The Future of Global Value Chains Post COVID-19

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I. ABSTRACT

When worldwide lockdowns in response to the COVID-19 pandemic were rolled out, panic ensued and global value chains (GVCs) were disrupted, causing shortages of a variety of goods, including necessities such as personal protective equipment (PPE), medical devices such as ventilators, and, interestingly, toilet paper in the United States. This essay provides an analysis of global value chains and their benefits. It discusses the effects of the COVID-19 pandemic on value chains that were disrupted the most, and argues that the future of global value chains is not going to be characterized by a total departure from them, but rather the diversification of chains (especially horizontal diversification across countries) and more supply-side protections that do not detract from the efficiency and productivity gains that are the hallmark of GVCs.

II. BASIC CONCEPTS

GVCs imply a series of value-added processes or stages that contribute towards the production of a final good or a service, with those processes, inputs or intermediate goods crossing borders one or more times (Reinert 2012).

Two main decisions in the creation of GVCs are that of tasks and location, that is, what task (or part of the production process) should be performed and in which location. The former is concerned with the decision of internalization or externalization, i.e., if the firm should handle that task itself or outsource it to a contractor. The latter is, as it may suggest, concerned with which task should be performed at which location.

Movements within the different stages of the value chain of a good between countries classify as horizontal movements, and movements between the different stages of a value chain within a firm or enterprise classify as vertical movements (Reinert 2012, pp. 162). Horizontal movements within a value chain can be forward or backward. In forward movements, "country A supplies inputs that are used for production in country B," whereas in backward movements, "country A uses inputs from country B for domestic production" (Seric and Tong 2019).

III. BENEFITS OF GVCs

In short, GVCs allow firms of developed economies to access inputs and labor at lower costs than in their home countries while providing economies of scale. On the other hand, they offer emerging economies of less-developed countries (LDCs) a path towards industrialization (Ignatenko, Raei, and Mircheva 2019).

GVCs allow the benefits of specialization and comparative advantage to operate on a global scale. Firms can manufacture their goods in a country where it is cheaper to produce said goods. This can be due to a variety of factors, including cheap labor, low input costs, better infrastructure, or other pro-FDI (foreign direct investment) government policies such as subsidies or favorable capital rates. They can also contract production to a firm in another country or an MNE that already possesses either the required infrastructure or the technical expertise (or both), thereby reducing fixed costs. GVCs also take advantage of global shipping networks that enable shipping of goods from manufacturing centers to markets worldwide. They reduce the costs associated with localized manufacturing while allowing production to be efficient and highly productive.

IV. IMPACT OF COVID-19 ON GVCs

The lockdowns imposed by countries worldwide in an effort to limit the spread of the coronavirus led to both demand-side and supply-side shocks. Increases in the demand of medical equipment (thermometers, oximeters, ventilators, etc.), and personal protective equipment (PPE, which includes masks and respirators) led to major shortages of these goods. At the same time, supply of these goods fell short of demand due to two reasons, the first being demand exceeding supply suddenly, and the second being reduction in production due to lockdowns, physical distancing measures, and transportation restrictions. The supply shocks were felt almost immediately, since the lean and efficient GVCs of these products meant that the buyers of these products (both end users and enterprises) had relied on the fact that they would be available as and when required, with little need for large stocks or reserves domestically. At the same time, producers of the products produced and supplied amounts close to the demand. On both sides of the market, therefore, costs were reduced, and companies' financial statements looked good. This is because reductions in inventory reduce the cost of goods sold (COGS) ratio, which paints a favorable picture for investors (Blokhin 2022). This phenomenon has been termed as "Just In Time manufacturing" (Goodman and Chokshi 2021). However, it became clear soon that easy production and transportation of goods globally was an assumption that never considered shocks of this magnitude (coupled with the trade and shipping restrictions that came with the COVID-19 pandemic). Indeed, any previous epidemics, such as the Severe Acute Respiratory Syndrome (SARS) epidemic of the early 2000s in China, were much less global and disruptive than COVID-19.

China has been the main focus in the discussions regarding the effects of COVID-19 on international trade and value chains, since it is the largest exporter of goods around the world (Qin, Liu, and Zhou 2020). Aside from PPE and medical equipment shortages, the strict lockdowns in most parts of China (not surprising, since the virus originated there) also led to severe computer chip shortages throughout the world, the effects of which were seen not just in the consumer electronics industry but also the automotive industry, which forced factories from India to the United States to halt assembly lines since the cars could not be fitted with chips that were essential for their operation (Goodman and Chokshi 2021, The Economist 2021). Notably, Japanese carmaker Toyota did not get as affected by the chip shortages as it "relied on suppliers clustered close to its base in Japan" (Goodman and Chokshi 2021).

V. THE FUTURE OF GVCs

The restrictions in GVCs as a result of demand and supply shocks, productivity decreases, and shipping restrictions led to an uptick in economic protectionist sentiments across the world – from the notions of efficiency to *resilience*. Resilience can be defined as the "ability to return to normal operations over an acceptable period of time, post-disruption" (Miroudot 2020). A common complaint against globalized markets is that production gets concentrated in a few locations (in case of computer chips, it would be China and Taiwan, which account for the majority of global production). The shift from international trade to domestic production supported by government tariff and non-tariff measures (NTMs) can only be successfully implemented by a handful of countries with both the consistent local demand (in the absence of external shocks) and the presence of relevant infrastructure and comparative advantages to justify local production. As Willy C. Shih, an international trade expert at Harvard Business

School put it, “Consumers won’t pay for resilience when they are not in crisis.” (Goodman and Chokshi 2021).

