN countries, Indonesia ranks the lowest on the Global Innovation Index. Furthermore, compared with 10 years ago, Indonesia has not made significant advances in the ranking. Indonesia scores particularly low in knowledge creation and knowledge diffusion.

Table 4. **Global Innovation Index ranking: Indonesia against selected middle-income ASEAN countries and Japan**

	Overall rank		Knowledge and technology output scores (0–100) (year 2019)		
Country name	2009–2010 (out of 132)	2019 (out of 127)	Knowledge creation	Knowledge impact	Knowledge diffusion
Indonesia	72	85	4.6	36.7	11.5
Japan	13	15	56.1	39.7	56.4
Malaysia	28	35	9.9	46.3	40
Thailand	60	44	16.7	43.6	33.8
Viet Nam	71	45	8.1	56.5	42.1

Source: INSEAD (2010); Cornell University et al. (2019).

While the government budget for research and development is increasing and continues to be crucial, more strategic policies that focus on indigenous manufacturing firms and integrated cooperation among the government, research institutes, and indigenous firms is a priority.

Indonesia is one of the ASEAN member countries that has not been able to move up from the middle-income level despite being the world's tenth largest economy. From the perspective of structural change, the slow growth of the manufacturing value added share in GDP is one element that needs attention. The high share of DVA in Indonesia is concerning because the country's manufacturing activities have been concentrated in lower tiers of production, which require minimal levels of imported input and foreign technology. In other words, signs indicate that Indonesia has failed to maximize GVC expansion despite being an active player. Indonesia only takes a role as contributor of basic inputs such as raw materials and low-technology intermediate goods.

If Indonesia wishes to integrate deeply into GVCs and RVCs, which is a viable option for the country to grow dynamically, too weak and too small indigenous manufacturing firms should be improved so as to capture and develop technology spillover. Facilitating GVC expansion is one thing, but optimizing GVC expansion for the national economy is another (i.e., upgrading indigenous technological capabilities as exhibited by national pattern characteristics). Doing so demands strong government support through an effective NIS or STI policy. Evaluation of the NIS in Indonesia, mainly through the country's STI policy, shows that two elements can be improved.

First, the Indonesian government needs to construct a well-integrated NIS where the Ministry of Industry and the Ministry of Research, Technology, and Higher Education work together to not only produce the technology but also to disseminate it to indigenous manufacturing firms. Researchers already note that effective triple-helix coordination (government-university-industry) is the key to transforming foreign technology (through channels such as FDI, technical licensing agreements, and technical assistance) into indigenous technology (Nugroho et al., 2013, p. 162). Within the Ministry of Research, Technology, and Higher Education, the Directorate General of Innovation Strengthening is the key agent in charge of various technology innovation policy programs since 2016. Indonesia not

only spends less on R&D, but its national innovation structure is also too complicated.[5] Support from the Indonesian Ministry of Industry for the indigenous firms' development is lacking. As the country facilitates the expansion of GVC into the Indonesian automotive sector, the Ministry of Industry has been less involved in developing indigenous technological capabilities. As the Ministry of Industry focuses only on promoting local components, the indigenous firms remain small in scale and weak in their innovation activities. They cannot compete with the TNCs' subsidiaries, which receive higher investments and have access to better technological infrastructure (Kardoyo, 2013, pp. 187-188).

Second, the Indonesian government needs to prioritize upgrading the indigenous manufacturing firms within GVCs, particularly at the medium-low technology and medium-high technology levels. Medium-high technology manufacturing sectors such as electronics and automotive sectors have produced high shares of FVA as they are well integrated into GVCs and RVCs. Yet, as most Indonesian indigenous firms remain in low-technology sectors, the Indonesian STI policy and STI policy agents have been mostly involved in low-technology sector development. This means that the expansion of GVCs into Indonesia has not fully maximized by the host country.

The inefficiency of STI policy in developing the indigenous medium-technology manufacturing sector in Indonesia can be observed through the case of the national car project in Indonesia. Indigenous automotive sector development in Indonesia is one of the most complex challenges yet to be solved. Along with the electronics sector, the automotive industry benefits most from expanding the global value chain in Southeast Asia. The case of the national car project in Indonesia highlights what went wrong, especially the government's neglect of medium-high technology development by university-based research institutes, even though this sector received the centre of excellence (COE) program (box 2). Therefore, a well-planned NIS could be the bridge that transforms foreign technology into indigenous technology in the manufacturing sector. As presented earlier, the Indonesian government needs to establish a well-planned (i.e., targeted at industrial catch-up) and efficient NIS (i.e., having efficient coordination among key ministries such as industry, R&D, and higher education) to support the indigenous manufacturing firms' upgrading within the GVC. In this regard, STI policy agents need to focus on creating a network to transform foreign technology into indigenous technology capabilities instead of creating something that is "purely local".

The capacity of local firms determines the competitiveness of Indonesia as a partner in GVCs as weak manufacturing companies prevent the country from becoming a GVC-oriented economy. In this process, the STI policy plays an important role in enhancing manufacturing capacity. At the same time, Indonesia should pay more attention to the external economy, in addition to the domestic economy, placing trade, investment, and foreign technology at the centre of its development process.

[5] Too many actors are pursuing disparate objectives. Almost 20 separate departments and ministries are involved in R&D activities. They are under the Ministry of Finance, the National Development and Planning Agency, the Coordinating Ministry of Economic Affairs, and the Ministry of Research and Technology. The Ministry of Research and Technology and the Ministry of Industry are two central bodies that receive significant government spending in R&D. But the Ministry of Research and Technology is responsible for the formulation, co-ordination, and implementation of STI policy. It oversees government R&D agencies, such as the Indonesian Institute of Sciences and the Agency for the Assessment and Application of Technology. The latter has the largest R&D budget. Meanwhile, the Agency for Research and Development of Industry oversees another R&D agency (Nugroho et al., 2013, pp. 167–169).

Box 2. **STI policy and indigenous automotive sector development in Indonesia: Centre of excellence in automotive systems and control, Sepuluh Nopember Institute of Technology (PUI-SKO ITS)**

The case of the Indonesian national car project, including indigenous automotive sector development, demonstrated that the Indonesian government paid less attention to indigenous technological catch-up and more to the use of local resources (including workers). As a result, GVC expansion did not automatically follow despite a significant effort to support indigenous technological upgrading through the NIS. Throughout history, various national car projects in Indonesia have been neither about transforming foreign technology into indigenous technological capabilities nor about export market expansion (i.e., upgrading within GVCs). Instead, the project has been mostly led by the indigenous engineer's economic nationalism approach to creating a "pure national product".

Maximizing technological upgrading opportunities brought by GVC expansion requires indigenous firms that can develop foreign technology. The problem is, however, that SMEs in parts and components are still too weak to be subcontractors for tiers 1 and 2 within the automotive GVC. National car projects mostly emerge from unorganized R&D activities led by different institutions. There is a disconnect between the university-based research institutes' R&D activities and the industry-based R&D activities concerning the STI objectives (Kardoyo, 2013).

PUI-SKO ITS is one of the most important COEs in medium-high technology development. Nevertheless, the domination of TNCs within the Indonesian automotive market and their large contribution to the Indonesian economy might add to the reluctance of the national government to facilitate R&D outputs entering the market or even to provide industrial partners. Overall, there are two types of COEs: university based and non-university based. The regulations stipulate that COEs need to have an established network with an industry partner to receive research funds from the government. However, in reality, plenty of COEs do not conduct technological development activities yet continue to receive government budget (Purbantina, 2019a).[6]

The representative of the PUI-SKO ITS states that the main difficulty of COEs that develop medium-level technology face is the technology dissemination stages (i.e., entering the market). Most university-based COEs that have successfully entered the market are mostly those that develop low-technology, such as food. A lack of cooperation seems to exist between the Ministry of Research, Technology, and Higher Education and the Ministry of Industry within the triple-helix scheme. Another problem is the lack of support from the government (e.g., tax incentives) for indigenous automotive industries to work with local R&D institutions. The government also does not facilitate networking between local R&D institutions and automotive TNCs (subsidiaries). Since the 1980s local suppliers do not seem to have been able to keep up with the cost of production. Overall, an observation at the local level confirms government negligence relative to medium-technology dissemination to indigenous industry (Purbantina, 2019a).

[6] In 2017, the Indonesian government started to use two categorizations for universiy-based COEs: the science-oriented university-based COEs and the product-oriented university-based COEs. The representative of PUI-SKO ITS argues that the national government continues to make many compromises for university-based COEs due to their need to maximize government budget absorption.

REFERENCES

ASEAN PATENTSCOPE. (2019). ASEAN PATENTSCOPE. Retrieved 13 August 2019, from http://ipsearch.aseanip.org/wopublish-search/public/patents?9.

