
Global Value Chains in the Era of the COVID-19 Pandemic: Symptoms of Deglobalization

Submitted 12/07/21, 1st revision 30/07/21, 2nd revision 19/08/21, accepted 10/09/21

Bogusława Drelich-Skulska¹, Sebastian Bobowski², Jan Gola³

Abstract:

Purpose: The COVID-19 pandemic significantly affected the performance of global value chains (GVCs) due to lockdowns, restricted labor mobility, and consumers' access to retail markets. Authors verify the research hypothesis as follows: recent disruptions in GVCs will induce reshoring and permanent reconfiguration of economic activity whereas enhancing deglobalization.

Design/Methodology/Approach: Authors conducted a critical analysis of economic papers registered in the Web of Science and Scopus databases and ratio analysis based on the World Bank's World Development Indicators and Reports.

Findings: Authors argued that the reshoring of GVCs seems to lack solid, far-reaching economic premises, whereas policy recommendations in favor of enhancing GVCs' stability and resilience proved to be significant.

Practical Implications: Authors provided a set of policy recommendations regarding enhancing the stability and resilience of GVCs when facing shocks such as the COVID-19 pandemic to minimize negative impacts related to reshoring and reconfiguring economic activity, e.g., discouraging productivity and competitiveness across regions, industries, and enterprises.

Originality/Value: The paper discusses current and vital issues associated with implications of the COVID-19 pandemic for GVCs activities, providing valuable policy recommendations for mitigating deglobalization trends.

Keywords: Global value chains (GVCs), COVID-19 pandemic, deglobalization.

JEL Classification: F12, F23, F60, K15, K22.

Paper Type: Research Paper.

Acknowledgement: The project is financed by the Ministry of Science and Higher Education in Poland under the programme "Regional Initiative of Excellence" 2019 - 2022 project number 015/RID/2018/19 total funding amount 10 721 040,00 PLN".

¹Department of International Business, Wroclaw University of Economics and Business, Poland, boguslawa.drelich-skulska@ue.wroc.pl;

²Department of International Business, Wroclaw University of Economics and Business, Poland, sebastian.bobowski@ue.wroc.pl;

³Department of Public Economic Law, University of Wroclaw, Poland, jan.gola@uwr.edu.pl;

1. Introduction

Global value chains (GVCs) have become an inherent property of the world economy since the 1990s, triggered by the neoliberalist approach to international macroeconomic policies and rapid progress in information and communication technologies (ICT). Significantly, progressive regulatory changes, related to the emergence of numerous regional trade agreements (RTAs), enhanced deeper penetration of low-wage countries by multinational enterprises (MNEs), seeking cost advantages through offshoring low-value-adding stages of the production chains.

Dynamic economic growth and foreign direct investment (FDI) flows resulted in the expansion of GVC trade's shares in total world trade, particularly in machinery, automotive, electric, and electronics industries across East Asia, Europe, and North America. In contrast, low-end outputs and activities concentrate within African, Central Asian, and Latin American locations. However, the Global Financial Crisis (2007-2008) has halted this upward trend, perceived as an advent of a slowdown in globalization, also termed deglobalization. However, the gradual resurgence of the GVC trade in the post-2008 world has been challenged by the COVID-19 pandemic in 2020, which raised the concerns whether disruptions in cross-border supplies induced by lockdowns and restricted labor mobility and consumers' access to the retail market might deglobalize the world (Khan *et al.*, 2020; Grima *et al.*, 2020).

The paper's main objective is to characterize the impact of the COVID-19 pandemic on GVCs by verifying the hypothesis as follows: Recent disruptions in GVCs will induce reshoring and permanent reconfiguration of economic activity whereas enhancing deglobalization.

