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THE EXPOSURE OF ARAB COUNTRIES TO THE COVID-19 SHOCK: A FOCUS ON THE GLOBAL VALUE CHAINS OF TOURISM AND TRANSPORT

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Table of contents

1. Introduction

It is now widely recognized that the outbreak of the COVID-19 pandemic triggered the most serious economic crisis in a long time. All economic sectors have been affected by the disruption to global supply chains, weaker demand for exported goods and services, a drop in international tourism, the halt to business travel, a lack of demand for domestic and imported goods and services and in some cases a combination of these factors. Beyond the massive loss of human life and the significant long-term negative effects on health, the pandemic has had a major effect on social and economic relationships. The pervasive measures of the lockdowns imposed to tackle the spread of the virus have fuelled the rapid transition from a health emergency to an economic one. Policymakers around the world must now confront a major reconsideration of all social activities (working relationships included) and the biggest economic crisis since World War II.

The speed at which the virus became a pandemic and the rapid transmission of the economic shocks show the extent to which the socio-economic relations of countries are intertwined. Despite stark differences between countries, the global reach of the health crisis and the international disruption of supply chains are reshaping both national economies and international relationships. The fact that countries are deeply interconnected means they are directly or indirectly exposed to shocks originating elsewhere in the world. Like the health shocks, the economic shocks are quickly transmitted along the chain of demand and supply relations, with the pace and strength dependent on the relative position and weight of each country. The overall final global impact is the result of the complex interaction of a range of national shocks. To outline both the scale and the consequences of the shock, we need to know the length of the health crisis, and the subsequent impact on economies. Regarding the former, the media and institutional organizations have been providing up-to-date data on the spread of the virus. However, the outbreak of new waves of contagion triggered new

concerns, as well as new restrictions. While waiting to measure the beneficial effects from vaccination campaigns, countries are trying to strike a balance in coping with the virus, focusing on compensating for the damage caused by the economic crisis and devising new, less-costly containment measures. Recognizing the role played by the international structure of production and thus the foreign linkages that support countries' economies is fundamental in this context. Many economies rely heavily on foreign inputs or foreign demand for their production.

Against this backdrop, there have been many discussions regarding the global structure of both demand and supply. On the one hand, global interconnection is considered a cause of the rapid spread of the pandemic and there have been discussions regarding the possibility of reshoring. On the other hand, it is argued that the current production structure has attenuated the shock of the pandemic (Bonadio et al., 2020), and could still facilitate a sound and rapid expansionary phase (Baldwin and Evennet, 2020). Although initial attempts to quantify the consequences of the pandemic are emerging, it remains difficult for countries to design appropriate policies to support growth and development. Moreover, exposure to the shock differs greatly, depending on the role and the position of countries and firms in the international production network. Developing countries, most of which have only recently become involved in global value chains (GVCs), may experience an even harder recovery. Despite limited but growing integration, their production linkages with foreign partners play a fundamental role, especially for the supply of locally unavailable inputs. A prolonged slowdown in international trade, or even the interruption of some linkages due to chains restructuring or lockdowns, could harm their development perspectives.

In this paper, we offer a detailed analysis of the international economic exposure of countries through GVCs. The paper looks closely at the Arab region, with a particular focus on Egypt, Jordan, Lebanon and the United Arab Emirates (UAE). We investigate countries' integration into the international production network by using Multi-Region Input–Output (MRIO) tables. The analysis presents several statistics on GVC participation and value-added trade decompositions by considering the origins and destinations of value-added trade and thus providing a comprehensive snapshot of countries' exposures. After the country-level analyses, we focus on two of the sectors hardest hit by the COVID-19 pandemic: tourism and transport.

Despite being part of the same geographic area and sharing some common social and demographic characteristics, Arab countries are extremely heterogenous in terms of their economic structures, histories, and political differences. Within this group, for example, Gulf countries depend heavily on oil production and exports; middle-income industrialized North African countries, such as Morocco and Tunisia, are oil importers but have trade agreements with European countries and are mainly integrated into GVCs through countries on the northern shore of the Mediterranean; Egypt, also an oil importer, but less integrated into GVCs, relies on tourism and remittances from abroad; finally, Jordan and Lebanon have focused on tourism to drive economic growth.[1] Taking into account this heterogeneity, we analyse Egypt, Jordan, Lebanon and UAE to make the analysis as representative as possible of the area as a whole.

The analysis uses the Eora input–output tables for 2016, the last available update, disaggregated for 26 sectors.[2] The main advantage of this data source is its broad country coverage, which includes several developing countries for which no detailed information is otherwise available. The Eora tables provide data on national and international sector-to-sector flows of goods and services. The study of how inputs contribute to the gross value of output makes it possible to identify flows of value-added. This breakdown shows where the value is originally added and where it is eventually absorbed into final demand. This information is crucial for identifying the actual exposure to economic shocks through GVCs: origin and destination of value-added track direct and indirect supply and demand linkages, even between countries that would appear unrelated based solely on bilateral gross trade flows. This perspective focuses on where value is added and absorbed, rather than exchanged, and easily allows monitoring of the entire supply chain by looking at the ends. Note how our approach differs from a more common trade-flow oriented GVC approach where export flows are broken down into their domestic and foreign content. This is crucial for also understanding intermediate transactions and appreciating how international production linkages imply multiple border crossings (generating so-called "double counting"). However, it says little about how demand or supply shocks several steps down the chain can affect a country. Moreover, GVC studies usually focus on countries' integration into GVCs and their relative position, rather than the size and importance of their value-added partners. In a nutshell, our approach consists of identifying the largest upstream (value-added origin) and downstream (value-added destination) contributors for any

1 The situation in Lebanon has worsened in the last two years due to political tensions and the explosion in August 2020.

2 The Eora global supply chain database comprises a multi-region input–output table model that provides a time series of input–output tables for 190 countries. See worldmrio.com for more details.

given country–sector and using this information to gauge exposure to foreign shocks.

Among the sectors, tourism is of primary interest due to its importance for the countries analysed and because it was severely hit by the crisis, both directly by restrictions on national and international movements and indirectly by the fear of contagion and lower disposable incomes. According to the United Nations World Tourism Organization (UNWTO), in 2019 the Middle East[3] had the world's highest share of the tourism export market (10.3 percent compared to a world average of 6.9 percent). This share is the result of major investment in the sector that supported a significant increase with respect to the 2010 value of 6.6 percent (UNWTO, 2020b). Closely linked to tourism and accounting for almost 30 percent of services exports, the transport sector suffered from both the collapse in demand from tourism and travel restrictions on domestic residents. We use the Eora Hotels & Restaurants and Transport accounts to analyse these sectors using the input–output approach.

The rest of the paper is organized as follows: section 2 presents country-level statistics for the selected countries; section 3 discusses the main results of the analysis on value-added origin and destination, as well as countries' international exposure to the crisis; section 4 focuses on the tourism and transport sectors; section 5 discusses possible policy recommendations; and section 6 contains our conclusions.

3 The Middle East includes Bahrein, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Oman, State of Palestine, Qatar, Saudi Arabia, Syria, UAE and Yemen (UNWTO, 2020b).

2. Economic structure, trade and GVC participation

We shall begin by providing some general statistics to give an overview of the economic structure and international performance of the selected countries (Egypt, Jordan, Lebanon and UAE). This “traditional approach” is fundamental for building up a complete picture of the exposure of countries to the global shock. Table 1 provides estimates of GDP, broken down by sectors. While size varies across the countries, the results in terms of the breakdown of GDP are more even. Services is the leading macro sector, for all countries, with *Financial intermediation and business activities* accounting for about one third of total GDP and *Education, health and other services* and *Wholesale and retail trade* also playing a significant role. Manufacturing makes up around 15 percent of total GDP, with the main contributions being *Electrical and machinery* and *Petroleum, chemical and non-metallic mineral products*. This latter sector is of huge importance to Jordan, where it accounts for almost double the level of other countries. It is also worth noting the role of *Food and beverages* in all countries except Jordan.

Table 1. GDP decomposition

	Egypt	Jordan	Lebanon	UAE
	Sectoral composition (%)			
Primary	**3.15**	**3.56**	**2.69**	**3.57**
Manufacturing	**13.03**	**16.64**	**12.13**	**14.87**
Food and beverages	15.80	5.61	15.66	12.00
Textiles and wearing apparel	4.45	3.78	3.97	3.55
Wood and paper	9.72	9.43	9.69	9.44
Petroleum, chemical and non-metallic mineral products	23.11	37.37	19.58	23.05
Metal products	9.27	10.48	9.13	10.32
Electrical and machinery	24.99	22.79	28.70	28.55
Transport equipment	8.44	6.87	8.55	8.84
Other manufacturing	4.22	3.67	4.72	4.26
Total manufacturing	*100*	*100*	*100*	*100*
Services	**83.82**	**79.80**	**85.18**	**81.56**
Construction	5.18	3.24	6.02	5.70
Hotels and restaurants	3.81	4.78	3.95	3.44
Financial intermediation and business activities	41.17	40.63	40.71	40.70
Education, health and other services	15.86	14.16	16.24	15.53
Wholesale and retail trade	13.22	15.12	12.66	13.07
Total services	*100*	*100*	*100*	*100*
Total GDP (%)	**100**	**100**	**100**	**100**
Total GDP (US$ million)	**299,968**	**35,377**	**44,168**	**408,437**

Notes: Authors' elaboration from Eora MRIO for 2016. Only the main subsectors are reported for services.

Table 2 reports trade balances. All of the countries are net importers, although the trade deficit as a share of GDP varies, from 5 percent in Egypt and 7 percent in UAE to up to 23 percent in Jordan and 29 percent in Lebanon. The main import sectors are similar for all four countries: the biggest importing sector by a large extent is *Electrical and machinery*, accounting for around one third of manufacturing, followed by *Petroleum, chemical and non-metallic mineral products*, *Textile and wearing apparel*, *Transport equipment* and *Transport*. Exports show greater variation across countries: primary sectors like *Agriculture* and *Mining and quarrying* are extremely important (with the exception of Lebanon) while *Petroleum, chemical and non-metallic mineral products* is a fundamental source of income for all countries. For all countries except Egypt, *Electrical and machinery* accounts for more than 10 percent of manufacturing, with an exceptionally high value in Lebanon (almost 30 percent). The significance of these last two sectors for both imports and exports seems to suggest an integration of these countries in relative supply chains.

