

Egypt's Participation in the Global Value Chain: A Proposed Road Map

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Received on: 02 November 2021

Accepted on: 23 November 2021

Published on: 04 December 2021

Abstract

Purpose: This research aims to identify the current status of Egypt's participation in the global value chain (Strengths, Weaknesses, Opportunities, and Threats) while highlighting the main requirements and obstacles that face such participation.

Methodology: The paper investigates the current status of Egypt's participation in the global value chain, adopted the qualitative approach through conducting semi-structured interviews with all relevant parties from the governmental and private sectors in addition to experts in the field. Also, a focus group was conducted with relevant parties to analyze the current status of Egypt's participation in the global value chain and to identify the obstacles it faces. These qualitative data were analyzed using narrative data analysis methods.

Findings: From the semi-structured interviews and the focus group, it was concluded that Egypt has many weaknesses and challenges that limit its participation in the global value chain. Accordingly, all sectors must work on linking the domestic value chain with regional and global value chains.

Research limitations: This research only used structured interviews and focus groups as research instruments. Nevertheless, more research methods, such as surveys with significant stakeholders, could be used in future research to increase its value and relevance.

Practical implications: The paper provides a road map proposal to increase Egypt's participation in the global value chain, with a review of the role of different sectors to link the domestic value chain with regional and global value chains.

Originality/value: This paper proposed a road map to enhance the participation of Egypt in global value chains. Also, the paper suggested detailed action plans for different involved sectors, such as trade and investment, export and logistics, the international and multimodal transport sector, and the scientific research sector.

Keywords: Covid 19, Egypt, Global Value Chain, GVCs, International trade, Logistics, Participation in Global Value Chain.

Article classification: Original research.

Introduction

The coronavirus outbreak has been a major test for humanity, as its coping mechanisms will have a significant impact on the global economy in the next few years, as well as the significant macroeconomic shift still facing the world today (Global Trade Review, 2020). The world trading system has been heavily influenced by major changes in trade over the past decade, these changes have also created obstacles that may change the entire global trade road map, especially as the capacity and volume of international trade and foreign investment have expanded in conjunction with the technological advances created by the Fourth Industrial Revolution (European Bank, 2020).

Egypt is slowly recovering now after turbulent years marked by social unrest and political instability, which caused a significant slowdown in the country's development in the previous period. Although the economy gradually started to grow, many of the social issues that led to the revolution have not yet been addressed, in addition to the isolation imposed by the Covid 19 pandemic. In this light, it has become important to increase the participation of Egyptian investments in the international trade map and to engage in the global value chain. However, Egypt faces many challenges that prevent increased participation in global value chains, so it is important to adopt positive changes to increase involvement in the global value chain (Information and Decision Support Center, 2020).

The paper starts with an introduction and theoretical background. Section two reviews the concept and evolution of global value chains and analyzes their impact on many economic variables, with a review of the most important successful experiences in this regard. The study then analyzes the current economic situation at the international level, especially during the COVID-19 pandemic, and its impact on global value chains, focusing on Egypt's current situation and its participation in global value chains. In section three, research methodology is illustrated, by conducting a semi-structured interview and focus group to analyze the most important opportunities and challenges facing

Egypt to enter the global value chain. Section four illustrates the results of the semi-structured interview and focus group. The paper concludes in section five by presenting the research findings and providing a road map proposal to increase Egypt's participation in the global value chain, with a review of the role of different sectors to link the domestic value chain with regional and global value chains.

The Theoretical Framework of the Study

Global Value Chains Concept

Global value chains (GVCs) can be defined as "the range of activities through which companies and workers undertake to get the product to the end-user and beyond (Jerome & Ajakaiye, 2019; Tipi et al., 2021). The concept of value chains can be traced back to the 1870s, as a result of changes in national development strategies from the import-substitution industry (ISI) to the export promotion industry (Osabuohien et al., 2015).