2. Literature Review

GVCs, also termed global production networks and global supply chains, combine several attributes critical to MNEs, such as spatial flexibility, economies of scale, and cost advantages. The managerial, innovation and marketing skills of MNEs have enabled them to access skilled labor forces, natural resources, logistics service providers, and markets at an unprecedented scale since the 1990s. Decision-making processes related to fragmentation of value chains, determined by cost savings and service link costs across spatially dispersed production blocks, have deepened interdependencies across the regions, resulting in business cycle synchronization and magnification effect in the world trade about world GDP (Jones and Kierzkowski, 1990).

Massive FDI inflows to lower-cost offshore locations boosted employment, entrepreneurship, infrastructure development, and technology spillovers (Bobowski 2018). High-frequency GVCs, characterized by vertical specialization, agglomeration effects, with intra-firm activities accompanied by arm's length transactions, have led to the expansion of cross-border production networks, with regard to network-friendly

industries, i.e., machinery, automotive, electric, and electronics (Drelich-Skulska and Jankowiak, 2020).

In the era of hyper globalization (1986-2008), fueled by neoliberal macroeconomic agendas of Reagan and Thatcher administrations, as well as the collapse of the Soviet Bloc and entrance of several emerging markets to the global stage (e.g., China, India), the world trade' shares in the world GDP – a standard measure of globalization - increased from 35.33 to 60.79%, with minimal decreases of less than 1% in years 1991, 1993, 2001-2002. In 2009, due to the Global Financial Crisis (2007-2008) originated in the US mortgage market, the global economy experienced the highest downturn since the Great Depression (1929-1933), while this ratio dropped by 8.46%. Rapid recovery next year (by 4.70%), the second-highest positive annual change since 1974, however, was followed by a downward trend. In fact, before the COVID-19 pandemic year of 2020, the ratio scarcely recovered to the pre-crisis level (macrotrends, 2021).

Numerous empirical studies by, e.g., Johnson and Noguera (2012), Wang *et al.* (2013), Koopman *et al.* (2014), Borin and Mancini (2019), and Pichler *et al.* (2020), addressing measurement of GVC trade by using input-output tables, confirmed that during the period of hyper globalization (1986-2008) GVC participation in total world trade increased significantly, but stagnated or declined since then. This, in turn, complies with studies by Antràs (2020), that hyper globalization was directly associated with the expansion of GVCs, whereas slowbalization – with their stagnation. As stated by the author, escalating nationalistic sentiments among societies of advanced countries encouraged by the economic downturn and recent US-China trade disputes and Brexit put into question the foundations of globalization.

Interestingly, another important measure of globalization, the stock of international migrants, reached the peak of 280.6 million in 2020, nearly twice as much as in 1990, with the highest annual growth rates in 2015-2020 (migration data portal 2021). Thus, globalization hasn't translated into a downward trend in international migrations so far. Furthermore, both in terms of net inflows and outflows of FDI as % of GDP, the 2007 peak of 5.4-5.5% has never been recovered; similar trends were observed in the case of portfolio investments (data world bank, 2021). The latter effect was mainly triggered by risk aversion, macroprudential policies, and government bailouts (Beck *et al.*, 2020).

In respect of proliferation above of neoliberal macroeconomic agenda, it should be noted that the Global Financial Crisis (2007-2008) didn't reverse the downward trend in the value of weighted mean applied tariff in the world trade – it dropped by 69.8% since 1994 to less than 2.6% (macrotrends, 2021a). Tariff reductions were introduced both within the WTO multilateral negotiation process and the proliferation of RTAs – since 1986 cumulative number of RTAs in force has increased by more than 19 times to 349 (RTA database, 2021). In regard to ICT development, it should be stressed that since 1990 the total number of active Internet users worldwide has increased by 1.880

times – from 2.5 million to 4.7 billion in 2020 (Statista, 2021), the power of processing and memory capacity of computers used to double every two years (in line with Moore's law). In contrast, the cost of transmitting a bit of information through an optical network decrease by half every nine months (Antràs 2020). As argued by Fort (2017), the ICT revolution enhanced fragmentation of value chains by MNEs due to the possibility of organizing and managing production processes at a distance – for instance, by separating design and manufacturing activities with the assistance of computers and contract manufacturers within offshore locations.

