Localising value chains in the post-COVID world would add to the economic losses and make domestic economies more vulnerable

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The Covid-19 pandemic has left in its wake a global economy damaged beyond what was thought possible a decade ago. The globalised nature of the 21st century global economy is a key component in terms of the dynamics, and effects, of the virus. This column presents an analysis of the importance of global value chains, both during the pandemic and throughout the recovery process. The results of the study suggest that increased localisation could do more harm than good, and that the international network of interconnected supply chains remains key to producing essential goods and services.

In just six short months, the Covid-19 pandemic has swept across the globe, leaving but a few island nations untouched. The virus and the measures required to contain it have left in their wake a global economy damaged beyond what was thought possible after the financial crisis over a decade ago. Unemployment in the OECD area increased by an unprecedented 2.9 percentage points in April alone (up from 5.5% the previous month), and the recent OECD Economic Outlook projects that "five years or more of income growth could be lost in many countries by the end of 2021". The pandemic has painfully reminded us of the vulnerability of the global economy to shocks.

In the early stages of the pandemic, we saw dramatic shortages in the global availability of personal protective equipment and other medical supplies. This was due primarily to surging demand and in some cases exacerbated by trade restricting measures. Since the production of these products relies on modern ways of sourcing materials (dividing tasks and managing risks in global value chains), these events raised questions about the relative gains and risks from deepening and expanding international specialisation in global value chains.

Global value chains organise the cross-border design, production, and distribution processes, creating much of what we purchase and consume every day – from food and medicines to smartphones and cars. Some policymakers and analysts now wonder whether more localised production of key goods would provide greater security against disruptions that can lead to shortages in supply and uncertainty for consumers and businesses (Javorcik 2020, OECD 2020a).

Modelling the question of reshoring post-COVID

While the discussion about the pros and cons of global value chains intensifies, and some countries are already discussing (or putting in place) incentives for firms to re-locate their supply chain activities, there is little empirical analysis quantifying costs and benefits associated with different policy options. In particular, few studies to date attempt to quantify the purported trade-off between efficiency and security (resilience) of supply within global value chains.

Two recent studies quantify the economic impacts of supply and demand shocks due to Covid-19. Bonadio et al. (2020) estimate the part of the real GDP reduction which is due to transmission through global supply chains. They show that the contraction of GDP would have been worse with re-nationalised global value chains. Camatte et al. (2020), in turn, quantify the transmission of price shocks through global value chains. But neither of these studies considers the balance of costs and benefits of GVCs in the face of economic shocks.

To fill this gap, recent simulations with the OECD METRO model (a multi-country multi-sector computable general equilibrium trade model) compare two stylised versions of the global economy. The 'interconnected economies' regime captures production fragmentation in global value chains much as we see it today, while also taking into account the changes already resulting from the Covid-19 crisis (OECD 2020b). These include reductions in supply and productivity of labour, reductions in demand for certain goods and services, and a rise in trade costs related to new customs procedures for goods, as well as restrictions on temporary movement of people in services. In the 'localised – turning inward – regime', production is more localised, and businesses and consumers rely less on foreign suppliers. This illustrative counterfactual world is constructed through a global rise in import tariffs to 25%. This is combined with imagined national value-added subsidies equivalent to 1% of GDP on labour and capital directed to domestic non-services sectors (to mimic rescue subsidies that favour local production). It is also assumed that, in the localised regime, firms are more constrained in switching between different sources of products they use, making international supply chains more rigid. Such assumptions create strong incentives to increase domestic production and rely less on international trade, and are meant to illustrate a range of potential implications of policies that aim at creating more localisation.

These two baseline future trade regimes are exposed to a 'supply chain shock' similar to the disruption Covid-19 caused to global supply chains (where the cost of trading to and from one region increases). During the pandemic, disruptions to labour, transport, and logistics increased the cost of exporting and importing to a similar extent. The model analysis of shock propagation explores how the interconnected economies and the localised regimes compare in terms of the propagation of, or insulation from, such shocks. The 'supply chain shock' is simulated with a 10% increase in the costs of bilateral exports and imports between a given region and all other countries. Because a

