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The Covid-19 pandemic and the future of Global Value Chains (GVCs)

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Report details:

What is the emerging evidence on the effects Covid-19 has on GVCs? Is there any evidence on how Covid-19 impacts on lead firm–small- and medium-sized enterprise (SME) linkages and the green transformation of GVCs in Middle-Income Countries (MICs)?

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Helpdesk Report

K4D | Knowledge, evidence and learning for development

The Covid-19 pandemic and the future of Global Value Chains (GVCs)

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Question

- What is emerging evidence on the effect of Covid-19 on GVCs?
- Is there any evidence on how Covid-19 impacts on lead firm-SME linkages and the green transformation of GVCs in Middle-Income Countries (MICs)?
- What evidence is there on how the resilience of GVCs can be supported in responding to Covid-19?

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1. What are Global Value Chains?

Global Value Chains (GVCs) are characterised in the literature as linked activities undertaken by firms in different countries that each add value to a product (Donovan et al., 2015; Kano et al., 2020; Strange 2020).

Most GVCs involve large international corporations, which are often an important driver of GVC development. They account for two-thirds of international trade (Meyer et al., 2020, p.n/a).

The role of multinational enterprises in GVCs has shifted away from hierarchical entities, with their traditional focus on managing internalised overseas investments, to corporations as international lead firms (Kano et al., 2020).

1. What are Global Value Chains?

Where mainstream economists have focussed mainly on efficiencies and costs-benefits of GVCs, 'development' research has focused explicitly on the nature of the relationships among the various actors involved in the chain and explores their implications for upgrading from the perspective of Low- and Middle-Income Countries (LMICs).

The concept of 'governance' of GVCs helps to understand how decision-making processes take place and as such, how disruptions could trigger strategic and operational changes in GVCs.

- Kano et al. (2020, p.584) show a governance framework for GVCs and how this affects outcomes such as firm-specific performance, upgrading, and chain level durability and stability.
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1. What are Global Value Chains?

Strange (2020) lists the following benefits of GVCs above domestic ones:

- **Cost advantages:** In particular, for advanced economies, inputs of intermediate goods and services from abroad may be cheaper (e.g. labour costs) than similar inputs sourced from the domestic economy.
 - **Limited productive capacity:** There may not be enough productive capacity in the domestic economy to provide the necessary inputs in sufficient quantity, or inputs of the requisite quality.
 - **Increased resilience:** Diversified global sourcing could reduce a firms' unsystematic risks and provides them with greater resilience to supply chain disruptions.
 - **Choice:** Consumers value the greater choice offered by the availability of final goods that include products from foreign sources.
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2. Covid-19 and Global Value Chains

The literature mentions several reasons why the Covid-19 pandemic could disrupt GVCs:

