How Feasible Is Reshoring?

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Trade during the COVID-19 pandemic



(a) Trade around global recessions

(b) Trade in goods and services during the pandemic

- ⇒ Trade collapsed dramatically in 2020:Q2 (-21% against 2019:Q4), but rebounded quickly compared with previous global recessions
- \Rightarrow Yet, many differences (services vs goods; GVC-intensive goods vs other goods)

Large swing in GVC-intensive goods, but quick recovery

Trade in GVC-intensive industries was more volatile than trade in other industries

Volatility of Trade in GVC-Intensive Industries versus Non–GVC-Intensive Industries Early in the Pandemic (Index)



The quick recovery occurred in some GVC-intensive goods but not for others

Trade in Automobiles and Semiconductors (Index, January 2018 = 100)



Global supply chain disruptions during the pandemic

Global goods trade, supply chain pressures, and inflation



Foreign suppliers, production, and delivery delays in the United States



Increasing interest in reshoring



Outline of the talk

- Did the pandemic response affect trade via international spillovers?
- Were Global Value Chains (GVCs) able to adjust?
- How can GVCs be made more resilient?
- How could geoeconomic fragmentation affect FDI?

International trade spillovers from domestic COVID-19 lockdowns

Spillovers from partner countries' policies

- The negative trade effect of lockdowns could spill over to partner countries, via a supply effect
- We compare imports of a given product from countries that, at a given point in time, imposed different containment policies

Change in imports and partner countries' lockdown stringency



Isolating supply with a gravity model

 $M_{meit} = exp[\beta Stringency \ Index_{et} + \delta Controls_{met} + \alpha_{mei} + \gamma_{mit}] + \epsilon_{meit}$

- M_{meit} are imports in industry *i* by importer country *m* from exporter country *e* in month *t*
- Stringency Index_{e,t} is a time-varying measure of lockdown intensity in the exporter country
- Country-pair-industry FEs (α_{mei}) control for differences in industry-specific trade flows
- Importer-industry-time FEs (γ_{mit}) absorb the role of unobserved factors (e.g., demand)
- Controls include new trade restrictions and the number of COVID-19 cases and deaths pc
- β captures the spillover effect of lockdowns on imports via the supply channel

Data: monthly bilateral imports, 6-digit level, aggregated across \sim 300 industries Estimation: PPML (Santos Silva & Tenreyro 2006); cluster at exporter level

Spillovers effects were large, but short-lived

Spillover effect of trade partner containment policies over time



Lockdowns accounted for up to 60% of the observed trade decline from Jan to May 2020



Heterogeneous spillovers effects



International spillovers from lockdowns are larger:

- for countries whose trade partners have been less able to rely on discretionary fiscal expansions
- for countries which are less able to rely on remote working
- in GVC-intensive industries, and especially in electronics, as GVC-intensive industries are relatively more exposed to disruptions in the supply chain

The role of upstreamness

 $M_{meit} = g(\beta Stringency \ Index_{et} \times Upstream_i + \delta Controls_{eit} + \alpha_{mei} + \gamma_{mit} + \mu_{et} + \epsilon_{meit})$

| | (1) | (2) |
|---|------------------------------------|------------|
| Stringency index Stringency index x Upstreamness | -0.00234*** (0.001) 0.00039* | 0.00057*** |
| | (0.000) | (0.000) |
| Observations | 23,531,808 | 23,531,808 |
| Exporter-importer-industry FE | Y | Υ |
| Importer-industry-month FE | Y | Υ |
| Exporter-month FE | Ν | Y |

The negative effect of stringency measures is dampened in industries which are very upstream (like metals and minerals products), while it is stronger for those downstream (like transportation and textiles).

GVCs during the pandemic

GVCs adapted well to the shock

- Asynchronous lockdowns: initial increase in Asia's market share partly unwound by mid-2021
- Suggests that countries adapted to the pandemic, permanent changes in the structure of GVCs are unlikely

Change in Regions' Market Shares of GVC-related products



Sources: Trade Data Monitor, reported import flows, GVC-related products; and IMF staff calculations.