Table 2. Trade balance

	Egypt		Jordan		Lebanon		UAE	
	Imp	**Exp**	**Imp**	**Exp**	**Imp**	**Exp**	**Imp**	**Exp**
	Sectoral composition (%)							
Primary	**6.78**	**25.12**	**3.64**	**21.00**	**6.25**	**10.90**	**7.70**	**21.52**
Manufacturing	**72.65**	**62.18**	**72.58**	**61.69**	**66.71**	**72.10**	**72.71**	**53.58**
Food and beverages	5.68	12.06	7.15	8.40	9.39	17.53	7.36	7.87
Textiles and wearing apparel	13.06	32.29	15.60	10.28	19.30	9.58	12.67	5.97
Wood and paper	3.90	1.70	4.09	5.05	5.10	11.17	3.91	2.42
Petrol., chem., non-met. min. prod.	18.55	35.46	18.46	47.45	20.53	16.10	18.01	34.80
Metal products	6.38	7.03	5.97	3.37	6.85	6.81	7.70	9.14
Electrical and machinery	33.15	7.59	34.36	16.97	28.20	26.28	33.26	27.41
Transport equipment	13.28	0.55	9.26	3.91	3.46	2.69	11.24	7.68
Other manufacturing	6.00	3.31	5.11	4.58	7.17	9.85	5.85	4.73
Total manufacturing	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*
Services	**20.56**	**12.71**	**23.77**	**17.31**	**27.03**	**17.00**	**19.59**	**24.90**
Transport	26.97	44.83	30.75	52.19	30.26	33.53	27.70	46.46
Construction	0.46	2.42	0.67	1.79	0.66	7.38	0.50	1.60
Hotels and restaurants	7.30	15.48	9.95	16.51	9.92	10.48	8.53	22.49
Financial interm. and business activities	21.94	0.06	19.63	0.12	16.98	0.15	18.62	0.02
Ed., health and other services	4.86	10.52	5.89	8.67	5.95	14.05	4.97	10.13
Wholesale and retail trade	9.19	12.07	9.31	8.36	9.72	13.62	12.42	8.61
Total services	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*
Total (%)	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Total (US$ million)	**37,125**	**22,120**	**15,422**	**7,313**	**17,918**	**5,247**	**125,720**	**98,881**
Trade deficit/GDP	**5 percent**		**23 percent**		**29 percent**		**7 percent**	

Notes: Authors' elaboration from Eora MRIO for 2016. Only the main subsectors are reported for services.

Let us now consider the participation of these countries in GVCs. A value chain comprises "the full range of activities that firms and workers do to bring a product/good or service from its conception to its end use and beyond [including] activities such as design, production, marketing, distribution and support to the final consumer" (Duke University, 2020). In recent decades, a dramatic reduction of transport and communications costs has resulted in the globalization of value chains, whereby the production of goods now crosses several borders, with different firms spread all over the world performing individual tasks. This production structure creates major opportunities for developing countries, providing easier access to international markets and fostering growth, employment and poverty reduction (Taglioni and Winkler, 2016; World Bank, 2019, 2020a).

Table 3 provides a breakdown of exports and GVC participation for the selected countries. We have adopted the methodology developed by Borin and Mancini (2019), which provides a comprehensive framework that combines a number of previous attempts,[4] applying corrections to take into account construction biases, and thus providing an up-to-date toolkit to address issues measuring GVC participation.[5]

This method first decomposes gross exports into domestic content and foreign content. These categories are then further divided between value-added (domestic value-added vs foreign value-added) and double counting, which reflects the amount of value-added leaving a country's borders more than once. A source-based approach has been followed to identify which of the outflows are double counted, with the outflow counted as value-added the

4 See Hummels, Ishii and Yi (2001); Johnson and Noguera (2012); Koopman, Wang and Wei (2014); Nagengast and Stehrer (2016); Johnson (2017), all of which use different GVC measures.

5 The calculation has been conducted on Stata with the software package (Belotti, Borin and Mancini (2020), implementing the methodology of Borin and Mancini (2019).

first time it crosses national borders.[6] Moreover, domestic value-added is further disaggregated into reflected value-added, that is value-added that is finally reabsorbed by the exporting country through future reimports, and value-added absorbed abroad. Borin and Mancini (2019) also provide a measure of GVC participation, which accounts for the share of value-added in gross exports that has crossed more than one national border. This measure is subdivided into backward GVC participation, which has crossed a border before the one under consideration, and forward GVC participation, where value-added crosses a border after.

The country estimates show differences in the domestic and foreign content share of exports. Given the size of its economy, Egypt has the largest share of domestic content, about 10 percentage points higher than UAE and Jordan, and almost 20 points higher than Lebanon. Interestingly, all these countries have a limited degree of re-importing and/or reimport-to-reexport: almost all domestic content is made up of value-added absorbed abroad. Regarding the GVC indicator, the values of the four countries are more similar: all the estimates are around 35 percent, with the best performance in Lebanon. However, the converse is true for backward GVC and forward GVC: Egypt is the country that is highest up the value chain, with forward GVC that more than double backward GVC. In contrast, backward GVC for Jordan is two times larger than forward GVC, with the difference increasing to a factor of four in Lebanon. UAE is somewhere in the middle, with backward GVC a few points higher than forward GVC.

Table 3. Export decomposition and GVC participation

	Egypt	Jordan	Lebanon	UAE
	Gross exports decomposition (%)			
Domestic content (DC)	**88.81**	**77.54**	**70.39**	**79.59**
Domestic value-added (DVA)	88.80	77.53	70.39	79.52
DVA absorbed abroad	*88.71*	*77.47*	*70.34*	*79.18*
Reflection	*0.09*	*0.06*	*0.04*	*0.34*
Domestic double counting	0.01	0.01	0.01	0.07
Foreign content (FC)	**11.19**	**22.46**	**29.61**	**20.41**
Foreign value-added (FVA)	11.19	22.46	29.61	20.39
Foreign double counting	0.00	0.00	0.00	0.02
GVC-related trade (GVC)	**36.82**	**34.03**	**37.90**	**36.22**
GVC-backward (GVCB)	11.20	22.47	29.61	20.48
GVC-forward (GVCF)	25.62	11.56	8.28	15.74
Total gross exports (DC + FC)	**100**	**100**	**100**	**100**
Total gross exports (US$ million)	**22,120**	**7,313**	**5,247**	**98,881**

Notes: Authors' elaboration from Eora MRIO for 2016.

This preliminary evidence could provide some interesting insights for policymakers when discussing the post-COVID-19 economic agenda. Figures on the decomposition of exports and participation in GVCs are important in the discussion on international openness and particularly relevant to the highly debated issue of the restructuring of chains and national reshoring. For this purpose, we will broaden the analysis with a different approach focused on the identification of main partners in terms of the origin and destination of value-added.

6 See Borin and Mancini (2019) for a detailed explanation.

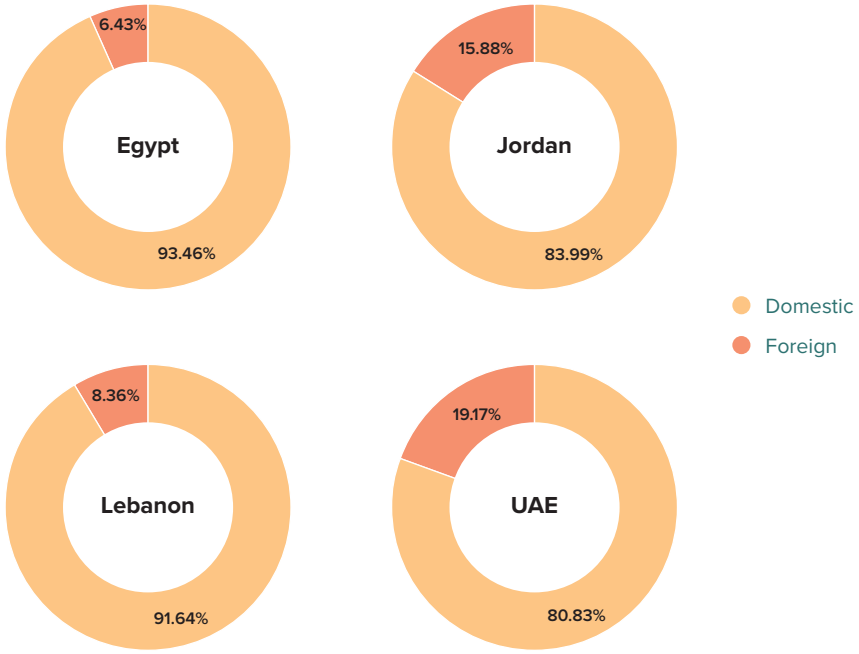
3. Exposure along the GVC

The GDP decomposition and trade balance figures in the previous section do not show sharp differences among countries. However, the evidence on GVC participation in Table 3 suggests country-specific outcomes. To further investigate country-specific exposure, we begin with a decomposition of destination and origin of value-added and then identify the main international partners. This allows us to quantify exposure as the share of value-added that originates or is absorbed abroad and to weight it by the expected shock for trade partners. By looking at the destination, we are highlighting the foreign impact on demand, while focusing on the origin of the foreign impact on supply. As such, we are measuring the exposure of countries by combining the intensive and extensive margin of participation along GVCs.

3.1 Value-added destination

Figure 1 shows the destination (domestic vs foreign) of the value-added produced by each country. There are some striking differences that emerge: almost 16 percent of value-added in Jordan and one fifth in UAE is absorbed abroad, compared to a much smaller share for Lebanon (8 percent) and Egypt (6 percent).