According to World Bank (2020), increasing participation in global value chains is one of the top priorities of many economic development strategies around the world. This is because rapid technological developments in the world over the past three decades have led to significant growth in global value chains, which now account for 50% of global trade volume. Countries that innovate and produce advanced goods and services, such as the United States, Japan, and the European Union, have the largest share in global value chains. Egypt belongs to the category of countries with a medium contribution to global value chains through raw materials and primary commodities.

Successful International Experiences to Activate Participation in Global Value Chains

The analysis of the examples of other countries in increasing participation in global value chains can provide important insights and best practices to support Egypt's aim to increase such international participation.

For example, the Brazilian aviation industry is an interesting case for the participation of a developing country in global value chains, as the participation of countries in global value chains is concentrated only at an early stage of the industrialization process. Still, the aviation industry in Brazil, a high-tech sector, is an illustrative case of the participation of Brazilian companies in the entire production cycle, from design to sales and after-sales services. Manufacturers of all products in this industry receive inputs from around the world and export intermediate products and services to foreign companies.

R&D is mostly carried out by domestic institutes, such as the Aeronautics Institute of Technology, or in partnership with foreign companies. These institutes are also responsible for building capacity in services related to maintenance and repair of aircraft of all sizes, engines, components, on-board systems, design services, engineering, and industrial services (Al-Najjar, 2019).

Tunisia is also a good example of an Arab country working to activate its participation in global value chains, as the European Bank (2020) states that Tunisia's strategy for integration into global value chains was based on two pillars. First, the country took a step to liberalize trade, signing more than 60 trade agreements with the European Union, Turkey, COMESA, the Agadir Group, the Arab world, and with the entire African continent through the recent ratification of the African Continental Free Trade Agreement (AFCFTA).

Tariffs were simplified and decreased between 2006 and 2016, with the average tariff applied to manufactured goods dropping from 20% to 10%. Second, Tunisia promoted an attractive system for firms operating in exports in free trade zones, through which

export-oriented firms enjoyed a wide range of financial incentives and were also eligible for tax exemptions and investment grants in regional development zones. In 2016, a new investment law was implemented, which targeted foreign investors by effectively reducing red tape, liberalizing foreign equity rules, granting land, and promoting free capital movement. These strategies have had a significant impact on the growth of Tunisian exports and increased the share of companies operating in the offshore system from 0.6% in 1996 to 4% of the total private sector companies in 2016.

Currently, foreign companies represent 34% of employment in the private sector and 78% of merchandise exports (excluding energy). Globally, Tunisia's integration into the global value chain has stagnated in recent years, while the most significant trade integration has occurred in the 2000s. In this light, the country's integration into the GVCs has declined since 2011. Nevertheless, Tunisia still enjoys strong GVC integration, as the economy has strong backlinks in GVCs (European Bank, 2020).

From this analysis, this paper extracts some of the requirements necessary for successful participation in global value chains, such as the application of trade liberalization on a large scale and the need to have clear competitive advantages so that the country can obtain advanced or appropriate ratings in the competitiveness indicators determined by the Global Competitiveness Report.

Therefore, it can be stated that advantages of successful participation in global value chains include the following:

high quality of health and education, achieving political stability to reduce the risks of uncertainty when participating in global value chains, the efficiency of education and training, the efficiency of labor and business markets, the efficiency of commodity markets, efficiency of financial markets, technological and innovative modernization, commitment of companies to technological modernization and international quality standards, use of intermediate materials, high quality and conforming to international standards, the ability to perform the required tasks, activities and operations

with the highest quality and lowest price, in addition to the ability to enter and communicate with global markets according to modern systems (Global Competitiveness Report, 2018).