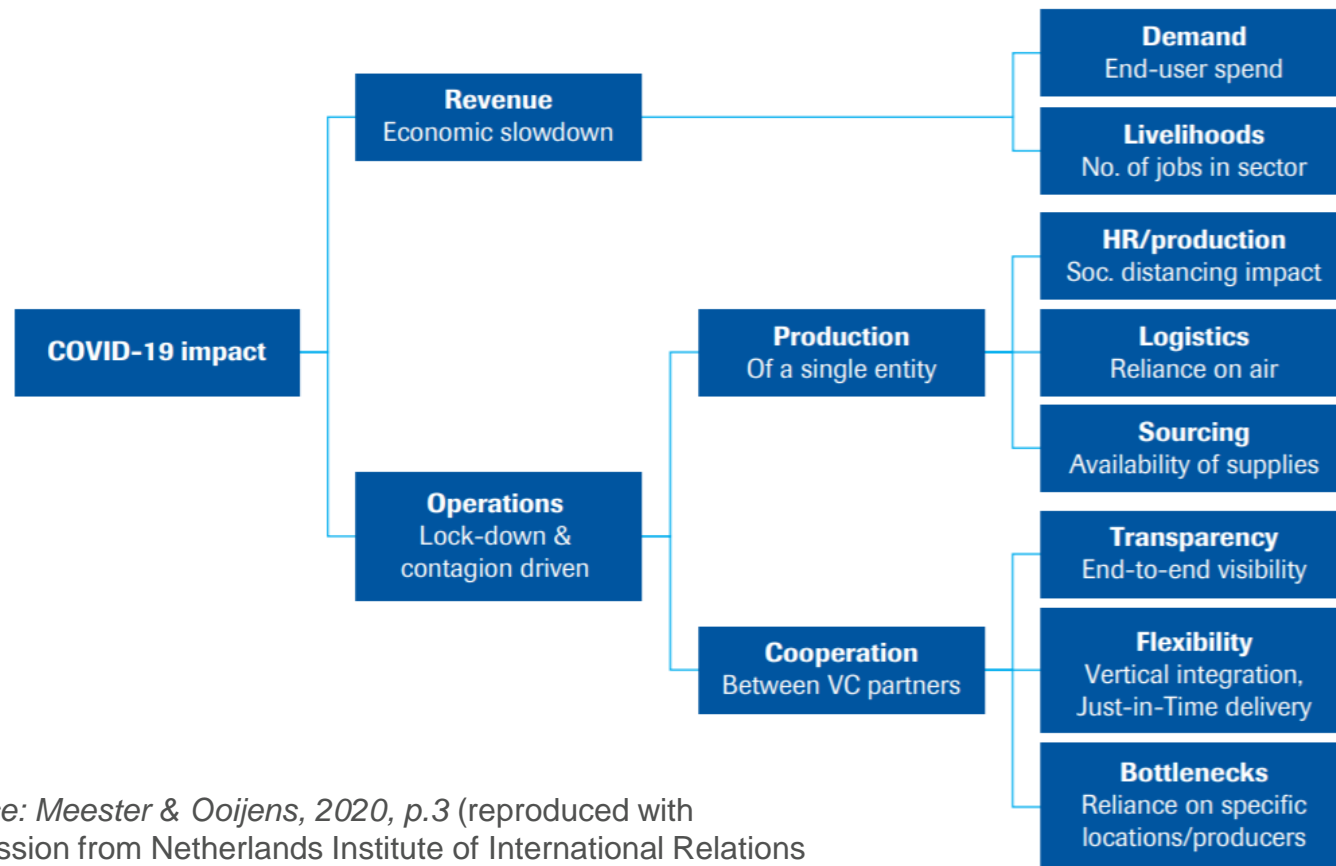
- As the virus has been detected in most countries around the world, the resilience benefit of diversifying global sourcing has weakened.
 - The pandemic has interrupted the international movements of people, capital, goods, and services (e.g. through physical distancing and lockdown measures).
 - The greater the distances involved and the more borders that need to be crossed, the more transaction costs have increased due to the disruptive effects of Covid-19.
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2. Covid-19 and Global Value Chains

The impact of the Covid-19 pandemic on GVCs can be distinguished between:

- **Supply-side** (constraints to suppliers' production and reliability) and **demand-side** (disruption in demand from both consumers and businesses) impacts of the value chain.
 - **Direct** (sickness of staff, social distancing) and **indirect impacts** (result of measures taken by others) on firms in GVCs.
 - **Short-term** (e.g. lockdown) and **medium- to longer-term** (the wider economic slowdown makes it more difficult to return to pre-Covid-19 demand levels) impacts.
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2. Covid-19 and Global Value Chains



Source: Meester & Ooijens, 2020, p.3 (reproduced with permission from Netherlands Institute of International Relations 'Clingendael')

2. Covid-19 and Global Value Chains

While these impacts eventually affect most producers in the value chain, the financial burden is unlikely to be shared equally across the chain:

- **Impacts are likely to vary strongly across sectors:** e.g. demand for agricultural products is likely to fall less than demand for seasonal garments. Demand for some products increased (health, hand sanitisers, delivery firms).
 - **Impacts are likely to vary across different firms:** when buyers cancel orders and/or extend their payment periods, such effects are larger when the buyers are large firms. Also firms adapted for e-commerce have a benefit.
 - **Transparency:** Visibility on demand fluctuations reduces the further up the value chain one goes, affecting producers far removed from the end-consumer the most – also called the ‘bullwhip effect’ – leading to heavy costs to absorb the mismatch.
 - **Flexibility:** Long value chains involving steps with long cycle times, low inventories and significant vertical integration may especially face difficulties in adjusting when demand falls or individual links stop working.
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2. Covid-19 and Global Value Chains

By using simulation models, researchers found the following:

- Covid-19 has mostly disrupted sectors in which economies lack domestic productive capacity, depending more on GVCs (Strange, 2020).
 - Domestic industries that are highly integrated within GVCs have been disrupted – however, the amount of disruption depends on the sectors (Bonadio et al, 2020).
 - It has been measured that GVCs are responsible for a sizeable degree of the overall GDP contraction, amplifying the magnitude of domestic shocks. The mean contribution of foreign shocks to the fall in GDP is about one-third of the total (Bonadio et al, 2020).
 - Global supply chain losses seem largely dependent on the number of countries imposing restrictions, and losses are more sensitive to the duration of a lockdown than its strictness (Guan et al., 2020).
 - The most negative impact on the supply chain performance is observed in the cases with very long facility, and demand disruption durations downstream the chain are also referred to as ‘ripple effect’ (Ivanov, 2020a).
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3. Covid-19 and Lead firm-SME linkages