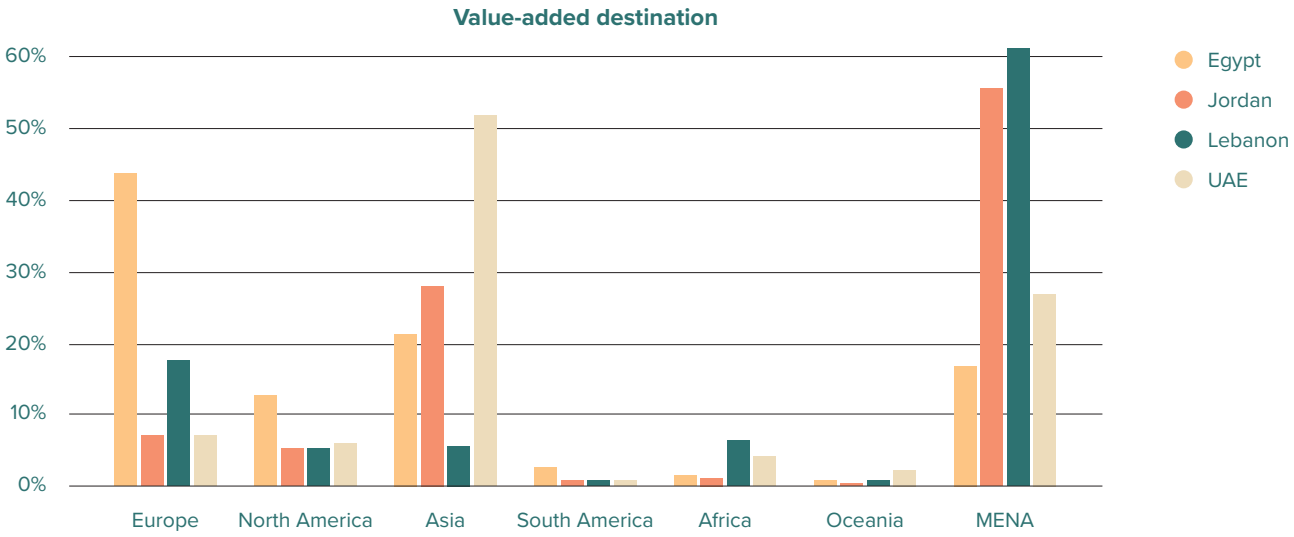
Figure 1. Intensive margin of value-added destination



Notes: Authors' elaboration from Eora MRIO for 2016.

These shares also differ in terms of geographical distribution (Figure 2): while Europe is the main destination for Egyptian value-added, its role is significantly lower for the other countries. Almost 90 percent of Jordan's value-added is absorbed in the Asia and Arab regions, which is also the main destination for Lebanon. For Jordan and Lebanon, the large share of value absorbed in the Arab region highlights a massive reliance on regional partners and chains. In contrast, the main partners of UAE are in Asia, which absorbs more than 50 percent of its value-added abroad. Table 4 provides a decomposition of value-added absorbed abroad, listing the top 10 countries. As expected from the previous results, the top partners of Egypt are advanced economies like the United States, Italy, Germany, and the United Kingdom; the partners of Lebanon and Jordan are Arab countries, including Saudi Arabia, Kuwait, the State of Palestine, and UAE. Finally, the biggest absorbers for UAE are Asian economies, including Japan and Korea, alongside regional partners like Iran and Oman. The exceptional role of India for Jordan and the limited weight of China are also worth mentioning.

Figure 2. Decomposition of value-added destination by region



Notes: Authors' elaboration from Eora MRIO for 2016. The MENA region includes Algeria, Bahrein, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, State of Palestine, Syria, Tunisia, UAE, and Yemen.

Table 4. Decomposition of value-added destination by country

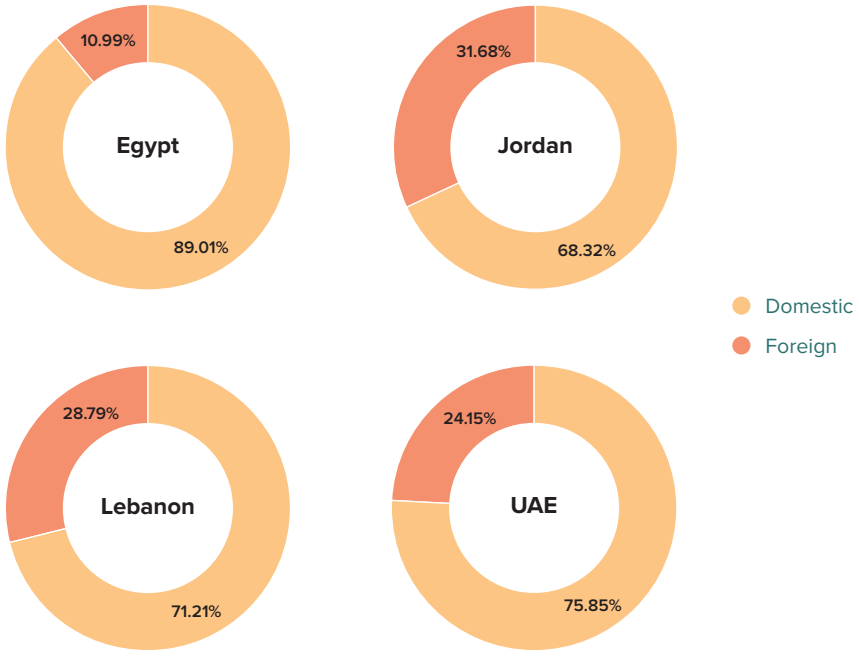
Egypt		Jordan		Lebanon		UAE	
United States	11.61%	India	17.33%	Kuwait	13.50%	Japan	19.90%
Saudi Arabia	9.83%	State of Palestine	13.33%	Iraq	12.00%	Iran	14.28%
Italy	8.62%	Saudi Arabia	10.19%	Saudi Arabia	9.45%	Republic of Korea	7.31%
United Kingdom	7.72%	UAE	7.76%	UAE	9.25%	Oman	6.26%
Germany	6.00%	Kuwait	6.35%	Switzerland	5.70%	India	5.96%
China	5.51%	United States	4.70%	United States	4.38%	China	5.94%
France	4.88%	Iraq	4.14%	Syria	3.80%	United States	5.31%
Turkey	4.17%	Egypt	2.71%	Jordan	3.69%	Saudi Arabia	4.43%
Spain	3.45%	Japan	2.63%	Egypt	2.61%	Turkmenistan	2.91%
Japan	3.19%	China	2.32%	France	2.11%	Thailand	2.53%
Other countries	35.02%	Other countries	28.55%	Other countries	33.50%	Other countries	25.16%
Total	100%	Total	100%	Total	100%	Total	100%

Notes: Authors' elaboration from Eora MRIO for 2016.

3.2 Value-added origin

To complement the analysis on value-added destination, we have also conducted a quantitative and qualitative assessment of the origin of the foreign value-added absorbed by each country. Figure 3 reports the intensive margin of value-added origin. Once again, Egypt is the country with the lowest level of foreign value-added absorbed at home, while Jordan stands as the most exposed country, with almost one third of the value-added originated abroad.

Figure 3. Intensive margin of value-added origin



Notes: Authors' elaboration from Eora MRIO for 2016.

For all the countries, the largest sector in terms of value-added absorption (around 20 percent) is *Electrical and machinery* (Table 5). This is not surprising given that this sector has one of the most complex supply chains led by multinationals in the most developed countries. In this respect, national reshoring policies would cause significant harm to this sector, given the impossibility of replacing foreign inputs with domestic ones, even in the medium term. The same argument applies to *Transport equipment*. Other top importing sectors are *Textile and wearing apparel*, in which China has global leadership by far, *Petroleum, chemical and non-metallic mineral products* and *Food and beverages*.

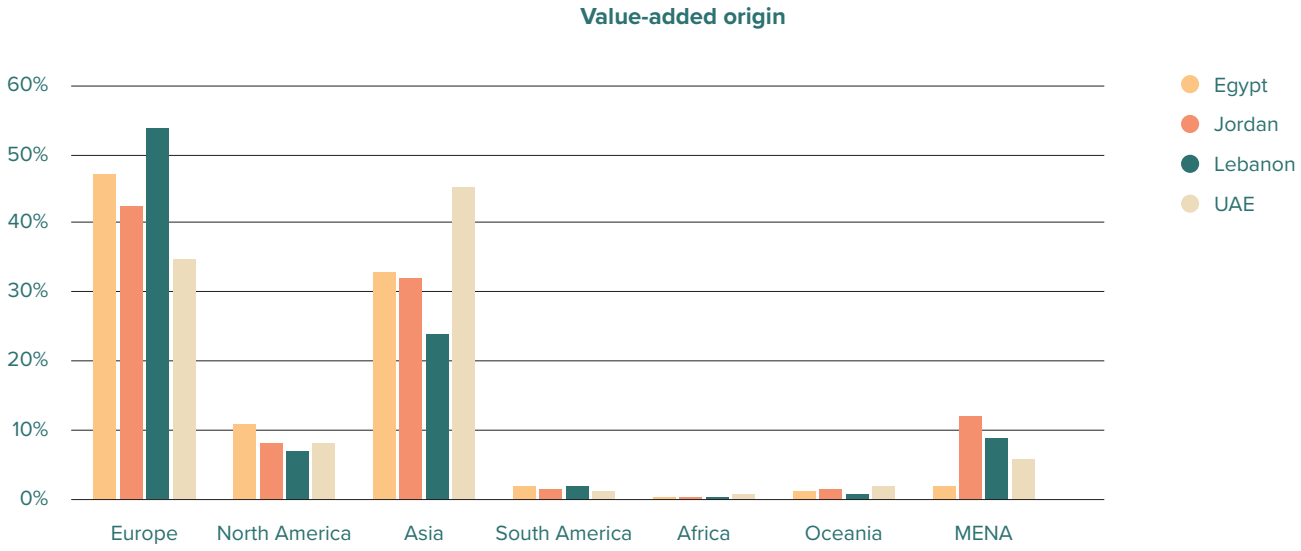
Table 5. Decomposition of value-added origin by sector of absorption

Egypt		Jordan		Lebanon		UAE	
Electrical and machinery	19.60%	Electrical and machinery	21.08%	Electrical and machinery	16.92%	Electrical and machinery	20.61%
Transport equipment	12.98%	Transport equipment	9.66%	Textiles and wearing apparel	11.33%	Transport equipment	11.79%
Textiles and wearing apparel	9.29%	Textiles and wearing apparel	8.52%	Petroleum, chem and non-met. min. prod.	8.14%	Textiles and wearing apparel	8.80%
Petroleum, chem. and non-met. min. prod.	7.55%	Public administration	7.14%	Food and beverages	7.53%	Food and beverages	6.78%
Food and beverages	6.00%	Food and beverages	6.69%	Education, health and other services	6.12%	Petroleum, chem. and non-met. min. prod.	6.74%
Education, health and other services	5.60%	Petroleum, chem and non-met. min. prod.	6.69%	Transport	5.94%	Construction	6.40%
Public administration	5.28%	Education, health and other services	5.79%	Construction	5.68%	Public administration	5.50%
Construction	4.99%	Transport	5.25%	Public administration	5.45%	Education, health and other services	4.89%
Financial interm. and business activities	4.91%	Construction	5.19%	Hotels and restaurants	5.20%	Other manufacturing	4.80%
Other manufacturing	4.58%	Financial interm. and business activities	4.76%	Transport equipment	5.17%	Financial interm. and business activities	4.78%
Other sectors	19.22%	Other sectors	19.23%	Other sectors	22.52%	Other sectors	18.90%
Total	100%	Total	100%	Total	100%	Total	100%

Notes: Authors' elaboration from Eora MRIO for 2016.

