



POLICY BRIEF

POLICY ACTIONS TO SAFEGUARD THE OPERATIONS OF GVCS IN TIMES OF CRISIS AND BEYOND



Task Force 11

**COVID-19: MULTIDISCIPLINARY APPROACHES
TO COMPLEX PROBLEMS**

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موجز السياسة إجراءات السياسة لحماية عمليات سلاسل القيمة العالمية في أوقات الأزمات وما بعدها

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جائحة فيروس كورونا المستجد (كوفيد-١٩): نُهج متعددة
التخصصات لمعالجة المشكلات المعقدة



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ABSTRACT

COVID-19 has spurred calls for the renationalization of value chains to safeguard the supply of essential goods. In this policy brief, we argue that global value chains (GVCs) offer a solution to supply shortages and that the Group of Twenty (G20) must take the lead in safeguarding production in GVCs. Focusing on essential industries such as healthcare and food supply, we propose key policy actions to enhance the robustness of production systems by reducing trade costs and increasing multilateral cooperation.

حرّك "كوفيد-١٩" دعوات لإعادة تأمين سلاسل القيمة لحماية توريد البضائع الأساسية. ونحن نرى في ملخص السياسة هذا أن سلاسل القيمة العالمية تقدم حلاً لتوفير العجز، وأن مجموعة العشرين لا بد أن تأخذ المبادرة في حماية الإنتاج بسلاسل القيمة العالمية. وبالتركيز على مجالات جوهرية كالرعاية الصحية وتوريد الغذاء، فإننا نقترح إجراءات سياسية رئيسية لتعزيز قوة نُظم الإنتاج من خلال تخفيض تكاليف التداول، وزيادة التعاون متعدد الأطراف.



CHALLENGE

Currently, around 80% of global trade takes place in global value chains (GVCs; UNCTAD 2013), in which the production of goods is vertically fragmented across different firms and countries. This vertical specialization generates efficiency gains, thereby reducing costs and ultimately benefiting consumers (UNIDO 2018; World Bank 2019). While GVCs have grown in importance since the mid-1980s (Johnson and Noguera 2017; Pahl and Timmer 2019), trade in GVCs appears to have been stagnating since 2008/2009 (IMF 2016), which is attributable to four general trends.

First, the factor prices of major offshore destinations (most prominently China) and richer economies are converging, which reduces the economic benefit of engaging in GVCs. Second, this trend coincides with the rise in automation and other new technologies. The use of labor-saving technologies may potentially shift patterns of comparative advantage away from labor-abundant economies, making it economical to relocate production back to richer economies, thereby reducing trade in GVCs (Dachs and Seric 2019; Rodrik 2018). Third, these trends are being fueled by political tensions. While trade used to be organized on a rules-based multilateral trading system (WTO), it is increasingly being buffeted by bilateral tensions (Evenett and Fritz 2015). Rising trade costs make GVC trade less profitable, especially because these higher costs are incurred at each border. Moreover, bilateral tensions generate unpredictability, adding a source of unforeseen consequences for production in GVCs. Fourth, natural disasters, which were previously localized, thereby affecting only specific stages of production, represent yet another source of volatility. The 2011 earthquake in Japan, for example, led to temporary closures of production facilities in the country, while causing supply shocks in neighboring countries that depended on inputs from Japan (Escaith et al. 2011). High dependence on inputs from other countries requires firms to increase the robustness of their own production processes—defined as the ability to maintain production despite disruptions triggered by supply shocks (Miroudot 2020).

The coronavirus pandemic led to supply shortages that were, from the onset, felt around the globe because China was the first to be afflicted. Key intermediate inputs supplied by China ceased to be available when China closed its production facilities (Seric et al. 2020). The ensuing shock was so severe because the closures affected firms in essential industries such as healthcare. This quickly raised concerns about the robustness of production in GVCs because of the high dependence on China, and calls for politically induced renationalization of value chains gained momentum. Although

the initial shock associated with COVID-19 was localized to China, it soon spread to other countries. Predicting the distribution and timing of shocks is extremely difficult; hence, pursuing a purely national strategy does not necessarily entail reduced risk. Self-sufficiency concentrates risk domestically, while GVCs are associated with risk distribution; thus, relying on well-diversified suppliers reduces the risk of supply shortages, and supply can be scaled up in each location if other suppliers fail to deliver. Inter-firm relationships in GVCs also facilitate dealing with supply shortages and the sharing of best practices.

