

# Chapter 1

## Asian trade and global value chains

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The turn of the 20<sup>th</sup> and 21<sup>st</sup> centuries was a period of enormous changes in world trade, which was caused by many factors. Globalization processes, progressive liberalization, and political changes were the primary stimuli affecting the world's economic development that have indirectly impacted trade. These trends were significant for Asian countries, where they became particularly visible.

The following chapter will indicate the changes that have taken place in the trade of Asian countries<sup>1</sup> since the mid-90s in the context of their participation in global value chains (GVC). Globalization processes, related in particular to the last wave that resulted in a significant increase in exports of materials and semi-finished products, led to a very rapid increase in trade turnover in the global economy. However, do the traditionally presented trade statistics reflect the actual share of individual countries in trade? The growing importance of international production chains has led to a situation in which individual production components cross borders many times and, as a result, inflate traditional trade statistics. Therefore, an analysis of the role of a given country in the global economy can be more accurate when using data on trade in value added. These data also make it possible to determine the position of individual countries in GVC.

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1 Countries analyzed: Brunei (BRN), China together with Hong Kong (CHN), Philippines (PHL), India (IND), Indonesia (IDN), Japan (JPN), South Korea (KOR), Cambodia (KHM), Malaysia (MYS), Singapore (SGP), Thailand (THA), Taipei (TWN), Vietnam (VHM).

## 1.1. Globalization, global value chains and value added trade

Globalization is a comprehensive term, defined differently depending on the context. In economic terms, particular emphasis is placed on the free movement of goods, services, and capital which allows doing business in different countries as if the borders between these countries did not exist.<sup>2</sup> Globalization is similarly defined by many international organizations indicating that this is a concept ‘used to describe an increasing internationalization of markets for goods and services, the means of production, financial systems, competition, corporations, technology and industries [...] giving rise to increased mobility of capital, faster propagation of technological innovations and an increasing interdependency and uniformity of national markets.’<sup>3</sup>

Three waves of globalization of the economy can be distinguished in the history of global economic development.<sup>4</sup> As already mentioned, they are closely connected with the liberalization and internal policy implemented by various countries. The first wave began in the mid-nineteenth century and lasted until the outbreak of the First World War. It was characterized by relatively fast industrial and transport development, which resulted in a significant increase in world trade. The second wave of globalization was associated with the reconstruction of trade after World War II and lasted according to various authors until the end of the 1980s. It was characterized by the division of the world economy into two competing blocks, within which multilateral trade developed. Characteristic for this period was a small share in the world trade of the least developed countries that pursued autarky policy. They did not see the possibility of developing their economies through exports and decided to implement a policy of economic isolation. A different strategy was adopted by the so-called “Asian tigers”, which associated their economic development with increased exports. They retained the protectionist approach in importing goods, but at the same time opened their economies

2 A similarly defined term can be found in: G. Gaburro, E.J. O’Boyle [2003], *Norms for evaluating economic globalization*, “International Journal of Social Economics”, vol. 30, (1/2); N.R.F. Al-Rodhan, G. Stoudmann [2006], *Definitions of Globalization: A Comprehensive Overview and a Proposed Definition*, Program on the Geopolitical Implications of Globalization and Transnational Security 6.1–21; P.V. Nikitin, J.E. Elliott [2000], *Freedom and the Market*, “The Forum for Social Economics”, Fall, pp. 1–16.

3 United Nations [2002], *Manual on Statistics of International Trade in Services*, Eurostat, IMF, OECD, UN, UNCTAD, WTO, 2002 – Annex II, Glossary, [http://unstats.un.org/unsd/publication/Seriesm/Seriesm\\_86e.pdf](http://unstats.un.org/unsd/publication/Seriesm/Seriesm_86e.pdf), p. 170 (accessed: 07.08.2019).

4 E. Gostomski, T. Michalski [2017], *Czy następuje odwrót od globalizacji?*, in: A. Gorynia (ed.), *Nowe kraje członkowskie UE wobec procesów globalizacji. Źródła konkurencyjności*, Wydział Ekonomiczno-Informatyczny w Wilnie, Uniwersytet w Białymstoku, Vilnius, pp. 42–43.

to foreign investment. This specific growth model was possible, among others, thanks to the help of the United States. It significantly influenced the development of Asian countries in subsequent years. Third phase of globalization began at the turn of the 1980s and 1990s, along with the dynamic IT and communications revolution with simultaneous political and economic changes taking place in many regions of the world.<sup>5</sup> It was connected with the liberalization of trade in goods, services, and the movement of capital as well as factors of production. This was fostered by international economic and financial organizations (including WTO, IMF, and World Bank) and many regional integration groups. On one hand, they were admitting new member states, and on the other, they began to pursue an active trade policy in favour of new regional trade agreements (RTAs) and free trade agreements (FTAs).

The division of production into separate stages (fragmentation), which can be implemented independently, in combination with the search for the lowest possible manufacturing costs, resulted in the creation of long production chains. These chains are a process during which technology is combined with materials and work to create goods and services. This process is also extended to the distribution and sale of manufactured goods and services.<sup>6</sup> Production chains defined this way are merged with the concept of global value chains. With the introduction of the GVC concept, researchers have attempted to unify the respective definitions.<sup>7</sup> At the beginning of the 21<sup>st</sup> century, it was agreed that different terms: global commodity chains, value chains, value systems, production networks and value networks describe similar ideas.<sup>8</sup> According to the World Trade Organization, global production chains are interrelated stages of the production of goods/services that cover two or more countries. Under GVC, the process of combining imported intermediate goods and services with domestic goods and services takes place. Then, manufactured goods and services, as final or semi-finished products, are exported to the next production process or final consumer.<sup>9</sup>

The complexity of production chains means that their analysis is difficult and affects the actual assessment of the participation of individual countries in the global economy. The solution is to study trade relationships between countries

5 M. Rosińska [2008], *Procesy globalizacji jako geneza kreowania globalnej przestrzeni gospodarczej*, "Acta Universitatis Lodzensis. Folia Geographica Socio-Oeconomica", vol. 9, p. 17.

