GVCs in Central Europe
a perspective of automotive sector after COVID-19

Visegrad Fund

Can Chinese intermediaries be crowded out by the components produced in Poland and other Visegrad countries?

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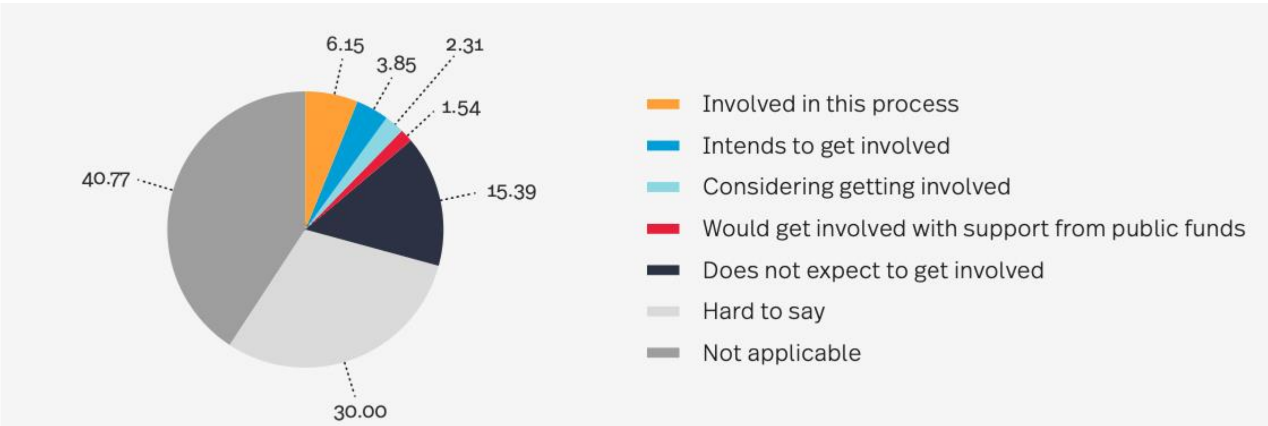
The outbreak of the Covid-19 pandemic has triggered an intensive debate about its impact on businesses as well as international production networks, such as automotive sector that constitutes one of the main supply chains in Europe, especially central region. Supply shocks that were caused by labor unavailability, lack of natural resources, and difficulties in transport organization had strongly affected manufacturers in the automotive sector in Europe. It also strongly affected Polish manufacturers. Nevertheless, these results are not only seen in reduction of outcomes due to the lockdowns and lack of resources or disorganized transportation links. Polish producers may also be affected by an impact of the pandemic on Asian economies in terms of international trade and division of labor. To secure smooth supplies in strategic sectors, the authorities of many countries considered that the concentration of production in one place (for instance, in China) is too hazardous (Leonard, 2020). Therefore, the enterprises were attentive to reorganizations in their supply chains. As a result, the new GVCs were expected to be established away from China - primarily in Japan, the US, and the European Union. Poland was supposed to be one of the countries to gain from reconstruction of the global value chains (Czy pandemia koronawirusa zrewolucjonizuje globalne łańcuchy dostaw i handel międzynarodowy?, 2021). Despite these expectations and the announced tendency in shifting supply sources out of distant Asian locations to sites much closer to factories in Europe, the effects of the pandemic on Polish automotive manufacturers are not yet as obvious as may be expected.

According to Polish Economic Institute (PEI), in May 2020, Poland could gain up to $8.3 billion each year as global value chains shift away from China. Moreover, Poland would be the biggest beneficiary of this change in Europe. The benefits would be the result of more significant domestic production of intermediate goods once outsourced abroad and – together with other Eastern European countries – taking over the production for the entire EU. The PIE report lists some other CEE countries which may benefit from shifts in GVCs. Czechia has a gain of $4.9 bln, Hungary and Romania, which gains respectively $2.7 bln and $2.6 bln.

Due to the pandemic, the redesign of automotive production organizations took place worldwide (Wilczek, 2020). Similar conclusions may be drawn from a blog entry made around the same time by an economist at Poland's largest bank PKO BP (Czaplicki, 2020).

In July 2021, the optimism about Poland's growing role in the GVCs waned a year later. Some 6% of the Polish enterprises surveyed by the PEI admitted that they were participating in the supply chain shift from China. In comparison, 15% of the respondents did not expect to be involved in the relocation of production from China and almost 41% perceived that issue did not apply to them – see figure 1.