When it comes to the geographical origin of absorbed value-added (Figure 4), we find a completely different picture from the regional destination of value-added produced. Europe is now the most important region, accounting for more than 30 percent in each case. Asia is the main source of value-added for UAE, and the second for all the other countries. The Arab region has a much lower relevance than for the destination of value-added, with only Jordan sourcing more than the 10 percent from this region, with values similar to North America.

Figure 4. Decomposition of value-added origin by region



Notes: Authors' elaboration from Eora MRIO for 2016. The MENA region comprises Algeria, Bahrein, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, State of Palestine, Syria, Tunisia, UAE, and Yemen.

Looking at the main partners in Table 6, there is considerable similarity across countries: the United States, China, Germany and Italy are the main partners, although India is the main country for UAE. The United Kingdom and France are also in the top 10 for the entire group.

Table 6. Decomposition of value-added origin by country

Egypt		Jordan		Lebanon		UAE	
China	14.22%	China	14.20%	Italy	12.35%	India	14.56%
United States	10.21%	Germany	10.65%	China	11.10%	China	13.59%
Italy	9.22%	United States	7.42%	Germany	8.28%	United States	7.49%
Germany	9.13%	Italy	6.94%	France	8.12%	Germany	6.37%
India	5.70%	United Kingdom	5.00%	United States	6.21%	United Kingdom	6.20%
France	5.35%	France	4.09%	United Kingdom	3.92%	Italy	5.02%
United Kingdom	4.97%	Japan	3.28%	Spain	3.27%	Japan	4.67%
Japan	3.20%	Turkey	3.27%	India	2.83%	France	3.84%
Spain	2.70%	India	3.24%	Switzerland	2.74%	Republic of Korea	2.86%
Netherlands	2.38%	Saudi Arabia	2.42%	Syria	2.66%	Indonesia	2.24%
Other countries	32.92%	Other countries	39.50%	Other countries	38.53%	Other countries	33.16%
Total	100%	Total	100%	Total	100%	Total	100%

Notes: Authors' elaboration from Eora MRIO for 2016.

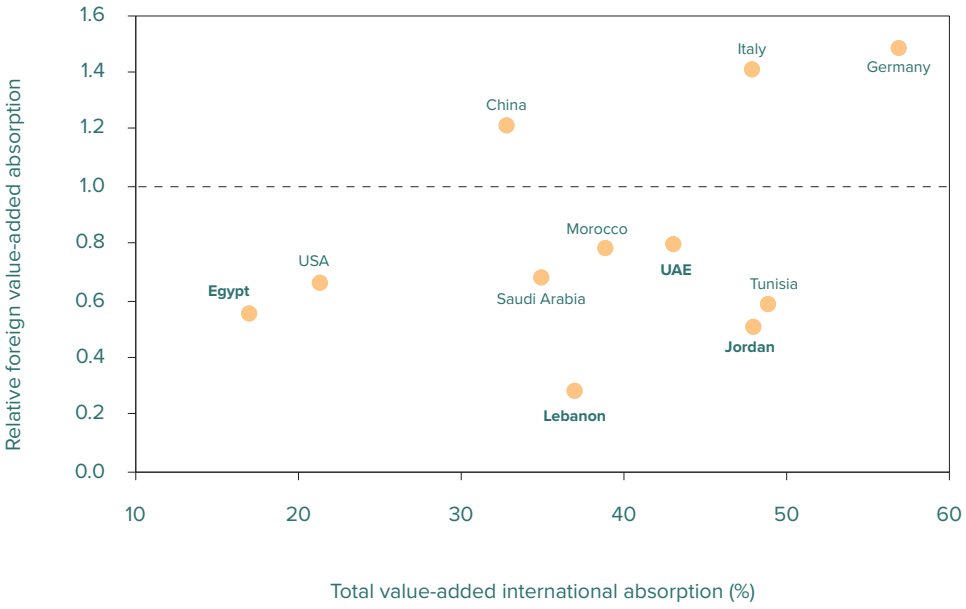
The difference between partners, especially their weightings, offer important insights into the nature of the trade relationships of these Arab countries. Their position appears to be subordinate to most developed countries, from which they source fundamental inputs, but to which they are still unable to export their domestic value-added, which is mainly absorbed by other developing countries. Some exceptions are the UAE, whose main value-added absorber (especially petroleum) is Japan (Table 4); Egypt, whose main absorbers are the United States, Italy, the United Kingdom and Germany. This shows that UAE and Egypt have stronger linkages with developed countries than Jordan and Lebanon.

3.3 GVC exposure and the COVID-19 economic shock

The large body of evidence on GVC exposure outlined so far has revealed both differences and similarities among the selected Arab countries. However, despite the relevance of this information, synthesizing it to obtain insights into the exposure of different countries could make a significant contribution to discussions on responses to the pandemic. It could also allow a direct comparison between countries. This subsection combines some of the statistics already presented to derive a concise measure that includes both the intensive and extensive dimension of internationalization. For comparison, we include other Arab countries (Morocco, Saudi Arabia and Tunisia), as well as some of the main developed countries (United States, China, Germany and Italy).

Figure 5 provides a concise measure of international exposure by combining the share of used value-added that originates abroad and produced value-added that is absorbed abroad. The horizontal axis shows the sum of the two figures, while the vertical axis shows their ratio (foreign-absorbed value-added divided by foreign-origin value-added). Arab countries are found to be net absorbers of foreign value-added: the only countries with a ratio above one are Italy, Germany, and China, which are relative sources of value-added. However, despite the fact that Arab countries apparently occupy similar positions in the graph, there are significant differences between them: Egypt is by far the least integrated into GVCs, at around half the level of Lebanon and one third of the level of UAE and Jordan. Among the countries under comparison, Jordan is highly integrated into GVCs, with total exposure values similar to Italy and similar relative absorption values to Tunisia.

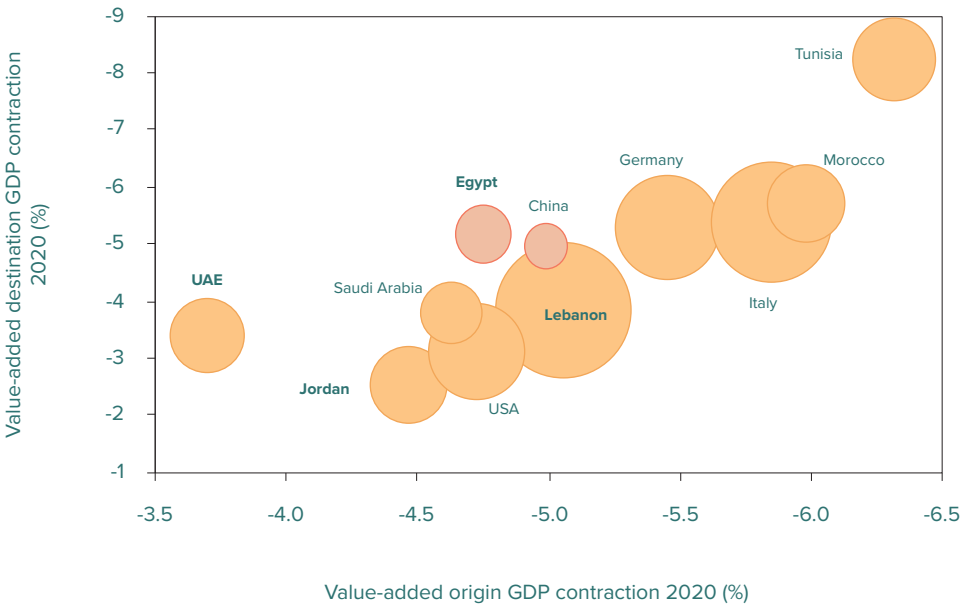
Figure 5. Foreign exposure of countries



Notes: Authors' elaboration from Eora MRIO for 2016. The horizontal axis is the sum of the share of produced value-added that is absorbed abroad and the share of used value-added that originates abroad. The vertical axis is the ratio given by dividing the first of these two figures by the second.

To investigate the possible impact of the COVID-19 pandemic, Figure 6 shows the expected economic shock from origin and destination trade partners (IMF, 2020). How economic partners recover is fundamental to understanding the potential foreign impact on individual countries. Among the countries analysed, UAE and Jordan are expected to suffer the least. The former will face the same level of shock on the supply and demand sides (a contraction of about 3.5 percent of GDP), while Jordan is expected to suffer more on the supply side (around double the level for the demand side). In contrast, Lebanon and Egypt are expected to be hit harder, even though the latter did not see a contraction in GDP. Some of the most integrated countries in GVCs, such as Germany, Italy and Tunisia will also be affected by shocks to large partners. The effect on Morocco is expected to be similar.