The answer to the current crisis caused by the COVID-19 pandemic is thus not to intervene in the configuration of GVCs, but to safeguard their effective functioning. We explore the effects of COVID-19 on the healthcare and food industry and subsequently propose actionable policies to strengthen GVCs.



PROPOSAL

Healthcare and food value chains during COVID-19

The production of medical goods has taken center stage since the outbreak of the coronavirus pandemic and has demonstrated that countries are highly dependent on each other. Approximately 80% of personal protective equipment (PPE) sold in the EU, for example, is imported from non-EU countries (Stellinger et al. 2020).

As the crisis began to intensify, many governments grappled with acquiring large quantities of PPE, but instead of facilitating trade, they introduced export restrictions on domestic goods (Bown 2020a; WTO 2020). Stellinger et al. (2020) point out that import restrictions on medical equipment were already high even before the pandemic, particularly in less developed countries, suggesting a general trend towards self-reliance rather than international collaboration. The healthcare industry is particularly prone to tight regulations and other administrative barriers. Although it is indisputable that regulations are necessary, they do add a layer of non-tariff trade costs, especially if such regulations are not coordinated across countries.

Regarding the organization of production, it is important to highlight the heterogeneity of the healthcare industry. Simpler products, such as face masks, are produced in relatively less complex and mostly regional value chains.¹ More advanced products, such as pharmaceuticals, involve many distinct production stages such as chemical production or assembly. Becoming insular is not the solution for either product type.

Even for simpler medical goods, trade barriers present major obstacles to meeting sudden spikes in demand. Fiorini et al. (2020) indicate that export bans interrupt trade routes and result in firms assisting local governments in building stockpiles of essential supplies. As smaller, less developed countries cannot ramp up their production capacities by quickly repurposing already existing manufacturing capacities, this strategy affects them far more adversely than other countries. Retaliation from major suppliers may also lead to supply shortages in larger, more advanced countries (Bown 2020b). Protectionist policies are even more harmful for goods produced in complex GVCs, as final goods can no longer be produced. A protectionist approach essentially leads to an additional supply shock because crucial inputs become unavailable. Even countries with large manufacturing capacities may face difficulties executing all stages of production domestically—or with limited efficiency—which ultimately leads to higher prices and less innovation.

1. It is important to note that not even face masks are necessarily manufactured independently. Even China, the largest producer of face masks, requires a filter component that is sourced from fabric manufacturers located in countries such as Germany and Canada (United Nations Department of Economic and Social Affairs 2020).

In contrast to the underlying notions of protectionist measures, GVCs have contributed to cushioning supply shocks and to meeting global spikes in demand. The health-care industry has become more globalized over the past decade, with many companies increasing production to meet the rising demand of emerging economies and adjusting to the demographic changes in richer countries. The demand for medical supplies, including PPE, has doubled since 2008 (United Nations Department of Economic and Social Affairs 2020), and firms have actively expanded their production lines into emerging markets, thereby diversifying risk and leveraging local capacities (Bamber and Gereffi 2013).

This has helped meet the spikes in demand that were triggered by the recent crisis for at least two reasons. First, production was markedly scaled up, as many companies were able to acquire inputs from around the world at very short notice because of their collaboration with a diverse range of suppliers. Second, this was facilitated by the nature of trade within GVCs. Integrated firms do not only transact with goods but typically also share know-how and expertise through inter-firm relationships. These firms have been able to forge new partnerships to produce medical goods. GVCs have thus facilitated the scaling up of production by allowing new alliances of producers to enter the market—the individual firms would not have had the capacities to do so on their own (Bamber, Fernandez-Stark, and Taglioni. 2020).