According to the authors, the ratio analysis provided above suggests no deglobalization trends, at least symptoms of slowbalization, as post-2008 ratios recovered to early 2000s levels in respect of GVC trade, trade-in total as well as FDI to GDP. However, the COVID-19 pandemic in 2020 and its implications may complicate this picture.

According to recent WTO (2021) estimations, in 2020, world trade volume declined by 5.3%, while GDP – by 3.8%, thus, the destructive impact of the COVID-19 pandemic proved to be smaller than expected, mainly due to the monetary and fiscal response of national governments across the world. Nevertheless, globalization processes have been jeopardized significantly for the second time within a decade, this time, by a coronavirus and its numerous mutations, with nearly 180 million cases and 4 million deaths reported to date (world meters 2021). Trade-distorting effects of the COVID-19 pandemic spread throughout GVCs, starting with rising prices of inputs imported by countries that manufacture final goods. The latter group of producers suffers from rising costs and declining productivity of manufacturing activities (Hayakawa and Mukunoki, 2021). The supply of final goods has been reduced due to limited labor participation and mobility, and productivity.

In contrast, countries importing final goods experienced a drop in demand because of lockdown measures and decreasing income. On the other hand, at least to some extent, the trade-distorting effects can be offset. Manufacturing activities are maintained when being performed at home - according to Dingel and Neiman (2020), this relates to 22% of jobs in the manufacturing sector - however, it is limited only to selected parts and components of finished goods. In this regard, ICT development proved to be critical during pandemics to enable businesses and individuals to communicate, organize home offices and purchase consumption goods online.

3. Discussion

Deglobalization - much ado about nothing? Deglobalization, conceptualized as a process opposite to globalization, manifests itself through erosion of cross-border interdependencies, integration processes, and interactions among the societies (Kim *et al.*, 2020), with the perception of the global market through the prism of declining advantages and expanding set of risks, mainly in respect of manufacturing and trade activities (Abdal and Ferreira, 2021). As pointed out by Bloom *et al.* (2020), there is

also an essential technological context of globalization related to rising R&D expenditures. Whereas there is still an upward trend in respect of speed of transmission of information due to the development of fiber optic technology, it seems that returns on such organizational and managerial innovations for MNEs that orchestrate GVCs may gradually decline.

On the other hand, however, recent progress in industrial automation and robotics may substitute for offshoring and lead to reshoring of GVC activities (Ancarani *et al.* 2019), while MNEs might opt for high automation within offshore locations when considering domestic production factor prices (Rodrik 2018). This, in turn, would threaten less developed countries (LDCs) in respect of reaping their cost advantages by participating in GVCs. Nevertheless, it is non-consistent with empirical studies by Artuc *et al.* (2018) and the World Bank (2020), according to which automation may enhance MNEs' productivity and economies of scale while inducing demand for intermediate inputs from developing countries.

For instance, at first sight, 3D printing technology, trade-distorting proved to positively impact productivity and input demand by MNEs (Freund *et al.*, 2018). The aforementioned technological novelties, e.g., automation, and robotics, may favor better-skilled labor forces in LDCs and aggravate income inequalities. Furthermore, digital platforms may select more significant market players in GVCs, able to collect and utilize data on consumers at the expense of counterparts from developing countries, thus, abusing market power and violating fair competition.

Digital innovations related to high-speed Internet and e-commerce proved to trigger GVCs' inclusiveness, considering reduction of entry barriers for smaller enterprises, also from LDCs challenged by various infrastructure backwardness. On the other hand, inventories and logistics management are enhanced by digital technologies, favoring, next to services, manufacturing stages of GVCs (Antràs, 2020). There is also a massive potential for adopting machine learning systems, artificial intelligence, big data, digital rating systems, and open distributed ledgers to mitigate information gaps and distance in B2B and B2C relations (Brynjolfsson *et al.*, 2019).