- There is acknowledgement that lower-tier suppliers are ‘critically important to the overall supply-chain hierarchy, and disruptions at these levels can quickly cause disturbances throughout the chain’ (Baker McKenzie, 2020, p.10). Many of these lower-tier firms are SMEs.
 - A World Trade Organization (WTO, 2020) publication mentions that current disruptions disproportionately affect sectors in which micro-, small- and medium-sized enterprises (MSMEs) are highly integrated into GVCs.
 - As such, progress towards more inclusive value chains ‘can be undermined’ (WTO, 2020).
 - However, most MSMEs in LMICs were already excluded in GVCs for various reasons. The WTO (2020) mention that MSMEs’ exports amount to only 7.6% of total sales in the manufacturing sector in LMICs.
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3. Covid-19 and Lead Firm-SME linkages

A recent IFC report (Geaneotes & Mignano, 2020) mentions examples of how inclusive businesses, as lead firms in their sectors in emerging markets, have adapted during the Covid-19 crisis to support their low-income and vulnerable suppliers, distributors, and customers.

- **Leverage existing tech-based information and payment channels:** Many inclusive businesses use technology platforms to support and engage with micro and small enterprises in their supply and distribution chains.
 - **Adopt alternative distribution channels:** To enable business-to-consumer deliveries, inclusive retailers are partnering with small transportation companies that deliver goods via motorcycle.
 - **Adapt the product or service:** Some inclusive businesses are modifying their product and service offerings to continue linkages with SMEs.
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3. Covid-19 and lead firm-SME linkages

In many cases, lead firms have passed the risk burden along the supply chain to vulnerable small businesses in LMICs (ITC, 2020). How can the links between lead firms and SMEs be strengthened to become more resilient?

- Better contracts with SME suppliers can facilitate the sharing of risk.
 - Lead firms should redesign their approach to collaboration and costing with SME suppliers to ensure more equally shared value. This 'social capital' in the supply chain can be crucial to transmitting information and funds as necessary to respond to crises.
 - The way that the supply chain is managed and developed over time can foster an agile work culture that improves the capacity to adapt. Such attitude embraces open and transparent supply chains.
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4. Covid-19 and the green transformation of GVCs

- **Change in awareness:** Covid-19 has increased the awareness of global lead firms about the environment and climate change as there are concerns of major future natural and health disruption, which could push for higher environmental values.
 - **Change in behaviour:** Home-working and using local people instead of flying international experts into countries.
 - **Change in localisation:** Near-shoring could reduce carbon footprint.
 - **Change in technology:** Automation and using big data makes logistics within value chains more efficient.
 - **Change in demand:** Demand for greener products could increase, changing value chains: e.g. electric cars (less parts, circular economy principle).
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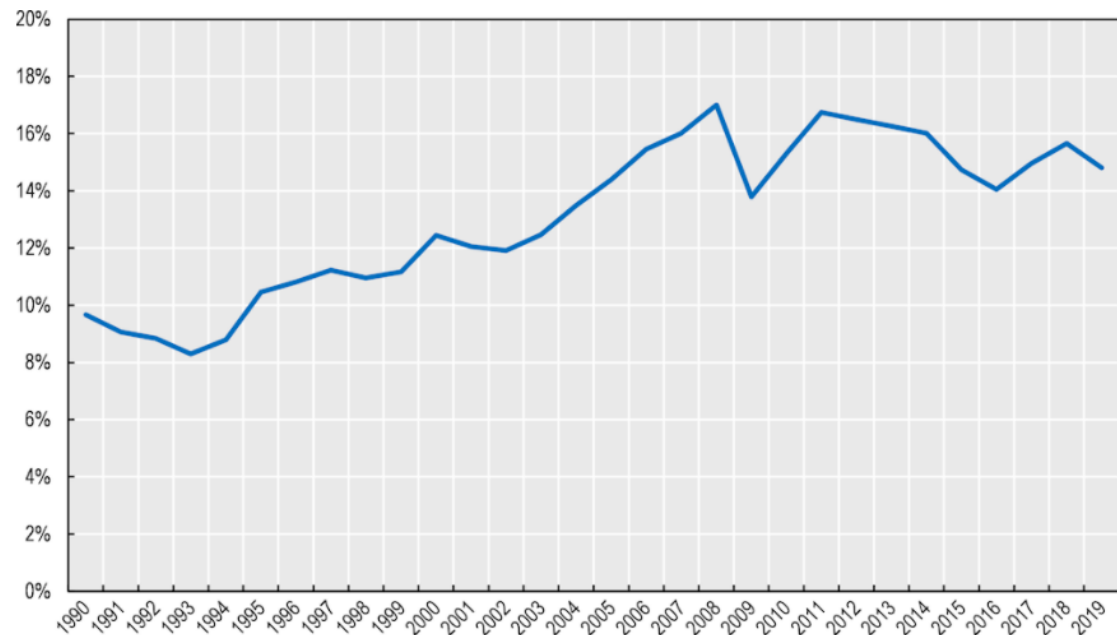
4. Covid-19 and the green transformation of GVCs