Figure 1. Polish companies' attitude to the relocation of supply chains from China by international corporations (%), July 2021



Source: (Ambroziak et al., 2021, p. 38)

The PEI survey indicates that the COVID-19 pandemic has not changed GVCs forever. It may have just disrupted formerly established cooperation links. Even though many companies announced their plans to shift production from China, there were few such rearrangements. There was also no mass relocation of production to Poland or other CEE countries.

The recognition if a change of GVCs is possible and which countries may take the position and role of China in previous cooperative networks depends on multiple factors. Firstly, these are economic factors affecting the profitability of business endeavors undertaken in China or emerging economies. On the other hand – these are geopolitical factors.

Industrial manufacturing in China has been attracting a massive inflow of foreign direct investment (FDI) for years. The FDI was in China because of lower labor costs than in investors' home countries, the availability of natural resources, especially raw materials, and the size of the domestic market. Geopolitical motivations also explain China's critical role in global value chains, especially in the manufacturing sector. The way China was treated in the European and the U.S. strategies in the past decades is illustrated by the "Dell hypothesis" concept. According to that approach: "No two countries that are both parts of a major global supply chain, like Dell's, will ever fight a war against each other as long as they are both parts of the same global supply chain". This concept has been generalized by Thomas L. Friedman to "McDonald's theory of international relations". No country in which McDonald's operates will ever attack the (other) country in which McDonald's is located. It is based on the conviction that participation in the global value chain is an expression of the integration of the domestic economy with the global economy and of cultural openness, which determines the economic unprofitability of war.

The western countries also hoped that thanks to gradually expanding cooperation with Chinese corporations, "western values" would be spread in China. Both the period before the pandemic and, even more, during the pandemic revealed that this plan did not work correctly. First of all, China has become more authoritarian. Chinese strategic plans (e.g., the Belt and Road Initiative) have complicated its market, with Chinese companies in many sectors overtaking production so far limited to European or American companies. Secondly, the behavior of China during the pandemic revealed that the country is not a reliable global player (Leonard, 2020).

We may conclude that now the geopolitical determinants should not influence companies' decisions about substituting China with other partners within GVCs. Moreover, the lesson from the ongoing war of the Russian Federation against Ukraine is that even if there are some economic benefits in individual cases (as in the case of Russia – purchasing "cheaper" gas and oil), the total costs of maintaining close trade and production relations with some countries should be judged in much broader perspective (for example, infringement of intellectual property rights in China significantly increases total transaction costs). As the research of the World Bank indicates, countries that are deeper integrated into GVCs, have quicker recovery after a crisis (Brenton et al., 2022). Deepening integration within GVCs is a reasonable strategy for many states seeking the drivers of development themselves. Despite some concerns raised in the literature that strong integration within a GVC increases exposure to risk (Baldwin & Freeman, 2021), other empirical studies provide the opposite evidence (Brenton et al., 2022; Borin et al., 2022).

If appropriate economic policies are introduced (Drelich-Skulska et al., 2021) (including the growth of awareness of interlinkages both within a domestic economy and externally), Poland might benefit from the reorganization of GVCs globally. Poland's active participation in global value chains in electromobility has established the country as being prominent producer and exporter of electric buses and the largest exporter of lithium-ion (li-oin) batteries in the European Union (Ambroziak, 2021). Poland's unique central European location has supreme access to major European networks in automotive production networks. There are over 60 li-ion battery-related manufacturing plants. After Germany and Italy, it locates Poland as the third producer in Europe. The country had supplied 40% of the total production in Europe in 2019.
Except for the batteries, there are numerous domestic and world-leading upstream and downstream suppliers for the automotive sector.

What does the statistical data tell us about changes in GVCs during a pandemic? – some insights on misleading assumption

Since Germany is one of the biggest exporters (and participants in global value chains) and the significant economic partner of the V4 countries, we analyze the origin of value-added in German exports before (2015–2019) and during the first year of the pandemic (2020). Unfortunately, the statistics concerning the year 2021, have not been available yet. We treat this case as a good lesson on avoiding making too hasty conclusions.