Analysis of the International Situation in light of the COVID-19 Pandemic and Its Impact on Global Value Chains

According to the World Economic Forum, globalization could deteriorate on the trade front. According to World Bank data, after decades of continuous growth, the volume of global trade declined due to the global financial crisis in 2009, and global trade volume has never returned to its previous growth trajectory since then (measured as a percentage of global GDP). In the wake of the effects of the pandemic, many experts expect that the pandemic and the trade war between China and the United States may push companies to move towards more local production and purchasing methods (self-sufficiency models), which may lead to a sustainable decline in global trade (Richter, 2020).

Adapting to employing the value chain proves to be difficult. Uncertainty is currently the biggest obstacle for companies, as it will hinder their ability to plan and forecast demand, allocate financial and human resources to specific projects and keep costs low (Laker, 2020). In response to this crisis, most companies have adopted the hedging approach through insurance and warehousing, seeking alternative supply solutions and better monitoring and understanding of the supply chain, in preparation for supply chain reorganization.

According to a survey made by Allianz (2020) of several companies, four out of ten companies announced that they had already started replacing suppliers from abroad. A percent of 32% of survey respondents also emphasized the focus on environmental, social, and corporate governance of suppliers to mitigate supply chain disruptions.

This will have its impact on global trade, as supply chain decisions will be driven by many possibilities associated with traditional issues that enhance or weaken competitiveness in the global supply chain,

such as production costs, quality, transportation issues, investment costs, and the demand for protection.

For policymakers, this means that governments have a role to play in enhancing the resilience of the domestic supply chain. The responses of companies are divided according to different political and economic measures, which confirms that the future will hold many possible scenarios for international production. For example, in the UK, supply chain concerns related to Brexit are self-evident, with companies concerned about cost competitiveness. In France, the focus is on labor market flexibility and investment in research and development to assert the country's position in global value chains, while in Italy companies are concerned about domestic tax incentives to boost attractiveness (Allianz, 2020).

The Current Status of Egypt's Participation in Global Value Chains

According to Information and Decision Support Center (2020), Egypt's participation in global value chains is increasing, and participation in 2018 was estimated at around \$11 million. Egypt ranks eighth in the Arab ports' waiting time index, with an average of 34.6 hours. This rank is considered among the efforts and opportunities for improvement by enhancing the competitiveness of the port. Improvements will also be achieved through digital transformation to simplify administrative procedures and customs clearance and increase the efficiency of port workers.

Egypt also ranks third in Africa in the Logistics Performance Index. Also, Egypt aims to increase the port's handling capacity from 120 million tons to 370 million tons by 2030. This is achieved through the establishment of the Red Sea Port Authority's utility station, the development of Port Said Port, and the development of port infrastructure. Egypt ranks first in Africa in the Shipping Lines Index and second in the Arab world, reaching 66.7 points in 2019. The high value of this indicator reflects the ease of access to the global shipping system for future trends, global value chains (Information and Decision Support Center, 2020).

Despite the remarkable improvement in international

indicators related to Egypt’s participation in the global value chain, obstacles are facing Egypt to expand participation. The World Bank (2019) ranks Doing Business in Egypt fairly low in the category of cross-border trade (114 out of 190 countries). As nearly half of all active trading firms view customs and trade regulations as a major or serious obstacle to their business operations as illustrated in Figure 1:

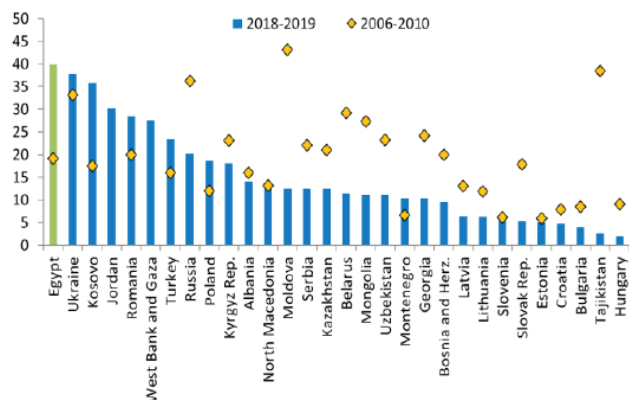


Fig. 1: Firms reporting customs and trade regulations as a major or serious obstacle (as a percentage of total firms active in trade) Sources: European Bank (2020)

