Staff Working Paper ERSD-2022-11 **2 August 2022**

World Trade Organization

Economic Research and Statistics Division

THE FUTURE OF GLOBAL VALUE CHAINS AND THE ROLE OF THE WTO

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Manuscript date: April 2022

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ABSTRACT

Disruptions to global value chains (GVCs) – caused by conflicts, natural disasters, and accidents that close transport routes – and that affect specific regions or sectors, are not unusual. However, in recent years and amid the Covid-19 pandemic, they have become more frequent and severe. High profile, sizeable, and repeated disruptions raise pressing questions: Is the breakdown in many GVCs a temporary glitch, or a permanent phenomenon? Have GVCs become endemically more accident prone, and why? And if so, are firms going to rely less on them? If a sustained withdrawal from GVCs occurs, how will business models be reshaped, and what will be the consequences for growth and inflation? How will the global trading system be affected? In short, policymakers want to know, what is the future of GVCs?

Persistent and severe GVC disruption is a recent phenomenon and hard data needed to analyze its consequences on trade and investment flows are still scarce. Given the available evidence, which is mainly conceptual and anecdotal, and the reigning uncertainty, the note suggests some pointers on how GVCs might evolve and how the WTO could respond.

Keywords: global value chains, supply chain resilience, reshoring, WTO, globalization

JEL classification codes: F13, F17, F52, F62

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KEY POINTS:

- The supply disruption due to the pandemic will largely abate as the disease recedes, but inflationary pressures are likely to persist unless macroeconomic policies adjust.
- Repeated shocks to GVCs are not purely random and disjointed events. They are partly the result of fundamental shifts in the global economy, climate and the geopolitical environment.
- Firms have concluded that international supply chains have become endemically riskier, and this is changing their risk/efficiency calculus. But there is little evidence or reason to believe that GVCs will stage a large-scale retreat.
- Indeed, barring a cataclysm, globalization is not dead. Powerful economic forces are at work that require increased reliance on GVCs and improve their operability in the future.
- Governments tend to over-react when faced with possible supply shocks, and unnecessarily impede GVCs; more nuanced responses are needed.
- The WTO can play an important role, promoting the resilience of GVCs.

Global value chains (GVCs) – international networks of suppliers that contribute to the production of a good or service along lines of comparative advantage – are vital sources of efficiency. According to the World Bank, GVCs account for over 50% of world merchandise trade. It is no exaggeration to say that GVCs underlie modern prosperity, helping to ensure abundance, quality, and low prices across much of the world economy. Insertion in GVCs plays a central role in development, providing poor countries with know-how, access to world markets, and – since key suppliers are often foreign-invested - financing capacity, enabling them to exploit untapped trade opportunities.

GVC disruptions – caused by wars, civic conflicts, natural disasters, and accidents that close transport routes – and that affect specific regions or sectors, are not unusual. However, in recent years, they have become more frequent and severe. The ongoing Covid-19 pandemic inflicted a shock of unique ferocity to production in terms of its breadth, intensity, and duration. The pandemic comes on the heels of numerous other major shocks to GVCs, such as the Trump tariffs on steel and aluminium, temporary closure of the Suez Canal, Brexit, and the China-US trade war. The long-standing negotiating stall on big multilateral agreements at the WTO and the disabling of its dispute settlement mechanism do not physically impede the operation of GVCs, but they contribute to the sense that all international trade has become less predictable, especially as protectionist measures have proliferated. The war between Russia and Ukraine, which has upended the world's supply of energy, food, and many minerals, exploded even as a fourth wave of the Covid-19 disease was engulfing the United States, Europe, and now China, while large populations in Africa and elsewhere in the developing world remained unvaccinated.

These high profile, sizeable, and repeated disruptions have caused shortages and delays in the supply of goods and services and contributed to a resurgence in global inflation. The disruptions raise pressing questions: Is the breakdown in many GVCs a temporary glitch, or a permanent phenomenon? Have GVCs become endemically more accident prone, and why? And if so, are firms going to rely less on them? If a sustained withdrawal from GVCs occurs, how will business models be reshaped, and what will be the consequences for the global trading system? In short, policymakers want to know, what is the future of GVCs?

This note attempts to address these questions and draws some implications for the World Trade Organization (WTO). Institutions designed to promote open and predictable trade, the WTO and its predecessor, the GATT, made trade rules almost universal, and enabled the international division of labor on which GVCs rest. The WTO – whose fundamental principle is non-discrimination, and whose functions include monitoring of trade policy, trade negotiations and settlement of trade disputes – is the *de facto* guardian of GVCs.

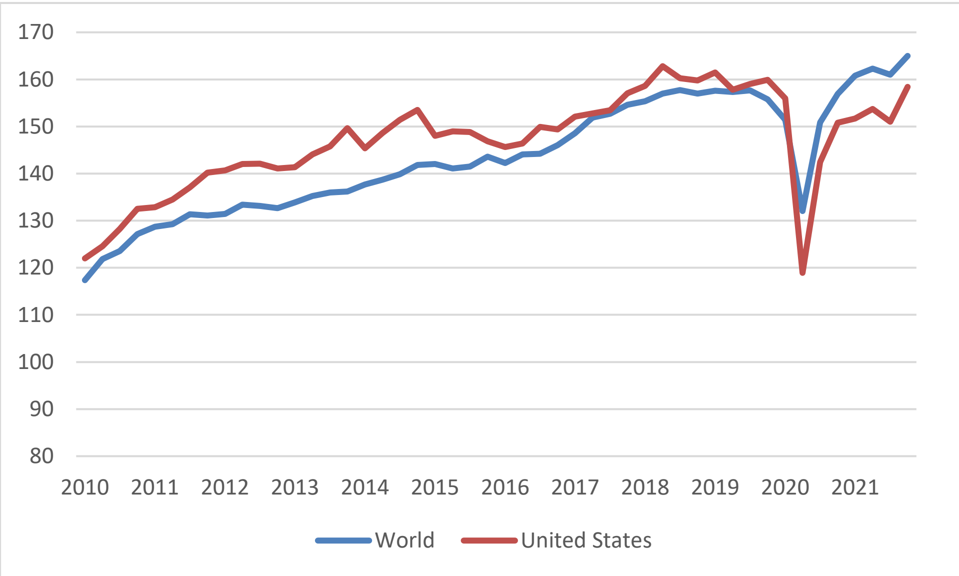
Persistent and severe GVC disruption is a recent phenomenon and hard data needed to analyze its consequences on trade and investment flows are still scarce. As underlined in dramatic fashion by the outbreak of the pandemic and of the Russia-Ukraine war, any prediction is hazardous. Given the available evidence, which is mainly conceptual and anecdotal (though some trade data is available), and the reigning uncertainty, the best one can do is to suggest some pointers on how GVCs might evolve and how the WTO could respond.