An upward trend in production factors' prices within developing countries, e.g., rising unit labor costs, resulting from massive FDI inflows by MNEs from advanced economies, causes traditional advantages of the former to shrink, irrespective of improving their productivity. This, however, doesn't have to translate into deglobalization, as MNEs facing deteriorating market conditions may consider relocation of specific stages of GVC to other developing countries offering, for instance, cheaper labor or more favorable environmental regulations (Belderbos and Zou, 2006).

Taking into account sunk costs of GVC establishment, related to, e.g., relations-specific arm's length transactions between unrelated local small and medium enterprises (SMEs) and MNEs, the latter are unwilling to exit the economy they've

already entered (Kimura and Obashi, 2011), instead opting for a change in the profile of their operations at a given location (Monarch, 2021), e.g., by reorienting to intra-firm transactions to manage exchange rate fluctuations more effectively.

Moreover, while relatively inefficient intellectual property rights (IPR) regimes in some developing countries offering cost advantages and market access do not discourage MNEs from transferring technologies and operating there, expected improvements and rising restrictiveness of regulatory frameworks in this field may further enhance the spatial expansion of GVCs (Bilir, 2014). Similarly, the growth of trade in services at a distance induced by structural transformation and technological development potentially reduces the risk of globalization. On the other hand, however, a downward trend observed in the aggregate world investment rate observed for the last five decades, translating to, among others, reduction of trade in investment goods, e.g., machinery and automotive, might reduce the contribution of work to world GDP prospectively (García-Santana *et al.*, 2016).

There is also an important political context of deglobalization, related to the intensification of trade protectionism at the expense of liberalization at multilateral (e.g., series of impasses of Doha Round) and regional level (e.g., renegotiation of NAFTA, US withdrawal from TPP and TTIP, Brexit, US-China trade war), new waves of populism and nationalism (e.g., Trump, Bolsonaro, Orban, Kaczynski), anti-globalist and anti-trade sentiments fueled by rising income inequalities both within advanced and developing economies (Goldberg, and Pavcnik, 2007; Rodrik, 2020).

Fortunately, newly elected US President Biden declares a retreat from Trump's isolationism and protectionism in trade policy, which might weaken trends toward deglobalization. On the other hand, eventual reshoring to domestic economies due to uncertainty over US-China trade relations appears to be uncertain; instead, MNEs would opt to relocate their GVCs to the other developing countries (Flaen *et al.*, 2020). In an extreme scenario, political polarization may enhance fragmentation of the global economy into opposite blocs and deglobalize GVCs.

4. Conclusions

The COVID-19 pandemic caused a significant drop in world trade and halted GVCs in February and April/May 2020 due to lockdowns and related restrictions, with regard to vehicle trade; however, it recovered to October pre-pandemic levels. Thus, the COVID-19 crisis, if it appears to be temporary, will not enhance or speed up reshoring and deglobalization in the shorter perspective. Nevertheless, in the medium- and longer-term view, GVCs performance may be affected by a reluctance to personal interactions and international travels, as well as relocation. In contrast, future location decisions may include the aspect of spatial distance and related health risks. Due to pandemic experiences, GVCs may become more regional or local, enhancing supply security at the expense of productivity and efficiency (Shih, 2020; Gandoy and Díaz-Mora, 2020; McKinsey, 2020).

Thus, relocation to nearshore locations seems to be a more probable scenario than reshoring MNE's domestic economies. According to Zhan (2021), regional GVCs would be shorter, less fragmented, and more concentrated regarding value-added per stage.

Technological novelties studied in the paper would discourage offshoring decisions, favoring mostly better-skilled labor forces within the developing world while leaving poorer societies behind. This and more excellent recovery of stock markets compared to real economies may further expand income inequalities across the regions, disadvantaging losers of globalization, making them advocates and supporters of deglobalization.

There is also an essential aspect of legal uncertainty among businesses caused by the fact that regulatory restrictions concerning, e.g., prohibition of taking up and pursuing economic activity in specific areas, restrictions on manufacturing, trade in goods and services, often violate the exercise of constitutional freedoms and rights of financial entities (Salter, 2020).