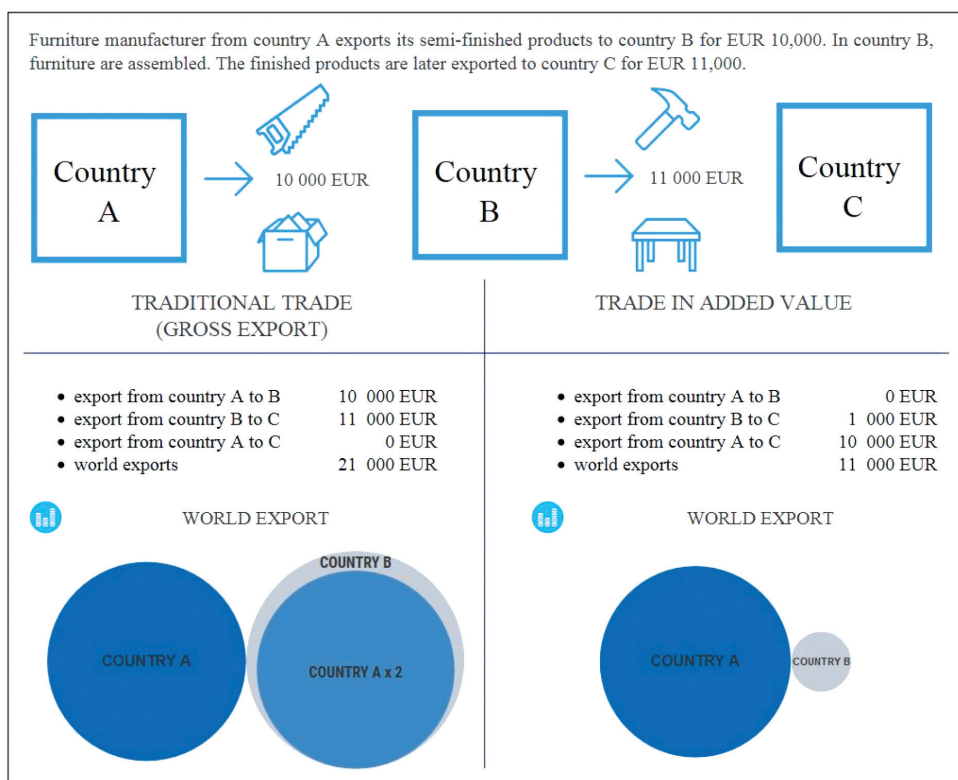
6 G. Gereffi, J. Humphrey, T. Sturgeon [2005], *The governance of global value chains*, "Review of International Political Economy", vol. 12 (1) February, p. 79.

7 T. Sturgeon [2009], *From Commodity Chains to Value Chains: Interdisciplinary Theory Building in an Age of Globalization*, in: J. Bair (ed.), *Frontiers of Commodity Chain Research*, Stanford University Press, p. 112.

8 G. Gereffi, J. Humphrey, R. Kaplinsky, T.J. Sturgeon [2001], *The Value of Value Chains: Spreading the Gains from Globalisation*, "IDS Bulletin", vol. 32 (3), Institute of Development Studies.

9 World Trade Organization [2014], *World Trade Report 2014. Trade and development: recent trends and the role of the WTO*, Geneva.

in terms of added value. The concept of value added trade became popular along with the development of GVC at the turn of the 20<sup>th</sup> and 21<sup>st</sup> centuries. Value added is the gross value of a given good/service arising during its production, and it is the difference between the gross value and the value of costs incurred (e.g., purchase of semi-finished products). Value added arises in a single enterprise, as well as within a group of entities or a country. In the last case, i.e., in relation to domestic value added, it will be the sum of expenditure incurred in the production process of a given goods/services within the country. Therefore, trade in value added will be the export of domestic value added or import of value added created abroad.<sup>10</sup> Figure 1.1. presents these relationships.



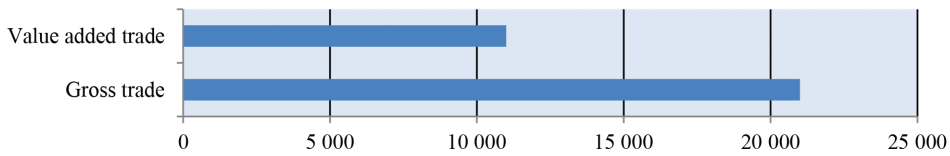
**Figure 1.1.** Comparison of traditional and value added trade

**Source:** own elaboration

10 A. Nacewska-Twardowska [2018], *Atlas handlu wartością dodaną. Eksport*, Wydawnictwo Uniwersytetu Łódzkiego, pp. 11–15.

Traditionally, part of the trade is double-counted. As a result, world trade statistics and trade statistics between individual countries do not reflect the actual flows of goods and services:

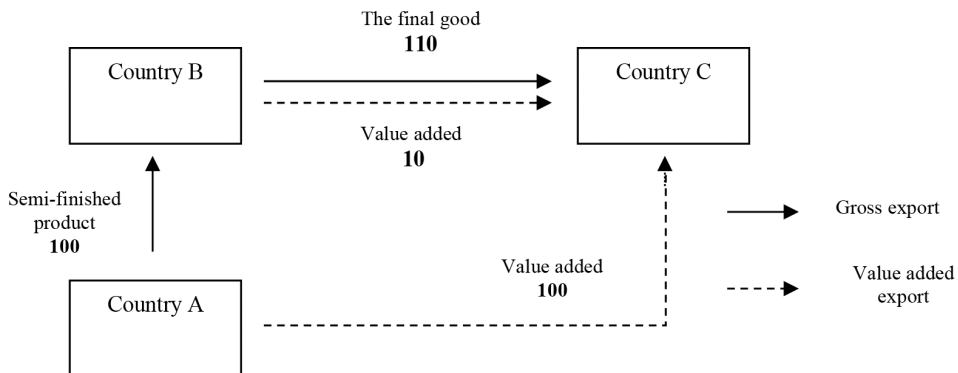
- in gross terms, country B's exports have been "overstated" 11 times (EUR 11.000 instead of EUR 1.000 in value added);
- this also resulted in an overestimation of total trade by almost half (EUR 10.000) (figure 1.2.);
- in traditional terms of international trade, the export of country A to country B is *invisible*.



