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GLOBAL VALUE CHAINS IN THE AFTERMATH OF COVID-19: OPPORTUNITIES TO INCREASE EURO-MEDITERRANEAN INTEGRATION

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COVID-19 and global value chains

The COVID-19 pandemic has hit the whole world like a sudden and destructive earthquake. The virus rapidly spread, and, in less than 18 months, it has caused millions of deaths as well as unprecedented economic and social damages. Most countries experienced severe gross domestic product (GDP) contractions in 2020, with rare exceptions (notably China, whose real GDP growth was +2.3% according to the International Monetary Fund's World Economic Outlook of April 2021). The shock has negatively affected all economic sectors, with many services facing particularly large turnover losses, higher than those suffered on average by manufacturing sectors. Particularly hit were those sectors and activities characterised by a higher intensity of face-to-face interactions, such as hospitality, hotels, restaurants and tourism in general (see Giovannetti et al., 2020).

One of the reasons for the rapid transmission and extent of the crisis is the international structure of production. Since the 1980s, global value chains (GVCs) have reshaped the world economy, increasing the physical fragmentation and the geographic dispersion

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of the production process. The growing international connectivity both in terms of commercial and ownership linkages contributed to an easier transmission of shocks through the network of firms (Bena et al., 2020; Di Giovanni et al., 2018; Di Giovanni & Levchenko, 2010; Kleinert et al., 2015). In the current crisis, the shock hit both supply and demand (Ayadi et al., 2021; Di Stefano, 2021): lockdown measures have disrupted supply chain logistics by hampering the delivery of foreign intermediate goods, causing delays and raising transport costs; temporary export bans on key products, such as medical supplies, have, at least at the beginning, further aggravated disruptions; sensitive changes in the basket of demanded goods, also related to a pervasive reduction in purchasing power, have also affected the existing equilibrium.

That international linkages and GVCs contribute to shock transmission is hardly surprising. Yet, while there is a consensus on the role played by GVCs in transmitting the COVID-19 shock, the evidence on whether they have amplified or reduced its magnitude and on whether international firms will prove more or less resilient to the shock is still scant. Comparing the COVID-19 pandemic with the 2008 global financial crisis (GFC), Giovannetti et al. (2020) and Simola (2021) underline that firms and sectors in GVCs have been relatively less impacted during the pandemic. In the current crisis, firms more involved in GVCs had a lower probability of incurring severe turnover losses than domestic firms (for Italian firms, see Giovannetti et al., 2020) and GDP losses would have been more severe with a less connected structure of production – for 64 developed and developing countries (Bonadio et al., 2020). In the same line, Borino et al. (2021) highlight the role of GVCs in transmitting the shock, and how international firms' response has been more resilient.

This preliminary evidence provides a nuanced view of GVCs: despite the existence of sectoral and country-specific outcomes, GVCs, on average, transmit the shocks, but they may also provide shelter from the worst consequences and contribute to a faster recovery. Nevertheless, big economic losses and a growing uncertainty in international markets have fuelled doubts about GVC resilience and concerns regarding a possible wave of de-globalisation. On the one hand, it is still unclear whether the positive effects of GVC participation are large enough to yield overall benefits and, if so, whether they materialise fast enough, while, on the other, exposure to foreign shocks is immediately visible and economic damages pervasive. Specific factors contribute to this uncertainty, making it difficult to predict the precise direction that globalisation will take.

The length of the crisis, especially the duration of containment measures, plays a crucial role. While shocks perceived as temporary are likely to have a low impact on the decisional process of firms, long lasting uncertainty may increase the incentives to modify the current organisation of production. Firms' decision-making process is characterised by a certain degree of "inertia", i.e., a "wait and see" strategy. This occurs because past decisions matter, especially for internationalisation choices. GVCs have a relational nature, with buyer-supplier relationships requiring time and specific investments for their implementation. These types of relationships increase the likelihood of not switching suppliers, thus further strengthening the ties along the value chains (Alfaro et al., 2019; Antràs & Chor, 2021; Conconi et al., 2016; Del Prete & Rungi, 2017). If production was to rebound fast to pre-pandemic levels, a complete untangling of this complex network appears implausible, also because it would result in new costs for firms, linked to the research of new partners as well to the loss of previous investments (sunk or unrecoverable costs). However, despite these reasons in favour of GVCs resilience, if the economy does not rebound fast to pre-pandemic levels, we could observe changes in the current international network.