European Bank (2020) states that trading companies face very high costs and lengthy customs procedures. Thus, only 10% of Egyptian companies are active in both export and import. The different complex regulatory frameworks and the resulting division of economic systems between exporting firms and firms operating in the large domestic market create a complex environment and lead to different levels of productivity between firms. This is reinforced by unfair competition, the extensive presence of state-owned enterprises and institutions operating in the informal sector, which represent a significant proportion of the economy.

Moreover, the scarcity of qualified labor due to lack of vocational training schools, skills mismatch, lack of compatibility with international standards, and poor-quality controls reduce opportunities for firms to enter new value chains, move up along existing value chains and benefit from access to the vast preferential markets available for Egyptian products (European Bank, 2020). In an attempt to compare Egypt’s position in global value chains with other Arab countries in the region, an indicator is calculated by Giovannetti and Vannelli (2020) that

combines the quantitative and qualitative perspectives of the measures of participation in global value chains. Quantitative participation is assessed by the revealed comparative advantage (RCA) that a country holds in the products of global value chains, while qualitative participation is measured by using the PRODY index, as a proxy for value-added, and thus obtain an index in the country’s global value chains (The Participation Index - PI). The study of Giovannetti and Vannelli (2020) is not comparing Egypt with Libya and Algeria, since Libya and Algeria specialize in primary activities, as well as they suffer from serious social and political challenges of recent years which leads to a decrease in their revealed comparative advantage (RCA). Therefore, this paper compares Egypt with Tunisia and Morocco as shown in Table. I:

Table I: The Participation of Egypt, Morocco, and Tunisia in Global Value Chains

GVC		Morocco	Tunisia	Egypt	PI mean
Automotive	Number of RCAs	10	15	3	9.21%
	PI	10.36%	15.09%	2.19%	
Aerospace	Number of RCAs	2	3	0	5.18%
	PI	5.71%	9.82%	0.00%	
Shipbuilding	Number of RCAs	7	13	26	10.07%
	PI	5.90%	9.57%	14.73%	
Electronics	Number of RCAs	24	58	18	9.90%
	PI	7.27%	17.97%	4.45%	
Total	Number of RCAs	40	86	46	9.58%
		7.10%	15.25%	6.39%	
	PI				

Source: Giovannetti and Vannelli (2020)

According to Giovannetti and Vannelli (2020), Egypt’s participation in the global value chains represent a total PI of 6.39%. The country’s highest major index is in the global shipbuilding value chains, which are also the highest in the region, reflecting the country’s important historical traditions in this sector. However, apart from this series, the results are very disappointing. The shipbuilding value chain is followed by the electronics sector, with a very small PI of 4.45%, then the automotive sector at 2.19%, and finally the aerospace industry, with no product in the chain where Egypt has Zero RCA in the aerospace industry.

However, despite the low PI, country integration is expected to increase over the next few years, given the

large FDI inflows, especially in the electronics sector. In short, the challenges faced by Egypt's improvement in global value chains. First, an increase in PI or Egypt's participation in the shipbuilding value chain would allow the country to position itself as a leader in this sector, but at the same time would not encourage a significant improvement in the EXPY for Egypt. Second, investing to improve participation in the automotive and electronics chains would enable a significant increase in EXPY for the country as the country currently has very low PI values in these sectors.

In light of the outputs of the previous analyzes, a research methodology was formulated that aims to analyze the deepest strengths, weaknesses, opportunities, and threats facing strengthening Egypt's participation in the global value chain, and to determine the readiness of companies operating in Egypt to engage in the global value chain to draw conclusions and recommendations and develop a road map to enhance the participation of Egypt in the global value chain. The next part of the study reviews the details of the research methodology that were followed.