**Figure 1.2.** Comparison of gross trade statistics and value added trade statistics from figure 1.1. (in EUR)

**Source:** own elaboration

When analysing world trade using the two methodologies, the differences that appear in the turnover of goods and services in geographical terms are very significant. In the traditional approach, part of the export/import is not recorded (flows between countries A and C from figure 1.1.). When analysing the value added trade, it becomes possible to observe real flows of goods and services between individual countries. This comparison is presented on figure 1.3.

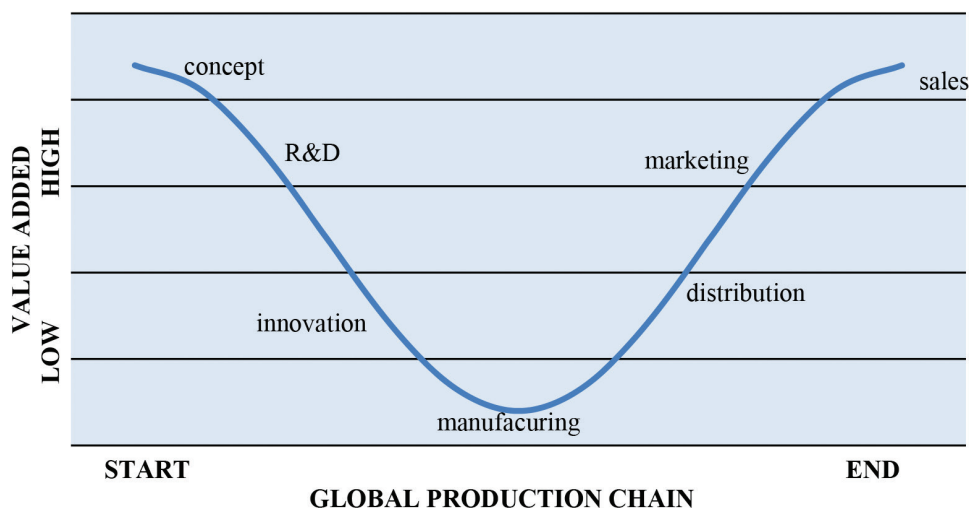


**Figure 1.3.** Comparison of gross trade and value added trade in a geographical context

**Source:** own elaboration

From an economic point of view, another significant factor is the analysis of the place that a given economy holds in global value chains. As noted in the early 90s by Stan Shih, CEO of Acer, various tasks performed in the production process bring

different income calculated as added value. Processes associated with manual labour are relatively less profitable than those related to research and development, marketing or distribution.<sup>11</sup> Shih presented his observations in the form of a ‘smile curve’ describing the relationship between added value and position in the production chain (figure 1.4.). Both high and low GVC position indicator is associated with high added value.



**Figure 1.4.** Stan Shih's smile curve  
**Source:** own elaboration

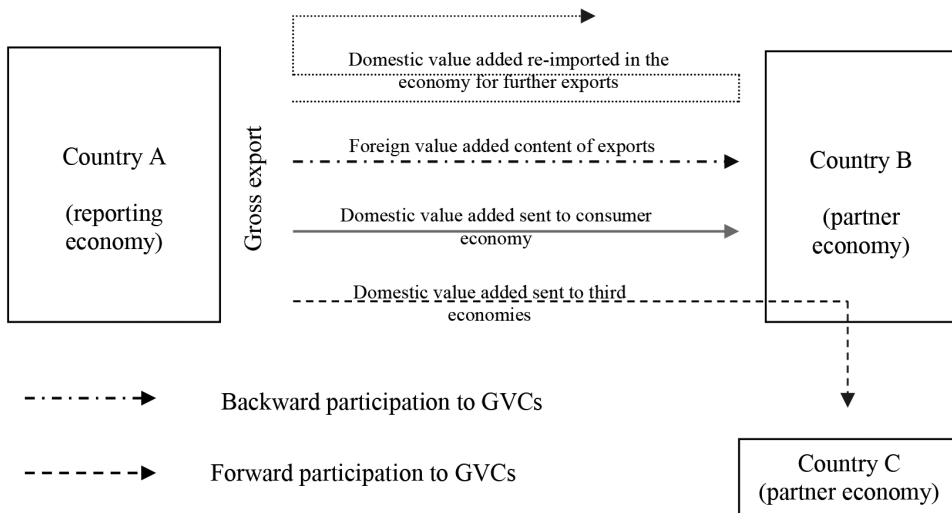
The analysis of trade exchange in terms of added value allows not only to illustrate real export and import but also allows determining the position of the studied country in the global value chain. This, in turn, makes it possible to calculate the real income (profits) brought about by the participation in the global economy.