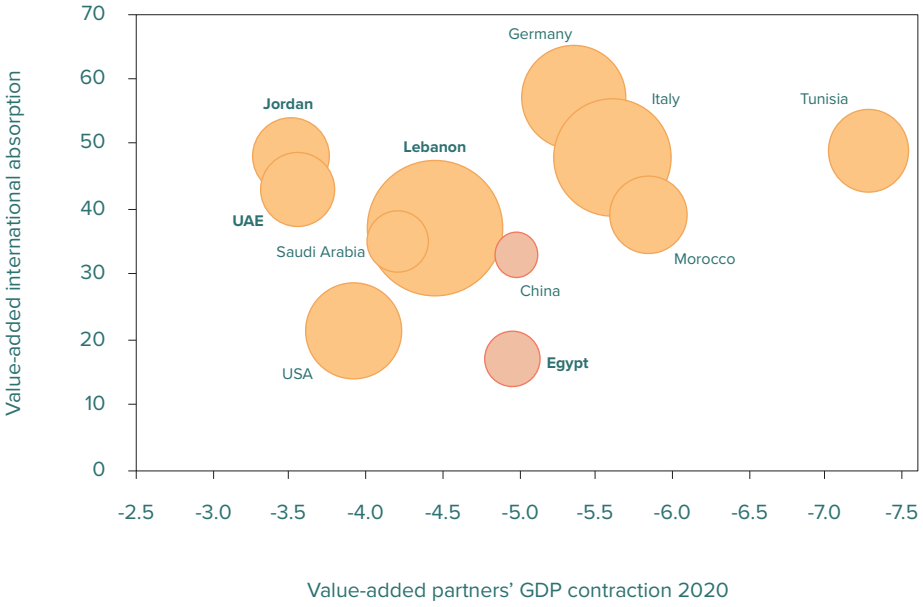
Figure 6. The economic shock from partners



Notes: Authors' elaboration from IMF (2020) GDP forecasts. Bubble size denotes own GDP change. Bubble colours denote sign of GDP change: red denotes GDP growth; orange denotes GDP contraction. The horizontal axis shows the average GDP contraction for origin partners. The vertical axis shows the average GDP contraction for destination partners.

Figures 5 and 6 illustrate two sides of the same coin. The effective degree of the exposure of countries depends on both sides. On the one hand, higher shares of value-added originated and/or absorbed abroad, imply higher exposure to foreign shocks, given the size of the partners' shocks. On the other hand, larger shocks to the trade partners may affect the country more severely, given the importance of value-added linkages. Figure 7 combines the two perspectives to obtain a synthetic measure to the COVID-19 induced shock. Two main groups of countries emerge. The most exposed countries are in the top right: Germany, Italy, Morocco, and Tunisia, with Tunisia by far the most exposed in both dimensions. In contrast, the least exposed countries are in the bottom left: all the selected Arab countries are in this area of the graph. Among them, different types of exposure emerge. With a very low share of foreign value-added absorption and positive GDP growth, Egypt is expected to mainly suffer from contractions in the GDP of its partners. In contrast, their large share of international value-added absorption is the main threat for Jordan and UAE. Finally, Lebanon should pay careful attention to both dimensions, in addition to a large expected domestic GDP contraction.

Figure 7. The international exposure of countries to the shock from COVID-19



Notes: Authors' elaboration from IMF 2020 GDP forecasts for 2020 and Eora MRIO for 2016. Bubble size denotes own GDP contraction. Bubble colours denote the sign of the GDP change: red denotes GDP growth; orange denotes GDP contraction. The horizontal axis is the average GDP contraction of a country's partners, for origin and destination. The vertical axis is the sum of the share of value-added used originating abroad and the value-added produced that is absorbed abroad.

In Table 7, we rank the two dimensions analysed and average the results to provide a ranking of countries' exposures. As expected, the countries with greatest exposure are Tunisia, Germany, Italy, and Morocco. Among the selected Arab countries, Lebanon is most exposed, followed by Jordan and UAE (joint seventh position). Egypt stands out as the least exposed country, second only to the United States. While the result for the United States may seem counterintuitive, recall that the ranking only measures international exposure, without taking into account the dimension of the domestic economy. Also considering the domestic GDP contraction, the United States is more heavily impacted by the pandemic-induced crisis. The converse is true of China.

Table 7. Ranking of the exposure of countries

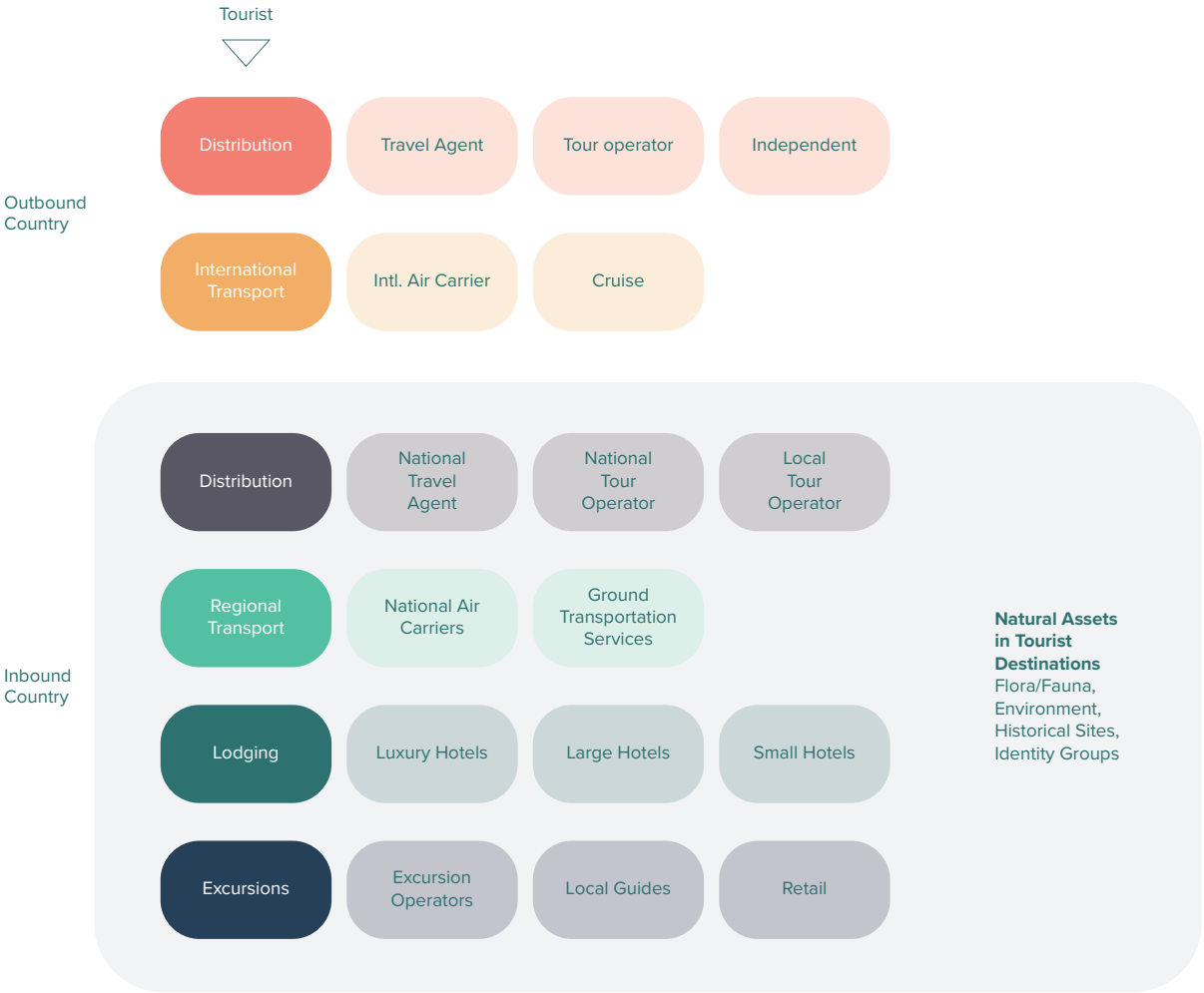
	Partners' average GDP contraction	Total value-added international absorption	Country exposure	Total COVID-19 exposure
Tunisia	1	2	1	1
Germany	4	1	2	1
Italy	3	3	3	1
Morocco	2	6	4	4
Lebanon	**7**	**7**	**5**	**5**
China	5	9	5	9
Jordan	**11**	**4**	**7**	**6**
UAE	**10**	**5**	**7**	**7**
Saudi Arabia	8	8	9	10
Egypt	**6**	**11**	**10**	**11**
United States	9	10	11	8

Notes: Values indicate position in specific rank. Country exposure is obtained by averaging the GDP contractions of partners and total international absorption values for value-added: 1 denotes biggest contraction. Total COVID-19 exposure is also obtained by using own GDP contraction rank when averaging. The countries analysed in this study are in bold. Countries are ordered according to the country exposure column (based on the average of the value used to calculate the rankings in columns one and two). Column 4 (total COVID-19 exposure) also accounts for own GDP contraction.

4. The impact of COVID-19 on tourism and transport

In this section, we will concentrate on two closely related sectors that have been hardest hit by the COVID-19 pandemic and that are of particular interest for the Arab countries: tourism and transport. The rapid development of information technology and a dramatic reduction in the cost of mobility over the last decade has resulted in an enormous surge in international tourism. The concept of tourism has become increasingly developed, with new branches, such as sports or food and wine tourism, which have superseded the classical idea of cultural or seaside tourism. Judd provides a new definition of tourism that encompasses the complexity and heterogeneity of the sector: “a wide range of products and services that interact to provide an opportunity to fulfil a tourist experience that comprises both tangible parts (e.g. hotel, restaurant, or air carrier) and intangible parts (e.g. sunset, scenery, mood)” (Judd, 2006, p. 325). Recognizing the potential of the sector to create jobs, growth, and development, as well as the considerable possibility for innovation and its international attractiveness, the economic contribution of tourism has become increasingly relevant in international studies. The sector has become the third export category, and an increasing number of countries (including emerging and developing ones) are focusing their development trajectories on tourism related activities (WTO, 2018). We analyse the sector through the lens of GVCs, based on Christian, Ahmed and Gereffi (2011), who provide a segment-by-segment reconstruction of the chain (Figure 8).

Figure 8. Tourism GVC segments



Source: Christian, Ahmed and Gereffi (2011).

The chain comprises a wide range of activities, encompassing the sale of holiday packages, national and international transport, hotels, and restaurants (with the related chains) and cultural, food and wine, and natural-experience goods. All this means countries have different opportunities to invest and attract demand, as shown by the huge investments of Oman and Jordan in the supply of innovative and customized desert experiences and the development of leading airline companies, such as Turkish Airlines and Emirates Airlines by Turkey and UAE.