The supply disruption due to the pandemic will largely abate as the disease recedes, but inflationary pressures are likely to persist unless macroeconomic policies adjust.

The pandemic was associated with a major shock to world merchandise trade, which, at the trough in mid-2020 fell by about 17% in volume terms relative to end 2019, pre-pandemic, and was about 4% higher than the pre-pandemic level in early 2021. The 21% swing in trade volumes in less than a year, huge as it is, refers to an aggregate and does not convey the scale of the disruption. A supply chain is only as strong as its weakest link and the cycle was even more pronounced in some regions and sectors, as the pandemic hit geographies at different times in a succession of waves. The United States, which accounted for 25% of world GDP in 2020, was among the worst hit by the disease and suffered a particularly pronounced trade cycle. During the pandemic, US export volume hit a low in the second quarter of 2020, falling by 25% year-on-year – more than world export volume during that same period which fell by only 16%. US Export volume only recently returned to pre-pandemic levels.

Chart 1: World and US quarterly merchandise export volume (seasonally adjusted), 2010-2021

Index 2005Q1 = 100



Source: WTO Secretariat (April 2022).

The automotive sector was among the worst affected by the outbreak, as sales collapsed, and production was disrupted. Exports of transport equipment saw big declines in 2020 (-41% year-on-year in Q2 2020) followed by a sluggish recovery in early 2021. Car makers and manufacturers of electronic equipment were especially affected by a shortage of semiconductors, which is likely to persist as demand for semiconductors is expected to strengthen (e.g., electric cars and other goods are increasingly using semiconductors more intensively and thus require larger quantities). In contrast, food supply chains showed remarkable resilience even during the peak of the pandemic. Exports of intermediates required in the food & beverages sector, grew by 10% in 2020.

Many international supply chains remain stretched and subject to long delays. According to an IMF working paper, average world shipping times increased by 25% soon after Covid hit due to labor shortages , and ports quickly became congested - despite declining throughput (Cerdeiro et al., 2022). A shortage of containers, due to the longer shipping times and disrupted logistics, contributed to soaring freight rates. Subsequently, demand for goods soared, but port capacity continued to lag.

According to Freightos Data, the cost of shipping a container internationally is now about 7 times higher than 2 years ago.

Still, the disruption caused by the pandemic in individual countries is diminishing. As the disease wanes through rising immunity and vaccines, supply returns. For example, freight rates have started to decline, domestic shipments in North America have increased and are now about 10% higher than at the end of 2019, prime-age labor force participation in the United States is almost back to pre-pandemic levels (as is unemployment), and only about 10% of US workers are working from home compared to almost 3 times as many during the worst of the pandemic.

This does not, however, mean that inflation – which is projected to remain in the 7-8% range in the United States in 2022 – will quickly abate. The persistence of inflation even as the physical supply-demand equilibrium is gradually re-established can be ascribed to three main factors. First, monetary policy remains exceptionally loose, especially in the United States, where the expected real yield on one-year Treasury Bills is in the negative 5% range, and the Fed has purchased USD 5 trillion of government securities since March 2020, only recently indicating it will wind down its purchases. Second, inflation, once triggered and then persisting for a while, can become entrenched in expectations and become reflected in wage demands, as in the case of the United States where wages rose 5.9% in March compared to the same month a year prior. Higher wages will contribute to a round of cost-push inflation going forward. Third, the Russia-Ukraine trade war has caused a new flare-up in the price of oil, gas, coal, cereals, vegetable oils, and some metals. Model estimates of the inflationary impact vary, depending on the duration of the shock. A typical estimate is that the war will add 2% to inflation in advanced countries over a year. The inflation hit from the war will be even harder in developing countries because they devote a higher share of expenditures to food and energy.

Trade liberalization and the proliferation of efficient international supply chains played a significant role historically in reducing prices, controlling inflation pressures through efficiency gains, economies of scale, competition, and moderating wage demands. Trade liberalization and GVC proliferation help explain why, over recent decades, the price of tradeable goods and of many tradeable services has risen less rapidly than that of non-tradeables. They can play the same role in the future. According to a Peterson Institute study, a feasible package of trade liberalization in the United States could deliver a one-time reduction in consumer prices of around 1.3% (Hufbauer et al., 2022). Increased supply as the pandemic recedes will also help contain inflation.

However, the end of the pandemic, trade liberalization, and increased reliance on GVCs cannot tame inflation without a major shift towards tighter macroeconomic policies. Such a shift need not be as draconian as that of the Volker era, where US CPI inflation rose to 14% following extraordinary growth in the 1960s and the huge oil shocks of the 1970s. At the peak in June 1981, the Fed Funds rate was raised to 19%, triggering a major global recession and debt crisis. Though it looks set to rise over at least the next year or so, inflation is much lower and is less entrenched (for now) than it was in the early 1980s.