Changes in market shares, driven by China in Asia, have been associated with changes in mobility



Market Share with Respect to Europe

Data source: TDM, reported import flows, GVC products

Change in Mobility and Market Shares



Diversification and GVCs resilience

A model-based approach

- The analysis is based on a multi-country, multi-sector GE model (Bonatio et al. 2021), extended to test whether diversification or substitutability make economies more resilient to shocks
- Geographic **diversification** might enhance resilience by reducing reliance on a single country
- **Substitutability** is either making production technologies more flexible, or standardizing intermediate inputs internationally

The **home bias** in sourcing inputs suggests room for diversification



Sources: Organisation for Economic Co-operation and Development, Inter-country Input-Output Tables; and IMF staff calculations.

Note: Blue bars show the share of intermediates sourced domestically. Yellow squares show the benchmark concentration in world production. Red bars show the stant of Import concentration (Herfindah) concentration indea) across foreign countries within the share of intermediates that is imported. Green squares show the world exports concentration benchmark. See Online Annes A.2 Brot details.

Diversification protects against shocks

Diversification substantially reduces GDP losses (and volatility) following a sizable (25%) labor supply contraction in a large global supplier of intermediate inputs



Note: The figure shows GDP declines in response to a 25 percent labor supply contraction in a country that is a large global supplier of intermediates Note: The bars show simple averages within each region of the percentage reduction in volatility.

Higher substitutability brings benefits and costs

Countries benefit from being able to more easily substitute away from one country's inputs to those produced in another country



Lower trade costs increase diversification

A 25 percent reduction in bilateral trade costs would lower the Herfindahl index of geographic concentration in the sourcing of intermediates by about 4 pps



FDI in a changing global landscape

Rising policy uncertainty and declining FDI



FDI is increasingly going to aligned countries



Geoeconomic fragmentation and FDI

Results based on a standard gravity model: $FDI_{sdt} = \alpha IPD_{sdt} + \psi_{sd} + \tau_{st} + \mu_{dt} + \epsilon_{sdt}$



Conclusions

To sum up

- 1. Lockdown policies had substantial-but unintended-international spillovers
 - Lockdowns in trading partners can account for up to 60% of the fall in imports
 - Spillovers larger for GVC-intensive and downstream goods, but faded over time
- 2. GVCs adjusted well to the pandemic
 - GVC-intensive goods imports fell more upon the shock, but rebounded quickly
 - Evolution of market shares across GVC-regions suggests GVCs were able to adapt
- 3. Diversification and substitutability in input sourcing can enhance resilience
 - "Home bias" in sourcing inputs suggests rooms to diversify
 - Greater diversification and substitutability lower economic volatility
- 4. The changing global landscape could affect:
 - the level of global FDI (via uncertainty)
 - and the destination of FDI (via geoeconomic fragmentation)

Policies

- 1. Enhance infrastructure (digital and physical):
 - Digital infrastructure to strengthen teleworking capacity can smooth lockdown-type shocks
 - Upgrade and modernize trade logistics infrastructure including ports
- 2. Close information gaps:
 - Generate more information on supply chain networks, including through advancing digitalization of firms' document filings (e.g., tax returns)
 - Use such information to conduct stress-testing exercises to identify weaknesses
- 3. Reduce trade costs:
 - Large scope to reduce nontariff barriers
 - Minimize trade policy uncertainty providing open and stable rules-based trade policy regime to support diversification

References

- IMF. 2022. World Economic Outlook: War Sets Back The Global Recovery, chapter 4, April.
- S. Aiyar, D. Malacrino, A. Mohommad, and A.F. Presbitero. 2022. International trade spillovers from domestic COVID-19 lockdowns, CEPR Discussion Paper n. 1739.