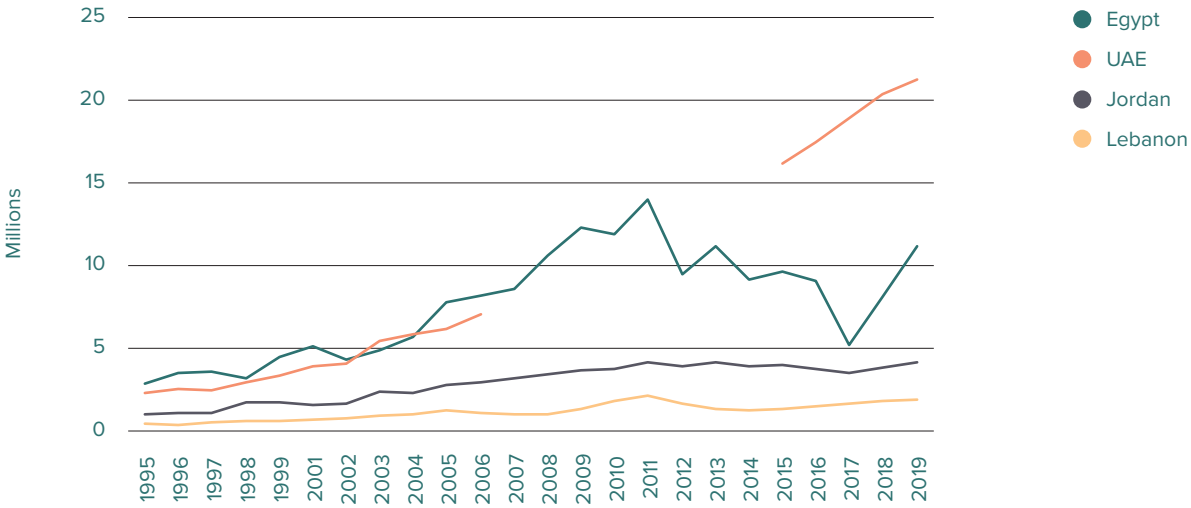
The COVID-19 pandemic severely impacted tourism, with major losses for countries reliant on international arrivals as a crucial source of income. We address this issue for the four Arab countries analysed so far, following the same approach based on the Eora MRIO Tables. Given the related nature of these two severely hit sectors, we have considered the tourism and transport sectors by analysing the *Hotels and restaurants* and *Transport* entries of the Eora MRIO Tables. The next section provides some statistics and discusses results.

4.1 COVID-19 exposure

In March 2020, a headline in an issue of the *Arab Spring Weekly* read "Pandemic will ruin Middle East's 2020 tourism economy" (Starr, 2020), hinting at the potential damage from the impact of COVID-19. Every country in the area has been hit by a significant shock, albeit of varying intensity. Figure 9 shows international tourist arrivals for the analysed countries. All countries were experiencing a growth in international arrivals in recent years: the tourism sector of Egypt, which had experienced a sharp decline in the aftermath of the Arab Spring revolution and the political uncertainty faced by the country, has been the fastest growing since 2016. Similarly, after almost doubling its number of arrivals, UAE was expected to enter the top 10 world tourism destinations. Growth rates were slower in Jordan and Lebanon. The COVID-19 pandemic has dramatically altered this growth trajectory (UNWTO, 2020b): international arrivals plummeted by 57 percent, with peaks of over 90 percent between April and July and

a dramatic fall in hotel occupancy. Middle Eastern air traffic shrank by almost 100 percent in June and July 2020.[7]

Figure 9. International tourism arrivals



Notes: Authors' elaboration from World Bank data. Data for UAE for 2006–2013 is not available.

To address the impact of the shock on the economy, we first provide some statistics on the role of these sectors for the four countries considered.

Table 8. *Hotels and restaurants* and *Transport*: GDP and contribution to trade

Sector	GDP	% of GDP	Imports	Exports	GDP	% of GDP	Imports	Exports
	Egypt				Jordan			
Hotels and restaurants	9,579	3.19	557	435	1,348	3.81	365	209
Transport	10,674	3.56	2,059	1,260	1,642	4.64	1,127	661
	Lebanon				UAE			
Hotels and restaurants	1,487	3.37	481	93	11,472	2.81	2,102	5,539
Transport	1,764	3.99	1,466	299	14,351	3.51	6,823	11,441

Notes: Authors' elaboration from Eora MRIO for 2016. GDP, imports, and exports are in millions of US$.

The sectoral contribution to GDP is nearly identical for the two sectors: around 3 percent for *Hotels and restaurants* and 4 percent for *Transport*, with the highest weight for Jordan and the lowest for UAE in both sectors. Regarding the trade contribution, there are differences among the countries: all countries except UAE are net importers for both *Hotels and restaurants* and *Transport*. These sectors play a much greater role in UAE than for the other countries: taken together, they amount for about 18 percent of exports, about 10 percentage points higher than the average of the other three countries. As such, at first glance, the halting of international travel would cause greatest damage to UAE, while Egypt, Jordan and Lebanon may find profitable opportunities by domestically reshoring tourism outflows.

To better address this issue, we need to analyse gross trade decomposition in depth. Table 9 gives the breakdown of exports for the specific sectors. Based on the share of domestic content, the results are similar for both sectors: Lebanon has the smallest share, just a few points below Jordan and UAE, although the three countries

7 The data available at www.flightradar24.com/data/statistics provides dramatic evidence for all airports in the region (see also World Bank, 2020b). Youssef, Zeqiri and Balaid (2020) note that "Egypt Air has lost two billion [seat kilometres], Royal Air Maroc 1.6 billion, Air Algeria 1.1 billion and Tunisair (which has a smaller fleet of aircraft) 600 million. Air Algeria's financial losses could reach 89 billion dinars by the end of 2020 and Qatar Airways, which has experienced a drastic drop in demand due to the crisis, has issued warnings about staff reductions."

are almost 10 percentage point below Egypt, where almost all exports are constituted domestic value-added. Table 9 also provides insights into GVC-related trade, notably the significantly higher integration of the *Transport* sector and the fact that Lebanon and Egypt are more integrated than Jordan and UAE.

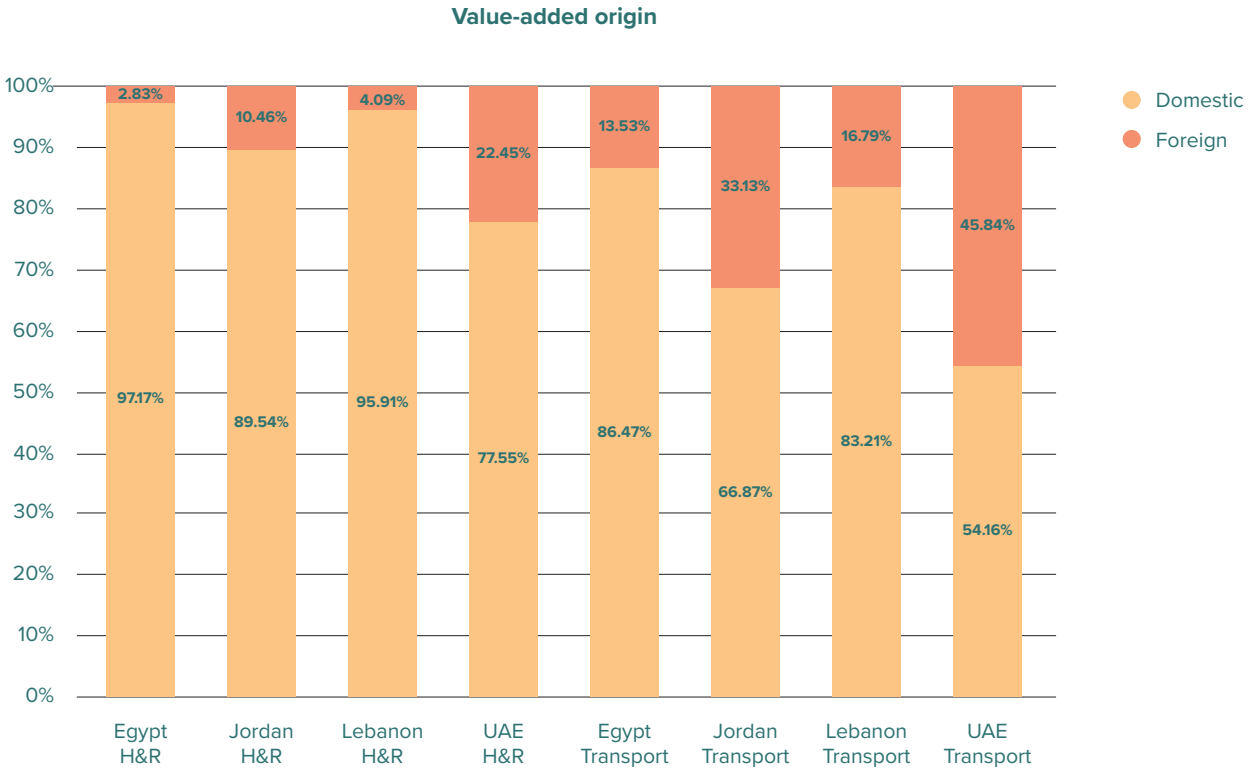
Table 9. Decomposition of *Hotels and restaurants* and *Transport* exports

	Hotels and restaurants				Transport			
	Egypt	**Jordan**	**Lebanon**	**UAE**	**Egypt**	**Jordan**	**Lebanon**	**UAE**
Gross exports (US$ million)	**435**	**209**	**93**	**5,539**	**1,260**	**661**	**299**	**11,441**
Domestic content (DC)	**94.51%**	**86.13%**	**84.13%**	**86.73%**	**93.22%**	**84.06%**	**81.57%**	**85.97%**
Domestic value-added (DVA)	94.50%	86.12%	84.13%	86.67%	93.22%	84.05%	81.57%	85.92%
DVA absorbed abroad	*94.44%*	*86.11%*	*84.11%*	*86.63%*	*93.15%*	*84.01%*	*81.52%*	*85.68%*
Reflection	*0.06%*	*0.01%*	*0.01%*	*0.04%*	*0.07%*	*0.04%*	*0.06%*	*0.25%*
Domestic double counting	0.00%	0.01%	0.00%	0.06%	0.00%	0.01%	0.00%	0.05%
Foreign content (FC)	**5.49%**	**13.87%**	**15.87%**	**13.27%**	**6.78%**	**15.94%**	**18.43%**	**14.03%**
Foreign value-added (FVA)	5.49%	13.87%	15.87%	13.26%	6.77%	15.94%	18.42%	14.02%
Foreign double counting	0.00%	0.00%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%
GVC-related trade (GVC)	**24.01%**	**17.34%**	**23.45%**	**16.79%**	**28.25%**	**23.92%**	**33.44%**	**27.81%**
GVC-backward (GVCB)	5.50%	13.88%	15.87%	13.33%	6.78%	15.95%	18.43%	14.08%
GVC-forward (GVCF)	18.51%	3.46%	7.58%	3.46%	21.47%	7.98%	15.01%	13.73%

Notes: Authors' elaboration from Eora MRIO for 2016. GVC-related trade denotes trade flows that cross more than one national border.