In 2020 the share of foreign value-added in German exports (of all goods and services) was lower than a year before – 28.15% vs. 32.63% (see Table 1). The reason for such a difference is most likely the COVID-19 pandemic. As soon as lockdowns were announced and limited international trading relations, the domestic intermediaries straightway replaced the foreign components. However, the share of foreign value-added in 2020 was higher than shares in 2015 and 2016, so the decrease was noticeable but not as spectacular as expected. If the share of foreign value-added in 2020 were 5% or 10%, the solid negative shock caused by the pandemic would be the most probable explanation. Thus, they can be other reasons for an unimpressive decrease in 2020. We suppose that some newly established German companies have started offering components. There might also be a case that formerly existing companies had developed their activities before the pandemic and, in 2020 have been able to supply necessary output to their domestic partners. As a result, some German companies reduced the imports of the components.

Table 1. The foreign value-added in German exports (of all goods and services) during 2015–2020, top countries in 2020

Value-added sourcing country	2015	2016	2017	2018	2019	2020
People's Republic of China	1.94%	1.84%	2.16%	2.57%	2.53%	2.41%
United States	2.47%	2.32%	2.53%	3.06%	2.82%	2.33%
France	2.18%	2.10%	2.58%	2.66%	2.22%	2.09%
Netherlands	1.23%	1.14%	1.68%	1.94%	1.94%	1.80%
Switzerland	1.03%	0.93%	1.00%	1.05%	1.57%	1.56%
United Kingdom	1.72%	1.52%	1.61%	1.95%	1.92%	1.50%
Austria	0.94%	0.90%	1.01%	1.34%	1.32%	1.31%
Italy	1.40%	1.31%	1.50%	1.82%	1.57%	1.25%
Poland	1.16%	1.11%	1.29%	1.47%	1.22%	1.14%
Belgium	0.77%	0.63%	0.74%	0.80%	0.92%	0.88%
Spain	0.81%	0.78%	0.88%	1.06%	0.91%	0.72%
Czechia	0.81%	0.77%	0.87%	0.94%	0.85%	0.71%
Sweden	0.51%	0.46%	0.59%	0.70%	0.62%	0.54%
Hungary	0.47%	0.41%	0.49%	0.60%	0.57%	0.51%
Russia	0.70%	0.55%	0.81%	0.78%	0.58%	0.51%
Denmark	0.40%	0.36%	0.44%	0.47%	0.51%	0.47%
Republic of Korea	0.45%	0.43%	0.49%	0.54%	0.52%	0.45%
Turkey	0.50%	0.48%	0.64%	0.54%	0.37%	0.38%
Japan	0.42%	0.40%	0.44%	0.43%	0.42%	0.34%
Romania	0.24%	0.22%	0.26%	0.30%	0.34%	0.32%
Slovakia	0.29%	0.29%	0.33%	0.34%	0.32%	0.30%
Mexico	0.23%	0.26%	0.34%	0.37%	0.40%	0.28%
Canada	0.29%	0.27%	0.29%	0.30%	0.32%	0.26%
India	0.23%	0.27%	0.31%	0.41%	0.31%	0.23%
Luxembourg	0.15%	0.13%	0.15%	0.13%	0.23%	0.22%
Taipei. China	0.17%	0.16%	0.19%	0.21%	0.22%	0.21%
Finland	0.23%	0.22%	0.24%	0.29%	0.04%	0.20%
Ireland	0.15%	0.16%	0.20%	0.23%	0.23%	0.20%
Australia	0.19%	0.17%	0.20%	0.20%	0.22%	0.19%