There is also uncertainty related to political and institutional dimensions of GVCs – effects of cooperative programs and responses, e.g., the EU' Recovery Fund, distribution of vaccines across the globe, as well as investigation of the COVID-19 genesis may hypothetically fuel globalization, integration, and liberalization in favor of GVCs expansion if being positive and successful, otherwise, would pave the way to isolationism and deglobalization.

Considering the importance of GVCs in the world trade and gains from specialization, governments should enhance GVCs' resilience and stability by, among others, support of risk management system, facilitation of investment, operational permits and certification procedures, homogenization of norms, standards, and related logistics, transport, and border procedures. However, a key challenge is to preserve gains from specialization while stimulating competition and diversification across GVCs.

References:

- Abdal, A., Ferreira, D.M. 2021. Deglobalization, Globalization, and the Pandemic: Current Impasses of the Capitalist World-Economy. *Journal of World-Systems Research*, 27(1), 202-230.
- Ancarani, A., Di Mauro, C., Mascali, F. 2019. Backshoring strategy and the adoption of Industry 4.0: Evidence from Europe. *Journal of World Business*, 54(4), 360B371.
- Antràs, P. 2020). De-Globalisation? Global Value Chains in the Post-COVID-19 Age. NBER Working Paper, No. 28115.
- Artuc, E., Bastos, P.S.R., Rijkers, B. 2018. Robots, Tasks, and Trade. Policy Research Working Paper 8674, World Bank, Washington, DC.
- Beck, T., Buitter, W., Dominguez, K., Gros, D., Gross, C., Kalemli-Ozcan, S., Peltonen, T., Sánchez Serrano, A., Portes, R. 2020. The Global Dimensions of Macroprudential Policy, 10. European Systemic Risk Board.

- Belderbos, R., Zou, J. 2006. Foreign Investment, Divestment and Relocation by Japanese Electronics Firms in East Asia. *Asian Economic Journal*, 20(1), 1827.
- Bloom, N., Jones, C.I., Van Reenen, J., Webb, M. 2020. Are Ideas Getting Harder to Find? *American Economic Review*, 110(4), 1104-1144.
- Bobowski, S. 2018. Measurement of Intra-Industry Trade in International Production Networks in The HDD Industry. The Case of East Asia. *Transformations in Business & Economics*, 17(2A(44A)), 42-59.
- Borin, A., Mancini, M. 2019. Measuring What Matters in Global Value Chains and Value-Added Trade. Policy Research Working Paper, No. WPS 8804. Washington, D.C.: World Bank Group.
- Brynjolfsson, E., Hui, X., Liu, M. 2019. Does Machine Translation Affect International Trade? Evidence from a Large Digital Platform. *Management Science* 65(12), 5449-5460.
- Dingel, J.I., Neiman, B. 2020. How Many Jobs Can Be Done at Home? *Journal of Public Economics*, 189, 104235.
- Drelich-Skulska, B., Jankowiak, A.H. 2020. The place of China in the Global Value Chains - current situation and future trends. *Transformations in Business & Economics*, 19(2A(50A)), 565-578.
- Flaen, A., Hortaçsu, A., Tintelnot, F. 2020. The Production Relocation and Price Effects of U.S. Trade Policy: The Case of Washing Machines. *American Economic Review*, 110(7), 2103-2127.
- Fort, T.C. 2017. Technology and Production Fragmentation: Domestic versus Foreign Sourcing. *Review of Economic Studies*, 84(2), 650-687.
- Freund, C.L., Mulabdic, A., Ruta, M. 2018. Is 3D Printing a Threat to Global Trade? The Trade Effects Didn't Hear About. Working paper, World Bank, Washington, DC.
- García-Santana, M., Pijoan-Mas, J., Villacorta, L. 2016. Investment Demand and Structural Change. CEPR Discussion Paper, No. DP11636.
- Grima, S., Dalli Gonzi, R., Thalassinou, I.E. 2020. The Impact of COVID-19 in Malta and its Economy and Sustainable Strategies. Available at SSRN: <https://ssrn.com/abstract=3644833>.
- Goldberg, P.K., Pavcnik, N. 2007. Distributional Effects of Globalization in Developing Countries. *Journal of Economic Literature*, 45(1), 39-82.
- Hayakawa, K., Mukunoki, H. 2021. Impacts of COVID-19 on Global Value Chains. *The Developing Economies*, 59, 154-177.
- Johnson, C., Guillermo, N. 2012. Accounting for Intermediates: Production Sharing and Trade in Value Added. *Journal of International Economics*, 86(2), 224-236.
- Jones, R., Kierzkowski, H. 1990. The Role of Services in Production and International Trade: A Theoretical Framework. In: Jones, R., Krueger, A. (Eds.). *The Political Economy of International Trade: Essays in Honor of Robert E. Baldwin*, Cambridge: Blackwell.
- Khan, S., Rabbani, R.M., Thalassinou, I.E., Atif, M. 2020. Corona Virus Pandemic Paving Ways to Next Generation of Learning and Teaching: Futuristic Cloud Based Educational Model. Available at SSRN: <https://ssrn.com/abstract=3669832>.
- Kim, H.M., Li, P., Lee, Y.R. 2020. Observations of deglobalization against globalization and impacts on global business. *International Trade, Politics and Development*, 4(2), 83-103.
- Kimura, F., Obashi, A. 2011. Production Networks in East Asia: What We Know So Far. ADBI Working Paper, No. 320.