Another factor that contributes to the uncertainty on the future of globalisation is the timing of the current crisis. The COVID-19 pandemic comes in a peculiar moment. Since the GFC, globalisation has been slowing down and GVC-related share of trade has stalled after decades of sustained growth (Giovannetti et al., 2020). Moreover, there are many other factors that could affect the current equilibrium. Production increasingly relies on new technologies such as 3D printing or automation, whose impact on GVCs is still unclear. On the one hand, these technologies may reduce the cost advantages associated with importing foreign intermediate inputs sourced from lower labour costs locations (Rodrik, 2018), thus increasing the profitability of re-shoring. On the other, these technological developments may increase the scale of production and thus even foster GVC integration (Artuc et al., 2020). Finally, another relevant factor that will shape the international framework is the new political and social context in the aftermath of the pandemic. In the years immediately after the GFC, there has been a surge in nationalist feelings. In the most recent years, moreover, episodes like Brexit and the US-China trade war have contributed to increasing uncertainty. Given the impact of the pandemic on the economic and social sphere, we cannot exclude similar outcomes, even though at the moment the protectionist measures have certainly not prevailed.

These considerations underline the peculiarity of the moment and warn us that there are many factors at play. Therefore, although preliminary evidence does not suggest drastic changes in the globalisation process, it is possible that some changes in the current organisational structure, at least in terms of geopolitical equilibria, will occur. Partners' diversification and regional shortening of GVCs are two possible outcomes, which could allow some of the benefits of GVCs to be maintained while mitigating the risks. In this regard, for some countries a reconfiguration of GVCs may also constitute an opportunity to further integrate in the international network by replacing more remote countries. In what follows, we discuss how such a scenario might be of crucial importance for countries in the Mediterranean area.

GVC participation in the Mediterranean

With Europe before the pandemic strictly connected with both Southeast Asian and Atlantic partners, a nearshoring process by (some) European Union (EU) members, a switch to closer supplier or shutting down plants in faraway countries would open the door for (some) Mediterranean countries to further integrate into the European network. Countries in the Mediterranean region are quite heterogeneous in terms of both production structure and international exposure. Focusing on the member countries of the Agadir Agreement, Ayadi et al. (2021) discuss their international exposure, showing differences regarding both aggregate exports and GVC participation. Morocco is the largest exporter followed by Egypt, Tunisia and Jordan. However, for the nature of GVCs, just looking at aggregate exports does not tell us much about countries' international integration. Countries export value-added (VA) produced domestically (domestic content of exports) as well as foreign VA previously imported (foreign content of exports). And, clearly, the domestic VA exported by one country can further be incorporated into exports of third countries. This multiple crossing of borders is the essence of GVCs, and that is why the foreign content of exports (also called GVC-backward) and the domestic content of exports further re-exported by the importer (GVC-forward) are used to measure the extent of countries' GVC integration. Ayadi et al. (2021) show that Morocco and especially Tunisia are more integrated in GVCs than Egypt and Jordan. The Agadir countries also differ in terms of positioning along the GVCs. Egypt and Morocco participate in GVCs mainly as suppliers of intermediate goods further re-exported, i.e., their share of GVC-forward is higher than that of GVC-backward. The contrary is true for Tunisia and Jordan.

Other than the aggregate extent of GVC participation, it is important to consider to whom these countries are linked. Identifying partners is crucial to give a complete representation of GVC integration. It also allows GVC-related policy to be discussed and exposure to shocks to be understood (Ayadi et al., 2021; Pahl et al., 2020). Ayadi et al. (2021) investigate shock transmission between some countries on the northern shore of the Mediterranean (France, Italy, Spain and Greece) and the Agadir countries. They provide evidence of limited regional integration for these countries. Table 1 reports for each exporting country (in column) the share of foreign VA in exports originating in each source (in row). Egypt, Jordan, Morocco and Tunisia are negligible sources of VA (rows 1-4). In addition, the linkages within the southern shore are negligible. In contrast, countries on the northern shore are an important source of VA for the whole area (rows 5-8). Morocco and Tunisia rely heavily on foreign inputs from Italy, Spain and France (columns 3-4), with shares that are much higher than those of Egypt and Jordan (columns 1-2). The former source in the Mediterranean more than 40% of foreign VA in exports, while the latter less than 20%.