## 1.2. Statistical data and methodology

The advantages of conducting trade analyses based on data on value added trade are considerable. However, access to data illustrating the exchange of goods and services in terms of value added is a problem. The first attempts to measure real trade shares

11 K. Kase, A. Slocum, Y. Zhang [2011], *Asian versus Western Management Thinking: Its Culture-Bound Nature*, “The Nonaka Series on Knowledge and Innovation”, Palgrave Macmillan, UK, p. 169; UNCTAD [2015], *Tracing the value added: product-level case studies in China*, New York and Geneva, pp. 2–3.

were made by describing the production chains of individual goods. The best-known examples are Apple products,<sup>12</sup> Barbie doll<sup>13</sup> and some computers.<sup>14</sup> Obtaining data presenting the export and import of value added globally was a huge challenge, and it was necessary to build international input-output tables. The two currently most extensive databases containing such information are WIOD (World Input-Output Database) and TIVA (Trade in Value-Added). The first was created as part of a project funded by the European Commission. Its 2016 edition includes data for EU28 countries and 15 other major economies for the time period 2000–2014 broken down into 56 sectors. The second database was prepared by the WTO and OECD as part of a joint initiative. The 2018 edition contains statistical data on 64 countries (including EU28, G20 countries, most East and Southeast Asian economies, and selected South



**Figure 1.5.** Division of gross exports into domestic and foreign value added along with links up and down the supply chain

**Source:** own elaboration based on: OECD-WTO TiVA Database [2016], *Trade in Value-Added and Global Value Chains profiles. Explanatory notes*. OECD, <http://www.oecd.org/industry/ind/measuringtradeinvalue-addedanoecdwtointitiative.htm> (accessed: 22.10.2016)

- 12 J. Dedrick, K.L. Kraemer, G. Linden [2008], *Who Profits from Innovation in Global Value Chains?: A Study of the iPod and Notebook PCs*, “Industry Studies”, 1–2 May, Boston; G. Linden, K.L. Kraemer, J. Dedrick [2009], *Who captures value in a global innovation network?: the case of Apple’s iPod*, “Communications of the ACM”, vol. 52, no. 3, pp. 140–144; OECD [2013], *Interconnected Economies: Benefiting from global value chains. Synthesis Report*, Paris; World Economic Forum [2012], *The Shifting Geography of Global Value Chains: Implications for Developing Countries and Trade Policy*, Global Agenda Council on the Global Trade System.
- 13 R. Tempest [1996], *Barbie and the World Economy*, “Los Angeles Times”, 22.10.1996, <https://www.latimes.com/archives/la-xpm-1996-09-22-mn-46610-story.html> (accessed: 10.08.2019).
- 14 J. Dedrick, K.L. Kraemer, G. Linden [2008], *op. cit.*

American countries) for the years 2005–2015 broken down into 36 sectors. Data since the mid-1990s are also available. Due to the scope of resources, the TIVA database will be used to present trade-related phenomena in Asian economies.

The above figure 1.5. presents the division of gross exports into domestic and foreign value added along with links up and down the supply chain. By analysing these relationships, a position in GVC can be evaluated. Backward participation relates to links up the supply chain i.e. all goods and services that had to be imported first before they could be exported. Forward participation reflects the links down the supply chain. They are goods and services produced in the country and then exported to third countries. The research methodology, including the analysis of changes in participation and position in global production chains, was prepared based on solutions proposed by Koopman<sup>15</sup> with others and UNCTAD:<sup>16</sup>

- index of the share of domestic value added in gross exports;

$$GVC_{DVA\ participation} = \frac{DVA}{Export_{gross}}$$

- indexes of participation in the global value chain (3 types):
  - GVC backward participation – the share of foreign value added in gross exports, also referred to as the indicator of vertical specialization of the country, is the share of foreign value added in gross exports. It allows to assess ‘how important imports are for the exports of a given country’ and the higher the ratio, the greater the relationship;

$$GVC_{backward\ participation} = \frac{FVA}{Export_{gross}}$$

- GVC forward participation – the share of the indirect national value added in gross exports is the indirect share of domestic value added in partners’ exports, and its size determines the role of value added generated in a given country in exports of other countries;

$$GVC_{forward\ participation} = \frac{IDVA}{Export_{gross}}$$

- general GVC participation index – is the sum of foreign value added in exports and indirect domestic value added in relation to gross exports; the larger this indicator is, the greater the country’s share in the global value chain;

15 R. Koopman, W. Powers, Z. Wang, S.J. Wei [2010], *Give Credit Where Credit Is Due: Tracing Value Added in Global Production Chains*, “NBER Working Paper”, vol. 16426.

16 UNCTAD [2013], *World Investment Report 2013: Global Value Chains: Investment and Trade for Development*, New York and Geneva.



$$GVC_{participation} = \frac{FVA + IDVA}{Export_{gross}}$$

- index for the position in the global value chain determines the difference between backward and forward participation and enables estimation of position in global value chains, thus indicating whether a given country specializes in the first or last stages of production; If the country is in the early stages of the production chain, it is likely to have high forward participation (a positive position index in global value chains); if the backward participation index is quite high, it probably imports a lot of intermediate goods and specializes in the last stages of production (negative position index in global value chains).

$$GVC_{position} = \log \left( 1 + \frac{IDVA}{Export_{gross}} \right) - \log \left( 1 + \frac{FVA}{Export_{gross}} \right)$$

### 1.3. Share of Asian economies in international trade

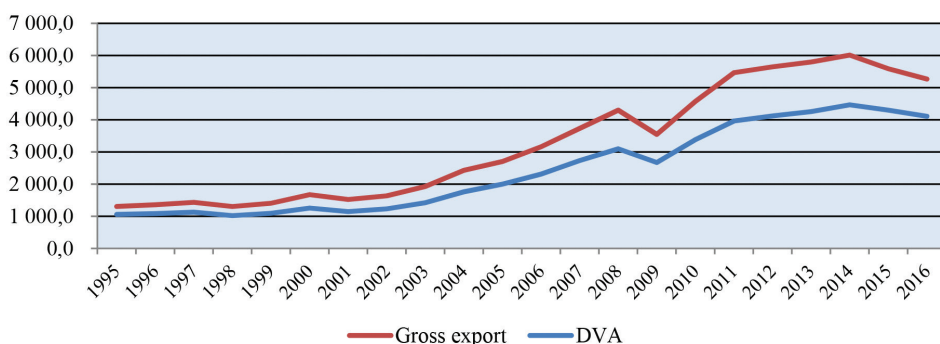
With the latest wave of globalization, trade in the world has increased significantly in traditional terms (table 1.1.). The world average year-on-year growth rate in the 1990s was calculated at 6.7%. The next decade was characterized by an average increase of 9.2%, despite the collapse of world trade following the global financial and economic crisis. In subsequent years, the average annual growth rate dropped to 5.52%. At the same time, Asia remained a region in which the average annual export growth rate was higher than for the global economy and exceeded 7% over the course of the last nine years.