The second industry that has played a key role during the coronavirus crisis is food production. While supplies were being hoarded in many developed countries, essential access to food has become a serious problem in low-income countries. The UNECA (2020), for example, predicts that Africa's current level of 40% undernourished children under the age of five will worsen due to disruptions in food value chains.

The main challenges in food production are: a) the consistent supply of food (in particular, to net importers of food products), and b) price stability, so that food products remain affordable. As with the healthcare industry, food value chains include relatively simple products (traded as final goods), as well as more complex goods traded in GVCs (including foods that require innovative food storage solutions to keep them fresh).

The impact of the coronavirus crisis permeates both containment policies and their effect on the availability of factors of production (labor, in particular) and trade policies, as labor and food products are no longer flowing freely between countries.

The reduction in labor supply triggered by the pandemic has led to a supply shock in the food industry where workers could not go to work due to lockdown measures imposed by governments. This labor-induced supply shock is particularly relevant in labor-intensive food value chains most prevalent in less developed countries (Reardon et al. 2020). More importantly, this reduction in labor supply has also induced an income shock in many low-income countries—where a large proportion of the population is employed in agriculture (and often only informally)—that is exacerbated by the absence of a social security system. This labor-induced supply shock could remain relatively weak in the longer term because the prime working-age population is less severely affected by COVID-19 relative to older populations (Martin and Glauber 2020).

Trade policies have, however, triggered a second supply shock. First, the flow of people has been restricted due to border closures, whereby migrant workers could not reach their workplace. This affected not only low-income countries but also more affluent economies that are dependent on migrant labor. Second, many countries imposed export bans on food products (Glauber et al. 2020). According to the WTO (2020), 80 countries have already enforced either export bans or restrictions in response to the pandemic.

As with medical products, unfavorable trade policies induce a food supply shock, as (final) goods may not reach their consumers. Another key discussion point in food supply is the effect on price levels and price volatility (Giordani et al. 2016; Martin and Glauber 2020). Export bans typically result in price increases due to the reduction in supply. They also make prices more volatile as the supply of food is typically more unstable in smaller markets than at the global level. Protectionist measures, for example, contributed to a 40% increase in wheat prices and a 25% in corn prices during the 2010–2011 food crisis (World Bank 2019). Similar effects have been reported in initial studies on the current trade restrictions (Espitia et al. 2020). Retaliatory export bans may also have a multiplier effect (Giordani et al. 2016). Trade restrictions of more complex food products may generate a supply shock of crucial inputs (similar to the case of complex medical goods). For both simple and complex food products, the adverse effects will be higher in countries that do not have the capabilities to rapidly scale up production (due to insufficient land, capital, or labor), especially in food-deficit countries with labor-intensive value chains. Such bans, therefore, severely affect low-income countries.

Actionable policies to safeguard value chains

Given the experiences of the healthcare industry, we recommend facilitating trade in GVCs as a strategy to build robustness against supply shocks. Traditional trade costs in the healthcare industry should be reviewed:

1. The international community should revive the **WTO Pharmaceutical Tariff Elimination** Agreement signed in 1994. It abolished tariffs on final goods and certain components. This agreement must be updated and enhanced to better reflect the current state of production in the healthcare industry. GVC complexities must be reviewed and reassessed (for example, the inclusion of intermediate products), and a substantially greater proportion of countries must be covered by the agreement.
2. A **reduction of import tariffs on medical** goods is crucial for lower-income countries that usually pay higher prices for final medical goods. Furthermore, firms from low-income countries are not integrated into GVCs and thus do not develop the capacity to produce (components of) medical goods because tariffs make it too costly for GVCs to pass through those countries.