Table1. Regional integration in the Mediterranean area

Foreign supply exposure		Exporter (j)							
		Egypt	Jordan	Morocco	Tunisia	Italy	Greece	Spain	France
Source of VA (i)	Egypt	·	3%	0%	1%	1%	1%	0%	0%
	Jordan	1%	·	0%	0%	0%	0%	0%	0%
	Morocco	0%	0%	·	1%	0%	0%	0%	0%
	Tunisia	0%	0%	0%	·	0%	0%	0%	0%
	Italy	9%	7%	9%	16%	·	13%	8%	8%
	Greece	1%	1%	0%	0%	1%	·	0%	0%
	Spain	3%	2%	14%	5%	5%	3%	·	6%
	France	5%	4%	18%	19%	10%	6%	14%	·
	Exposure to Mediterranean	19%	17%	42%	42%	17%	23%	23%	15%
	To southern Mediterranean	1%	3%	0%	2%	1%	1%	0%	0%
	To northern Mediterranean	18%	14%	42%	40%	16%	22%	23%	15%
	Exposure to rest of the world	81%	83%	58%	58%	84%	77%	77%	85%

Source: Ayadi et al. (2021).

Regional integration on the northern and southern shores of the Mediterranean is limited. Although it is not taken for granted that the pandemic will incentivise drastic changes, it could still constitute an opportunity to rethink regional integration in the area. This could be extremely beneficial especially for the countries on the southern shore that could enter more GVCs, replicating the success story of Morocco with the aeronautic and automotive sectors.[1]

Policy considerations

Predicting the future of globalisation is complex. As many factors are at play and we are still not out of the health crisis, we must consider the possible scenarios evolving

[1] See the Trade and Competitiveness Programme of the European Bank for Reconstruction and Development here: https://www.ebrd.com/what-we-do/economic-research-and-data/cse-economists/global-value-chains-and-trade-in-ebrd-regions.html

from the issues at stake. Accordingly, we offer some policy considerations on the challenges and opportunities of greater integration in the Mediterranean region.

We identify three main factors that are going to shape the international panorama: the length of the pandemic, the post-COVID-19 geopolitical equilibrium, and the pace of development of new technologies.

In the case of a longer crisis, reliance on more distant suppliers or buyers may be perceived as a cost. Whether linked to transport, time, uncertainty or also environmental feelings, these costs could become meaningful in a firm decision to re-shore or nearshore.[2] Confronted with this uncertainty, some European firms may consider substituting geographically distant partners, such as Asian firms, with closer ones, for example in the Mediterranean region. In doing so, firms will compare the reduction in costs with the profitability of the new relationship. Given the comparative advantages of Southern Mediterranean countries, the textile sector may be of interest for European firms' nearshoring strategies. This is especially the case for Egypt, Morocco and Tunisia. For Morocco and Tunisia, automotive and aerospace are additional opportunities for integration, even though already partially exploited. Moreover, in light of a progressive shift of the Chinese exports basket toward more sophisticated and higher VA products, there is room for Mediterranean countries to improve their comparative advantage in low VA electronics products. Finally, the Jordanian pharmaceuticals sector may attract European partners. Despite the differences between these sectors, there are useful cross-sectoral interventions that countries should pursue. Given that GVCs involve the exchange of high relational specific goods, policies targeted at reducing non-tariff measures (NTM), harmonising production processes, and facilitating the adoption of international quality certifications are of primary importance.