**Table 1.1.** Average annual increase in gross exports in 1990–2018 (%)

	1990–1999	2000–2009	2010–2018
World	6.70	9.20	5.52
Africa	3.65	13.75	3.73
Asia	8.15	10.54	7.25
Australia and New Zealand	5.15	10.36	6.63
Europe	8.76	8.52	4.37
North America	7.57	5.22	5.60
South and Central America	5.93	11.62	4.36

**Source:** own elaboration based on: *OECD-WTO TiVA Database* [2019], <https://stats.oecd.org/> (accessed: 11.08.2019)

It should be noted that the data from table 1.1. do not present real changes in exports because these can only be illustrated in terms of value added. In addition to changes in the total volume of exports, it is important to check the share of products and services produced in a given economy (share of domestic value added, DVA) in total exports. Figure 1.6. presents data from the mid-1990s for gross exports and value added of selected Asian countries. Over the entire analysed period, a similar trend is noticeable for gross exports and DVA, but smaller fluctuations characterize domestic value added in exports. This means that domestic value added export increases more slowly than traditionally measured exports, but at the same time, its share becomes larger as total exports decline.



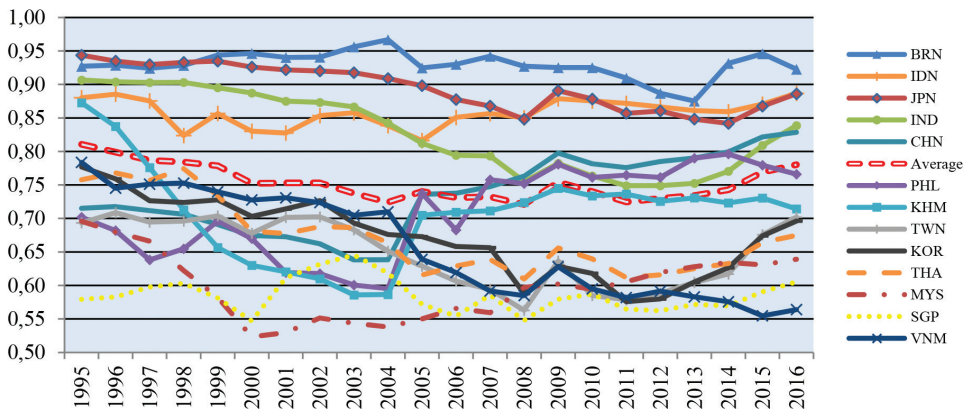
**Figure 1.6.** Traditional and value added exports (DVA) of selected Asian countries in 1995–2016 (bln USD)

**Source:** own elaboration based on: *OECD-WTO TiVA Database* [2019], <https://stats.oecd.org/> (accessed: 11.08.2019)

The share of domestic value added in total exports was different for individual Asian countries and was subject to large fluctuations (figure 1.7.). On average, it remained at the level of 0.8–0.7, with the highest values recorded in the mid-1990s. After a decrease, the index began to rise again in the second decade of the 21<sup>st</sup> century. Above-average rates were recorded in three countries: Brunei, Indonesia, and Japan. On the other hand, the lowest values of the indicator were observed in Singapore, Vietnam, and Malaysia. The latter economy, together with Cambodia, also recorded the most considerable fluctuations in the share of domestic value added in exports. Such dynamic changes over 20 years indicate that Asian countries had to quickly adapt to the rapidly changing conditions of the global economy.

Along with changes in the structure of exports of the analysed countries, there were also changes in the share of individual countries in total exports (table 1.2.).<sup>17</sup> The studied economies can be divided into three groups. First group includes countries that significantly increased their share in total exports. The most spec-

<sup>17</sup> More information in the appendix.



**Figure 1.7.** Index of the share of domestic value added in gross exports of selected Asian countries in 1995–2016

**Source:** own elaboration based on: *OECD-WTO TiVA Database* [2019], <https://stats.oecd.org/> (accessed: 11.08.2019)

tacular is the increase in China's share from 15% to 39% in gross terms and from 13% to 42% in terms of value added. Among other economies in this group, India and Vietnam stand out. The second group of countries includes those whose share in total exports has fallen. Japan recorded the most substantial reduction in the share, from 37% to 13% and from 43% to 15%, respectively. Taiwan is also a country that significantly decreased its share in the years 1995–2016. However, a third group of countries could also be distinguished, including economies which maintained their share in total exports at a similar level for over the 20 years, such as Korea, Thailand, or Malaysia. The differences between the statistical data in the traditional and value-added terms are also interesting. Japan's traditionally measured share of gross exports is underestimated when compared to DVA, while it overestimates the share of South Korea.

**Table 1.2.** Comparison of the share of selected Asian countries in total exports in 1995 and 2016

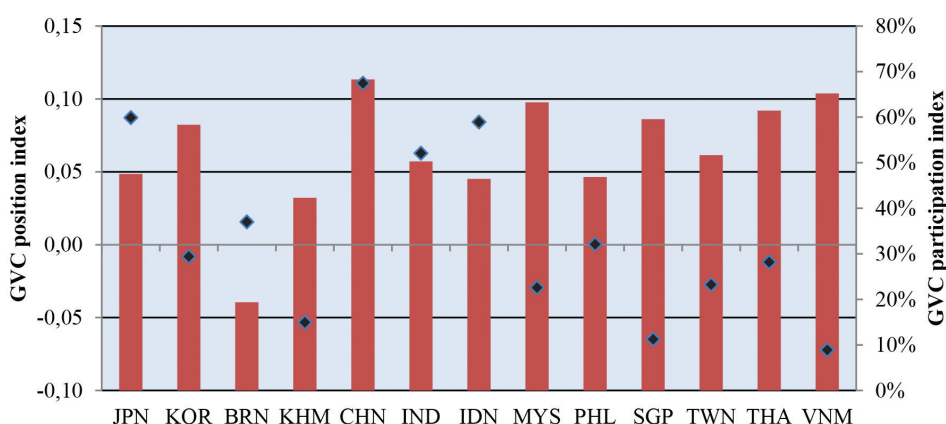
	Gross Export (%)		Export of DVA (%)	
	1995	2016	1995	2016
	1	2	3	4
JPN	37.0	13.0	43.0	15.0
KOR	12.0	11.0	11.0	10.0
BRN	0.0	0.0	0.0	0.0
KHM	0.0	0.0	0.0	0.0

Table 1.2 (cont.)