The higher cost of resilience would come in broadly two forms – the cost of local manufacturing (or manufacturing in closeby countries which may not possess the necessary infrastructure and economies of scale) and the cost of increased inventory or other controls against supply shocks. Either one or both of them may apply depending on the product and industry (for example, in cases where set-up of local manufacturing is not possible in the short to mid-term, inventories may be increased to a greater extent). In most cases, this push towards resilience has been from the government’s side, not from the corner offices of private enterprises (Freund 2020). This is because resilience inherently implies reduction in efficiency and productivity and an increase in costs, none of which are desirable by a profit-oriented company. On the other hand, it is in the interest of governments to push for domestic resilience in supply since it increases public support due to promises of greater economic activity. It is important to note here that market forces, even in the face of shocks of the magnitude of COVID-19, adapted in time – production of masks in China increased tenfold to meet demand, for example.

It is important to note here that reinvigorating domestic industry and creating or bringing back manufacturing jobs (“reshoring”) should not be policies solely related to the effects of COVID-19 in the global economy, but instead should be standalone government objectives that have a much broader motivation than just the supply-side effects of COVID-19 disruptions on GVCs. As discussed earlier in this section, there need to be multiple reasons and advantages for the shift towards resilience and domestic production for it to be a sound economic policy,

because it will be a large undertaking for most countries as part of a mid-to-long term economic plan. Otherwise, it will lead to market inefficiencies and rising costs which would eventually lead to a backtrack from protectionism and a return to GVCs, not to mention a domestic crisis or disaster which would cripple the supply of the product and affect the concerned industry much worse. Sébastien Miroudot, Senior Trade Policy Analyst at Organization for Economic Co-Operation and Development (OECD), argues that domestic production does not equate to *robustness*. Robustness is defined as the ability to maintain operations during a crisis (Brandon-Jones et al. 2016). A PPE production crisis in say, New York, would have had the same effect as the crisis in China. If a protectionist stance towards PPE was adapted with a scaleback from participation in GVCs, in a future pandemic such (say COVID-32), both resilience and robustness would be affected to a larger extent. According to Brenton, Ferrantino, and Maliszewska (2022), reshoring by leading economies would reduce global trade by 17% in 2030, with China, United States, and Western Europe seeing reductions between 20 and 30 percent.

The key to a post-pandemic world where economies are less adversely affected by crises and disasters is much more horizontal diversification of GVCs, that is, diversifying the countries which supply the goods to the concerned country (these can be raw, intermediate, or final). The shortage of masks and PPE was caused due to an overreliance on Chinese manufacturers, not an overreliance on GVCs. This is supported by Huang (2019), who found that in the aftermath of the SARS epidemic in China, firms which sourced from many different locations (i.e., were more geographically diversified) were more resistant to supply side disruptions. Being more GVC and international trade friendly would benefit low and middle income countries the most, with countries deeply integrated into GVCs seeing the biggest gains in real GDP growth rates (for

example, Thailand at 10.7% and Vietnam at 6.8%), with all pro-GVC countries seeing positive results (Brenton, Ferrantino, and Maliszewska 2022). A move towards reshoring, on the other hand, would not only mean reduced growth rates but increased poverty throughout the recovery process for low and middle income countries (Brenton, Ferrantino, and Maliszewska 2022).

On the firm level, firms that operate on an international level (i.e., MNEs) are more productive than firms that focus on the domestic market only, and that they also pay higher wages to their workers than domestically-focused firms (Sheperd 2021). This is due to the efficiency and productivity benefits of GVCs. Shepard agrees that an anti-GVC approach by countries or firms will have negative consequences, and the implementation of anti-GVC policies itself would be difficult due to how widespread and crucial it is to current supply chains of a large number of goods.

VI. CONCLUSIONS

In Sheperd's analysis of the effects of COVID-19 on GVCs, he has noticed that the private sector has responded to COVID-19, not by adding resilience through re-shoring but through geographic diversification of production, and added redundancy But these efforts focus on diversification, supplier redundancy, and technology, rather than large scale re-shoring. The private sector has not gone towards the aggressive geopolitical form of resilience that is heralded by many governments, but a form of resilience (and through redundancy, a level of robustness) that employs GVCs to a greater extent, which does away with the effects of manufacturing centrality that were experienced in the initial months of the pandemic.

The usage of unilateral trade policies to limit GVC dependence in some countries would pose economic challenges as described before, but in the year succeeding the start of the pandemic, they do not seem to have changed the preeminence of GVCs on a fundamental level. Any country attempting to do so should understand that the benefits of a shift away from GVC are heavily dependent on the good or industry and if specialization or comparative advantages exist in those industries or can exist with the implementation of policy measures or infrastructure improvements *in the near future*. If the supply of a good relies on GVCs, chances are that domestic reshoring would only lead to higher prices and inefficiencies.

Therefore, the future of GVCs is an even stronger emphasis on global distribution of value and supply chains that add the missing redundancy and diversification away from a handful of global suppliers. The rise of technology such as artificial intelligence and machine learning would contribute to the development of GVCs to more resilient and robust ones that are better protected against large-scale crises.

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