Repeated shocks to GVCs are not purely random and disjointed events. They are also the result of fundamental shifts in the global economy, climate and of the geopolitical environment.

If the series of major shocks to GVCs were only the result of bad luck, firms and governments would draw lessons from each episode and make appropriate adjustments specific to each shock. But if the shocks are related in some way, then the problems run deeper, requiring a rethinking of the GVC model itself and of the policy frameworks on which they rest.

Five relatively new features of the international environment have increased the risks to operation of GVCs in what may be described as a regime change. These new features – some evident decades ago but which have become increasingly prominent over the last several years - include deeper geopolitical rifts and more frequent confrontations, changing consumer preferences, greater need for decarbonization, and partial erosion of the rules-based trading system. There is also the possibility (or the fear) that pandemics will become more frequent. This is placed last on the list because it is especially difficult to evaluate:

- *Geopolitical rifts* between China and Russia, the United States and its allies, are hardly new but are now profound, and represent the single most important risk to the continued operation of GVCs as we know them. Such divisions culminated in the trade war between China and the United States, and most recently in the war between Russia and Ukraine, which prompted unprecedented trade and financial sanctions levied against Russia, including withdrawal of its MFN treatment by NATO countries and other allied nations (see Box). China and the United States are the largest economies, and China is at the center of many supply chains that span across Asia and the world. Insofar as geopolitical and security challenges persist, or even intensify as China's rise increasingly challenges the primacy of the United States, GVCs are likely to be exposed to more frequent shocks.

Box 1: Political and Economic Implications of the Russia Ukraine war

The war has far-reaching economic implications despite the limited integration of Russia and Ukraine in GVCs on account of their importance as suppliers of raw materials. The disruption in the supply of energy (oil, coal and gas), metals, and fertilizers from Russia and in the supply of cereals and vegetable oils from Ukraine and Russia negatively impacts GVCs in those sectors and hurts the poorest segments of the world population. The rise in energy prices raises the cost of all forms of transport on which GVCs depend. Food- and oil- import dependent countries in Africa are the most severely affected. Augmented and generalized inflationary pressures will force Central Banks to tighten faster, adding to the growth-depressing effects of the uncertainty caused by the war in financial markets and among investors. Even though Russia and Ukraine together represent less than 2% of world GDP at market exchange rates, devastation of the Ukrainian economy and a depression in Russia due to the unprecedentedly severe sanctions imposed on her – including withdrawal of MFN treatment by NATO allies - will directly dent world GDP growth in 2022. Outside Russia and Ukraine, the economies of Eastern and Western Europe will see the sharpest slowdown in growth among the world's regions.

The war has revealed geopolitical fault lines which cast doubt in the minds of some on the sustainability of the GVC model, and of the trading system as currently configured. Indeed, the causes of the war run deeper than many recognize. A fundamental cause of the war is Russia's irredentism (dictionary definition: "a policy of advocating the restoration to a country of any territory formerly belonging to it."). As several Western and Russian experts have argued, the outbreak of war can also be at least partially attributed to the Eastward expansion of NATO and Russian fears that it would one day include Ukraine, where many citizens crave being part of the West. The intensifying rivalry between China and the United States, and Russia's increasingly close ties with China reassured Russia that there would be a commercial and geopolitical back-up in the event of Western sanctions (or even military action) when it invaded. In a potentially explosive situation, miscalculations by all the parties involved played an important role, as they have in many previous wars.

As Russia's forces redeploy to the South and East of Ukraine, the war is likely to be a far more prolonged and destructive affair than originally expected and sanctions on Russia will be even more severe and longer lasting than expected a month or two ago. Unfortunately, with the war, the weaponization of trade, such as against Russia, China, Iran, the United States, Europe, etc., has become more pervasive than had been the case.

Countries are still bringing disputes, WTO panels decide cases, and 23 members (including the EU) have agreed to submit to arbitration under Article 24 Still, the disabling of the WTO Appellate Body means that that enforcement of WTO rules is greatly weakened. Trade disputes that could once be mediated peacefully by judicial process, are now allowed to fester or to turn into trade wars. Even worse, trade sanctions have become a weapon of choice in political disputes.

The Russia-Ukraine war is a contest of narratives as well as of arms. The narrative which dominates the Western media is not the only one; if proof were needed, President Putin's approval rating has reached 83% among the Russian population, according to an independent survey. Competing narratives also help account for differences in the way countries reacted to the war. China abstained in the UN General Assembly vote condemning the Russian invasion, reflecting its deep ambivalence about Russia's actions, but also the resentment it shares with Russia of US primacy. 34 other countries abstained in the UN vote, while 141 countries voted to condemn the

invasion, and only 4 countries in addition to Russia voted against the resolution. However, the countries that abstained, which include Algeria, India, Iran, Lao PDR, South Africa, and Viet Nam, in addition to China, account for about half the world population.
It is tempting to interpret the UN vote as the manifestation of a neat new alignment, a world where the US and its allies stand on one side and China, Russia and their allies stand on the other – a situation that would spell a halt to globalization as the world economy splits in two, as it did during the Cold War. The reality is far more complex. For example, India and Viet Nam are certainly warier of a China-dominated order than an American one.

Most importantly, China remains vitally interested in Western markets and technology. Such a position is not immutable, however. If opinion leaders in China become convinced that the overriding aim of America and its allies is to stymie China's development and block its rise, security considerations could prevail over economic interests. In that case, China's leaders could begin to fundamentally question whether reliance on Western markets and technology is wise.