Brazil	0.24%	0.18%	0.22%	0.22%	0.24%	0.19%
Norway	0.26%	0.23%	0.22%	0.22%	0.23%	0.19%
Portugal	0.17%	0.16%	0.18%	0.23%	0.22%	0.19%
Greece	0.12%	0.09%	0.12%	0.13%	0.14%	0.12%
Singapore	0.10%	0.12%	0.16%	0.20%	0.15%	0.11%
Thailand	0.06%	0.07%	0.08%	0.08%	0.14%	0.11%
Malaysia	0.08%	0.08%	0.12%	0.12%	0.12%	0.09%
Slovenia	0.07%	0.07%	0.09%	0.11%	0.11%	0.09%
Bulgaria	0.07%	0.06%	0.08%	0.09%	0.08%	0.07%
Croatia	0.05%	0.05%	0.06%	0.07%	0.08%	0.07%
Lithuania	0.06%	0.02%	0.04%	0.06%	0.08%	0.07%
Viet Nam	0.03%	0.04%	0.06%	0.08%	0.08%	0.07%
Indonesia	0.07%	0.05%	0.07%	0.09%	0.08%	0.06%
Estonia	0.04%	0.04%	0.04%	0.05%	0.03%	0.03%
Hong Kong. China	0.05%	0.05%	0.06%	0.05%	0.04%	0.03%
Kazakhstan	0.02%	0.03%	0.03%	0.03%	0.04%	0.03%
Latvia	0.02%	0.02%	0.03%	0.03%	0.04%	0.03%
Philippines	0.05%	0.05%	0.05%	0.08%	0.04%	0.03%
Bangladesh	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
Cyprus	0.01%	0.02%	0.02%	0.02%	0.01%	0.02%
Malta	0.01%	0.01%	0.01%	0.01%	0.02%	0.02%
Pakistan	0.02%	0.03%	0.03%	0.03%	0.02%	0.01%
Sri Lanka	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Rest of the World	3.65%	4.18%	4.23%	3.37%	4.58%	3.15%
Total	27.38%	26.25%	30.32%	32.91%	32.63%	28.15%

Source: Own deliberation based on (Asian Development Bank MRIO, 2022).

In 2020 the share of Chinese value-added in German exports was slightly lower than in 2019 – 2.41% vs. 2.53% (see Table 1). Also, the share of foreign value-added from the V4 countries was narrowly lower in 2020 than in 2019 (2.66% compared to 2.96%). Thus, the numbers have not confirmed the story of replacing Chinese components with the intermediaries coming from

Central Europe. For example, if in 2020 the share of Chinese components was 1.50% and the share of the intermediaries was 4%, the explanation based on the pandemic and the replacing the risky Chinese supplies with the safe supplies from Central Europe would be very probably. Does it mean that there are no changes in global value chains caused by the pandemic? The answer is no, and it does not. Changes in production and supplies need time, so it this possible that noticeably changes in the origin of foreign components in German exports will be visible in the year 2021. Moreover, it is worth noticing that the share of the V4 countries is higher than the share of China, which can be a good sign for the role of the V4 countries in German value creation. However, we must remember that in 2022 we have another solid external shock caused by the war in Ukraine, which is much more dangerous for the V4 economies than for the Chinese economy.

Table 2 presents similar data as Table 1, but it refers to German exports of the transport equipment. The possible explanations for the changes in 2020 compared to 2019 are pretty much comparable like before - the decrease in the share of foreign value-added is noticeable but not spectacular. Thus, it can result from a pandemic, but not necessary. The decrease in the share of Chinese foreign value-added (from 5.87% to 3.54%) is accompanied by the decline in the share of value-added coming from the V4 countries (from 3.29% to 3.13%). The decrease in the case of Chinese foreign value-added is much more substantial than in the case of value-added coming from the V4 countries, which makes the pandemic slightly more probable explanation. However, still, we cannot say that Chinese components were crowded out by the intermediaries coming from the V4 countries.

Table 2. The foreign value-added in German exports of transport equipment during 2015–2020, top countries in 2020

Value-added sourcing country	2015	2016	2017	2018	2019	2020
People's Republic of China	3.25%	3.00%	3.40%	3.43%	5.87%	3.54%
United States	5.03%	4.70%	4.83%	4.09%	5.85%	3.30%
United Kingdom	2.84%	2.80%	2.67%	3.68%	3.30%	2.85%
France	2.69%	2.45%	2.96%	2.98%	3.39%	2.64%
Italy	1.18%	1.10%	1.20%	1.51%	1.41%	1.26%
Netherlands	0.72%	0.65%	0.93%	1.21%	1.16%	1.18%
Poland	0.96%	0.88%	1.00%	1.15%	1.24%	1.12%
Austria	0.61%	0.53%	0.61%	0.95%	0.88%	0.98%

