



Task Force 04

TRADE AND INVESTMENT FOR SUSTAINABLE AND INCLUSIVE GROWTH

Towards a New Geometry of Global Value Chains: Lessons for the G20

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Abstract

Following an unprecedented surge in globalization post-WWII, notably accelerating from the mid-1980s until the 2008 financial crisis (referred to as 'hyper-globalization'), a subsequent period of 'slowbalization' emerged. The aftermath of the financial crisis witnessed a series of shocks, including US-China trade disputes, Brexit, COVID-19, and conflicts in Europe and the Middle East. These events have fundamentally altered the dynamics of globalization, sparking discussions about a new era of 'de-globalization'. The repercussions of these shocks are evident in the disruptions of global value chains (GVCs) worldwide and the potential for their reorganization. Governments are reacting to these trends by recalibrating their international and domestic economic policies, leading to a rise in protectionism and the resurgence of industrial policies. This policy brief aims to better understand the defining features of the potential reorganization of GVCs, focusing on the main drivers of value chain disruption, including technology, sustainability, and geopolitics. It identifies specific channels through which the three drivers can impact the overall structure of GVCs. Additionally, by developing a set of policy recommendations, the brief assesses several future scenarios of potential shifts in GVCs.¹

Keywords: Global Value Chains, Nearshoring, Reshoring, Friendshoring

¹This policy brief draws on Estevadeordal et al. (2024).



Diagnosis of the issue

An unprecedented surge in globalization has characterized the world economy during most of the post-WWII period, notably accelerating from the mid-1980s (referred to as 'hyper-globalization') until the onset of the Global Financial Crisis (GFC). Since 2008, however, the world economy has entered a period of 'slowbalization', marked by a deceleration in cross-border trade, financial flows, multinational activity, and the importance of GVCs trade in global trade.

The hyper-globalization phase, characterized by the rise of GVCs, occurred in a highly supportive technological, political, and trade policy environment. Rapid advances in information and communications technology (ICT) facilitated the emergence of cross-border production networks. On the political front, the disintegration of the Soviet Union and the rise of liberal reforms in many developing economies created strong support for global economic integration, leading to major trade liberalization policies.

In the aftermath of the GFC, however, many of these drivers of globalization appear to have lost steam. The global economy has weathered a series of cumulative shocks, ranging from trade disputes between the U.S. and China, the UK's Brexit, the COVID-19 pandemic, as well as the outbreak of armed conflicts in Europe and the Middle East. These events have caused major disruptions to supply chains and injected growing uncertainty into global geopolitics. The growing imperative to reduce carbon emissions, meanwhile, has provided further incentives for companies and policymakers to rethink the current structure of GVCs. In addition, new emerging technologies have the potential to reverse the economic logic of GVCs by making production in advanced economies more cost-effective.

These trends have major implications for the G20 agenda, as potential shifts in the structure and drivers of GVCs will shape opportunities to leverage global economic integration to boost productivity, reduce poverty, and advance key sustainability goals.

Technology

Technological change has been intricately linked to the deepening of international trade and the emergence of GVCs in the last several decades. Advances in transportation and information and communication technologies (ICTs) have been main drivers of the plummeting trade costs that facilitated specialization of production and, in recent decades, the geographic separation of production tasks through GVCs. The growing adoption of a new generation of digital technologies—including artificial intelligence (AI), advanced robotics, additive manufacturing, Internet of Things (IoT) and big data analytics—will increasingly shape the economics of location decisions in existing GVCs while opening new opportunities for the trade of goods and services (Baldwin 2016; Estevadeordal et al., 2020; Antras 2021).

Sustainability

The rapid evolution of clean energy and other low-carbon technologies, combined with growing decarbonization mandates at the national and global levels, will increasingly shape global trade and investment flows by affecting the costs and benefits of producing in different jurisdictions. The interaction of decarbonization mandates and trade and investment flows will have implications for the structure of GVCs. First, there will be incentives for a relocation of some tasks in existing GVCs to low-emissions jurisdictions, driven by sourcing decisions to reduce emissions and direct trade costs associated with carbon border taxes. Second, decarbonization mandates will likely drive the creation of

new value chains for emerging decarbonization technologies. Finally, these developments will likely encourage new financial instruments for sustainable finance (investments in renewable energy, green technology, as well as the voluntary carbon market (VCM).