We further propose the establishment of a new **intergovernmental coalition** among the Group of Twenty (G20) nations to oversee healthcare value chains. This coalition should provide a platform that brings together regulators from relevant bodies in charge of controlling pharmaceutical and healthcare supply in the G20 while facilitating closer collaboration between the member states in developing smarter and more effective approaches to regulation, trade, and distribution. The platform would:

1. Consolidate and enhance the development of **shared** databases within member states that track the availability of medical supplies and impending shortages to provide a clearer picture of existing healthcare value chains. This would allow for higher data transparency and the monitoring of both healthcare system performance and capacity during states of emergency.
2. Promote procedures to reduce regulatory barriers, facilitate regulatory cooperation, unify mandatory standard specifications for medical goods, and eliminate unnecessary costs. This will ensure the integrity of medical supplies while establishing globally accepted and achievable guidelines for production methods and quality assurance systems.
3. Promote **mutual** recognition of pharmaceutical regulations within member states based on widely-accepted accreditation programs that evaluate, by mutually approved inspection units and certification bodies, the performance of local and regional laboratories.

4. Establish **stand-by** procedures among member states in the event of a state of emergency that would facilitate logistics requests for the transfer of medical and pharmaceutical supplies and ease trade restrictions during emergencies.

Concerning food value chains, we propose focusing on the following key policies: the free flow of goods, services, and people; trade facilitation; price stability; and food availability.

1. As an immediate response, the G20 should **end deliberate restrictions on food exports** to ensure global food security. The food trade must be improved by eliminating food export barriers and/or prohibitions.

2. In terms of labor supply, the G20 should expedite **refugee and migrant work permits** to bridge the shortfall of workers in agriculture and food processing caused by the pandemic, thereby ensuring food availability.

3. Food supply chains and logistics must **facilitate regional and international trade** to ensure the flow of food inputs. Global food accessibility and stability measures, such as enhanced food trade liberalization, must be vigorously pursued to alleviate food shortages, with emphasis on perishable food commodities.

4. The G20 should support low-income countries by **sharing scientific and technological know-how** in labor-intensive food value chains to accelerate global food supply and stabilize food prices.

5. International **loan** facilitation for low-income countries should be promoted through the World Bank and IMF, among others, to incentivize improvements in production in food value chains and accelerate global food availability, especially for food-deficit countries.

6. In the long term, the **digitalization** of the food system, agro-investment/capital flows, and the use of e-commerce will be essential for food value chains, particularly for GVCs that are capital-intensive, thereby ensuring the stability of global food supply chains.

Thus, the free trade of goods, services, and people must be guaranteed. Restrictions, even as emergency measures, must be introduced as temporary policies only and must be proportionate to the assessed severity. The WTO should be notified of such measures to mitigate negative impacts on the GVC trade. Moreover, the diversification of production, increased regionalization, the locality of value chains, and a greater emphasis on the robustness of firms or industries are not necessarily detrimental to the development of GVCs if such measures are driven by economic rather than by protectionist policies.

To achieve longer-term goals that ensure the international free flow of goods by securing a level playing field, we further suggest:

1. Reinforcing trade safeguards against dumping, illegal subsidies, and other practices by **strengthening the WTO dispute resolution and notification system**. This would further ensure that export restrictions do not evolve into a common response tool and that retaliation measures do not lead to generally higher levels of trade costs.
2. **Aligning trade and climate policy goals** by eliminating barriers to trade in goods and services, fighting climate change, and safeguarding sustainable development—the development of a specific set of G20 recommendations.
3. Creating a G20 task force to **remove the bottlenecks in the trade of essential goods**, especially perishable goods.

These policies require a coordinated international approach with the UN, the G20, and regional organizations taking the lead. While individual governments have undertaken swift and decisive actions to respond to the impacts of the pandemic, the lack of concerted action at the global or regional level has led to supply chain disruptions. Disrupting the vicious cycle of mutual restrictions requires restoring trust and re-igniting multilateral cooperation and coordination. Any relevant progress will have to rely on the ability of multilateral institutions to deliver and a conscious decision by sovereign nations to refrain from actions that could hamper their functioning.