Spain	1.23%	1.13%	1.23%	1.32%	1.53%	0.97%
Republic of Korea	0.71%	0.61%	0.73%	1.00%	0.88%	0.88%
Russia	1.12%	1.24%	1.46%	0.94%	1.39%	0.88%
Switzerland	0.68%	0.68%	0.69%	0.94%	0.75%	0.86%
Czechia	0.69%	0.65%	0.76%	0.97%	0.92%	0.83%
Sweden	0.60%	0.65%	0.68%	0.84%	1.06%	0.74%
Hungary	0.46%	0.46%	0.51%	0.68%	0.69%	0.65%
Belgium	0.61%	0.58%	0.62%	0.67%	0.68%	0.56%
Slovakia	0.34%	0.32%	0.41%	0.49%	0.44%	0.53%
Japan	0.66%	0.64%	0.65%	0.55%	0.62%	0.44%
Denmark	0.21%	0.21%	0.26%	0.42%	0.34%	0.39%
Norway	0.41%	0.37%	0.33%	0.37%	0.31%	0.37%
Canada	0.54%	0.51%	0.52%	0.44%	0.54%	0.36%
Mexico	0.37%	0.27%	0.44%	0.49%	0.48%	0.35%
Turkey	0.61%	0.55%	0.72%	0.31%	0.52%	0.33%
Taipei, China	0.20%	0.20%	0.20%	0.32%	0.23%	0.32%
Portugal	0.28%	0.26%	0.29%	0.35%	0.35%	0.31%
India	0.41%	0.28%	0.42%	0.41%	0.55%	0.28%
Romania	0.13%	0.13%	0.14%	0.25%	0.16%	0.25%
Australia	0.29%	0.29%	0.31%	0.34%	0.30%	0.24%
Finland	0.24%	0.22%	0.23%	0.00%	0.28%	0.24%
Brazil	0.17%	0.21%	0.18%	0.24%	0.20%	0.17%
Ireland	0.21%	0.14%	0.19%	0.20%	0.33%	0.16%
Malaysia	0.15%	0.10%	0.18%	0.18%	0.17%	0.15%
Greece	0.06%	0.08%	0.07%	0.13%	0.08%	0.13%
Luxembourg	0.10%	0.10%	0.09%	0.10%	0.10%	0.09%
Thailand	0.06%	0.05%	0.06%	0.11%	0.07%	0.09%
Singapore	0.03%	0.02%	0.04%	0.10%	0.06%	0.08%
Slovenia	0.06%	0.06%	0.07%	0.09%	0.09%	0.08%
Lithuania	0.02%	0.03%	0.03%	0.08%	0.05%	0.06%
Bulgaria	0.04%	0.04%	0.05%	0.06%	0.05%	0.05%
Croatia	0.04%	0.04%	0.04%	0.07%	0.05%	0.05%

Indonesia	0.03%	0.04%	0.04%	0.06%	0.06%	0.05%
Philippines	0.01%	0.01%	0.01%	0.05%	0.01%	0.04%
Estonia	0.03%	0.03%	0.04%	0.04%	0.05%	0.03%
Hong Kong, China	0.06%	0.05%	0.06%	0.04%	0.05%	0.03%
Kazakhstan	0.01%	0.01%	0.01%	0.03%	0.01%	0.03%
Latvia	0.02%	0.02%	0.02%	0.03%	0.02%	0.03%
Bangladesh	0.05%	0.03%	0.05%	0.03%	0.03%	0.02%
Cyprus	0.02%	0.02%	0.02%	0.01%	0.02%	0.01%
Malta	0.00%	0.00%	0.00%	0.01%	0.01%	0.01%
Sri Lanka	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Viet Nam	0.03%	0.02%	0.03%	0.01%	0.03%	0.01%
Rest of the World	4.32%	3.83%	3.22%	6.10%	2.81%	4.24%
Total	33.61%	31.28%	33.71%	38.90%	40.49%	33.26%

Source: Own deliberation based on (Asian Development Bank MRIO, 2022).

Poland's position has not changed much recently on both lists, although its share of German value-added declined in 2020 compared to 2019. Only a few countries increased their share during this time. In terms of value-added in total exports, these were Turkey, Finland and Cyprus. On the other hand, in the case of production in the automotive industry, their share in the creation of added value increased, among others, in Netherlands, Austria, Switzerland, and Slovakia. The position of Poland is quite significant and stable. However, Poland overtook Spain and Russia on the list of countries creating added value in the German export of transportation equipment production.

Based on statistical data, these conclusions are uncommitted to the business organization's changes expected since the pandemic's outbreak. Therefore, a final assessment of the impact of the pandemic and the shift in supply chains should be awaited, at least until more recent data are available. However, Russia's aggression on Ukraine and disruptions in global economy may make it impossible to separate the effect of the pandemic and war on shifts in GVCs.

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