Geopolitics

Geopolitical tensions between the US and China have, in recent years, accelerated the weakening of the multilateral trading system and ushered in a new paradigm characterized by strategic trade policy and a resurgence of industrial policy in the world's major economies. Geopolitical tensions have manifested initially in the major shift in US trade policy under the Trump administration, mostly with regards to China, and have evolved under the Biden administration towards more targeted measures—including export controls and investment restrictions—affecting strategic sectors. This emerging US trade and investment policy framework will likely continue to influence investment location decisions in GVCs over the next several years. In addition, the expanding conflicts in Europe and the Middle East threaten to unleash similar dynamics. While disruptions to global trade have so far been moderate, these developments reinforce broader concerns over geopolitical risk as a driver of business decision-making.²

² See Estevadeordal et al. “Latin America in the New Geometry of Global Supply Chains,” 20, for a set of indicators to assess a country's preparedness to benefit from the various channels affecting the structure of GVCs – technology, sustainability, and geopolitics.

Recommendations

These technological advancements, sustainability imperatives, and geopolitical forces have the capacity to reshape GVCs and create new opportunities for the global economy. In this section, we highlight several policy recommendations aimed at capitalizing on the anticipated shifts in GVCs.

Capturing value amid the ongoing technological transition

The digital transformation is reshaping the landscape of GVCs, offering unprecedented opportunities for reorganization and efficiency enhancements. Technologies like the Internet of Things (IoT), artificial intelligence (AI), or blockchain play pivotal roles in optimizing production processes, reducing lead times, and enhancing overall supply chain visibility.

Unlocking the potential of digital trade requires addressing regulations surrounding digital service provision and cross-border data flows. This includes avoiding burdensome domestic regulations such as licensing requirements and special authorizations that limit digital services provision by foreign firms. The importance of domestic regulations will only increase as the range of services with the potential for digital delivery across borders grows (e.g., telemedicine, online education, legal services, etc.). It is critical to strike the correct balance between ensuring data privacy and protection without establishing cumbersome localization rules and other measures that limit the transmission of data across jurisdictions.

Strategic public-private partnerships are also vital to incentivize businesses to adopt digital technologies. Governments can provide financial incentives, tax breaks, and research grants to encourage companies to invest in digital tools that enhance their role

in GVCs. This collaborative approach in a supportive regulatory environment fosters business innovation and experimentation in the adoption of emerging technologies.

Seizing green comparative advantage

Countries with an abundance of natural resources, including clean energy resources and critical minerals essential for the energy transition, can become important contributors to green or low-carbon inputs in GVCs. Those with a low-carbon primary energy matrix and robust environmental and climate policy frameworks, can play a pivotal role in the global production landscape where carbon emissions increasingly influence investment and sourcing decisions. This paradigm shift offers an opportunity for many countries to transcend their traditional role as primary materials suppliers and move into more value-added innovation (e.g., carbon capture and storage (CCS) technologies).

Governments also have a central role in supporting and accelerating the "greenshoring" transition, whereby companies will seek out jurisdictions that facilitate low-carbon production processes. Policymakers must ensure that a country's abundant clean energy resources are translated into concrete investment opportunities by maintaining stable and efficient regulatory and institutional frameworks for clean energy investment. Governments should implement smart regulations that incentivize industries to reduce their carbon footprint, fostering the adoption of cleaner technologies without sacrificing competitiveness.

Governments can encourage innovation by providing research grants, fostering collaboration between academia and industry, establishing industrial clusters or special economic zones on clean technologies, and supporting startups that contribute to environmentally friendly solutions.