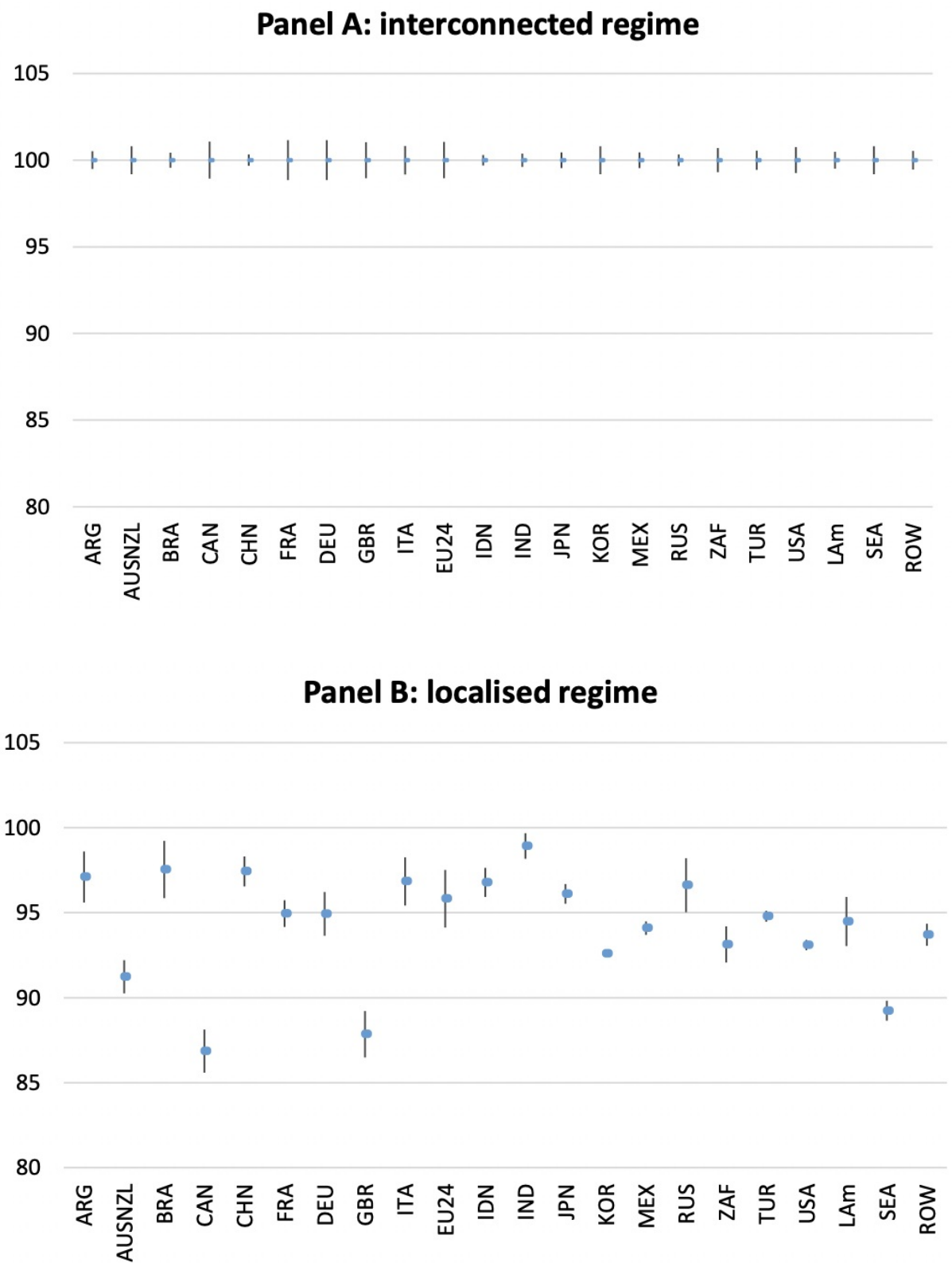
shock that decreases trade costs by 10% (a big drop in oil prices for instance) would have effects of the same magnitude but in the opposite direction, both the downside and upside stability in the two regimes can be explored.

More localised regime delivers neither greater efficiency nor greater stability

Current debates over future trade regimes often focus on a purported trade-off between efficiency and security of supply. This model simulation study allows us to evaluate the two simulated regimes for both. It found that a localised regime (where economies are less interconnected) has significantly lower levels of economic activity and lower incomes. A shift to the localised regime is estimated to decrease global real GDP by more than 5% relative to the post-Covid-19 baseline. Reductions in economic activity are significant across all regions and countries, and in some cases reach double digits. Increased localisation would thus add further GDP losses to the economic slowdown caused by the pandemic. Further, even with the support and protection offered to domestic producers under a localised regime, not all stages of production can be undertaken in the home country, and trade in intermediate inputs and raw materials continues to play an important role in domestic production. In that context, less international diversification of sourcing and sales means that most domestic markets are required to shoulder more of the adjustments to absorb shocks. This translates into larger price swings and large changes of production, ultimately leading to greater variability of incomes. In this sense, the more localised regime delivers neither greater efficiency nor greater security of supply (Figure 1).

Recent analysis on the global value chain of face masks during the Covid-19 outbreak (OECD 2020c) offers a concrete illustration. It shows that producing face masks requires a multitude of inputs along the value chain, from non-woven fabric made with polypropylene to specialised machinery for ultra-sonic welding. While the production itself does not require high-tech inputs, localising the production of just this one good would require high capital investments which would need to be supported during periods when demand shrinks, and localised production is not competitive. With current technologies it would therefore be excessively costly for every country to develop production capacity that matches crisis-induced surges in demand, and which encompasses the whole value chain from raw materials through distribution for a whole catalogue of essential goods to match any potential crisis, foreseen and otherwise.

Figure 1 In the localised regime, shocks result in lower levels and lower stability of real GDP



Note: All changes in variables are relative to the level of the interconnected regime base scenario which is set to equal 100. Blue dots show the base in the given regime relative to the interconnected base, and whiskers show average deviations for negative and positive trade cost shocks.
Source: OECD (2020b) based on OECD METRO database and simulations.

More localisation also means more reliance on fewer sources of (and often more expensive) inputs. In this regime, when a disruption occurs somewhere in the supply chain, it is harder and more costly to find ready substitutes, giving rise to greater risk of insecurity in supply. This is also the case for sectors that are often seen as strategic, such as food, basic pharmaceuticals, motor vehicles, and electronics.

Work on trade interdependencies in Covid-19-related goods (OECD 2020d) further supports these findings, demonstrating that no single country produces efficiently all the goods it needs to fight the pandemic. Indeed, while the US and Germany tend to specialise in the production of medical devices, China and Malaysia are most specialised in producing protective garments.

While the argument about global value chains is often posited as one of efficiency versus security, OECD research illustrates that greater localisation may fail to achieve either. The localisation of production is costly for the most developed countries and virtually impossible for the less developed. At the same time, a localised regime provides less protection from the impact of shocks.

An alternative, more effective, and cost-efficient solution to the challenges posed by shortages in some key equipment during demand surges may involve the combination of strategic stocks; upstream agreements with companies for rapid conversion of assembly lines during crises and supportive international trade measures.

The current health crisis has highlighted the interconnectedness of countries and economies. It has taught us that viruses, shocks, and economic consequences know no borders, and the best option that we have is to meet these challenges together.

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