Cornell University, INSEAD, and WIPO. (2019). *The Global Innovation Index 2019*. Ithaca, Fontainebleau, and Geneva: Cornell, INSEAD, and WIPO.

Fu, X., C. Pietrobelli, and L. Soete. (2011). "The Role of Foreign Technology and Indigenous Innovation in the Emerging Economies: Technological Change and Catching-Up". *World Development* 39(7), 1204–1212.

Harvie, C., D. Narjoko, and S. Oum. (2015). *Economic Integration in East Asia: Production Networks and Small and Medium Enterprises*. Oxon and New York: Routledge-ERIA Studies in Development Economics.

INSEAD. (2010). *Global Innovation Index Report 2009–2010*. URL: GII-2009-2010-Report.pdf (globalinnovationindex.org).

Kardoyo, H. (2013). "Sistem Inovasi, Entrepreneurship, dan Peran Pemerintah dalam Mendukung Pembangunan Industri Mobil Nasional". In H. Kardoyo, *Entrepreneurship Berbasis Teknologi dalam Sistem Inovasi Nasional: Studi Kasus Perintis Mobil Nasional*. Jakarta: LIPI Press, pp. 179–210.

Korwatanasakul, U. (2019). *Global Value Chains in ASEAN: Thailand*. Tokyo: ASEAN-Japan Centre.

Korwatanasakul, U. and P. Intarakumnerd. (2020). *Global Value Chains in ASEAN: Automobile*s. Tokyo: ASEAN-Japan Centre.

Korwatanasakul, U. and S. W. Paweenawat. (2020). "Trade, Global Value Chains, and Small and Medium-Sized Enterprises in Thailand: A Firm-Level Panel Analysis". ADBI Working Papers No. 1130. Tokyo: Asian Development Bank Institute.

Korwatanasakul, U., Y. Baek, and A. Majoe. (2020). "Analysis of Global Value Chain Participation and the Labour Market in Thailand: A Micro-Level Analysis". ERIA Discussion Paper Series No. 331. Jakarta: Economic Research Institute for ASEAN and East Asia.

Bolt, J., R. Inklaar, H. de Jong, and J. L. van Zanden. (2018). "Rebasing 'Maddison': New Income Comparisons and the Shape of Long-Run Economic Development". Maddison Project Database, version 2018. https://www.rug.nl/ggdc/historicaldevelopment/maddison/research.

Nugroho, Y., G. Hutschenreiter, I. A. Pawennei, and M. Amalia. (2013). "Indonesia Innovation Profile". *OECD Reviews of Innovation Policy Innovation in Southeast Asia*. Paris: OECD Publishing. https://doi.org/10.1787/9789264128712-en.

OECD. (2016). *OECD Science, Technology, and Innovation Outlook 2016*. Paris: OECD Publishing. https://doi.org/10.1787/sti_in_outlook-2016-en.

Purbantina, A. P. (2019a). "Technology-Driven Structural Change and the National Science Technology and Innovation Policy in Indonesia: The Problem of Economic Nationalism Discourse". *Rangsit Journal of Social Science and Humanities* 6(1), 13–30.

Purbantina, A. P. (2019b). "The AEC and a Technology-Driven Industrial Catch-Up: Three ASEAN Country Cases". *Global & Policy* 7(2), 158–182.

Purbantina, A. P. (2020). *Re-Contextualization of Indigenous Technology-Driven Industrial Catch-Up Strategy: A Comparative Approach on Seven Countries' Level of Urgency*, PhD thesis. Tokyo: Waseda University.

Tambunan, T. (2007). "Trade and Investment Liberalization Effects on SME Development: A Literature Review and a Case Study of Indonesia". Asia-Pacific Research and Training Network on Trade Working Paper Series No. 42. New York: United Nations.

Tambunan, T. (2010). *Trade Liberalization and SMEs in ASEAN*. New York: Nova Science Publishers.

UNCTAD. (2013). *World Investment Report 2013: Global Value Chains: Investment and Trade for Development*. Geneva and New York: United Nations.

UNIDO. (2015). *Industrial Development Report 2016: The Role of Technology and Innovation in Inclusive and Sustainable Industrial Development*. Vienna: UNIDO.

UNIDO. (2020). *Competitive Industrial Performance Index*. Retrieved from https://stat.unido.org/database/CIP.

World Development Indicators. (2018a). "Agriculture, Forestry, and Fishing, Value Added (% of GDP)". Retrieved 13 September 2018, from https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS.

World Development Indicators. (2018b). "Manufacturing, Value Added (% of GDP)". Retrieved 13 September 2018, from https://data.worldbank.org/indicator/nv.ind.manf.zs.

World Development Indicators. (2018c). "Services, Value Added (% of GDP)". Retrieved 13 September 2018, from https://data.worldbank.org/indicator/NV.SRV.TOTL.ZS.

ANNEX TABLES

Annex table 1. **Value added exports of goods and services from Indonesia, by value added creator, 1990–2019** (Millions of dollars)

	Value added creator	Exports from Indonesia						
		1990	1995	2000	2005	2010	2015	2019
Foreign value added (FVA)	**World**	2 607	6 637	10 237	15 578	26 409	29 547	37 257
	Developed countries	1 623	4 265	5 793	8 283	13 159	13 481	16 687
	Europe	550	1 457	1 990	3 255	5 108	5 272	6 604
	European Union	518	1 358	1 857	3 042	4 699	4 817	6 058
	Belgium	30	83	102	175	250	285	330
	France	61	169	216	376	583	592	679
	Germany	145	372	493	833	1 364	1 205	1 850
	Italy	51	120	162	276	438	457	529
	Netherlands	47	147	214	276	398	427	495
	Spain	20	55	69	145	215	246	318
	Sweden	36	73	72	123	205	232	268
	United Kingdom	66	178	298	430	587	668	664
	Other developed Europe	33	100	133	213	409	454	546
	Switzerland	22	69	85	141	290	339	401
	North America	402	1 072	1 670	2 031	3 107	3 261	3 976
	Canada	38	97	194	260	425	470	588
	United States	364	976	1 476	1 771	2 682	2 791	3 388
	Other developed countries	671	1 736	2 134	2 998	4 943	4 949	6 107
	Australia	156	368	520	866	1 534	1 801	2 060
	Japan	498	1 326	1 552	2 034	3 211	2 918	3 771
	New Zealand	14	34	49	80	162	190	227
	Developing countries	961	2 324	4 342	7 126	12 911	15 670	20 104
	Africa	35	100	182	313	520	515	611
	Nigeria	8	33	69	129	160	190	228
	Latin America and the Caribbean	42	115	194	310	632	666	798
	South America	36	96	148	246	528	550	660
	Brazil	17	41	55	108	239	250	335
	Asia	883	2 106	3 962	6 498	11 745	14 476	18 677
	West Asia	191	328	541	823	1 310	1 620	1 911
	Kuwait	12	43	82	173	287	379	444
	Saudi Arabia	147	221	334	449	688	830	971
	South, East and South-east Asia	692	1 778	3 421	5 675	10 435	12 856	16 766
	East Asia	406	956	1 757	2 741	5 130	6 590	9 457
	China	91	333	625	1 456	3 301	4 398	6 789
	Hong Kong, China	24	72	105	134	161	231	226
	Korea, Republic of	114	310	542	784	1 283	1 597	2 002
	Taiwan Province of China	177	241	483	364	379	358	427
	South Asia	40	113	204	367	783	932	1 145
	India	20	61	123	259	606	719	908
	ASEAN	246	709	1 460	2 568	4 523	5 334	6 163
	Brunei Darussalam	2	3	7	12	20	24	25
	Cambodia	0	0	2	1	2	2	2
	Lao People's Democratic Republic	0	0	0	0	1	1	2
	Malaysia	94	209	566	984	1 728	2 049	2 517
	Myanmar	1	2	8	6	12	15	18
	Philippines	8	26	35	67	146	175	250
	Singapore	93	270	401	744	1 657	1 902	1 830
	Thailand	39	122	264	475	709	875	1 106
	Viet Nam	9	76	176	278	250	291	413
	Oceania	1	3	5	6	14	13	18
	Transition economies	22	47	101	168	339	396	467
	Russian Federation	16	35	81	125	254	309	333
Domestic value added (DVA)		21 657	48 632	56 146	92 455	183 576	226 783	282 366
Gross exports		24 264	55 269	66 382	108 033	209 985	256 330	319 623

Source: AJC-UNCTAD-Eora database on ASEAN GVCs. Data for 2016–2019 are projected by UNCTAD and Eora.
Note: All values are estimated. Regions and countries refer to where the value added is attributed. For GVC terminology, see box 1.