Let us now discuss the statistics for value-added. Figure 10 shows the share of value-added produced by countries and absorbed abroad. In the *Hotels and restaurants* sector, while Egypt and Lebanon absorb almost all the value-added that is produced, for Jordan over 10 percent is absorbed abroad, with this figure more than doubling for UAE (22 percent). The percentages more than double for the *Transport* sector: once again, value-added for Egypt and Lebanon is mainly absorbed domestically, with the figure more than 10 points higher for Jordan and 20 points higher for UAE, where half of its value-added is absorbed abroad. The huge investment in the Emirates Airline play an important role in explaining this phenomenon.

Figure 10. Destination of value-added for *Hotels and restaurants* and *Transport*, intensive margin



Notes: Authors' elaboration from Eora MRIO for 2016.

There are also striking differences regarding the destination of value-added (Table 10). The destination network of Egypt is varied, with the top 10 destinations including major western countries like the United States, the United Kingdom, Italy and Germany, alongside leading Asian economies (Japan, Korea, and China) and Saudi Arabia in the Arab region. In contrast, the destinations of value-added for Jordan and Lebanon are mainly regional, with the main partners including the State of Palestine (for Jordan), Iraq, Saudi Arabia, UAE and Kuwait. India and Switzerland play an important role for the *Hotels and restaurants* sector in Jordan and Lebanon, respectively. Finally, East Asia is the main destination of value-added for UAE: Japan and Korea absorb 63 percent of value-added absorbed abroad for *Hotels and restaurants* and 33 percent for *Transport*, with significant contributions from India and Thailand and the remaining VA mainly absorbed in the Arab region (especially by Iran, Oman, and Saudi Arabia).

Table 10. Destinations of value-added for *Hotels and restaurants* and *Transport*, extensive margin

Egypt				Jordan				Lebanon				UAE			
Hotels and restaurants		Transport		Hotels and restaurants		Transport		Hotels and restaurants		Transport		Hotels and restaurants		Transport	
Foreign	3%	Foreign	14%	Foreign	10%	Foreign	33%	Foreign	4%	Foreign	17%	Foreign	22%	Foreign	46%
of which		*of which*		*of which*		*of which*		*of which*		*of which*		*of which*		*of which*	
GBR	23%	USA	13%	PSE	26%	IND	25%	CHE	16%	IRQ	10%	JPN	50%	JPN	24%
ITA	11%	GBR	9%	IND	19%	PSE	19%	IRQ	9%	SAU	9%	KOR	13%	IRN	16%
SAU	7%	ITA	9%	JPN	8%	SAU	8%	SAU	8%	KWT	8%	OMN	5%	KOR	9%
JPN	7%	SAU	8%	SAU	7%	ARE	5%	ARE	8%	ARE	7%	IRN	4%	IND	7%
KOR	5%	DEU	5%	IRQ	4%	IRQ	5%	JOR	6%	CHE	5%	THA	4%	OMN	5%
BRA	4%	FRA	4%	ARE	4%	KWT	4%	GBR	5%	USA	5%	IND	3%	KEN	4%
DEU	4%	CHN	4%	IDN	3%	USA	4%	SYR	3%	JOR	5%	GBR	2%	USA	4%

Egypt				Jordan				Lebanon				UAE			
USA	4%	TUR	4%	ISR	2%	JPN	3%	IDN	3%	SYR	3%	KEN	2%	CHN	4%
NLD	2%	JPN	3%	GBR	2%	CHN	2%	SRB	3%	GRC	3%	PHL	2%	SAU	3%
IND	2%	IND	3%	LBN	2%	LBN	2%	IND	2%	GBR	2%	SAU	2%	THA	2%

Notes: Authors' elaboration from Eora MRIO for 2016. ISO-3 codes are used to identify countries.

ARE: United Arab Emirates; BRA: Brazil; CHE: Switzerland; CHN: People's Republic of China; DEU: Germany; FRA: France; GBR: United Kingdom; IND: India; IRN: Iran; IRQ: Iraq; ITA: Italy; JOR: Jordan; JPN: Japan; KEN: Kenya; KOR: Republic of Korea; KWT: Kuwait; OMN: Sultanate of Oman; PSE: State of Palestine; SAU: Saudi Arabia; SYR: Syria; THA: Thailand; USA: United States of America.

While COVID-19 is mainly impacting demand for tourism, understanding sources of supply bottlenecks allows us to build up a full picture of the international exposure of the two sectors under consideration. Table 11 estimates countries' share of foreign-origin value-added, together with the percentage for each partner. Unlike the destinations of value-added, the networks for the origin of foreign value-added are much more similar among the selected countries. Foreign value-added is mainly sourced from developed countries, with major contributions from the United States, China, and Germany, although there are also contributions from Asian countries (India, China, and Japan) in the case of UAE.

Table 11. Origins of value-added for *Hotels and restaurants* and *Transport*, extensive margin

Egypt				Jordan				Lebanon				UAE			
Hotels and restaurants		Transport		Hotels and restaurants		Transport		Hotels and restaurants		Transport		Hotels and restaurants		Transport	
Foreign	8%	Foreign	17%	Foreign	28%	Foreign	49%	Foreign	30%	Foreign	48%	Foreign	22%	Foreign	37%
of which		*of which*		*of which*		*of which*		*of which*		*of which*		*of which*		*of which*	
USA	11%	USA	20%	DEU	10%	USA	12%	ITA	9%	ITA	9%	IND	19%	IND	11%
CHN	9%	DEU	8%	CHN	7%	DEU	11%	FRA	7%	USA	9%	CHN	9%	JPN	9%
DEU	8%	CHN	8%	USA	7%	CHN	7%	DEU	7%	DEU	8%	GBR	6%	CHN	9%
ITA	8%	ITA	7%	GBR	5%	JPN	6%	CHN	7%	FRA	7%	USA	6%	USA	9%
IND	6%	FRA	5%	IND	4%	GBR	4%	USA	6%	CHN	6%	DEU	5%	DEU	6%
GBR	5%	JPN	5%	ITA	4%	ITA	4%	CHE	5%	CHE	6%	KOR	4%	GBR	5%
FRA	5%	GBR	4%	SAU	4%	FRA	4%	SYR	5%	JPN	4%	ITA	4%	FRA	5%
NLD	3%	IND	4%	FRA	4%	SAU	3%	GBR	4%	SYR	4%	FRA	4%	KOR	4%
KOR	3%	RUS	2%	KOR	4%	KOR	3%	IND	3%	GBR	4%	OMN	3%	ITA	4%
ESP	2%	KOR	2%	EGY	3%	IRQ	3%	TUR	3%	RUS	3%	JPN	3%	THA	3%

Notes: Authors' elaboration from Eora MRIO for 2016. ISO-3 codes are used to identify countries.

ARE: United Arab Emirates; BRA: Brazil; CHE: Switzerland; CHN: People's Republic of China; DEU: Germany; FRA: France; GBR: United Kingdom; IND: India; IRN: Iran; IRQ: Iraq; ITA: Italy; JOR: Jordan; JPN: Japan; KEN: Kenya; KOR: Republic of Korea; KWT: Kuwait; OMN: Sultanate of Oman; PSE: State of Palestine; SAU: Saudi Arabia; SYR: Syria; THA: Thailand; USA: United States of America.

These results suggest that the *Hotels and restaurants* sector has less international exposure than *Transport*, with no marked differences in international partners. In terms of the individual countries, UAE is particularly vulnerable: in addition to the high level of exposure as a percentage of foreign-absorbed/originated value-added, the country is heavily reliant on a small number of partners, with Japan being by far the main partner for foreign-absorbed value-added and India the main partner for foreign-originated value-added for both sectors. On the contrary, given its almost full internal value-added absorption/origin, Egypt could prove the most resilient to the shock. However, one possible concern is that the country has a high share of GVC-related trade, and its international partners all have large GDP contractions.

In contrast, Jordan and Lebanon are characterized by differences between the shares of foreign value-added for origin and destination: they are the most exposed countries for foreign-origin value-added (Table 11), but they are less exposed in terms of shares of foreign-destination value-added (Table 10). For the two countries, partners differ between value-added origin and destination, with the latter being mainly developing countries.

5. Policy recommendations

The COVID-19 crisis is unprecedented and is impacting every country in the world. The interconnected nature of modern economies implies a high level of exposure to foreign shocks that is likely to have contributed to the fast propagation of the economic downturn. In some cases, however, rather than exposing countries to foreign shocks that can compound domestic ones, trade openness and GVCs may have helped mitigate the negative effects on national economies, thanks to the possibility of relying on foreign demand or foreign suppliers. Regardless, managing the health crisis has required severe measures and lockdowns whose effects have mostly affected residents and are largely independent from the international economic linkages between countries. The nature of the virus means labour intensive sectors have suffered more than others. Services have been badly hit, particularly tourism and transport struggled, which are exposed to health risks and lockdown measures. According to UNWTO, international tourist arrivals fell by 28 percent in the first quarter of 2020 and 95 percent during the second quarter, with the annual decline estimated to be 60–80 percent (UNWTO, 2020b).[8] This calls for urgent policy interventions focused not only on limiting the effects of the crisis, but also on paving the way for a fast and prosperous recovery.

Given the global nature of the crisis, scholars and policymakers are wondering about the future of globalization and GVCs. A vibrant debate has emerged and, more than a year after the start of the pandemic, there is still no consensus on the foreseeable trajectories or policy directions. On the one hand, some scholars argue that the COVID-19 crisis will induce a wave of deglobalization or “slowbalization”, with massive reshoring, or nearshoring, of foreign activities.

8 These forecasts did not account for the second wave of COVID-19 that has hit many countries and further restrictive measures, which means the year-on-year decline could even be higher.

On the other hand, others argue that the (perceived) transitory nature of the shock may not induce a drastic change in international relationships. Firms that built networks of cross-border linkages through time and (sunk) specific investments may have little incentive to completely dismantle them, even if faced with severe shocks.

