Reshaping of GVCs: Implications for Trade, Poverty and Income Distribution in Developing Countries

The impacts of COVID-19 pandemic and future reshaping of global value chains have been subject to extensive discussion. Some have argued that global integration and dependence on GVCs have made countries more vulnerable to the economic shock both due to the supply shortages and subsequent demand declines as countries have locked down to contain the disease. On the other hand, some studies suggest that greater reliance on domestic inputs would in fact exacerbate the economic impact of the pandemic. OECD (2020), using a global economic model, finds that greater localization of the supply of material inputs increases vulnerability by limiting the available channels for adjustment, by magnifying the impact of domestic shocks, and from the greater concentration of suppliers.1

The COVID-19 crisis is also drawing attention to the risks that workers, firms, consumers and countries face from the current structure and governance of global value chains. Globalization over the last 3 decades, driven by lower transport and trade transaction costs, saw international firms reorganize their supply chains to enhance efficiency by reallocating activities to low-cost suppliers in emerging developing economies. This increase in efficiency and the growth of trade in intermediates has led to a rise in dependencies across firms, sectors and countries.

As with shocks in general, it is the poor and marginalized who are bearing most heavily the costs of the COVID-19 crisis. The impact of the pandemic is rolling back recent progress on poverty across developing countries and further increasing inequality within countries throughout the world. It appears that women, and especially poor women, are being disproportionately impacted.2

COVID-19 is unlikely to be the last global health pandemic we will see. Hence, governments and firms in GVCs will be seeking lessons from the COVID-19 pandemic on how to manage the risks associated with future disease outbreaks that spread over large areas. Further, disease is not the only factor creating risks for GVCs.

GVCs are facing greater policy uncertainty. First, is the recent increase in US-China trade tensions and challenges to the legitimacy of the WTO. The unprecedented step back by the United States from the multilateral approach to trade governed by the WTO has seen significant bilateral trade restrictions imposed against China. This is turn has led to swift changes to bilateral trade flows in U.S imports. In the first quarter of 2019, China’s imports from the United States of goods affected by tariffs declined by 40 percent on a year-on-year basis while U.S. imports from China of targeted products dropped by 24 percent (Constantinescu et. al., 2019). Retaliatory tariffs by the United States and China diverted trade from each other to many developing countries, including Brazil, India, Malaysia, Mexico, and Vietnam.

Second, as part of attempts to mitigate climate change and to meet obligations under the Paris Agreement, a number of countries are developing domestic carbon regulations that will be implemented with carbon border adjustment mechanisms. For example, the European Commission has announced that carbon border adjustment mechanism (CBAM) will be part of the ambitious European Green Deal

1Bonadio et al (2020) also estimate that on average across countries the COVID-related economic downturn would be slightly worse with entirely renationalized supply chains compared to current sourcing patterns based on trade.
This scheme will be the first in which major border tax adjustment is to be used in climate policy.

Hence, firms in GVCs are now making sourcing and investment decisions, driven by the search for improved economic efficiency through lower production and trade costs, in an environment of higher prevalence of negative external shocks and greater policy uncertainty. With an evolving global economy subject to increasingly frequent external shocks, a useful distinction is between

(i) measures that firms and countries may take to address risks from external shocks so as to enhance the capacity to maintain activity during a crisis (robustness) and
(ii) those actions that enhance the capacity to return to normal operations after the disruption of an external shock (resilience).

Given the complexity of the natural and economic environment in which firms and governments are responding to the COVID-19 shock, a global computable general equilibrium model can be a useful tool to inform an understanding of the medium to long run implications of the recalibration of GVCs. The analysis designs forward-looking scenarios to anticipate medium run impacts of COVID-19 on trade in goods and services, employment and wages by sector and skill and gender; and poverty and income inequality by incorporating GVCs at the global level with a focus on developing countries.

The analysis builds on a global dynamic computable general equilibrium model i.e. the MRIO version of Envisage, and the global microsimulation framework Global Income Distribution Dynamics (GIDD). The ENVISAGE-GIDD approach allows for the analysis of global development and structural transformation, incorporating the complex interactions of productivity differences at the country, sector or factor level, shifts in demand as income changes, demographic and skill dynamics in factor markets, and changes in comparative advantage. This application will include an extension of the standard modeling framework by incorporating multi-regional input-output tables that distinguish between imports of intermediate, final and investment goods to better capture the nature of trade typical for GVCs. The model will include stylized scenarios investigating carbon border adjustment to highlight the risks and opportunities related to climate change policies. The CGE model relies on GTAP data base v.10 benchmarked to 2014. We will cover approximately 30 sectors and 30 countries/regions.

While the CGE analysis allows for the assessments of the impacts of COVID-19 on economic growth, sectoral trade flows, output and employment, the microsimulation tool the GIDD translates the CGE results into implications for poverty and income distribution, including impacts on employment and wages of female and male workers. The GIDD simulations are based on Global Micro Database, which covers 90% of global population and GDP. It includes harmonized household surveys for 124 countries.

The study presents various future scenarios of globalized or segmented world and analyzes the implications of various shocks such as future pandemics, trade policy changes and climate change policy changes. Their impacts on patterns of international trade, including GVCs along with their implications for poverty and distribution are the key questions to be addressed in this study.

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3 Miroudot (2020)
Key messages that we expect to deliver:

1. Developing countries are better off in a globalized world (further reduction of barriers to trade and broader and deeper regional integration) as compared to segmented world (incentives to relocate production locally with high trade barriers). Developed countries are better off too.

2. Developing countries can take steps to increase their resilience to future shocks through unilateral reduction of tariffs on inputs, implementing TF measures, diversifying sources of inputs etc.

3. Impacts of various shocks on developing countries are magnified in the segmented word with increased poverty and inequality.