Annex table 2.1. **Value added exports of goods and services from Indonesia, by value added creator and by sector and industry,**

		Exports from Indonesia by sector/industry							
		Primary			Manufacturing				
	Value added creator	Total	Agriculture, hunting, forestry, and fishing	Mining, quarrying, and petroleum	Total	Food, beverages, and tobacco	Textiles, clothing, and leather	Wood and wood products	Coke, petroleum products, and nuclear fuel
Foreign value added (FVA)	**World**	306	44	262	1 847	49	446	453	119
	Developed countries	187	30	157	1 133	34	237	315	28
	Europe	60	9	51	401	9	88	116	7
	European Union	57	9	48	377	8	83	111	6
	Belgium	3	1	2	23	1	7	6	0
	France	6	1	5	45	1	10	13	1
	Germany	18	3	15	103	2	21	28	2
	Italy	6	1	5	37	1	9	10	1
	Netherlands	5	1	4	34	1	10	8	0
	Spain	2	0	2	15	0	3	5	0
	Sweden	3	0	3	28	0	3	12	0
	United Kingdom	7	1	6	47	1	10	12	1
	Other developed Europe	4	1	3	24	1	5	6	0
	Switzerland	2	0	2	16	0	3	3	0
	North America	47	8	39	271	10	54	87	6
	Canada	4	1	3	28	1	5	12	1
	United States	43	7	36	243	9	49	75	6
	Other developed countries	80	12	68	461	15	95	111	15
	Australia	14	3	11	112	5	28	24	2
	Japan	64	9	56	337	9	65	80	13
	New Zealand	1	0	1	10	0	1	6	0
	Developing countries	116	14	102	698	15	206	135	90
	Africa	4	1	3	26	1	6	8	1
	Nigeria	1	0	1	6	0	1	1	1
	Latin America and the Caribbean	4	1	3	30	1	7	10	0
	South Africa	3	1	3	26	1	6	9	0
	Brazil	1	0	1	13	0	3	5	0
	Asia	108	12	96	642	14	194	117	88
	West Asia	33	2	31	134	2	23	19	48
	Kuwait	1	0	1	8	0	2	2	0
	Saudi Arabia	29	1	28	102	1	11	12	46
	South, East and South-east Asia	75	11	65	508	12	170	98	40
	East Asia	35	6	29	311	6	129	58	5
	China	10	2	8	65	2	23	13	3
	Hong Kong, China	1	0	1	20	0	8	5	0
	Korea, Republic of	8	1	7	90	1	45	15	1
	Taiwan Province of China	16	2	13	134	2	53	24	1
	South Asia	5	1	4	30	1	9	5	4
	India	2	0	1	15	0	5	3	0
	ASEAN	35	4	31	168	5	33	36	31
	Brunei Darussalam	0	0	0	1	0	0	0	0
	Cambodia	0	0	0	0	0	0	0	0
	Lao People's Democratic Republic	0	0	0	0	0	0	0	0
	Malaysia	18	1	17	67	1	8	9	28
	Myanmar	0	0	0	1	0	0	1	0
	Philippines	1	0	1	6	0	1	2	0
	Singapore	12	2	10	59	2	12	16	1
	Thailand	4	1	3	27	1	9	6	1
	Viet Nam	1	0	1	6	1	2	1	0
	Oceania	0	0	0	1	0	0	0	0
	Transition economies	2	1	2	16	0	3	3	1
	Russian Federation	2	0	1	12	0	3	2	0
	Domestic value added (DVA)	8 386	1 099	7 287	7 970	650	1 672	2 230	607
	Gross exports	8 692	1 143	7 548	9 817	699	2 118	2 683	726

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: All values are estimated. Regions and countries refer to where the value added is attributed. For GVC terminology, see box 1.

1990 (Millions of dollars)

Exports from Indonesia by sector/industry								
					Services			
Chemicals and chemical products	Metal and metal products	Machinery and equipment	Electrical and electronic equipment	Motor vehicles and other transport equipment	Total	Trade	Hotels and restaurants	Transport, storage, and communications
134	118	82	238	17	453	100	30	199
73	81	63	165	12	303	64	21	134
30	25	23	55	4	89	19	6	38
27	24	22	52	3	84	18	5	36
2	1	1	2	0	4	1	0	2
4	3	2	7	0	10	2	1	5
7	6	8	16	1	24	5	1	10
3	2	3	5	0	8	2	0	3
3	2	1	4	0	8	1	1	4
1	1	1	2	0	3	1	0	1
1	2	1	3	0	5	1	0	2
4	3	2	6	0	12	3	1	6
3	2	1	3	0	5	1	0	2
2	1	1	2	0	3	1	0	1
17	14	13	41	3	85	19	6	38
2	1	1	2	0	7	2	1	3
15	13	12	38	2	78	17	5	35
26	42	27	69	6	129	26	9	59
5	12	3	13	1	29	6	3	13
21	29	24	55	5	97	20	6	45
0	0	0	1	0	2	1	0	1
60	36	18	71	5	146	35	10	63
2	2	1	3	0	6	2	0	2
1	0	0	1	0	2	0	0	1
2	3	1	3	0	8	2	1	3
1	2	1	3	0	7	2	0	3
1	1	0	1	0	3	1	0	1
56	31	17	65	4	133	32	9	57
20	4	1	7	1	24	5	1	12
1	0	0	1	0	3	1	0	1
18	3	1	4	0	16	3	1	8
36	27	16	57	4	109	26	7	45
15	17	11	37	2	60	15	4	24
5	4	2	7	1	16	4	1	6
1	1	0	2	0	2	1	0	1
4	5	2	8	1	16	4	1	6
6	7	6	19	1	26	7	2	10
3	2	1	3	0	6	1	0	2
2	1	0	2	0	3	1	0	1
18	8	4	18	1	43	10	3	19
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
11	2	1	3	0	9	2	1	4
0	0	0	0	0	0	0	0	0
0	0	0	1	0	1	0	0	1
5	4	2	9	1	22	5	1	10
1	1	1	3	0	8	2	1	3
0	0	0	1	0	2	1	0	1
0	0	0	0	0	0	0	0	0
1	2	0	2	0	4	1	0	2
1	1	0	2	0	3	1	0	1
598	731	68	386	107	5 300	1 538	648	1 291
731	849	150	624	124	5 753	1 639	679	1 490

Annex table 2.2. **Value added exports of goods and services from Indonesia, by value added creator and by sector and industry,**

		Exports from Indonesia by sector/industry							
		Primary			Manufacturing				
	Value added creator	Total	Agriculture, hunting, forestry, and fishing	Mining, quarrying, and petroleum	Total	Food, beverages, and tobacco	Textiles, clothing, and leather	Wood and wood products	Coke, petroleum products, and nuclear fuel
Foreign value added (FVA)	**World**	659	100	560	4 978	145	939	1 163	241
	Developed countries	419	62	358	3 179	97	540	802	68
	Europe	133	20	113	1 126	25	212	303	12
	European Union	124	18	105	1 048	23	199	286	11
	Belgium	7	2	5	66	2	17	15	1
	France	14	2	12	130	3	24	36	1
	Germany	39	5	34	282	6	45	71	3
	Italy	13	1	11	93	2	16	25	1
	Netherlands	11	2	9	116	3	39	23	1
	Spain	5	1	4	42	1	6	14	0
	Sweden	6	1	5	59	1	5	25	1
	United Kingdom	16	2	14	133	3	24	33	2
	Other developed Europe	9	2	8	78	2	13	17	1
	Switzerland	7	1	6	55	2	9	10	1
	North America	104	17	87	782	31	118	228	19
	Canada	7	1	6	75	4	9	33	2
	United States	96	15	81	707	28	109	195	17
	Other developed countries	183	25	158	1 271	41	210	271	36
	Australia	29	7	23	277	17	62	58	3
	Japan	151	18	133	960	22	145	195	32
	New Zealand	2	0	1	28	1	3	16	0
	Developing countries	235	37	199	1 763	47	393	354	173
	Africa	10	1	9	76	2	13	21	10
	Nigeria	5	0	5	24	0	2	3	9
	Latin America and the Caribbean	9	2	7	88	3	15	28	1
	South Africa	7	2	6	74	2	13	25	1
	Brazil	3	1	2	33	1	6	13	0
	Asia	216	34	183	1 597	42	365	304	162
	West Asia	40	4	37	240	5	42	41	56
	Kuwait	4	1	3	29	1	5	8	1
	Saudi Arabia	31	2	29	161	3	20	24	52
	South, East and South-east Asia	176	30	146	1 357	37	323	263	106
	East Asia	84	18	66	752	17	219	142	24
	China	40	12	29	248	8	60	44	19
	Hong Kong, China	3	1	3	62	1	23	15	1
	Korea, Republic of	21	3	18	251	4	77	51	2
	Taiwan Province of China	19	3	17	191	4	59	32	2
	South Asia	11	1	9	88	3	23	15	9
	India	4	1	3	49	2	13	9	1
	ASEAN	81	11	71	516	17	82	106	74
	Brunei Darussalam	0	0	0	2	0	0	0	1
	Cambodia	0	0	0	0	0	0	0	0
	Lao People's Democratic Republic	0	0	0	0	0	0	0	0
	Malaysia	29	2	27	156	4	19	26	43
	Myanmar	0	0	0	2	0	0	1	0
	Philippines	3	1	2	19	1	3	6	0
	Singapore	27	5	22	189	5	32	47	3
	Thailand	10	2	8	91	4	21	21	2
	Viet Nam	12	1	11	57	2	6	5	25
	Oceania	0	0	0	2	0	0	1	0
	Transition economies	4	1	3	35	1	6	7	1
	Russian Federation	3	1	2	26	1	5	6	1
	Domestic value added (DVA)	15 053	2 432	12 622	21 732	1 832	3 740	5 463	1 103
	Gross exports	15 713	2 531	13 181	26 709	1 976	4 679	6 626	1 345

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: All values are estimated. Regions and countries refer to where the value added is attributed. For GVC terminology, see box 1.