Research Methodology

The study aims to answer the main question of the research problem: What is the proposed framework for increasing Egypt's participation in the global value chain? This is done by designing the research methodology to answer the following sub-research questions:

Q1: What is the current status of Egypt's participation in the global value chain?

Q2: How ready are local companies to participate in global value chains?

Q3: What are the obstacles that may arise while expanding Egyptian participation in global value chains?

Q4: What are the main obstacles and challenges that

local firms face in expanding participation in global value chains?

Q5: What are the strategic and technical measures to support Egyptian participation in global value chains?

Q6: How can the ecosystem support local companies to participate in global value chains?

To answer the previous research questions, the study adopted **the qualitative approach**, and relied, in addition to secondary data from previous studies and international reports, reviewed in the previous part, on compiling primary data from relevant parties through two research stages: **First, semi-structured interviews** were conducted with all relevant parties from the governmental and private sectors in addition to experts in the field to find out the current status of Egypt's participation in the global value chain.

Second: A focus group was formed with the relevant parties to analyze the main obstacles and challenges facing the expansion of Egyptian participation in global value chains and to put forward the most important strategic and technical measures proposed to support Egyptian participation in global value chains, to draw conclusions and recommendations and to set a road map to enhance the participation of Egypt in global value chains. The semi-structured interviews and a focused group were analyzed using **narrative data analysis methods**. Figure 2 summarizes the framework for the research methodology of the study and its relationship to the research questions, while the results of the analysis of the primary data and answering the research questions are reviewed in the next part.