Ideological positions in this debate are unhelpful. Considering the pros and cons of different trajectories is paramount to the design of fruitful policies. While GVCs may be a channel for the transmission of shocks, the existing literature has also clearly shown that they bring major long-term benefits in terms of growth and development (Antras, 2020). Furthermore, the most recent evidence points towards the beneficial role of GVCs, which even appear to have "sheltered" countries during the current crisis, as opposed to during the economic and financial crisis of 2008–2009 (Giovannetti et al., 2020). More emphasis on risk management and diversification of international partners may be a feasible solution to effectively rebalance pros and cons, and to develop less exposed, more sustainable and resilient GVCs. Our analysis provides useful material for policymakers. Egypt, Jordan, Lebanon, and UAE differ in terms of both extensive margins (composition of partners) and intensive margins (depth of integration). The international exposure of Egypt is the lowest (Figure 5) and is skewed towards developed countries (Tables 4 and 6). On the contrary, Lebanon and Jordan display a higher exposure but more diverse networks of partners. Finally, UAE is characterized by both high exposure and high concentration (especially towards Asian countries). This country-level description also largely applies to the transport and tourism GVCs (Figure 10 and Tables 10 and 11). Our results suggest that policies to diversify international partners are a major objective, especially for UAE. The pandemic has clearly highlighted the need for policies in this direction. However, these are medium- to long-run policy objectives, and while some diversification can and has been achieved in response to the crisis (e.g. efforts to secure access to medical supplies), it is hard to identify specific diversification policies for the immediate future. In the current situation, national governments must first tackle the economic and social challenges. This does not contrast with the international agenda. Given that international linkages also depend on healthy national economic environments, we maintain that the best policies to address the international sphere are inextricably intertwined with the domestic agenda. Countries have made significant effort in this regard. During the first wave of the pandemic and given the high level of uncertainty, most interventions involved crosscutting fiscal and monetary measures. However, despite these supportive policies, the revised growth forecasts of international organizations seem to reflect a higher-than-expected impact of lockdowns on mobility and growth. Budget deficits were also affected (both by COVID-19 and the oil shock), making it harder to finance the recovery.

The situation is even worse in Lebanon, given the drop in GDP experienced by the country in 2019, as well as the explosion in the port city of Beirut in August 2020 and the political turmoil that followed.

Policies must now be better targeted and shaped by specific sectoral needs, acknowledging the asymmetric effects of the crisis on different parts of the economies. The tourism and transport sectors display some specific features that must be taken into account. At the international level, these sectors involve large multinationals (e.g. international travel agencies, chain hotels and airline companies), while at the local level small and medium enterprises account for large shares of employment. These latter companies have suffered from the demand shock caused by COVID-19 in terms of reduced turnover and liquidity constraints. The impact on employment has the potential to have major consequences at the country level. Assuming the shock is temporary, economic policies should aim to avoid long-lasting negative effects in the form of permanent reductions to capacity and increased long-term unemployment. Fiscal and monetary support to prevent bankruptcies could help, job retention should be promoted, and specific retraining encouraged. Arab countries could also use the crisis to rethink their tourism policies and change the traditional model.

Within the Arab region, for example, Egypt has already taken action (UNWTO, 2020a). During summer 2020, several archaeological sites offered discounted entry, while visa fees at Luxor and Aswan airports were reduced. Payment holidays were introduced for tourism and hotels and exemptions to rental payments granted to bazars and cafeterias located in archaeological sites until tourism returns to normal levels. The country's central bank also devised special low-interest funds to help finance the salaries of tourism establishments. The Egyptian Ministry of Tourism and Antiquities and the Federal Tourism Association issued COVID-19 procedures and the Egyptian Hotel Association provided staff training based on World Health Organization (WHO) guidelines.

Another policy that could help sustain the tourism sector and support efforts to track the virus at the national level could be the implementation of "COVID-19 hotels". Instead of isolating COVID-19 positive individuals at home, some countries have developed agreements with hotels and bed and breakfast owners for the accommodation of asymptomatic patients, who do not require advanced medical care but must avoid contact with the rest of the population. From an economic point of view, this measure has two advantages: firstly, instead of granting lump sum transfers to closed activities, governments can support the economic recovery through public spending; secondly, isolating positive cases outside homes and preventing household members from infection helps reduce the

circulation of the virus while preventing more severe disruption of economic activity.

These are examples of specific national policies that could improve the situation. There are two aspects worth noting. Firstly, most of these policies will be in place until tourism safely resumes (typically the case of payment holidays), which may take longer than expected. Secondly, these interventions must be carefully designed, given that some measures may also entail non-negligible risks. On the one hand, while fiscal and monetary support is certainly helpful in the short term, it is not feasible over a longer period of time without aggravating already large public deficits. On the other hand, while preventing defaults and preserving capacity must be the primary objective in the short run, it may be unrealistic or even ineffective to do so until tourism safely returns to pre-crisis levels. The risk of slowing the necessary medium- to long-term adjustment process and the restructuring of supply must not be overlooked. Furthermore, establishing the "end date" for the measures is troublesome: unless stated in advance with binding constraints, it is extremely hard to decide when to stop support measures. Interventions must avoid the immediate negative effects of the shock while facilitating the shift towards a new normal that is likely to be at least partially different. These two concerns (the long-term public deficit and the adjustment process) imply that policy interventions should not be blind to different sets of circumstances within sectors: following the first and necessary wave of crosscutting inflows of money, policies must be targeted, based on transparent conditionalities to avoid opportunistic behaviour, and tailored to address different categories of firms. This perspective also suggests that measures to facilitate retraining and labour mobility are needed for the medium- to long-term restructuring of the labour market.

It is clear that these measures cannot be maintained indefinitely and succeed at the international scale (unless the sectors involved resume operations). While the full tourism and transport sectors are unlikely to reach their pre-COVID-19 levels, countries must find ways to restart or plan to restart some activities by guaranteeing procedures to monitor and control the health risks.

As such, while incentivizing domestic demand could be fruitful in the short term, in the medium to long term, international policies are needed for two main reasons. Firstly, as discussed in this paper, foreign demand is crucial for the tourism and transport sectors. Secondly, national policies risk having a small—or even negative—impact in the absence of cross-country agreements and international cooperation.

Health insurance schemes, the monitoring and tracking of the circulation of people, and the exchange of data should be among the most important topics under discussion. Health insurance could be key to encouraging people to move around. Countries could agree to implement health coverage that will allow international tourists to receive the same treatment as national citizens for free or they could also agree to set common standards of COVID-19 medical care. This could increase demand by reducing uncertainty regarding travel and harmonizing international COVID-19 treatment also has the potential to improve the supply of medical services.[9]

For such a proposal to be effective, countries need a sound mechanism for tracking people's movements and exchanging data. Tests on departure and arrival, the tracking of accommodation and visits as well as vaccination certificates are fundamental to rebuilding the tourism sector and value chain. This will also make it easier to trace the origin and destination of outbreaks. This intervention is crucial to stop the spread of the pandemic throughout the world, since it has entered many countries through cross-border movements whose chain has not yet been identified. As well as being vital for the tourism and transport sectors, these measures could also benefit the economy as a whole: given the level of international integration, closing borders is no longer a sustainable solution.

Partnerships with the private sector could be beneficial in delivering this ambitious set of policies. Financial and insurance companies could make a significant contribution to health coverage while businesses in the transport sector could expand the range of services they offer. These partnerships could also activate backward and forward linkages along the production chains, further spurring the economic recovery.

9 Some airlines in the area, such as Emirates, are offering full health insurance for 31 days to all passengers on flights. This measure has the positive effect of reducing fear and uncertainty.

Looking forward to the post-COVID-19 world, we cannot rule out new international standards for the movement of people, as occurred in airports after the 2001 terrorist attacks. Despite increasing costs and the time needed for international travel, these new procedures could prove beneficial to public and global health by addressing the spread of diseases and preparing countries to face future waves of COVID-19 or different epidemics.

After several months coping with the virus, cross-border agreements and updated international procedures can no longer be postponed. Given the complexity of implementing measures at the global scale in the short run, the regional stage may prove more efficacious in the short term. Moreover, given the importance of the tourism and transport sectors, the Arab region could be an area of primary interest.[10]

10 The UNWTO dashboard (www.unwto.org/international-tourism-and-covid-19) includes updated figures on tourism for the different areas. The estimated losses are in the order of 70 percent for the first eight months of 2020, despite the fact that regional tourism is also well developed in the Arab area. However, in 2020, the cancellation or postponement of several planned events, such as the Dubai 2020 expo and the annual Haj pilgrimage in Saudi Arabia—expected to attract 25 million visitors and two million religious tourists, respectively—has negative impacted the sector.

6. Conclusion

The recovery from the current pandemic-induced economic crisis will take a long time and will be challenging for all countries. The negative economic impacts are not just a direct consequence of the virus itself but also depend on the confinement measures aimed at slowing its propagation. These measures imposed short-term costs on economies to prevent greater long-term damage. From this perspective, there is no trade-off between health and the economy: confinement measures protect citizens and prevent larger long-term economic losses. Yet the virus and the measures have hit firms and consumers hard. Disruption to supply chains and logistics have interacted with a strong fall in demand. These phenomena are likely to reshape international trade, both at the country and sector level.

The analysis in this paper provides initial descriptive evidence of the relevance of the international network in sustaining both the demand and supply of domestic economies. Although Egypt—the least internationally exposed country in our sample—is expected to keep growing and recover quickly from the current crisis, we do not believe that cutting international ties and national reshoring will ease the recovery process for developing countries. On the contrary, we believe that, at least in the short run, such policies are likely to lengthen the crisis and deprive economies of crucial inputs that are not generally produced domestically to the same standards. Moreover, protectionism has the potential to result in retaliation and a loss of export markets.

Against this backdrop, the tourism sector may be even more severely impacted than others. Focusing on two key segments of the sector (*Hotel and restaurants* and *Transport*) shows how, relative to other sectors, tourism is more exposed to foreign GVC-related shocks and less diversified in terms of partners. A drastic slowdown in international tourism, especially if prolonged, may harm long-term

national investment and development policies focused on tourism. The UAE seems relatively more exposed to this risk, while Egypt may prove more resilient.

In this scenario, which is characterized by a high level of uncertainty, the failure of policymakers to strike a balance between extremes may prove ineffective: on the one hand, retreating behind national borders means forgoing valuable opportunities; on the other, an over-reliance on foreign markets exposes countries to international shocks. Instead, efforts should focus on strengthening regional linkages, laying the foundations for increasing regional integration and diversification in both the short and long term.

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