1995 (Millions of dollars)

Exports from Indonesia by sector/industry								
					Services			
Chemicals and chemical products	Metal and metal products	Machinery and equipment	Electrical and electronic equipment	Motor vehicles and other transport equipment	Total	Trade	Hotels and restaurants	Transport, storage, and communications
294	271	276	954	91	998	195	76	474
162	182	212	663	66	666	124	51	321
61	59	72	218	20	198	37	14	94
55	55	67	203	19	185	35	13	89
4	3	3	10	1	10	2	1	5
7	6	7	27	3	24	4	2	13
15	15	23	64	6	52	9	3	24
5	5	8	19	1	14	3	1	6
6	5	5	17	2	19	3	2	10
2	2	3	7	1	8	1	1	4
2	4	4	10	1	8	2	1	3
8	8	7	25	2	29	5	2	15
6	4	5	15	1	13	2	1	6
4	3	4	12	1	8	2	1	3
39	34	45	169	13	187	37	15	88
3	3	3	10	1	14	3	1	6
35	31	42	159	12	172	34	14	81
62	89	96	277	33	282	50	22	139
10	24	11	46	6	61	11	8	29
51	64	84	227	26	215	38	13	108
1	1	1	3	0	5	1	1	1
131	85	63	284	25	324	70	25	149
6	4	2	9	1	13	3	1	7
4	1	0	2	0	4	1	0	2
4	8	2	14	1	18	4	2	8
3	7	2	11	1	15	3	1	7
1	3	1	4	0	6	1	1	2
120	74	59	260	22	292	63	22	134
29	9	4	26	2	47	9	3	25
2	1	1	5	0	10	2	1	6
25	5	2	14	1	28	6	2	15
90	65	55	234	20	245	53	19	109
34	37	34	138	11	119	27	9	49
17	13	12	40	4	45	9	4	19
2	2	2	10	1	6	1	1	2
9	12	10	45	3	38	9	3	15
7	10	10	43	3	30	7	2	13
8	4	2	12	1	15	3	1	7
4	3	1	9	1	8	2	1	3
48	23	19	84	8	112	23	8	53
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
21	5	4	18	2	24	4	2	13
0	0	0	0	0	0	0	0	0
1	1	1	4	0	4	1	0	1
11	10	10	42	4	55	11	3	26
4	5	3	18	1	21	5	2	8
10	1	0	2	0	7	1	1	4
0	0	0	0	0	0	0	0	0
2	3	1	7	1	8	2	1	4
1	2	1	5	0	6	1	0	3
1 497	1 662	308	2 398	481	11 846	3 310	1 592	3 037
1 791	1 933	584	3 352	573	12 844	3 505	1 668	3 512

Annex table 2.3. **Value added exports of goods and services from Indonesia, by value added creator and by sector and industry,**

		Exports from Indonesia by sector/industry							
		Primary			Manufacturing				
	Value added creator	Total	Agriculture, hunting, forestry, and fishing	Mining, quarrying, and petroleum	Total	Food, beverages, and tobacco	Textiles, clothing, and leather	Wood and wood products	Coke, petroleum products, and nuclear fuel
Foreign value added (FVA)	**World**	625	126	500	8 438	279	1 730	1 249	547
	Developed countries	317	75	242	4 773	164	913	780	137
	Europe	95	25	70	1 680	46	366	293	19
	European Union	88	23	66	1 567	43	343	276	17
	Belgium	5	2	3	87	3	26	13	1
	France	10	3	7	181	6	37	33	2
	Germany	26	6	20	413	11	74	67	4
	Italy	8	2	7	139	3	26	25	2
	Netherlands	8	2	5	187	5	76	24	1
	Spain	3	1	3	57	2	10	12	1
	Sweden	3	1	2	63	1	7	19	0
	United Kingdom	15	4	11	245	6	51	40	4
	Other developed Europe	7	2	5	113	4	23	17	1
	Switzerland	4	1	3	74	2	14	9	1
	North America	98	24	74	1 328	55	236	252	45
	Canada	11	3	9	157	8	24	41	8
	United States	87	21	66	1 171	47	212	211	36
	Other developed countries	124	26	98	1 765	63	311	235	74
	Australia	25	8	17	426	32	99	60	9
	Japan	96	17	79	1 286	29	203	157	64
	New Zealand	2	1	1	42	2	7	17	0
	Developing countries	302	49	252	3 587	113	802	457	405
	Africa	14	2	12	148	4	27	25	21
	Nigeria	9	1	8	54	1	6	5	19
	Latin America and the Caribbean	9	3	6	158	6	32	32	2
	South Africa	7	2	5	123	5	25	26	1
	Brazil	2	1	1	47	2	9	12	0
	Asia	278	44	234	3 277	102	742	399	382
	West Asia	53	6	48	427	11	75	48	97
	Kuwait	5	1	4	62	2	13	11	4
	Saudi Arabia	40	3	38	262	5	33	25	85
	South, East and South-east Asia	225	39	186	2 849	91	667	350	284
	East Asia	76	19	57	1 520	41	450	184	31
	China	34	9	25	530	20	152	57	22
	Hong Kong, China	3	1	2	94	3	39	15	1
	Korea, Republic of	19	4	15	475	10	131	61	4
	Taiwan Province of China	20	5	15	418	8	128	51	3
	South Asia	13	3	10	169	9	44	20	15
	India	5	2	3	103	6	29	13	1
	ASEAN	136	17	119	1 160	41	173	146	238
	Brunei Darussalam	1	0	1	6	0	1	1	2
	Cambodia	0	0	0	2	0	1	0	0
	Lao People's Democratic Republic	0	0	0	0	0	0	0	0
	Malaysia	68	5	63	453	11	50	46	145
	Myanmar	0	0	0	7	1	1	1	0
	Philippines	2	1	1	28	2	5	4	0
	Singapore	24	8	16	306	12	56	54	4
	Thailand	18	3	15	218	10	45	30	24
	Viet Nam	24	1	23	141	5	13	9	62
	Oceania	0	0	0	4	0	0	1	0
	Transition economies	7	2	5	78	2	15	12	5
	Russian Federation	5	1	4	62	2	12	10	5
Domestic value added (DVA)		15 146	2 277	12 869	30 673	3 097	5 696	5 631	2 288
Gross exports		15 772	2 403	13 369	39 111	3 375	7 426	6 879	2 835

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: All values are estimated. Regions and countries refer to where the value added is attributed. For GVC terminology, see box 1.