- Sarkis et al. (2020): Outcomes depend on a government's will to change. For example, the need to find new sources of public revenue are an opportunity to impose substantially higher taxes on fossil fuels. On the other hand, a quick fix by revitalising national economies to disengage on climate change could put people back to work, compromising on environmental issues.
 - Kenner (2020): Firms will take notice of the future impact of decarbonisation, particularly if companies are incentivised to reduce their carbon costs through re-shoring strategies. Targeted decarbonisation policies and interventions could make production closer to the market more attractive for some sectors.
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5. Reframing GVCs after Covid-19

GVCs were already changing before the pandemic. Since 2011, expansion of GVCs has stalled, mostly due to forms of protectionism (e.g. US-China trade war), technological changes (e.g. big data, digitalisation, blockchain), and the urge for more inclusive and sustainable GVCs (e.g. climate change) (UNCTAD, 2020).

**Global import intensity of production 2005-2016
(OECD, 2020, p.3)**



Note: This indicator takes into account all trade flows of intermediates inputs used in any stage of the value chain, and expresses their overall value as a share of the final output. Calculated for the world, it measures the overall level of fragmentation of production

Source: OECD TIVA 2016, OECD TIVA 2018, OECD Economic Outlooks, Comtrade, IMF

5. Reframing GVCs after Covid-19

Will Global Value Chains change dramatically after the pandemic?

- **Yes, the combination of trade-policy shocks and Covid-19 could irreversibly accelerate the transformation of GVCs** (Javorcik, 2020; Lin & Lannig, 2020). Mainly, the Covid-19 pandemic is referred to as a wake-up call for a new balance between risk and reward for GVCs, as pandemics, climate change, natural disasters, protectionism, and man-made crises could result in frequent major disruptions. Calls for self-reliance and reshoring (near shoring).
 - **No, the current evidence does not explicitly support the idea that complex GVCs have been hit the hardest during the pandemic** (OECD, 2020; Miroudot, 2020, Verbeke, 2020). The bulk of the impact is through the fall in domestic demand hurting domestic *and* GVCs. Analytical work indicates that the contraction of GDP would have been worse with re-nationalised GVCs (Bonadio et al., 2020).
-

5. Reframing GVCs after Covid-19

The literature is clear that due to Covid-19, firms that participate in GVCs will make strategic decisions on increasing resilience and digitalisation.

- Resilience to bounce back quickly after the disruption and digitalisation as a tool to continue transactions and operations during lockdown periods.

Literature makes a distinction between (e.g. Ivanov, 2020b):

- **Robustness:** the ability to withstand a disruption (or a series of disruptions) to maintain the planned performance.
 - **Resilience:** the ability to withstand a disruption (or a series of disruptions) and recover the performance.
 - **Viability:** the ability to maintain itself and survive in a changing environment over a long period of time through a redesign of the structures and re-planning of economic performance.
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5. Reframing GVCs after Covid-19

- During the pandemic, robustness matters mostly for medical supplies, while resilience matters for negatively affected industries (e.g. tourism).
 - Since important costs are associated with robustness, many companies are not interested in cancelling out all risks in their supply chains at all cost; but invest in reducing the time needed for recovery (resilience).
 - Resilience is not the same as agility. An ITC (2020) Covid-19 survey reveals that SMEs were far more likely to adopt agile responses to the crisis than larger firms. However, it was mainly large businesses that could adopt a resilient approach than SMEs. ITC (2020, p.39): *'The take-away from this analysis is that while large companies can afford to stay put and be resilient, small companies must either adapt to the crisis in an agile manner or collapse'*.
-

6. Lead firms' responses to increase resilience

Resilience building in firms – what do we know from other crises?