What the UN vote underscores, most of all, is that there is no longer a sole country of reference, a role the United States played in the decades that followed the fall of the Berlin wall, and that even a bipolar or tripolar view of the world represents an oversimplification. After all, Ukraine, a relative midget, is standing up to giant Russia. Amid rising nationalism and the fragmentation of the world order, many small and large nations are inclined to chart their own separate course, unwedded to one ally or to multilateral principles, and driven exclusively by their own perceived interest.

Viewed from the standpoint of the WTO and other international institutions, there are two contrasting consequences of the war: first, deep divisions among members will make it even more difficult to achieve results than was recently the case; yet second, results have never been more needed to help keep the peace. Perseverance in multilateralism has rarely been more arduous, and more necessary.

- *Consumers* have drawn great benefits from rising real incomes, open trade, containerization, and technologies that enabled the rise of ecommerce. At the same time consumers have become increasingly demanding in all respects: price, quality, sustainability, and availability. Modern-day GVCs are forced by domestic and international competition to respond to these demands. They have become intrinsically more vulnerable to shocks that affect any link of the chain because in their quest for efficiency and low prices they have sought the cheapest supplier anywhere in the world and adopted "just in time" methods of production, distribution and inventory management.

- Dealing with *climate change* effectively will require increased reliance on trade and on GVCs, especially in sectors such as agriculture and environmental goods – but may also greatly complicate the operation of GVCs. The complications will occur through at least three channels: more frequent weather catastrophes such as flooding and hurricanes; increased cost of sea and air transport due to the huge "green premium" in those sectors given the present state of technology; and the competitive effects of divergent decarbonization policies across countries, which raise the spectre of a proliferation of carbon border adjustment taxes that are each based on different criteria and parameters.

- *Partial erosion of the rules-based global trading system* has become increasingly evident in recent years as nationalist and isolationist ideologies came to prevail in some instances, and protectionist measures have proliferated. Even so, though WTO negotiations remain stalled, and its dispute settlement system was disabled, major regional and bilateral agreements have been concluded across the world, most notably in Asia and Africa. Fragmentation of the trading system into regional blocks (Americas, Asia and Europe), each only partly cohesive and with unstable links between them, is a real possibility (Dadush, 2022). This trend would represent a direct challenge to Global Value Chains, although not necessarily to regional production networks, which are already regionally concentrated anyway.

- The last *great pandemic* before the present one was the Spanish Influenza of 1918-20. The risk of more frequent pandemics for the operation of GVCs is difficult to assess. However, the present episode has highlighted some worrying features that could herald bad disease scenarios. The world economy has become highly integrated, not only through trade and investment, but also constant movement of people, enabling the spread of infectious diseases of all kinds. The pandemic has also revealed how limited the existing arsenal of anti-viral vaccines and therapies is, and how quickly a deadly virus can mutate and create new waves of disease which resist them. We simply don't know whether Covid-19 should be considered as just another 100-year shock or the harbinger of more frequent episodes. All we know is that a new source of risk for the operation of GVCs now exists.

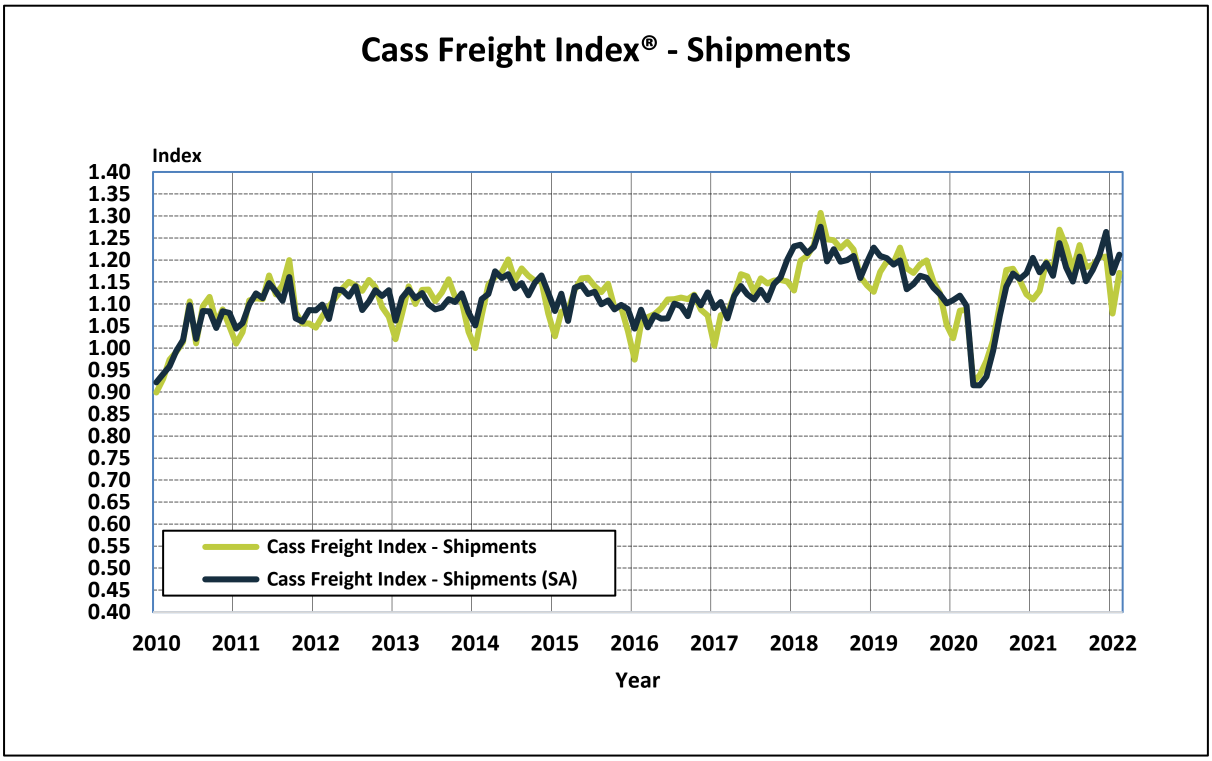
Firms have concluded that international supply chains have become endemically riskier, and this is changing their risk/efficiency calculus, in the direction of controlling risks. However, there is little evidence of a large-scale retreat from GVCs.