2000 (Millions of dollars)

Exports from Indonesia by sector/industry								
					Services			
Chemicals and chemical products	Metal and metal products	Machinery and equipment	Electrical and electronic equipment	Motor vehicles and other transport equipment	Total	Trade	Hotels and restaurants	Transport, storage, and communications
639	455	789	1 781	162	1 168	185	83	641
295	276	556	1 081	108	701	105	49	390
102	89	193	370	34	214	33	15	116
92	83	181	344	32	200	31	13	109
6	5	7	17	1	10	2	1	5
12	9	18	43	5	25	3	2	14
25	21	62	102	10	53	8	3	29
8	7	22	32	2	15	2	1	7
9	8	13	28	3	19	3	2	10
4	3	7	12	1	8	1	1	4
2	5	8	14	1	6	1	0	3
17	14	24	55	5	39	6	2	23
9	6	12	26	2	14	2	1	7
6	4	10	18	1	7	1	1	3
87	61	141	301	30	243	36	16	142
11	8	12	28	3	26	4	2	15
76	53	128	273	27	217	32	14	128
106	126	222	411	44	244	36	19	131
18	40	32	78	9	69	10	8	37
86	83	187	324	34	169	25	9	92
1	2	2	6	0	6	1	1	2
338	172	230	683	52	451	77	33	240
16	9	6	24	2	19	3	1	10
10	2	1	6	0	7	1	0	4
10	16	8	32	3	26	4	2	15
7	14	6	24	2	19	3	2	10
2	5	3	9	1	6	1	1	3
312	147	215	626	47	405	70	29	215
61	19	14	63	4	60	10	4	35
5	3	2	14	1	15	3	1	9
47	9	7	32	2	32	5	2	19
251	128	201	563	43	345	59	26	179
82	75	129	339	23	160	30	12	76
37	27	48	111	10	60	9	5	32
3	3	5	17	1	7	2	1	3
24	23	35	111	7	48	10	3	22
18	21	41	99	5	44	9	3	19
17	9	7	30	2	22	4	2	12
9	7	5	21	2	14	2	1	8
152	45	64	195	18	163	26	11	91
1	0	0	1	0	1	0	0	0
0	0	0	1	0	0	0	0	0
0	0	0	0	0	0	0	0	0
80	14	19	57	3	45	7	3	26
0	0	0	1	0	1	0	0	1
1	1	2	7	1	5	1	0	3
19	16	30	76	10	72	10	4	42
20	9	11	42	3	28	5	3	13
30	3	2	9	1	11	2	1	6
0	0	0	1	0	1	0	0	0
6	7	4	16	1	16	2	1	11
5	4	3	12	1	13	2	1	9
2 377	1 736	657	5 711	542	10 290	2 636	1 464	2 854
3 016	2 191	1 446	7 492	703	11 458	2 821	1 547	3 495

Annex table 2.4. **Value added exports of goods and services from Indonesia, by value added creator and by sector and industry,**

		Exports from Indonesia by sector/industry							
		Primary			Manufacturing				
	Value added creator	Total	Agriculture, hunting, forestry, and fishing	Mining, quarrying, and petroleum	Total	Food, beverages, and tobacco	Textiles, clothing, and leather	Wood and wood products	Coke, petroleum products, and nuclear fuel
Foreign value added (FVA)	**World**	838	201	638	12 731	462	2 476	2 083	747
	Developed countries	375	113	262	6 774	259	1 238	1 241	98
	Europe	135	41	95	2 726	81	532	526	26
	European Union	126	38	88	2 546	75	497	496	24
	Belgium	7	3	4	149	5	39	25	1
	France	15	5	10	313	11	61	61	3
	Germany	38	11	27	691	19	117	123	6
	Italy	12	3	9	236	6	44	44	2
	Netherlands	10	3	7	234	8	74	35	2
	Spain	6	2	4	122	4	20	29	1
	Sweden	4	1	3	106	2	11	35	1
	United Kingdom	19	5	13	351	9	69	62	5
	Other developed Europe	9	3	6	179	6	34	29	2
	Switzerland	6	2	4	122	4	23	16	1
	North America	99	31	68	1 597	75	282	336	25
	Canada	10	3	7	215	13	31	68	4
	United States	89	28	61	1 382	62	252	268	21
	Other developed countries	140	41	99	2 452	104	424	380	47
	Australia	35	13	22	705	52	148	113	9
	Japan	102	26	75	1 664	48	264	231	38
	New Zealand	2	1	2	67	3	8	33	0
	Developing countries	456	85	371	5 820	199	1 213	823	644
	Africa	23	3	20	253	8	43	38	41
	Nigeria	16	1	15	101	2	9	9	39
	Latin America and the Caribbean	13	5	8	252	10	47	58	3
	South Africa	10	3	6	203	8	38	49	2
	Brazil	4	1	2	91	4	17	26	1
	Asia	419	77	342	5 310	180	1 123	726	601
	West Asia	65	9	56	644	21	118	89	111
	Kuwait	9	3	7	127	5	27	26	5
	Saudi Arabia	47	4	43	351	9	46	40	98
	South, East and South-east Asia	354	68	286	4 667	160	1 004	637	490
	East Asia	114	33	80	2 335	74	647	315	57
	China	69	20	49	1 236	46	339	145	47
	Hong Kong, China	3	1	2	121	3	49	19	1
	Korea, Republic of	28	8	19	664	17	168	112	6
	Taiwan Province of China	13	4	10	311	8	90	38	3
	South Asia	16	4	11	306	16	84	43	10
	India	9	3	6	220	13	60	30	2
	ASEAN	225	30	195	2 026	69	273	280	423
	Brunei Darussalam	1	0	1	9	0	1	1	2
	Cambodia	0	0	0	1	0	0	0	0
	Lao People's Democratic Republic	0	0	0	0	0	0	0	0
	Malaysia	114	8	106	782	18	74	85	263
	Myanmar	0	0	0	5	1	1	1	0
	Philippines	3	1	2	54	3	10	9	1
	Singapore	38	14	24	563	23	99	108	8
	Thailand	31	5	26	388	16	70	61	48
	Viet Nam	38	1	36	223	8	18	14	101
	Oceania	0	0	0	5	0	1	1	0
	Transition economies	8	3	5	137	4	25	19	4
	Russian Federation	6	2	4	103	3	20	14	4
Domestic value added (DVA)		24 517	3 732	20 785	49 821	5 198	8 599	9 160	4 060
Gross exports		25 355	3 933	21 422	62 553	5 660	11 075	11 244	4 807

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: All values are estimated. Regions and countries refer to where the value added is attributed. For GVC terminology, see box 1.

2005 (Millions of dollars)

Exports from Indonesia by sector/industry								
					Services			
Chemicals and chemical products	Metal and metal products	Machinery and equipment	Electrical and electronic equipment	Motor vehicles and other transport equipment	Total	Trade	Hotels and restaurants	Transport, storage, and communications
957	751	1 150	2 756	194	2 006	310	138	1 082
383	424	777	1 593	122	1 133	168	79	610
165	152	310	629	45	393	57	26	213
151	142	291	587	43	369	54	24	200
10	9	11	30	2	19	3	1	10
20	17	29	76	6	48	6	3	28
40	38	99	176	14	104	15	6	55
14	12	36	55	3	29	4	2	14
14	11	18	43	4	33	4	2	18
7	8	16	25	2	17	3	1	9
4	7	12	23	2	12	2	1	6
24	21	34	81	6	60	9	3	36
14	10	19	42	2	24	4	2	13
10	7	15	30	1	14	2	1	7
92	82	157	379	25	335	53	23	179
11	11	16	40	3	35	6	3	19
81	70	141	339	23	300	47	20	160
126	190	309	585	51	405	58	31	218
27	67	56	140	12	125	17	14	67
95	120	249	432	38	269	38	15	147
2	3	3	10	0	10	2	2	4
565	313	365	1 130	70	850	138	58	459
30	16	10	42	2	37	6	2	21
21	3	2	10	1	12	2	1	7
15	27	13	52	3	44	7	3	24
11	24	9	39	2	33	6	3	17
4	10	5	17	1	13	2	1	5
520	270	342	1 035	64	768	125	52	414
82	34	22	106	5	114	19	7	67
9	7	5	29	1	37	6	2	22
60	14	9	48	2	52	9	3	30
439	236	319	929	58	654	106	45	347
135	131	196	527	32	292	50	21	145
88	65	106	274	17	150	23	12	75
4	5	6	24	1	10	2	1	5
30	44	57	149	10	93	17	6	46
13	17	27	80	4	39	7	3	18
27	20	14	60	3	45	7	4	24
20	16	10	45	2	30	5	3	15
277	85	109	343	23	317	49	20	178
1	0	0	1	0	1	0	0	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
148	25	30	94	4	88	13	5	52
0	0	0	1	0	1	0	0	1
3	3	5	15	1	9	2	1	4
36	33	50	143	13	143	21	7	83
37	19	21	75	4	56	11	5	27
52	5	2	13	1	18	3	1	10
0	1	0	1	0	1	0	0	0
9	14	8	33	2	23	3	1	13
7	9	6	24	1	16	2	1	10
4 032	2 959	907	9 532	742	18 116	4 468	2 490	5 177
4 989	3 710	2 057	12 287	936	20 121	4 778	2 628	6 260

Annex table 2.5. **Value added exports of goods and services from Indonesia, by value added creator and by sector and industry,**