	1	2	3	4
CHN	15.0	39.0	13.0	42.0
IND	3.0	8.0	3.0	8.0
IDN	4.0	3.0	5.0	4.0
MYS	5.0	4.0	4.0	3.0
PHL	2.0	2.0	2.0	1.0
SGP	7.0	6.0	5.0	4.0
TWN	9.0	6.0	8.0	5.0
THA	5.0	5.0	5.0	4.0
VNM	1.0	3.0	1.0	2.0

**Source:** own elaboration based on: *OECD-WTO TiVA Database* [2019],  
<https://stats.oecd.org/> (accessed: 11.08.2019)

In 2016, the analysed countries participated to different degrees in global value chains (figure 1.8.). China, Vietnam, and Malaysia had the largest share, where about 65% of exports related to GVC. The country with the smallest share of under 20% was Brunei. At the same time, individual economies were characterized by a varying level of position index in global value chains. China, Japan, Indonesia, and India were relatively high with substantial forward participation. Therefore,



**Figure 1.8.** General index of participation in the global value chain and position index in the global value chains of selected Asian countries in 2016

**Source:** own elaboration based on: *OECD-WTO TiVA Database* [2019],  
<https://stats.oecd.org/> (accessed: 11.08.2019)

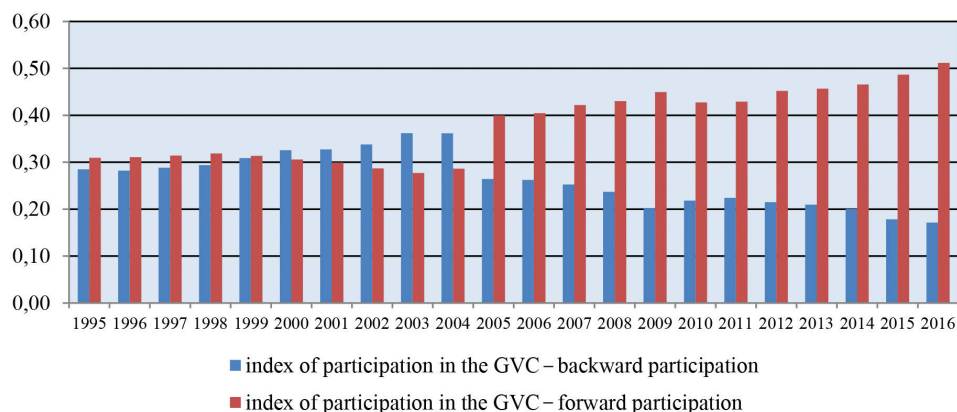
they are countries that export a lot of intermediate products or services used in subsequent production stages in other countries. On the other side were Vietnam, Singapore, and Cambodia, with a relatively high backward participation index. These are the countries that import more intermediate goods and specialize in the last stages of production.

## 1.4. Analysis of the largest Asian economies

The three largest Asian economies in terms of exports, measured both traditionally and in terms of value added, are China, Japan, and South Korea. Korea and China have significantly increased their exports since the mid-1990s. In these countries it increased almost four- and tenfold respectively. Japan was a country that, although experienced an over 46% increase in gross export (37% in domestic value added export), at the same time recorded the largest decrease in the share of total exports. A detailed analysis of changes in the share of these three countries in global value chains is presented in the sections below.

### China

Between the years 1995 and 2016, two periods can be distinguished during which the indices of participation in global value chains were characterized by different trends (figure 1.9.). Until the middle of the first decade of the 21<sup>st</sup> century,

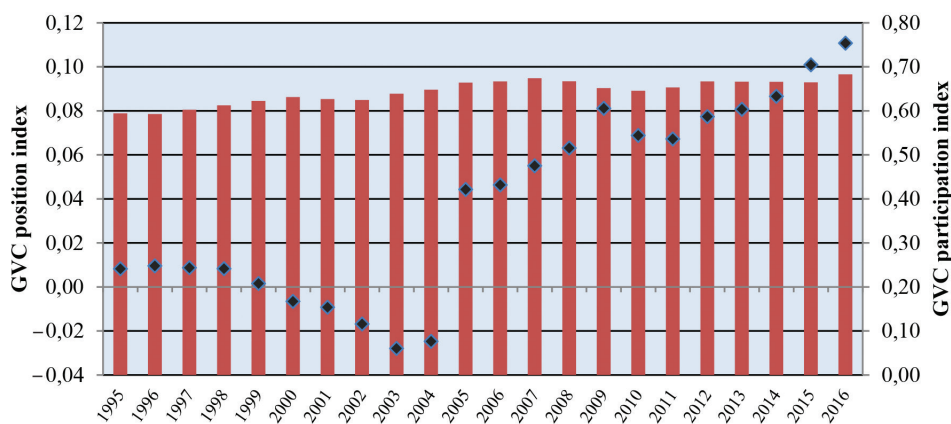


**Figure 1.9.** China's backward and forward participation in the GVC in 1995–2016

**Source:** own elaboration based on: *OECD-WTO TiVA Database* [2019],  
<https://stats.oecd.org/> (accessed: 11.08.2019)

backward and forward participation was at a similar level, with the first one showing a slight upward trend and the second a downward trend. These trends changed after 2004 when forward participation in the GVC began to significantly outperform backward participation.