-
- Macrotrends. 2021. Retrieved from:
<https://www.macrotrends.net/countries/WLD/world/trade-gdp-ratio>.
- Macrotrends. 2021a. Retrieved from:
<https://www.macrotrends.net/countries/WLD/world/tariff-rates>.
- Migrationdataportal. Retrieved from: 2021.
<https://migrationdataportal.org/themes/international-migrant-stocks>.
- Monarch, R. 2021. It's Not You, It's Me": Prices, Quality, and Switching in U.S. - China Trade Relationships. *The Review of Economics and Statistics*, 1-49.
- Pichler, A., Pangallo, M., del Rio-Chanona, R.M., Lafond, F., Doyne, F.J. 2020. Production Networks and Epidemic Spreading: How to Restart the UK Economy? *Covid Economics*, 23, 79-151.
- Rodrik, D. 2020. Why Does Globalization Fuel Populism? *Economics, Culture, and the Rise of Right - Wing Populism*. National Bureau of Economic Research, Paper 27526.
- Rtdatabase. 2021. Retrieved from: <http://rtais.wto.org/UI/charts.aspx>.
- Salter, A.W. 2020. Constitutional Drift and Political Dysfunction: Underappreciated Maladies of the Political Commons. In: Powell, B. (Ed.). *Economic Freedom and Prosperity the Origins and Maintenance of Liberalization*, New York: Routledge.
- Statista. 2021. Retrieved from: <https://www.statista.com/statistics/617136/digital-population-worldwide/>.
- Wang, Z., Wei, S., Zhu, K. 2013. Quantifying International Production Sharing at the Bilateral and Sector Levels. NBER Working Paper, No. 19677.
- World Bank. 2020. *World Development Report 2020: Trading for Development in the Age of Global Value Chains*, World Bank Publications. Retrieved from:
<https://data.worldbank.org/indicator/BX.KLT.DINV.WD.GD.ZS>.
- Worldometers. 2021. Retrieved from:
https://www.worldometers.info/coronavirus/?fbclid=IwAR3qglWQPYpXW0godaf_rTx-PwIrJz3tXYnZaI2YYFIF8oScDt5Mhbhy3P8#countries.
- WTO. 2021. Retrieved from: https://www.wto.org/english/news_e/pres21_e/pr876_e.htm.
- Zhan, J.X. 2021. GVC transformation and a new investment landscape in the 2020s: Driving forces, directions, and a forward-looking research and policy agenda. *Journal of International Business Policy*, 4, 206-220.