		Exports from Indonesia by sector/industry							
		Primary			Manufacturing				
	Value added creator	Total	Agriculture, hunting, forestry, and fishing	Mining, quarrying, and petroleum	Total	Food, beverages, and tobacco	Textiles, clothing, and leather	Wood and wood products	Coke, petroleum products, and nuclear fuel
Foreign value added (FVA)	**World**	1 227	336	891	21 889	773	3 984	3 569	1 137
	Developed countries	527	174	354	10 912	413	1 855	1 994	175
	Europe	184	61	123	4 351	125	770	832	37
	European Union	169	56	113	4 001	114	705	778	33
	Belgium	9	4	5	215	7	50	32	2
	France	19	7	12	493	17	90	92	4
	Germany	53	17	36	1 159	31	183	206	9
	Italy	16	5	11	379	9	66	70	3
	Netherlands	14	5	9	336	13	79	54	3
	Spain	8	2	6	185	5	29	41	1
	Sweden	6	2	4	180	3	18	62	1
	United Kingdom	23	7	16	484	13	92	82	6
	Other developed Europe	15	5	10	351	11	65	54	3
	Switzerland	10	3	7	253	8	46	33	2
	North America	139	48	91	2 465	117	411	520	37
	Canada	15	5	9	354	21	47	117	6
	United States	124	42	81	2 111	95	364	404	31
	Other developed countries	204	65	140	4 096	172	675	642	102
	Australia	58	23	35	1 262	87	245	201	17
	Japan	141	40	102	2 666	77	409	365	84
	New Zealand	4	2	3	139	6	14	72	1
	Developing countries	686	158	528	10 689	352	2 078	1 537	953
	Africa	29	6	23	425	15	77	71	44
	Nigeria	16	1	14	127	3	13	14	40
	Latin America and the Caribbean	23	9	15	517	20	89	125	6
	South Africa	19	7	12	434	17	73	110	5
	Brazil	7	3	4	205	8	34	60	1
	Asia	633	143	490	9 735	316	1 911	1 339	903
	West Asia	93	15	78	1 036	33	184	144	174
	Kuwait	15	5	10	213	9	42	43	9
	Saudi Arabia	64	6	58	546	14	67	62	152
	South, East and South-east Asia	540	128	412	8 699	283	1 727	1 195	729
	East Asia	187	62	125	4 425	127	1 071	582	93
	China	134	44	90	2 833	93	715	323	81
	Hong Kong, China	4	1	2	145	3	51	22	1
	Korea, Republic of	36	12	24	1 116	23	215	196	7
	Taiwan Province of China	13	4	9	327	8	89	39	3
	South Asia	27	9	18	665	35	176	87	10
	India	19	7	12	523	29	132	65	5
	ASEAN	326	57	269	3 609	120	481	527	626
	Brunei Darussalam	2	0	2	16	0	2	2	4
	Cambodia	0	0	0	1	0	0	0	0
	Lao People's Democratic Republic	0	0	0	1	0	0	0	0
	Malaysia	174	15	159	1 400	31	127	152	454
	Myanmar	1	0	0	9	1	1	2	1
	Philippines	6	2	4	121	7	20	20	2
	Singapore	76	30	46	1 275	48	216	237	16
	Thailand	38	8	30	582	27	100	99	56
	Viet Nam	30	1	29	204	5	13	13	93
	Oceania	1	0	0	11	1	1	2	0
	Transition economies	14	5	9	287	8	50	38	8
	Russian Federation	10	4	6	218	5	39	28	7
	Domestic value added (DVA)	45 327	7 584	37 742	102 451	10 680	16 498	17 915	9 377
	Gross exports	46 554	7 920	38 633	124 340	11 454	20 482	21 484	10 514

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: All values are estimated. Regions and countries refer to where the value added is attributed. For GVC terminology, see box 1.

2010 (Millions of dollars)

Exports from Indonesia by sector/industry								
					Services			
Chemicals and chemical products	Metal and metal products	Machinery and equipment	Electrical and electronic equipment	Motor vehicles and other transport equipment	Total	Trade	Hotels and restaurants	Transport, storage, and communications
1 613	1 276	2 191	5 119	290	3 289	466	217	1 761
628	632	1 361	2 702	160	1 717	238	117	909
270	223	566	1 082	56	572	78	37	299
243	206	524	994	52	529	72	34	277
15	12	21	49	2	26	4	2	13
32	25	54	129	9	71	8	5	42
68	58	182	311	16	152	21	9	76
21	18	65	93	4	43	6	3	21
24	17	34	74	4	48	6	4	27
12	11	28	41	2	22	3	1	10
7	10	22	40	2	19	3	1	9
35	26	53	124	6	80	11	4	45
28	17	42	89	4	43	6	3	22
20	12	34	67	2	27	4	2	12
141	119	265	615	30	504	74	33	267
18	17	27	67	3	57	8	5	31
123	102	238	547	26	447	66	28	236
216	290	530	1 005	74	642	85	48	343
49	105	119	276	20	215	28	22	114
161	178	402	700	53	404	53	23	220
4	4	6	22	1	19	4	3	7
966	617	808	2 343	126	1 533	223	98	832
42	26	22	83	4	65	9	4	37
24	4	4	17	1	17	3	1	10
28	52	30	112	6	91	14	6	51
22	47	24	89	5	75	11	5	41
8	21	13	40	2	27	5	2	12
896	537	754	2 146	116	1 376	200	87	743
132	49	42	183	8	180	27	10	108
15	11	10	51	2	60	9	3	37
96	21	17	79	3	78	12	4	46
764	488	712	1 962	108	1 195	173	76	636
247	299	428	1 097	58	517	77	34	256
190	147	304	697	36	334	46	23	170
5	6	9	34	1	13	2	1	6
38	130	83	273	17	131	23	8	61
14	16	31	91	4	39	6	3	19
58	44	38	150	7	91	14	8	46
48	37	31	122	6	65	10	6	31
459	145	246	715	42	587	82	34	333
3	1	1	2	0	2	0	0	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
268	42	62	186	8	154	20	9	91
1	0	0	2	0	2	0	0	1
6	6	12	36	2	19	3	2	9
81	66	129	347	26	306	41	15	178
50	25	40	128	6	89	15	7	43
50	5	2	14	1	16	2	1	9
0	1	1	3	0	2	0	0	1
18	27	22	74	4	38	5	2	20
15	19	15	55	3	26	4	2	15
9 142	5 811	2 155	20 609	1 440	35 792	8 129	4 710	10 667
10 754	7 086	4 345	25 728	1 729	39 081	8 595	4 927	12 428

Annex table 2.6. **Value added exports of goods and services from Indonesia, by value added creator and by sector and industry,**

		Exports from Indonesia by sector/industry							
		Primary			Manufacturing				
	Value added creator	Total	Agriculture, hunting, forestry, and fishing	Mining, quarrying, and petroleum	Total	Food, beverages, and tobacco	Textiles, clothing, and leather	Wood and wood products	Coke, petroleum products, and nuclear fuel
Foreign value added (FVA)	**World**	1 403	389	1 014	24 471	877	4 446	3 974	1 350
	Developed countries	542	185	357	11 165	437	1 889	2 077	165
	Europe	190	65	125	4 494	131	790	867	35
	European Union	174	59	115	4 103	118	718	809	32
	Belgium	10	4	6	245	8	58	36	2
	France	20	7	12	501	17	89	95	3
	Germany	48	16	32	1 021	28	155	181	8
	Italy	17	5	12	396	10	68	74	3
	Netherlands	15	5	9	361	14	86	58	3
	Spain	9	3	6	212	6	32	48	1
	Sweden	7	2	5	205	4	20	72	1
	United Kingdom	26	8	17	552	15	105	94	7
	Other developed Europe	17	6	11	391	12	72	58	3
	Switzerland	12	4	8	297	9	53	38	2
	North America	150	53	97	2 576	126	421	549	38
	Canada	16	6	10	392	24	50	132	7
	United States	134	47	87	2 184	102	371	417	31
	Other developed countries	202	68	135	4 096	181	678	661	92
	Australia	69	28	41	1 477	100	288	240	20
	Japan	127	37	90	2 423	72	367	330	70
	New Zealand	5	2	3	163	8	16	86	1
	Developing countries	845	198	647	12 970	431	2 497	1 854	1 174
	Africa	32	6	25	417	15	63	70	53
	Nigeria	19	2	17	150	4	15	16	49
	Latin America and the Caribbean	25	9	16	544	21	94	134	6
	South Africa	20	8	12	451	18	77	118	5
	Brazil	8	3	5	215	8	36	65	1
	Asia	788	183	605	11 998	393	2 339	1 648	1 115
	West Asia	116	19	97	1 277	42	222	178	219
	Kuwait	20	6	13	280	12	55	56	12
	Saudi Arabia	78	7	71	658	17	80	74	189
	South, East and South-east Asia	672	164	508	10 721	351	2 117	1 470	896
	East Asia	251	85	166	5 672	166	1 348	742	127
	China	189	63	126	3 761	125	923	426	114
	Hong Kong, China	5	2	3	208	5	71	32	2
	Korea, Republic of	44	16	29	1 389	29	269	247	9
	Taiwan Province of China	12	4	8	309	8	83	37	3
	South Asia	32	11	21	790	43	211	104	12
	India	23	8	14	619	36	158	77	5
	ASEAN	389	68	321	4 258	142	558	624	757
	Brunei Darussalam	2	0	2	19	0	2	2	5
	Cambodia	0	0	0	1	0	0	0	0
	Lao People's Democratic Republic	0	0	0	1	0	0	0	0
	Malaysia	209	18	191	1 662	37	148	180	551
	Myanmar	1	0	0	12	2	2	3	1
	Philippines	7	3	4	146	8	23	24	2
	Singapore	87	35	52	1 463	55	245	276	19
	Thailand	48	10	37	717	33	122	123	71
	Viet Nam	35	2	34	238	7	16	15	109
	Oceania	1	0	0	10	1	1	2	0
	Transition economies	16	6	10	336	9	60	43	11
	Russian Federation	12	4	8	265	6	48	33	10
	Domestic value added (DVA)	54 386	9 123	45 263	128 277	13 393	20 503	22 075	11 758
	Gross exports	55 789	9 512	46 277	152 747	14 270	24 948	26 049	13 108

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: All values are estimated. Regions and countries refer to where the value added is attributed. For GVC terminology, see box 1.