The effect of these changes is visible in the rapid shift in position in global value chains (figure 1.10.). This indicates an increase in exports of products and services that are used in the next stages of production in other countries to be subsequently exported to third partners. At the same time, China's overall share in global value chains is quite stable, with a visible upward trend.



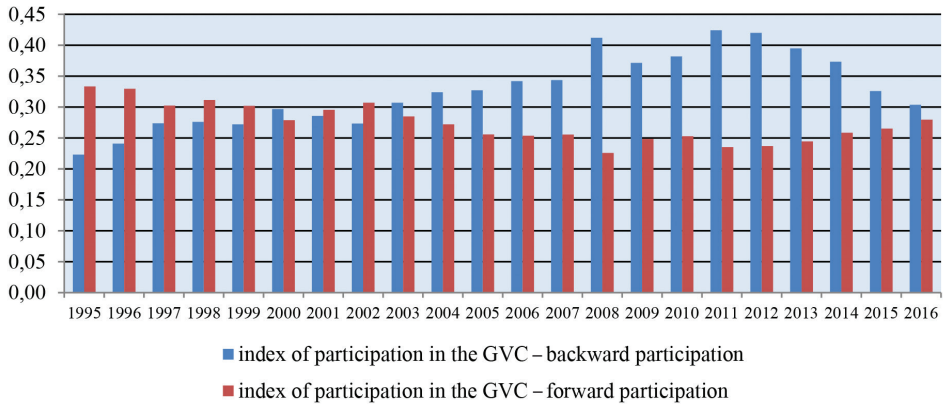
**Figure 1.10.** General indexes of participation and position in the global value chains of China in 1995–2016

**Source:** own elaboration based on: *OECD-WTO TiVA Database* [2019], <https://stats.oecd.org/> (accessed: 11.08.2019)

## South Korea

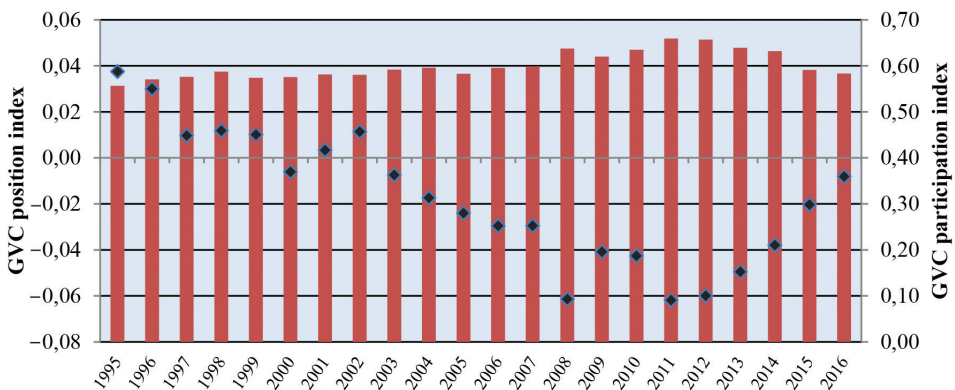
From the mid-1990s to 2011/2012, the GVC participation index related to backward participation in Korea was on the rise (figure 1.11.). At the same time, frontal participation showed a downward trend. In subsequent years, these trends reversed and, as a result, share indices were evened out.

The overall GVC share index for South Korea (figure 1.12.) fluctuated around 60% in during the analysed period. The highest values, above the mentioned average, were recorded in 2008–2014. The downward trend in Korea's position in global value chains reversed after 2012, when the backward participation index began to decline. For the Korean economy, this may be an unfavourable trend, suggesting that it is in the middle of the smile curve, thus bringing the lowest benefits from international trade.



**Figure 1.11.** Backward and forward participation of South Korea in GVC in 1995–2016

**Source:** own elaboration based on: *OECD-WTO TiVA Database* [2019], <https://stats.oecd.org/> (accessed: 11.08.2019)

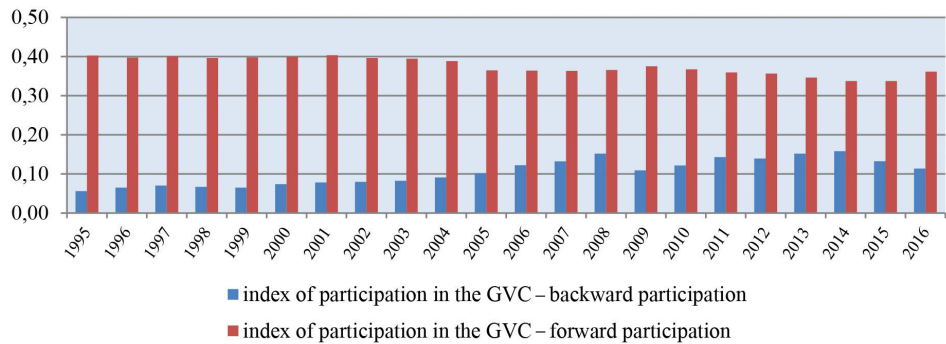


**Figure 1.12.** General indexes of participation and position in the global value chains of South Korea in 1995–2016

**Source:** own elaboration based on: *OECD-WTO TiVA Database* [2019], <https://stats.oecd.org/> (accessed: 11.08.2019)

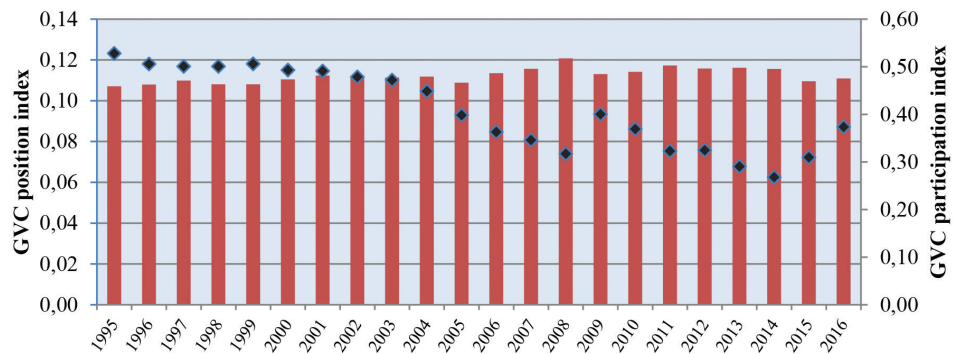
## Japan

Next figure (1.13.) presents Japan's share in global value chains – participation indices in GVC were quite stable. The level of forward participation was significantly higher in the entire analysed period than backward participation, although the latter increased after 2005. The consequence of this was the decline in the position of the Japanese economy in global value chains, although the overall GVC participation index did not change significantly (figure 1.14.).