GVCs are made of firms, and GVC patterns result from the interplay of firms' individual decisions. In turn, firms' decisions respond to economic incentives, some of which are determined at the country level by factors such as the macroeconomic context, business environment and national policies. Economic crises have always put social and political balances to the test. This possible turmoil may favour the adoption of protectionist measures that could further slow down globalisation. We cannot ignore that the two leading global forces have already embarked on a process of fostering their own domestic supply chains: China has launched the "Made in China 2025" programme, while the United States President Joe Biden, in one of his first initiatives, has implemented an interagency action to strengthen the resilience of America's supply chains. Whether this represents the birth of a new geographic polarisation, it poses important challenges for both Europe and Southern Mediterranean countries, which are in between the two poles. Responding to protectionism with protectionism may not be a first best strategy: given the complex structure of GVCs, a trade war may have a strong negative impact on domestic firms too (Bellora & Fontagné, 2020). While entering one of these poles may be difficult, especially for the reasons these poles are arising, the development of a third European pole is conceivable, and indeed, for instance, Italy and Germany are already very important partners in GVCs. The entry in this network of (some) Southern Mediterranean countries may greatly benefit both themselves and European countries. Advantages for both groups can arise from a deeper integration in GVCs, as well as technology and know-how spillovers, and alternative sourcing/buying opportunities. To put in place such a configuration, a stark

[2] In this respect, the accident of the Ever Given container ship in the Suez Canal in March 2020 may also play a role by amplifying the feeling of riskiness toward distant chains and thus increasing the perceived costs.

enforcement of the current framework of agreements is mandatory. This may consist of a two-step process. First, policy-makers need to boost integration within the two shores of the Mediterranean. While the EU has a well-integrated single market, trade agreements between Mediterranean countries, such as the Agadir Agreement, have not so far allowed for a deep integration between members. Secondly, countries should devote much effort toward the creation of a common framework that could link the two shores. This second task may constitute one of the biggest obstacles. The two shores of the Mediterranean are still characterised by differences regarding the economic, cultural and institutional environment. A "sine qua non" condition for a rapid implementation of a common regulatory framework is the improvement of the business environment as well as of the governance indicators, especially in the countries on the southern shore. Another important issue regards the implementation process of the revised Pan-Euro-Mediterranean cumulation of origin system. A rapid ratification of the revisions by all members would foster GVC integration, especially in those sectors, such as apparel, in which the "Made in" label substantially increases product VA. Furthermore, developments regarding association agreements may lead to the reduction of the tariffs still in place. Overall, this harmonisation process may allow both the direct costs and the frictions linked to the search for new partners to be reduced, thus facilitating connections and matchmaking between firms across the two shores. In the longer run, trade itself may induce stronger integration by easing foreign direct investment engagement (Conconi et al., 2016; Irarrazabal et al., 2013). Policies for attracting new investment projects and easing mergers and acquisitions may further facilitate the entire process (Javorcik, 2020).

Finally, the advent of new technologies is another important factor that will shape the future of globalisation. Robotics, machine learning, 3D printing and blockchains are just some examples of innovations that will profoundly affect the production process. To the extent that these technologies would reduce the relative costs of producing low-skilled activities at home, firms may be incentivised to re-shore production. In this case, Southern Mediterranean countries could not fully exploit their labour cost differentials to further integrate in GVCs. Therefore, in the short run, the possibilities of increasing their role in the European network might be limited. In contrast, if these technologies, by increasing scale achievement, foster globalisation, lower production costs may incentivise European countries to outsource or offshore production, including in Southern Mediterranean countries. However, in any case, these new technologies will change the production process increasing the importance of services. Most high-skilled intensive services are perhaps likely to remain concentrated in developed countries, but some of them and the less skilled intensive ones might be increasingly offshored thanks to technological developments. Mediterranean countries may seize this opportunity by devoting substantial investments to incentivise the adoption of adequate information and communication technologies, implementing national plans for digital infrastructure, and designing and financing specific educational curricula to upgrade the required skills. These policies may also benefit the entire economy by fostering upgrading and diversification of the production structure as well as by addressing unemployment issues, especially for the growing share of young population.

With such complexity, it is hard to predict the future of globalisation. If some changes to the international organisation of production occur, some countries may have the opportunity to improve their integration and position in the international network of production. Southern Mediterranean countries might be in the position to strengthen their linkages with European partners. Given the comparative advantages of involved countries, this seems more than a remote possibility. But action is needed to materialise this potential. To seize the opportunities, countries need to set the conditions for facilitating connections between firms. Several policies may serve this purpose. The creation of a common regulatory framework has a prominent role. Given the relational nature of GVCs, the reduction of NTMs and the harmonisation of the production process would further benefit this process. Finally, investments in information and communication technologies and in digitalisation in Southern Mediterranean countries may spur the entire services sector, and in turn facilitate the whole integration process.

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