According to a McKinsey report based on a survey of supply chain executives carried out in May 2020, during the height of the pandemic disruption, 93% were still planning to increase resilience of their supply chain (Alicke et al., 2020). Measures contemplated to improve resilience include diversification of the supplier base, holding more inventories, improving knowledge of supply chains (the suppliers of suppliers) and making them more transparent, and improving ongoing monitoring of the supply chains for early identification of bottlenecks through applying IT.

However, only 15% plan to nearshore their own production, meaning bringing own production back to their home country or to one in geographic proximity. Given the many voices arguing for self-reliance, the latter finding may be surprising. How come, if GVCs have become so exposed to shocks, few firms are contemplating home production? Cost, including large investments in supplier relationships over many years – i.e., sunk cost – is a major reason. In fact, the Mc Kinsey survey found that less than half of the firms intending to increase resilience of their supply chain would do so even at the expense of short-term savings. Some production cannot be re-shored because essential raw materials or skills are simply not available nearby.

But another reason to avoid reshoring – often overlooked -- is that reshoring does not necessarily mean reduced risk. If the shock originates nearby, concentration of production at home can also be a big source of risk. Take the case of the pandemic. Those arguing for self-reliance assume implicitly that domestic supply lines were far less affected than foreign supply lines by pandemic restrictions. Yet the case of North America, the world's largest economy, casts serious doubt on this notion. The disruption to volumes of shipments inside North America, i.e., those originating and destined for delivery inside the continent, as measured by the widely used Cass Freight Index, was extremely severe.

Chart 2: Cass Freight Index® - Shipments



Source: Cass Information Systems Inc., ACT Research Co, LLC: Copyright 2022.

During the worst of the pandemic, shipments within North America fell 20% from the pre-pandemic level in volume terms and then recovered to about 10% above the pre-pandemic level in a year. This cycle was about as pronounced as that of trade of the United States with the rest of the world, and about 50% wider than that of world merchandise trade volume.

Though the data on trade and domestic shipments is not directly comparable, they show that domestic supplies within North America were severely disrupted. Not surprisingly, shortage of truck drivers appears to have caused at least as much delay of shipments originating in North America and destined to North America as they did of those sourced outside the continent.

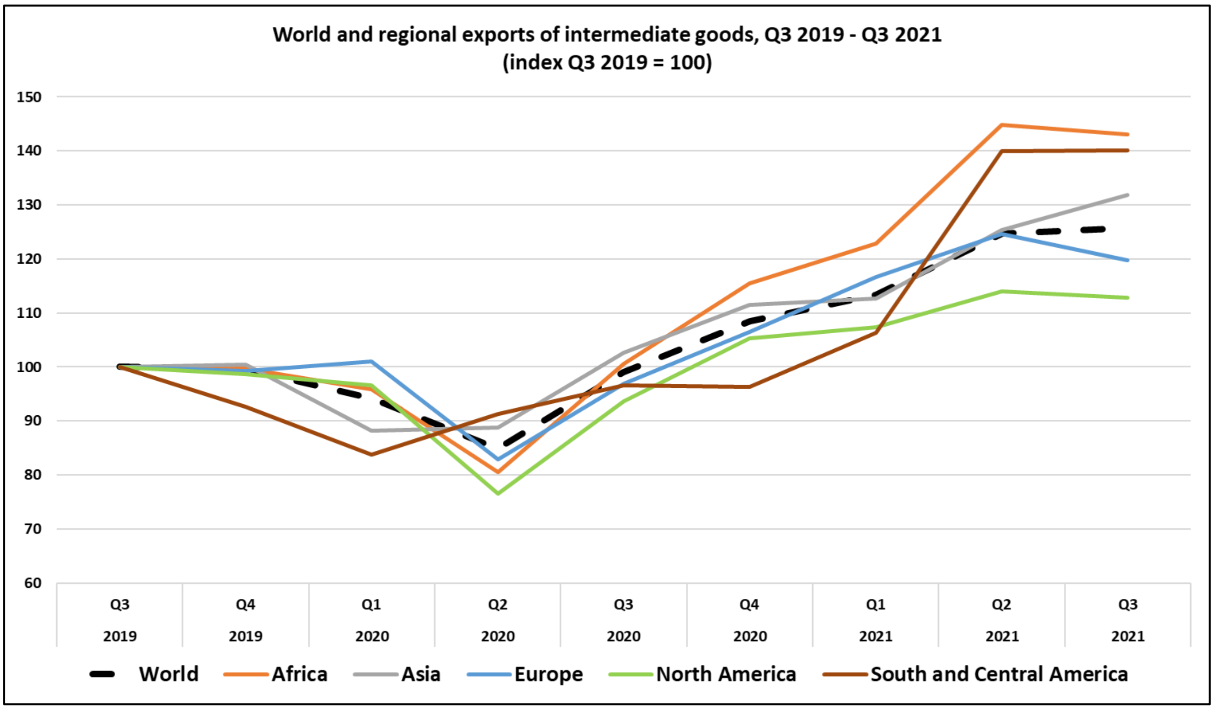
In the same vein, trade often functioned as a mechanism to pool pandemic risk to the supply chain. Since pandemic waves hit countries at different times, foreign suppliers often acted as a shock absorber of domestic supply disruption. In the case of medical equipment, where the shortage in individual countries was at times extreme, GVCs played an essential role in filling the gap. This feature is underscored in the latest IMF World Economic Outlook (April 2022, Chapter 4), which identifies a pronounced "home bias" in supply chains – meaning a reliance on domestic suppliers which is far greater than their weight in world production. The implication of this finding is that reshoring of production represents a further move away from diversification, thus potentially increasing risks to the supply chain.