Such multilateral efforts should focus on two areas. First, with the increased risk of secular stagnation, new incentives for investments are needed. In lieu of simple financial measures, governments should focus on agreeing on global public goods such as investment framework stability, transparency, accountability, and comparability. This could build on the existing provisions in the WTO TRIMs Agreement and service-relat-

ed sections of GATTs or the OECD Declaration on International Investment and Multinational Enterprises, albeit requiring a review that accommodates the interests of all stakeholders. Second, the shift in internet and mobile-based trade has underscored the need for a multilateral framework for e-commerce. The G20—as an inclusive format of international cooperation, grouping together developed and developing nations—should spearhead efforts to conclude these agreements.

To summarize, we propose that governments:

1. **Empower existing multilateral institutions** by providing them with the necessary resources and competences to deliver results.
2. Adopt a **multilateral investment agreement**.
3. Increase **trade resilience** against disruptions caused by pandemics and natural disasters by concluding a new agreement on e-commerce.

Disclaimer

This policy brief was developed and written by the authors and has undergone a peer review process. The views and opinions expressed in this policy brief are those of the authors and do not necessarily reflect the official policy or position of the authors' organizations or the T20 Secretariat.



REFERENCES

Baldwin, Richard, and Rebecca Freeman. 2020. "Supply Chain Contagion Waves: Thinking Ahead on Manufacturing 'Contagion and Reinfection' from the COVID Concussion." <https://voxeu.org/article/covid-concussion-and-supply-chain-contagion-waves>.

Bamber, Penny, and Gary Gereffi. 2013. *Costa Rica in the Medical Devices Global Value Chain*. Duke University Center on Globalization, Governance, and Competitiveness.

Bamber, Penny, Karina Fernandez-Stark, and Daria Taglioni. 2020. "Four Reasons Why Globalized Production Helps Meet Demand Spikes: The Case of Medical Devices and Personal and Protective Equipment." <https://blogs.worldbank.org/developmenttalk/four-reasons-why-globalized-production-helps-meet-demand-spikes-case-medical>.

Bown, Chad. 2020a. "COVID-19: Demand Spikes, Export Restrictions, and Quality Concerns Imperil Poor Country Access to Medical Supplies." In *COVID-19 and Trade Policy, Why Turning Inward Won't Work*, edited by Richard Baldwin and Simon Evenett, VoxEU.org eBook. London, UK: CEPR Press.

Bown, Chad. 2020b. "COVID-19: Trump's Curbs on Exports of Medical Gear Put Americans and Others at Risk." <https://www.piie.com/blogs/trade-and-investment-policy-watch/covid-19-trumps-curbs-exports-medical-gear-put-americans-and>.

Dachs, Bernhard, and Adnan Seric. 2019. "Industry 4.0 and the Changing Topography of Global Value Chains." Department of Policy Research and Statistics Working Paper 10/2019, Vienna: UNIDO. <https://www.unido.org/api/opentext/documents/download/16411800/unido-file-16411800>.

Escaith, Hubert, Robert Teh, Alexander Keck, and Coleman Nee. 2011. "Japan's Earthquake and Tsunami: International Trade and Global Supply Chain Impacts." Blog post. <https://voxeu.org/article/japans-earthquake-and-tsunami-global-supply-chain-impacts>.

Espitia, Alvaro, Nadia Rocha, and Michelle Ruta. 2020. "Covid-19 and Food Protectionism: The Impact of the Pandemic and Export Restrictions on World Food Markets." World Bank Policy Research Working Paper 9253. Washington, DC: The World Bank.

REFERENCES

Evenett, Simon, and Johannes Fritz. 2015. "The Tide Turns? Trade Protectionism and Slowing Global Growth." The 18th GTA Report. London, UK: CEPR Press.

Fiorini, Matteo, Bernard Hoekman, and Aydin Yildirim. 2020. "COVID-19: Expanding Access to Essential Supplies in a Value Chain World." In *COVID-19 and Trade Policy, Why Turning Inward Won't Work*, edited by Richard Baldwin and Simon Evenett, VoxEU.org eBook. London, UK: CEPR Press.

Giordani, Paulo, E., Nadia Rocha, and Michelle Ruta. 2016. "Food Prices and The Multiplier Effect of Trade Policy." *Journal of International Economics* 101: 102–122.