These dynamics also underscore the importance of incorporating sustainability into the trade policy framework, which is in line with the G20 agenda. Trade and investment, with appropriate policy incentives, can encourage companies to reduce their carbon footprints without sacrificing efficiency by shifting their value chains towards low-carbon inputs and jurisdictions. However, protection can undermine these opportunities and unnecessarily raise the costs of sustainability-enhancing trade and investment flows. Governments should instead leverage trade agreements and partnerships to promote sustainable practices.

Attracting investment amid increasing geopolitical risk

Global geopolitics will increasingly shape the global economic landscape. On a broad level, governments can proactively respond to these geopolitical trends by implementing predictable and investor-friendly policies to attract foreign direct investment (FDI), including transparent and stable regulatory frameworks and streamlined bureaucratic processes. In addition, strategic infrastructure investments, both domestic and cross-regional, are paramount. Governments should prioritize the development of transportation networks, ports, and logistics hubs to facilitate seamless connectivity within GVCs.

Beyond these broad recommendations, governments can ensure they are well positioned in the evolving geopolitical landscape by strengthening anti-corruption and anti-money laundering frameworks to help mitigate growing risks around sanctions evasion. At a more operational level, establishing more efficient and effective customs controls, including the use of digital technologies, will help assure companies that their supply chains are not exposed to sanctioned entities or jurisdictions. Strengthening inter-

governmental cooperation on security and law enforcement further instills confidence among companies that are increasingly sensitive to geopolitical risk.

Tackling the unfinished agenda of regional and global integration

G20 countries are well positioned to support the strengthening of the multilateral trading system and, at the same time, leverage regional integration initiatives to increase the country's participation in traditional value chains or in emerging strategic nearshoring opportunities. While these new regionalization trends present certain risks of (exacerbating) fragmentation, if used strategically, they can also help counter pressures from outside actors through greater bargaining power and promoting intra-regional trade as a buffer against decoupling pressures (IMF 2023).

Several initiatives at the regional level in Latin America, Asia, and Africa can play an important role in a successful insertion into regional and global value chains. By harmonizing and simplifying regional trade rules, enhancing trade facilitation measures, and connecting to major emerging global markets, countries in these regions can position themselves as more attractive and efficient partners in the intricate web of international trade. These policy priorities include promoting the convergence of trade rules, specifically rules of origin (RoOs), to support the development of robust supply chains. It also involves ambitious trade facilitation measures, including the inter-operability of national single windows for foreign trade, implementing authorized economic operator programs, and other coordinated border management initiatives.

Scenario of outcomes

The analysis and policy recommendation in this brief have identified potential implications for future GVC scenarios that are relevant to the G20 agenda. Recent literature on GVCs already provides useful references for conceptualizing different shifts in GVCs (Thun et al., 2022; Baldwin and Freeman, 2022; Qiu, Shin, and Zhang, 2023). For instance, there is evidence that many GVCs have lengthened in recent years, especially those linking suppliers in China to final customers in the US. This has occurred because their goods now pass through intermediary jurisdictions, likely to avoid US tariffs against Chinese direct imports (Alfaro and Chor, 2023).

The trends in technology, sustainability, and geopolitics summarized above bring the potential to accelerate shifts in GVCs. Rather than contributing to de-globalization, they are likely to have heterogenous impacts on trade and investment flows, leading to several possible scenarios for the future structure of GVCs³.

Shortening

The shortening of GVCs implies a reduction in the total *geographic* distance connecting all the suppliers within a given value chain, such that more production occurs closer to the destination market and its overall geographic extension is reduced. The automation of certain production tasks or the adoption of new technologies clearly have the potential to drive reshoring and therefore a shortening of GVCs. In addition, both sustainability concerns and geopolitical risks can incentivize companies to reduce the

³ See Estevadeordal et al., “Latin America in the New Geometry of Global Supply Chains,” 17-18, for a summary of different potential GVC shifts in specific industries.



overall geographical extension of their supply chains. Shorter GVCs will likely translate into lower overall carbon footprints, given the high emissions levels inherent in transportation. In addition, GVCs that involve fewer total jurisdictions will entail less exposure to disruptive events such as natural disasters and episodes of unrest or political violence. Similarly, given the operational risks that result from geopolitical tensions and military conflicts, companies may prioritize shorter supply chains even if they are not directly exposed to global conflict hotspots.