Whether foreign or domestic shocks dominate will depend on the nature of the shock and is highly specific to the supply chain in question, including – crucially - the location of its main customers. Multinational companies have long recognized this and sought to mitigate risks accordingly. For example, to control risks associated with exchange rate fluctuations, business cycles, shifting tastes, and protectionism, many firms prefer to conduct final assembly close to where they sell, e.g., in China for China, while relying on a home-based and global network of suppliers as needed. There is no one-size-fits-all recipe for supply chain resilience; each firm differs. What can be said with certainty is that a diverse supply chain is more likely to be resilient than one that relies on only one or a small number of suppliers concentrated geographically.

Economic forces are at work that – barring a cataclysm – will increase reliance on GVCs and improve their operability.

Recent shocks such as the effect of the pandemic are not yet fully reflected in the available statistics, and the effect of the Russia-Ukraine war even less so. Nevertheless, the data at our disposal tends to confirm that there has been no large-scale withdrawal from GVCs; indeed, if anything, the evidence at our disposal points in the contrary direction. According to a WTO quarterly report on trade in intermediate products, in the third quarter of 2021, world exports of intermediate goods were 20% higher than pre-pandemic levels in value terms, with Africa and South and Central America reporting growth rates of 40% over pre-pandemic levels.

Chart 3: World and regional exports of intermediate goods, Q3 2019 - Q3 2021



Source: Trade Data Monitor (99 reporting economies, including estimates for Africa, excluding fuels).

As for the direct effects of the Russia Ukraine war, the dependency of GVCs on Russian and Ukrainian inputs is low. The shares of Russia and Ukraine in world imports of intermediate goods were estimated at 3.4%, of which fuels account for the lion's share. Trade in value added estimates show that the shares of Russian value-added in German and Chinese total exports of goods and services were only around 1%. However, smaller European economies like Bulgaria, Lithuania or Finland show far higher rates of Russian value-added in their exports, reaching almost 12% in Bulgaria. Still, even small value inputs can upend a large value chain if the input is critical and there are no alternative sources immediately available.

So far, one can say with some confidence – based on data – that the reports of the death of globalization that are found in many journalistic accounts are vastly exaggerated. Without doubt, governments have moved in the direction of trade and investment restrictions and import-substituting industrial policy, and it is possible to envisage a dreadful scenario for GVCs, one where great power tensions transform into open warfare, China and the US decouple, the WTO unravels, and the world descends into a dark age of protectionism.

However, this worst-case scenario is unlikely. Besides the fact that nuclear weapons make open warfare among the great powers almost unthinkable, vast opportunities exist to advance global economic integration and nations recognize it; and nations are increasingly compelled to cooperate to deal with global challenges.

Globalisation persists because vast arbitrage opportunities ("buy low, sell high") remain in the markets for goods, services and capital, and these opportunities are difficult to resist. This is not only because many natural and man-made barriers to exchange still exist. It is also because economic conditions are in constant flux, creating new trade opportunities. Developing countries, home to most of the world population, grow and undergo structural transformation that alters their comparative advantage. Meanwhile, product and process innovations originating mainly in advanced countries continue – from medicines to software to machinery -- which the rest of the world needs. A recent WTO study has illustrated how – for this reason - "technological decoupling" could be profoundly damaging to the prospects of all nations, and especially in developing countries (Bekkers and Góes, 2022). In the same vein, a recent World Bank Study of GVCs in the wake of the pandemic, concluded : "Steps toward creating a more "hostile" environment for GVCs, with a shift toward global reshoring to high-income countries and China, could drive an additional 52 million people into extreme poverty, 80 percent of whom would be in Sub-Saharan Africa. …In contrast, measures to reduce trade barriers, streamline trade procedures, and facilitate trade at borders contribute to the response to a crisis by expediting the movement, release, and clearance of goods, including goods in transit, and by enabling the exchange of services, paving the way for greater resilience to future shocks. Such measures support integration into GVCs, boost incomes, and could lift almost 22 million additional people out of poverty by 2030." (World Bank, 2022)

Severe restrictions on migration mean large wage and price differences can only be narrowed through trade and investment over a long time, with GVCs likely to play a central role in both. Meanwhile, ICT-based innovations, including remote work, e-commerce, artificial intelligence, blockchain and cryptocurrencies, are reducing trade costs, sometimes dramatically, thus improving the ability to coordinate and exchange, and enabling the operation of GVCs.

Meanwhile, globalisation itself and other structural shifts are continuously raising the stakes for international cooperation, of which trade is an essential part. Without trade in vaccines and personal protection equipment, for example, there would have been many more COVID-19 victims, and economies would have struggled even more than they did to compensate for domestic supply disruptions. Mitigation of climate change will not happen without international cooperation. And, to keep the cost of mitigation and adaptation to climate change within manageable bounds, international trade is essential, especially in sectors such as agriculture and environmental goods.

As an antidote to the frequent pessimism about globalization, it is useful to recall that two World Wars in the twentieth century interrupted economic integration but did not stop it. The rise of communism and the Cold War cut large populations off from the world economy, but it did not stop the advance of economic integration elsewhere.

Governments tend to over-react when faced with actual or potential supply shortages shocks, and unnecessarily impede GVCs; more nuanced responses are needed.

Faced with increased GVC uncertainty, firms have both every incentive to respond and the capacity to do so. They do not need help or instructions from the government. The evidence shows that firms are certainly not inclined to dismantle GVCs, but to modify them in many ways. In a highly competitive environment, CEOs know that were they to withdraw from the global division of production they would be unlikely to survive.