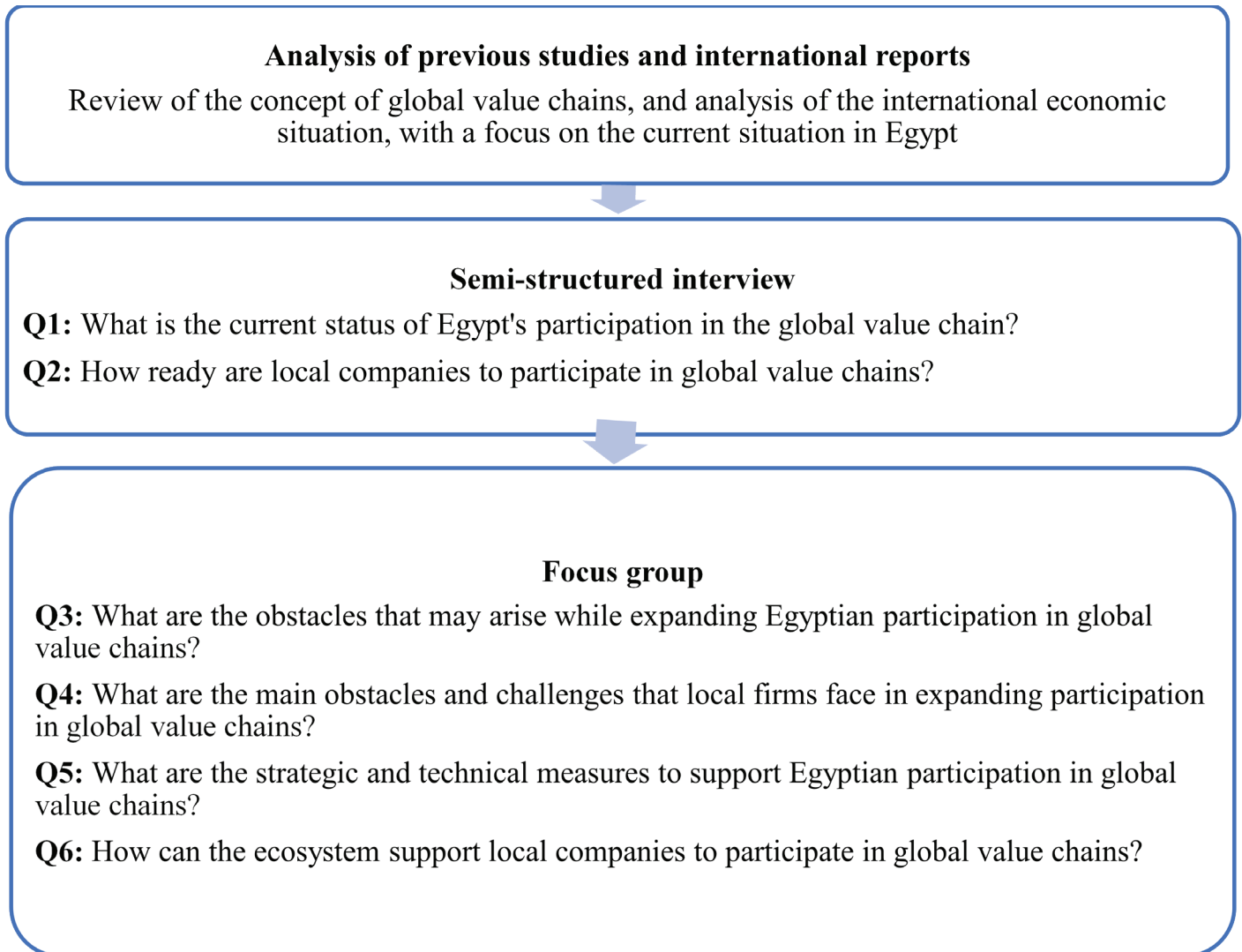


Fig. 2: The research methodology of the study and its relationship to research questions
Source: The researchers

Analysis of the Results

This section deals with an analysis of the primary data collected through several interviews, and focus groups with various relevant authorities from the public and private sectors and experts in the field to draw conclusions and recommendations to draw a road map to enhance the participation of Egypt and companies operating in Egypt in the global value chain.

Current Status of Egypt's Participation in the Global Value Chain

To get acquainted with the current status of Egypt's participation in the global value chain and to identify the obstacles it faces, by analyzing the strengths,

weaknesses, opportunities, and threats facing Egypt to engage in the global value chain, five semi-structured interviews were conducted with representatives of the government and private sectors in the field of industry in addition to experts in the field (a representative of industrial companies, a representative of distribution companies, a representative of export and import companies, a representative of the Ministry of Supply and Internal Trade, and a consultant in the field of logistics and supply chains), where the interviews were recorded and transcribed to ensure accuracy by analyzing the answers. Table II summarizes the most important points made by the participants in the interviews regarding the current status of Egypt's participation in the global value chain and the obstacles it faces:

Table II: The Current Status of Egypt's Participation in the Global Value Chain (Strengths, Weaknesses, Opportunities, and Threats)

Strength points	<ul style="list-style-type: none"> • Egypt's distinguished strategic geographical location in addition to the Suez Canal, which connects the East to the West. • Egypt has a comparative advantage in the field of agriculture, where the climate is moderate. • Egypt ranks first in the world for citrus exporting countries. • Availability of human wealth and cheap labor. • Multiple development projects such as new cities, national roads and infrastructure projects, and the development of slums and others. • Bilateral trade agreements that could serve many sectors and industries in Egypt if they were activated.
Weakness points	<ul style="list-style-type: none"> • Absence of a regulatory body to protect exports and market policies. • Absence of supervisory and regulatory bodies to protect markets and prevent export without a license. • Lack of a platform that works on marketing investment opportunities. • Lack of sufficient knowledge of the logistics officials in the Egyptian exporting companies regarding the regulations in force in the importing countries. • Lack of special studies to qualify the logistic officials for export operations. • Absence of an incentive structure that guarantees the continuity and development of emerging industries. • Existence of a complex legislative framework which increases the difficulty of entering new investments at the time when investment opportunities are available • High customs tariffs and taxes that directly affect the manufacturing industries that import components of their production from abroad in addition to affecting the logistics industry. • Bureaucracy and the difficulty of government procedures related to export. • Drivers' lack of commitment to regulations and laws and the absence of any supervision over drivers and their companies. • Lack of clarity on the policy of support for factories, companies, and exporters.
Opportunities	<ul style="list-style-type: none"> • Increasing the flow of foreign direct investments to Egypt. • Increasing and stabilizing the rate of economic growth. • Increasing the share of international trade exchange. • Developing value-added trade. • Improving economic efficiency and increasing development at many levels. • Providing advanced technology, developing the companies' capabilities, and meeting international standards. • Raising the capacity of the local product as a result of compliance with international controls and standards, which leads to facilitating the entry of the Egyptian product to international markets. • Creating better job opportunities. • Shifting from export of primary commodities to basic manufacturing. • Development of complementary industries that serve the sectors of manufacturing, transport, logistics, and agriculture.
Threats	<ul style="list-style-type: none"> • Some practices in bilateral agreements, such as imposing unjustified expenses by importing countries or obligating the exporter to document many documents. • Changes in political relations between countries of the world and the resulting change in commercial relations. • Egypt's lack of scientific research and development. • The unplanned and random entry of some manufacturers to the promising sectors. • Difficulty in complying with some of the new standards that are emerging in industries and services.