Glauber, Joseph, David Laborde, Will Martin, and Rob Vos. 2020. "COVID-19: Trade Restrictions are the Worst Possible Response to Safeguard Food Security." IFPRI Blog: Issue Post. <https://www.ifpri.org/blog/covid-19-trade-restrictions-are-worst-possible-response-safeguard-food-security>.

International Monetary Fund (IMF). 2016. "Global Trade: What's Behind the Slow-down?" In *World Economic Outlook*, Chapter 2, October. Washington, DC: IMF Publication.

Johnson, Robert C., and Guillermo Noguera. 2017. "A Portrait of Trade in Value-Added Over Four Decades." *Review of Economics and Statistics* 99(5): 896–911.

Martin, Will J., and Joseph W. Glauber. 2020. "Trade Policy and Food Security." In *COVID-19 and Trade Policy, Why Turning Inward Won't Work*, edited by Richard Baldwin and Simon Evenett, VoxEU.org eBook. London, UK: CEPR Press.

Miroudot, Sebastien. 2020. "Resilience Versus Robustness in Global Value Chains: Some Policy Implications." In *COVID-19 and Trade Policy, Why Turning Inward Won't Work*, edited by Richard Baldwin and Simon Evenett, VoxEU.org eBook. London, UK: CEPR Press.

Pahl, Stefan, and Marcel P. Timmer. 2019. "Patterns of Vertical Specialisation in Trade: Long-Run Evidence for 91 Countries." *Review of World Economics* 155(3): 459–486.

Reardon, Thomas, Mark Bellemare, and David Zilberman. 2020. "How COVID-19 May Disrupt Food Supply Chains in Developing Countries." IFPRI Blog: Guest Post. <https://www.ifpri.org/blog/how-covid-19-may-disrupt-food-supply-chains-developing-countries>.

REFERENCES

Rodrik, Dani. 2018. "New Technologies, Global Value Chains, and Developing Economies." NBER Working Paper No. w25164. National Bureau of Economic Research: Massachusetts, M.A.

Seric, Adnan, Holger Goerg, Saskia Moesle, and Michael Windisch. 2020. "Managing COVID-19: How the Pandemic Disrupts Global Value Chains." UNIDO Industrial Analytics Platform. <https://iap.unido.org/articles/managing-covid-19-how-pandemic-disrupts-global-value-chains>.

Stelling, Anna, Ingrid Berglund, and Henrik Isakson. 2020. "How Trade Can Fight the Pandemic and Contribute to Global Health." In *COVID-19 and Trade Policy, Why Turning Inward Won't Work*, edited by Richard Baldwin and Simon Evenett, VoxEU.org eBook. London, UK: CEPR Press.

United Nations Department of Economic and Social Affairs. 2020. "Trade, Travel, and Transport Dashboard." UN Comtrade: International Trade Statistics. Retrieved June 20, 2020. <https://comtrade.un.org/data/monitor>.

United Nations Conference on Trade and Development (UNCTAD). 2013. "World Investment Report 2013: Global Value Chains: Investment and Trade for Development." New York and Geneva: United Nations.

United Nations Economic Commission for Africa (UNECA). 2020. "COVID-19 in Africa: Protecting Lives and Economies. COVID-19 Response." Addis Ababa, Ethiopia: UNECA.

United Nations Industrial Development Organization (UNIDO). 2018. "Global Value Chains and Industrial Development: Lessons from China, Southeast, and South Asia." Vienna, Austria: UNIDO.

World Bank. 2019. "Commodity Markets Outlook, April 2019. Special Focus: Food Price Shocks: Channels and Implications." Washington, DC: The World Bank.

World Bank. 2020. "Trading for Development in the Age of Global Value Chains." World Development Report, 2020. Washington, DC: The World Bank.

World Trade Organisation (WTO). 2020. "Helping MSMEs Navigate the COVID-19 Crisis." Geneva: WTO. https://www.wto.org/english/tratop_e/covid19_e/msmes_report_e.pdf.



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