Yet, governments are under intense political pressure to respond to supply disruptions, whatever their source, and often blame trade, thereby interfering with the operation of GVCs whether wittingly or not. It is important to understand where the pressures come from. Three such sources can be identified.

First, insufficient food, energy, medicines, or semiconductors, can affect large parts of the population and impair national productive capacity. Although shortages can, in theory, be dealt with through the price mechanism, surging prices of a strategic commodity can be politically unacceptable for equity reasons, or because they may cause large-scale economic disruption and cause civil unrest. Governments deploy different instruments to deal with shortages, such as price controls and rationing (as in times of war or drought), income transfers to the most vulnerable, and the lifting of import barriers. In many instances such measures, if temporary and well designed, can be effective in minimizing the damage. Other responses, such as stockpiling and releasing supplies when needed can also work though they are expensive, especially in the case of perishable commodities or those liable to obsolescence.

One of the easiest-to-apply interventions is export controls. It is also potentially the most economically harmful and the most disruptive for GVCs. To participate in global supply networks, countries must view their partners not only as reliable clients but also as reliable suppliers. In normal circumstances, all benefit, and are seen to benefit, from this arrangement with little friction. In times of shortages, however, that is not the case. Export controls imposed at a time of global shortages may provide temporary relief at home, but they aggravate the problem elsewhere, and are liable to backfire, entailing reputational risk, and triggering retaliation.

The second reason for governments to intervene is national security; this is often to forestall shortages, not only to compensate for them once they have occurred. For example, in the wake of the Russian invasion of Ukraine, European nations are considering deploying massive amounts of public funds on alternatives to Russian gas. Another example is reluctance to rely on China for critical supplies – from medical goods to 5G networks - or on Asian nations as the main providers of semiconductors. A long-standing and related concern is the export of "dual use" goods and technologies, those that can serve an economic and military purpose. National security concerns must be addressed but, if precautions are taken to extremes and the instruments used are too blunt, they can lead to vastly sub-optimal economic outcomes, disrupting GVCs entirely. Faced with the risk of lawsuits or impaired reputations, many firms tend to engage in "over-compliance", a form of extreme caution that impedes capturing trade and investment opportunities that should be taken. Sanctions can lead to unintended consequences. For example, some experts have argued that restrictions placed on Russia on the use of the US Dollar, the Swift system, and the freezing of its Dollar and Euro reserves, could lead to China, Russia, and others, redoubling efforts to find alternatives to each of these instruments.

Times of shortage also tend to create pressures to become more self-reliant. This is the third reason governments intervene. Import substitution policies are a constant temptation even in normal times. The pandemic-induced recession, international supply shortages, and the associated GVC anxiety have created new opportunities for those seeking protection and judging from data gathered by Global Trade Alert – which identifies 7,200 restrictive measures since the start of 2020[2] -, many have succeeded. But import-substitution is also an expensive and unsustainable course. Importing to export is a reality of GVCs, which is reflected by the foreign value-added content of gross exports derived from Trade in Value Added (TiVA) data. On average, 2018 world exports of goods and services contained 29% of foreign value added, meaning imported inputs from GVC partners[3]. Accordingly, protectionism has many unintended consequences, of which retaliation by trading partners is only one. Tariffs on inputs penalize exports and home production. Multinational firms confronted with trade impediments at home and abroad can reconfigure their supply chains to favor third countries instead, or simply move production to where they sell, reducing their presence in their home base.

Faced with increased supply chain disruptions, countries should rely far less on defensive policies such as export controls and import substitution. Instead, they should recognize that – in many instances – crisis creates opportunities. The push of firms towards geographic diversification designed to mitigate supply chain risk means that they will reevaluate where and how they source. Countries that improve their investment climate, invest in their digital and transport infrastructure (especially ports), ensure adequate skilling of their labor force (often requiring more liberal and targeted immigration policies), assure low-cost and tariff-free access to inputs from abroad, and facilitate foreign investment will help their own citizens and have a distinct advantage over countries that turn inwards.

In sum, the pressures on governments to react to, or forestall, supply shortages are genuine and often legitimate. However, these interventions also carry the risk of sub-optimal outcomes, such as when they undermine the international division of labor through GVCs and the efficiency and diversification they bring. Instead, proactive policies to facilitate GVCs can pay high dividends.

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[2] Most of these measures took the form of new subsidies in trade-exposed sectors. How many of these were intended for pandemic relief or for import protection or for both is unknown.

[3] Source: WTO calculations based on OECD TiVA database.

International coordination, in the form of norms or rules that restrain governments from over-reacting to shortages, can help avoid the baby being thrown out with the bathwater.

The WTO can play a crucial role in promoting the efficiency and resilience of GVCs.

GVCs depend on open trade in goods and services and perform most efficiently in regimes that minimize discrimination. They require predictability of all links in the chain, from final client to supplier. Thus, all WTO disciplines, whether on market access or rules, or on goods or services, serve to facilitate the orderly operation of GVCs.

It follows that the most important role the WTO can play in dealing with the increased risk of GVC disruption is to do what it normally does – or what it is designed to do – better than it does at present. Thus, the recently concluded negotiations on domestic services regulation – which directly and indirectly help GVCs operate better – represent a step forward. All three ongoing Joint Statement Initiatives negotiations, on investment facilitation, ecommerce, and MSMEs are important for the operation of GVCs. Conclusions of an agreement on the IP waiver at MC12 will promote the orderly operation of the international production of vaccines. An agreement on fisheries would help reestablish the institution's credibility in multilateral negotiations.