2015 (Millions of dollars)

Exports from Indonesia by sector/industry								
					Services			
Chemicals and chemical products	Metal and metal products	Machinery and equipment	Electrical and electronic equipment	Motor vehicles and other transport equipment	Total	Trade	Hotels and restaurants	Transport, storage, and communications
1 839	1 355	2 524	5 674	323	3 668	565	255	1 936
636	612	1 456	2 740	164	1 772	267	129	923
281	218	613	1 108	58	587	87	39	303
249	200	563	1 009	54	540	80	36	280
18	13	25	55	3	30	5	2	15
32	23	57	131	9	72	9	5	42
59	48	174	273	15	136	21	9	67
22	17	71	97	4	44	7	3	21
26	17	39	78	5	51	7	4	28
13	12	34	47	2	25	4	2	11
8	11	26	45	2	20	4	1	9
40	28	63	141	7	90	13	5	51
32	18	50	99	4	47	7	3	24
24	13	42	79	3	31	5	2	14
147	117	295	636	31	535	86	37	279
20	18	32	73	4	62	10	5	33
127	100	263	563	28	473	76	32	245
208	276	548	996	75	650	94	52	341
57	116	148	322	24	256	36	26	134
143	153	390	641	49	368	53	22	197
5	5	7	25	1	22	5	4	8
1 181	713	1 042	2 848	155	1 853	291	123	990
46	25	22	81	4	65	10	5	37
28	5	5	19	1	20	3	1	12
30	52	32	117	6	97	15	7	53
23	47	25	92	5	78	13	6	42
9	20	13	41	2	28	5	2	12
1 104	635	987	2 647	145	1 689	265	112	899
164	58	54	227	10	227	36	14	134
20	14	14	67	3	80	12	4	49
117	23	21	94	4	93	16	6	54
941	577	933	2 420	135	1 462	229	98	765
327	368	582	1 405	77	666	108	47	325
259	190	428	928	49	448	68	33	224
8	8	14	50	2	18	3	1	9
47	155	109	339	21	163	31	10	74
13	14	31	87	4	37	6	3	17
70	49	47	177	8	110	18	10	56
59	41	37	144	7	77	13	7	36
544	160	305	838	50	686	103	42	385
3	1	1	3	0	3	0	0	2
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
319	47	77	217	9	179	25	11	105
1	0	0	2	0	2	0	0	1
7	6	15	44	2	23	4	2	10
94	71	156	398	30	352	50	18	204
62	29	51	157	8	109	20	9	53
58	5	3	16	1	18	3	1	10
0	1	1	2	0	2	0	0	1
22	30	25	86	5	44	7	3	23
19	22	19	66	3	31	5	2	17
11 282	7 119	3 025	26 422	1 838	44 118	10 135	5 786	13 171
13 121	8 474	5 549	32 096	2 161	47 786	10 700	6 041	15 107

Annex table 2.7. **Value added exports of goods and services from Indonesia, by value added creator and by sector and industry,**

		Exports from Indonesia by sector/industry							
		Primary			Manufacturing				
	Value added creator	Total	Agriculture, hunting, forestry, and fishing	Mining, quarrying, and petroleum	Total	Food, beverages, and tobacco	Textiles, clothing, and leather	Wood and wood products	Coke, petroleum products, and nuclear fuel
Foreign value added (FVA)	**World**	1 491	459	1 032	29 277	998	5 001	4 861	1 541
	Developed countries	587	219	368	13 443	494	2 119	2 531	199
	Europe	211	78	133	5 488	152	893	1 077	44
	European Union	193	71	122	5 032	138	816	1 008	40
	Belgium	11	5	6	278	9	62	41	2
	France	20	8	12	560	19	93	107	4
	Germany	62	23	39	1 546	39	223	285	11
	Italy	17	6	11	458	11	72	87	3
	Netherlands	14	6	9	405	15	91	66	3
	Spain	11	4	8	260	7	36	59	3
	Sweden	7	2	4	229	4	21	81	1
	United Kingdom	23	8	15	540	14	96	93	6
	Other developed Europe	18	7	11	456	14	77	69	4
	Switzerland	12	4	8	340	10	57	45	3
	North America	159	61	98	3 009	141	452	658	45
	Canada	18	7	11	476	28	56	165	9
	United States	141	54	88	2 533	113	396	493	37
	Other developed countries	217	81	137	4 945	200	774	795	109
	Australia	68	31	38	1 615	107	303	270	23
	Japan	141	47	94	3 107	83	446	422	85
	New Zealand	5	2	3	184	8	17	97	1
	Developing countries	886	233	653	15 457	495	2 820	2 279	1 329
	Africa	33	7	26	479	17	68	82	59
	Nigeria	20	2	18	177	4	17	20	55
	Latin America and the Caribbean	30	12	19	673	25	106	165	9
	South Africa	25	10	15	567	21	88	147	7
	Brazil	10	4	6	278	10	43	82	2
	Asia	822	214	608	14 290	452	2 645	2 030	1 261
	West Asia	119	22	96	1 465	47	241	213	236
	Kuwait	20	7	13	317	13	57	64	14
	Saudi Arabia	78	9	69	750	19	86	90	203
	South, East and South-east Asia	703	191	512	12 826	404	2 403	1 817	1 024
	East Asia	289	109	179	7 351	211	1 634	1 016	155
	China	223	84	139	5 142	164	1 178	644	139
	Hong Kong, China	5	2	3	191	4	62	31	2
	Korea, Republic of	48	18	29	1 662	34	305	296	11
	Taiwan Province of China	13	5	8	347	8	88	44	3
	South Asia	35	13	22	872	48	207	125	14
	India	24	10	15	677	40	151	93	7
	ASEAN	380	69	311	4 602	145	562	676	855
	Brunei Darussalam	2	0	2	19	0	2	2	5
	Cambodia	0	0	0	2	0	1	0	0
	Lao People's Democratic Republic	0	0	0	1	0	0	0	0
	Malaysia	208	19	188	1 894	40	159	212	615
	Myanmar	1	0	0	13	2	2	3	1
	Philippines	8	4	4	183	10	28	32	2
	Singapore	72	31	41	1 341	47	213	259	16
	Thailand	51	12	39	847	38	137	146	85
	Viet Nam	38	2	36	302	8	20	21	132
	Oceania	1	0	0	14	2	2	2	0
	Transition economies	18	7	11	378	10	63	51	13
	Russian Federation	12	5	7	277	6	47	35	11
	Domestic value added (DVA)	57 717	10 867	46 850	146 742	14 603	21 930	25 113	12 937
	Gross exports	59 208	11 326	47 882	176 019	15 602	26 931	29 974	14 478

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: All values are estimated. Regions and countries refer to where the value added is attributed. For GVC terminology, see box 1.