**Figure 1.13.** Japan's backward and forward participation in the GVC in 1995–2016

**Source:** own elaboration based on: *OECD-WTO TiVA Database* [2019], <https://stats.oecd.org/> (accessed: 11.08.2019)



**Figure 1.14.** General indexes of participation and position in the global value chains of Japan in 1995–2016

**Source:** own elaboration based on: *OECD-WTO TiVA Database* [2019], <https://stats.oecd.org/> (accessed: 11.08.2019)

## Conclusions

Changes in the global economy have affected most of the world's economies. United States and developed Western European countries have experienced a reduction in their share of global trade. At the same time, the increase in GDP, higher than the average global GDP growth, and the average annual increase in exports in Asian countries caused the region to strengthen their economic position. However, these processes differed in individual Asian countries. On the one hand, China should be indicated as a country whose export share has increased tenfold. On the other hand, at the same time, the largest Asian economy in the second half

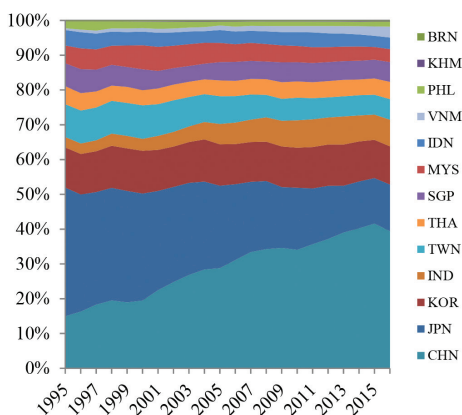


of the 20<sup>th</sup> century, Japan, recorded a slowdown and fell to the second position in exports among the analysed countries. Comparison of trade data in the traditional and value added terms showed that in some cases, exports were underestimated and in some cases overestimated. This was the effect of a much higher index of participation in the global value chain related to forward participation. Therefore, when changes in exports were associated with an increase in exports of products or services that were used in further production and exports by third countries, gross export was usually underestimated in relation to domestic value added export. Differences between backward and forward participation meant that the position of individual countries in the GVC changed. In some cases, when the position index was relatively high (e.g., China) or low (e.g., Singapore), this indicated a relatively high share of domestic value added in exports (2016). However, a broader analysis might be necessary because e.g. in Japan the GVC position index was quite high in 2016, but it was preceded by a downward trend, suggesting unfavourable changes in Japanese exports over the analysed period.

Trade analyses using added value data enable in-depth research into changes in the global economy. They allow not only to assess the participation of individual countries in exports, but also help to assess the changes that occur in the context of participation in global value chains. The share of Asian countries in the global economy increased significantly during the period between the years 1995 and 2015, which is mainly associated with a growing share in the GVC. Most of the studied countries have become foremost suppliers of semi-finished products on the one hand and are used for manufacturing purposes on the other. Conclusions of chapter 1 are connected with the changes that have taken place in the largest Asian transnational corporations. This issue is elaborated on further in the next chapter of the book.

## Appendix

Share of selected Asian countries in total gross exports in 1995–2016



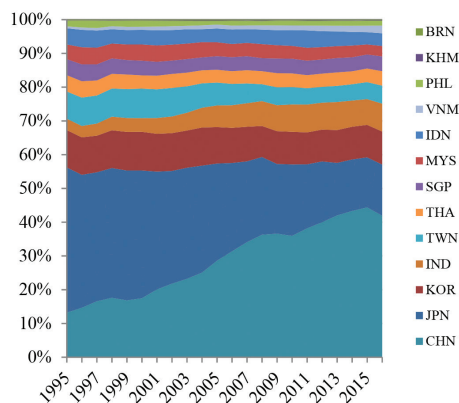
**Source:** own elaboration based on: OECD-WTO TiVA Database [2019], <https://stats.oecd.org/> (accessed: 11.08.2019)

Total gross export of selected Asian countries in 1995–2016 in USD billion

	1995	2016
BRN	2.6	4.9
KHM	1.0	8.7
PHL	25.6	80.1
VNM	7.0	164.8
IDN	57.8	175.5
MYS	66.7	197.3
THA	67.4	262.4
SGP	86.4	298.4
TWN	123.2	311.3
IND	39.4	403.3
KOR	150.7	578.4
JPN	482.8	705.0
CHN	195.3	2 078.0

**Source:** own elaboration based on: OECD-WTO TiVA Database [2019], <https://stats.oecd.org/> (accessed: 11.08.2019)

Share of selected Asian countries in domestic value added exports in 1995–2016



**Source:** own elaboration based on: OECD-WTO TiVA Database [2019], <https://stats.oecd.org/> (accessed: 11.08.2019)

DVA export of selected Asian countries in 1995–2016 in USD billion

	1995	2016
BRN	2.4	4.5
KHM	0.9	6.2
PHL	18.0	61.4
VNM	5.5	93.0
IDN	50.9	155.7
MYS	46.4	126.1
THA	51.1	177.1
SGP	50.1	180.7
TWN	85.4	218.6
IND	35.7	338.3
KOR	117.1	402.8
JPN	455.7	624.8
CHN	139.77	1 722.2

**Source:** own elaboration based on: OECD-WTO TiVA Database [2019], <https://stats.oecd.org/> (accessed: 11.08.2019)