Casting an eye beyond MC12, reform of the WTO is essential for GVCs to continue to operate effectively. GVCs are more likely to thrive in a system where trade relations are governed by laws, rules and regulations that are transparent, and disputes are resolved by negotiations or, when these fail, by judicial procedures, rather than by deployment of power. And GVCs are more likely to thrive if WTO disciplines are extended and modernized to address the concerns of their operators. An important area of reform of rules and market access, for example, remains in logistics services, ICT and digital trade, for example. Disciplines on export controls (GATT Article 11) could be tightened[4]. Predictability is critical – one reason that the uncertainties associated with carbon border adjustment mechanisms must be dispelled. The Trade Facilitation Agreement is a landmark deal for operators of GVCs. The WTO must have the tools to monitor and encourage faster implementation of the agreement.

If a sufficiently large coalition of willing members exists, it is essential that the WTO be able to conclude a deal even when not every member agrees. Therefore, Joint Statement Initiatives, which apply MFN benefits to all WTO members, represent an important innovation. However, willing members should not always be constrained to extend benefits to countries that do not want to participate. This means that "closed", or non-MFN, plurilateral deals such as the Government Procurement Agreement, should be allowed under certain conditions without requiring a waiver from the whole membership. This procedure would extend to the exception for regional trade agreements under GATT article 24 for deals among members on specific issues, with due conditions (Akman et al., 2021).

The WTO must also find ways to support and harness the energy behind regional agreements, such as the African Continental Free Trade Area to advance trade disciplines in developing countries and to support Africa's integration in GVCs. Novel disciplines in areas such as digital trade and State-Owned Enterprises, as contained in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, for example, can be a source for new multilateral rules and promoted in other regional deals.

All this does not mean that the WTO abandons the principle of non-discrimination. Instead, it means promoting partial and interim deals, whether comprehensive regional agreements or plurilateral deals, as waypoints towards increasingly open trade, resulting in enhanced multilateral disciplines.

The WTO is likely to remain a member-driven organization, but the WTO Secretariat can – and should - play a more assertive role in promoting open trade. To improve the resilience and efficiency of GVCs specifically, the WTO Secretariat can identify and propose negotiation of issues that are highest priority for their operation. To identify priorities, the Secretariat should strengthen its data

[4] Agreements that prohibit export controls exist but are difficult to enforce in a time of crisis, which is precisely when they are most needed. The WTO prohibits export controls (WTO, 2020) of various kinds, but recognizes limits. Thus Article XI:2(a) of the GATT 1994 states that the general prohibition in Article XI:1 "shall not extend" to "[e]xport prohibitions or restrictions temporarily applied to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting [Member]".

gathering, monitoring and analysis of trends in the operation of GVCs. Consultations with CEOs in sectors of interest can help identify and anticipate issues, and even galvanize committee negotiations, as happened recently in the case of vaccines. Experience shows that cooperation with other international institutions, such as the OECD, UNCTAD, ITC, and the World Bank, can yield important results, such as the Trade in Value Added Data, which is essential to monitor and understand the evolution of GVCs, and the Aid for Trade framework which helps integrate poor countries in GVCs.

GVCs are vehicles of prosperity. They have been, and continue to be, essential instruments in the fight against poverty across the world. In conclusion, one can point to four urgent challenges that the WTO Secretariat and the membership must confront to respond to the disruption in GVCs and to facilitate their operation in the future. These are best cast in the form of questions: how can the WTO's negotiating function be revitalized using plurilaterals, both of the MFN kind and the non-MFN kind? What compromises are needed to reestablish the orderly functioning of the Dispute Settlement Understanding? How can the WTO better use the energy fueling regional and bilateral trade agreements to advance free trade across the world? What approach should be taken to ensure that WTO rules help promote decarbonization, without endangering the workings of the present system?

REFERENCES

Akman, S. & Armstrong, S. & Braga, C. & Dadush, U. & Gonzalez, A. & Kimura, F. & Nagakawa, J. & Rashish, P. & Tamura, A., 2019. "The Crisis in World Trade," Policy notes & Policy briefs 1909, Policy Center for the New South. (Note in preparation of the G20 under the Italian Presidency).

Alicke, Knut; Gupta, Richa; and Trautwein, Vera (2020), "Resetting supply chains for the next normal", McKinsey & Company, 21 July 2020. Resetting supply chains for the next normal | McKinsey

Bekkers, Eddy; and Góes, Carlos (2022), "The impact of geopolitical conflicts on trade, growth, and innovation: An illustrative simulation study", VOXEU, CEPR, 29 March 2022. The impact of geopolitical conflicts on trade, growth, and innovation | VOX, CEPR Policy Portal (voxeu.org)

Cerdeiro, Diego A.; Komaromi, Andras; and Liu, Yang (2022), "Supply Chains and Port Congestion Around the World" International Monetary Fund (IMF), Working Paper No. 2022/059, Washington, 25 March 2022. Supply Chains and Port Congestion Around the World (imf.org).

Dadush, Uri (2022), "Is the post-war trading system ending?", Policy Contribution 04/2022, Bruegel. Is the post-war trading system ending? | Bruegel

Hufbauer, Gary Clyde; Hogan, Megan; Wang, Yilin (2022), "For inflation relief, the United States should look to trade liberalization", Peterson Institute for International Economics (PIIE), Policy Brief 22-4, Washington, March 2022. For inflation relief, the United States should look to trade liberalization | PIIE

International Monetary Fund (April 2022), World Economic Outlook, Chapter 4.

Brenton, Paul; Ferrantino, Michael J.; Maliszweska Maryla (2022), "Reshaping global value chains in light of Covid-19" World Bank

World Trade Organization (WTO) (2020), "Export Prohibitions and Restrictions, Information Note", WTO, Geneva, 23 April 2020. export_prohibitions_report_e.pdf (wto.org)

WTO (2022), "Exports of intermediate goods continue to grow in third quarter of 2021", World Trade Organization, Geneva. 4 February 2022. info_note_2021q3_e.pdf (wto.org)