Lengthening

The lengthening of GVCs implies an increase in the total *geographic* distance connecting all the suppliers within a given value chain. Lengthening thus corresponds, *ceteris paribus*, to an increase in overall GVC trade (although we note that, in principle, lengthening can occur within country borders as well) in contrast to the expectations of near-reshoring, or slowbalization narratives. Shifts in value chains in response to US tariffs and other policy measures (for example, through friendshoring investments in Vietnam, Mexico, and other jurisdictions) have not excluded Chinese suppliers from these supply chains. Instead, these production tasks continue to depend heavily on Chinese inputs, especially in IT and other manufacturing industries. Beyond geopolitical drivers, lengthening is also consistent with strategies aimed to increase overall GVC resilience to shocks, in line with broader sustainability concerns, through the diversification of suppliers.

Relocation

Relocation refers to shifts in the structure of existing GVCs whereby certain tasks are relocated to new jurisdictions in response to either technological, geopolitical, or



sustainability pressures. This type of change does not, therefore, entail a decrease in GVC trade or (necessarily) a shortening (or lengthening) of GVCs but rather a shift in their geographical pattern. The transfer of certain tasks or supply relationships to geopolitically "safe" jurisdictions (whether to take advantage of specific policy incentives or to avoid generalized geopolitical risk) or low-emissions suppliers are examples of such shifts. As these examples underscore, relocation is likely to reflect the emergence of new factors (for example, geopolitical alliances or clean energy sources) as increasingly important factors in firms' locations and sourcing decisions, potentially displacing traditional drivers such as low labor costs. These potential shifts will be most likely in strategic industries such as high technology manufacturing and strategic industries for energy transition technologies (which have been the target of friendshoring strategies of the US and EU in critical minerals, EVs, and clean energy components). Relocation of GVCs for sustainability concerns, meanwhile, appears most likely in energy-intensive manufacturing that will be especially sensitive to the incorporation of carbon emissions in trade costs.

Redistribution of value

Redistribution of value refers to changes in the distribution of value-adding opportunities across production tasks within existing value chains. This can occur due to technological, sustainability, and potentially geopolitical forces. Traditionally, value-added along manufacturing chains follows a u-shaped distribution: high value-added activities are at the extreme upstream (e.g., design, engineering) and downstream (e.g., marketing, advertising), while mid-stream activities (e.g., production of materials, assembly) generally capture less value. However, the growing integration of digital services into production tasks (or the "servicification" of manufacturing) is leading to the

incorporation of more knowledge-intensive inputs (and therefore higher-value added) in manufacturing processes. Sustainability mandates are driving a growing demand for clean energy inputs, elevating the value of raw materials, which traditionally occupied lower value-added stages of GVCs. As these materials increasingly embody lower emissions, they may take on characteristics of differentiated products, leveraging sophisticated technologies to reduce carbon intensity (e.g., green hydrogen). These shifts are particularly likely to occur in manufacturing industries that heavily rely on energy and natural resources.

Creation of new value chains

Finally, new technologies, growing sustainability mandates and geopolitical factors will likely drive the creation of new GVCs, which can arise in three ways: (a) when new goods and services are produced through cross-border production chains; (b) when new innovations currently produced within companies' home markets are unbundled; and when technology enables cross-border production of existing goods and services currently produced within one market. Examples of new products associated with digital technologies include 3D-printers, industrial robots, and equipment for new generation ICT networks among others. In the case of sustainability, frontier technologies such as EV batteries and CCS equipment will likely forge new cross border production networks as innovation advances. Finally, technology-enabled digital trade will create new opportunities for knowledge-intensive services to be delivered via cross-border networks.

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