2017 (Millions of dollars)

Exports from Indonesia by sector/industry								
					Services			
Chemicals and chemical products	Metal and metal products	Machinery and equipment	Electrical and electronic equipment	Motor vehicles and other transport equipment	Total	Trade	Hotels and restaurants	Transport, storage, and communications
2 405	1 864	3 009	6 472	407	4 271	576	269	2 248
859	848	1 749	3 160	210	2 076	273	135	1 078
382	309	743	1 295	74	696	90	43	355
341	284	687	1 186	69	643	84	39	329
23	18	27	59	3	32	4	2	16
40	30	64	140	11	79	8	5	46
100	85	251	394	23	201	26	11	101
29	23	84	107	5	49	7	3	23
32	23	43	84	6	55	7	4	30
19	17	40	55	3	31	4	2	14
10	14	28	48	3	23	3	1	10
44	32	61	132	8	84	11	4	46
41	25	56	109	5	53	7	4	26
31	18	47	85	3	35	5	2	16
193	157	332	719	38	618	88	38	320
27	25	36	84	4	75	10	6	41
166	133	296	635	34	543	77	33	279
285	382	673	1 147	97	762	95	54	403
71	143	160	335	28	278	35	27	146
204	230	502	777	68	454	55	23	245
6	6	8	27	1	25	4	4	9
1 517	980	1 233	3 222	192	2 146	296	131	1 145
58	32	26	88	5	71	10	5	39
35	7	6	22	1	23	3	1	13
42	75	39	138	8	115	16	7	63
33	68	31	110	6	95	14	6	50
13	32	17	51	3	36	6	3	16
1 417	872	1 166	2 993	180	1 958	269	118	1 042
199	75	63	250	12	256	36	14	152
25	18	17	73	3	88	12	4	54
139	31	25	103	5	105	16	6	61
1 218	796	1 103	2 743	168	1 702	233	104	890
478	543	742	1 726	108	878	119	54	444
387	303	569	1 208	75	626	79	40	326
8	9	13	43	2	18	3	1	9
65	212	126	380	26	191	31	11	88
17	19	34	92	4	41	6	3	19
80	63	54	186	10	126	18	10	64
66	53	43	149	8	90	13	8	43
660	190	307	831	50	698	96	40	382
3	1	1	3	0	2	0	0	2
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
388	58	86	231	10	194	24	11	113
1	1	1	2	0	3	0	0	1
11	9	19	52	3	29	5	3	13
98	75	136	350	26	320	43	14	179
82	38	59	172	10	128	21	10	62
77	7	5	20	1	22	3	1	12
1	2	1	3	0	2	0	0	1
29	36	28	90	5	49	7	3	26
23	24	19	64	3	31	4	2	17
14 046	9 072	3 478	29 857	2 172	50 536	11 171	6 459	14 638
16 451	10 936	6 487	36 329	2 578	54 807	11 746	6 728	16 886

Annex table 3. **Value added exports of goods and services from Indonesia, by value added creating sector and industry, 1990–2017** (Millions of dollars)

	Exports from Indonesia						
Sector/industry	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2017**
Total	28 468	65 171	76 451	131 088	265 052	322 488	377 685
Primary	12 215	24 717	29 081	50 111	103 437	118 492	134 925
Agriculture, hunting, forestry, and fishing	2 056	4 840	6 112	10 194	20 886	23 318	29 794
Mining, quarrying, and petroleum	10 159	19 877	22 969	39 917	82 551	95 175	105 132
Secondary	7 747	20 173	26 625	45 740	90 336	119 843	135 439
Food, beverages, and tobacco	556	1 626	2 350	4 014	8 268	11 081	12 834
Textiles, clothing, and leather	1 536	3 555	4 703	7 591	14 649	18 803	20 049
Wood and wood products	1 728	4 362	3 938	6 564	12 724	16 636	18 249
Publishing, printing, and reproduction of recorded media	124	669	361	434	726	916	1 234
Coke, petroleum products, and nuclear fuel	1 082	1 777	2 503	4 832	9 802	13 317	13 684
Chemicals and chemical products	599	1 418	2 497	4 290	8 562	11 670	13 590
Rubber and plastic products	319	1 087	932	1 567	3 072	4 050	4 970
Non-metallic mineral products	153	401	579	1 009	1 794	2 298	3 185
Metal and metal products	362	844	1 819	3 047	5 427	7 184	9 050
Machinery and equipment	269	787	929	1 388	2 983	4 171	4 804
Electrical and electronic equipment	355	1 868	4 117	7 915	16 237	21 791	24 386
Precision instruments	104	428	178	330	654	865	1 045
Motor vehicles and other transport equipment	371	1 094	1 366	2 093	4 143	5 241	6 527
Other manufacturing	189	258	353	665	1 296	1 820	1 831
Tertiary	8 483	20 212	20 638	35 144	71 113	83 970	106 877
Electricity, gas, and water	182	399	510	798	1 554	1 722	2 414
Construction	161	331	350	517	879	911	1 167
Trade	2 849	6 858	7 536	12 580	25 326	28 194	38 017
Hotels and restaurants	491	1 185	1 141	1 936	3 781	4 400	5 858
Transport, storage, and communications	1 698	4 186	4 129	7 279	14 940	18 866	21 902
Finance	1 603	3 557	3 200	5 457	11 105	13 063	16 250
Business activities	331	819	791	1 300	2 665	3 263	4 268
Public administration and defence	15	43	39	67	134	171	207
Education	89	168	210	353	695	858	1 409
Health and social services	23	63	62	95	179	249	297
Other services	1 040	2 603	2 670	4 760	9 856	12 273	15 088

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: All values are estimated. The value includes both values created abroad (outside Indonesia) (FVA) and within Indonesia (DVA). The industry refers to the industry to which the value is attributed, not the industry from which exports originate.

Annex table 4. **Indonesian value added exports incorporated into other countries' exports, by region or country, 1990–2019** (Millions of dollars)

	DVX from Indonesia						
Region/country	**1990**	**1995**	**2000**	**2005**	**2010**	**2015**	**2019**
World	6 811	16 538	20 305	38 632	81 475	95 705	136 903
Developed countries	3 401	7 634	8 459	16 036	32 373	36 783	54 029
Europe	1 899	4 627	5 311	9 844	20 175	21 944	35 375
European Union	1 860	4 530	5 209	9 627	19 712	21 459	34 485
Belgium	252	538	546	1 025	2 040	2 317	3 243
France	172	400	497	820	1 516	1 714	2 641
Germany	423	976	1 129	2 283	4 996	5 006	8 488
Italy	159	393	437	765	1 544	1 733	2 654
Netherlands	360	872	933	1 644	3 435	3 961	4 994
Spain	99	270	263	525	1 011	1 175	1 696
Sweden	33	75	79	144	305	334	646
United Kingdom	156	426	538	916	1 721	1 677	3 367
Other developed Europe	38	97	102	217	464	485	890
Switzerland	24	61	61	151	323	340	676
North America	240	690	999	1 509	2 749	3 061	4 408
Canada	74	227	334	540	932	1 031	1 946
United States	166	463	665	968	1 817	2 030	2 462
Other developed countries	1 262	2 317	2 149	4 683	9 449	11 778	14 246
Australia	75	228	227	415	879	1 067	1 480
Japan	1 170	2 041	1 859	4 160	8 346	10 467	12 343
New Zealand	10	31	37	63	137	152	306
Developing countries	3 390	8 868	11 801	22 509	48 887	58 675	82 319
Africa	31	83	110	178	372	424	663
Nigeria	3	8	12	11	18	19	19
Latin America and the Caribbean	37	214	437	700	1 324	1 553	2 953
South America	18	82	82	167	373	457	678
Brazil	3	22	31	67	145	194	341
Asia	3 316	8 562	11 246	21 621	47 166	56 673	78 672
West Asia	71	229	195	338	744	886	1 390
Kuwait	3	6	4	10	24	27	48
Saudi Arabia	31	80	60	85	199	203	239
South, East and South-east Asia	3 245	8 334	11 051	21 283	46 422	55 787	77 282
East Asia	1 864	3 058	4 742	9 191	20 456	24 075	26 175
China	63	392	888	2 739	7 697	8 633	10 786
Hong Kong, China	163	375	354	703	1 582	1 861	1 961
Korea, Republic of	591	1 090	2 131	4 279	9 453	11 823	11 661
Taiwan Province of China	1 045	1 196	1 363	1 461	1 702	1 728	1 752
South Asia	36	134	185	400	992	1 313	980
India	12	84	125	302	790	1 042	687
ASEAN	1 346	5 142	6 124	11 692	24 975	30 400	50 127
Brunei Darussalam	4	7	6	10	25	29	70
Cambodia	0	3	8	13	24	29	33
Lao People's Democratic Republic	0	0	0	1	2	2	2
Malaysia	283	1 341	1 377	2 498	5 268	5 965	7 958
Myanmar	1	0	0	0	0	0	1
Philippines	72	283	369	611	1 124	1 247	1 813
Singapore	801	2 430	3 647	7 101	16 307	20 468	36 709
Thailand	158	997	610	1 248	1 839	2 250	2 561
Viet Nam	28	79	107	210	387	410	981
Oceania	6	8	8	11	24	26	29
Transition economies	21	37	45	88	216	247	556
Russian Federation	12	22	30	54	126	147	375

Source: AJC-UNCTAD-Eora database on ASEAN GVCs. Data for 2016–2018 are projected by UNCTAD and Eora.
Note: All values are estimated. The value refers to that incorporated in exports from the countries listed. For GVC terminology, see box 1.

ASEAN-Japan Centre

ISBN 978-4-910293-33-2

ASEAN Promotion Centre on Trade, Investment and Tourism
www.asean.or.jp/en