- **Sourcing strategies** may differ across activities depending on the level of acceptable risk (e.g. diversification only for essential products).
 - Products with **buffer stocks and standardised inputs** can more easily be replaced (Miroudot, 2020).
 - **Risk management strategies** at the firm level are emphasising risk awareness and promoting agility, for example through resilience monitoring (assessing the time to recover for each type of supplier) (OECD, 2020; Miroudot, 2020).
 - Overall, **automation and innovation** help to identify and isolate very narrow activity opportunities and challenges (e.g. comprehensive dashboards, blockchain) (Verbeke, 2020; Cordon & Buatois, 2020).
 - **Long-term relationships among companies** are associated with a more rapid recovery from a crisis (Jain et al., 2017). Supporting suppliers creates resilient production networks, as firms increasingly recognise that suppliers are their intricately linked partners (Qiang et al., 2020).
-

6. Lead firms' responses to increase resilience

To understand management decisions for dealing with disruptions in supply chains, the three Ts are mentioned in the literature:

- **Time:** focussing only on adding value processes that costumers are willing to pay for.
- **Transparency:** the necessary levels of inventory and costs of production which are reliable and fair for the joint planning of production and sales.
- **Trust:** the consequence of collaborative working practices that enable the sharing of gains and losses.

(Wilding, 2003 – as cited in Lopes de Sousa Jabbour et al., 2020, p.n/a)

6. Lead firms' responses to increase resilience

The supply chain management literature refers to ECAC: engineering, collaboration, agility, and culture (Lopes de Sousa Jabbour et al., 2020):

- **Supply chain engineering:** Mapping the structure and bottlenecks of a supply chain, covering all of its members, including first- and second-tier suppliers, channels of distribution and final consumers.
 - **Supply chain collaboration:** Sharing information is the best way to increase visibility and reduce risks in a supply chain, and creates a community perspective.
 - **Supply chain agility:** Being aware of changes and velocity concerns through monitoring the flow of materials and information across a supply chain to ensure that procurement, production, delivery schedules, and orders will be met.
 - **Supply chain risk management culture:** Risk assessment management should be developed as part of the routine of a company and its supply chain to build an ability to anticipate and respond to disruptions.
-

6. Lead firms' responses to increase resilience

In general, the literature seems to agree that many foreign companies are expected to continue with a China +1 strategy, while China is expected to remain the main manufacturing centre in the near term, with trends towards diversifying global industrial capacity set to continue over a longer period.

7. Supporting resilience building in GVCs

Main policy recommendations for GVCs in times of Covid-19 (Source: OECD, 2020, p.9)

Crisis	Recovery	New normal
Maintain operations of essential GVCs and increase supply	Help to restart GVCs	Promote robustness and resilience in GVCs
<ul style="list-style-type: none"> • Facilitate trade by removing trade barriers and by ensuring the smooth functioning of international transport and customs 	<ul style="list-style-type: none"> • Maintain an open trade and investment environment to reduce the time to recover and continue to support trade facilitation 	<ul style="list-style-type: none"> • Create a stable regulatory environment (including through trade and investment agreements that can include provisions for the smooth operations of GVCs)
<ul style="list-style-type: none"> • Prioritise shipments for essential goods and adapt rules for movement of key personnel 	<ul style="list-style-type: none"> • Address financial and other issues of firms that can delay the recovery of GVCs and support MSMEs 	<ul style="list-style-type: none"> • Promote standards and certification procedures including risk awareness; review transport, logistics and customs clearance regulations to better mitigate disruptions
<ul style="list-style-type: none"> • Increase supply of essential goods by facilitating investment and operation permits and by expediting certification procedures 	<ul style="list-style-type: none"> • Adapt health measures to the needs of firms operating in an international environment 	<ul style="list-style-type: none"> • Develop stress tests for critical supply chains and include criteria for robustness of supply chains in government procurement procedures on a non-discriminatory basis
		<ul style="list-style-type: none"> • Promote the diffusion of digital technologies that can improve information systems for risk management (e.g. Internet of Things)

7. Supporting resilience building in GVCs

- The literature on supporting resilience does not seem to emphasise a new direction of support for lead firms and suppliers (larger or smaller) in a post-Covid-19 world.
- Most recommendations seem to be a continuation of older ones, with an emphasis on e-commerce and digitalisation, in combination with an enabling environment of open trade.
- When inclusiveness is considered in the resilience building agenda, awareness is needed that more digitalisation and higher standards could exclude many SMEs.
- There should be closer collaboration and coordination among international organisations, business support organisations, and regulatory bodies to work together in assisting small businesses and ensuring a fair business environment.

A sector specific approach based on governance structures is recommended to understand in more details future changes of specific GVCs.

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