Source: The researchers

It can be observed that the main obstacles which will be further discussed in the following section include: the absence of a regulatory authority to protect exports and market policies, and the absence of supervisory

and regulatory bodies to protect markets and prevent exports without a license. Other impediments mention the insufficient knowledge of the logistics officials in the Egyptian exporting companies about the regulations in force in the exporting countries and how to obtain documents to facilitate customs clearance of the importing customer, including the required controls and certificates in addition to the current legislative framework. All these hurdles make it more difficult for new investments to enter at a time when investment opportunities are available, as well as the cause rises increases in customs tariffs and taxes that directly affect the manufacturing industries that import components for their products from abroad.

Key Challenges for Egypt to Enter and Expand Participation in Global Value Chains

To analyze the challenges and the most important procedures for entering and expanding participation in global value chains, to draw conclusions and recommendations in light of the above, and to develop a road map to enhance the participation of Egypt and companies operating in Egypt in the global value chain, a focus group was formed with relevant parties. The participants included six stakeholders from different sectors: retail, distribution, staging of goods, import and export, government sector, and an expert in the field of transport and logistics.

By asking the participants about the most important obstacles that Egypt and companies can face while expanding Egyptian participation in global value chains, the participants explained that participation in global value chains brings with it more trade integration and dependence on multiple countries, and the trade deficit is likely to increase in the early stages of participation in global value chains. The share of intermediate goods in international trade in global value chains is also increasing, which makes it difficult to control them, which may expose Egypt to shocks in its import accounts.

In addition, competition in global value chains is not absolute competition, but competition between major economic and commercial entities, that is, between mega monopolies. Within the framework of global value

chains, achieving independence in a country's trade policy is difficult, as is it difficult to adopt protectionist policies.

In addition, there are many obstacles that companies may face to participate in global value chains, such as lack of familiarity with the laws of the countries to which products are exported, and the imposition of additional fees from certain countries on cars and containers exported from Egypt.

In addition to obstacles in various modes of transport, land transport suffers from the age of the transport fleet and transport disruption resulting from the breakdown of transport vehicles during the delivery of goods to the ports and the resulting delays in shipping dates, with the insufficient land transport fleet to transport containers, in addition to the unjustified increase in transport prices that negatively affect the competitiveness of Egyptian products and the lack of special containers required for shipping goods in some cases (High Cab or Open Top).

In air transport, as a result of the backlog of transport requests, airlines will raise fares. In addition to the obstacles to maritime transport, especially the length of the sailing period, as the Egyptian ports are not entered with the original mother ship, but the shipment is carried out by feeders to European ports, where container terminals are transferred to other ships, which leads to a long sailing period. In addition to the inability of Egyptian ports to adapt to the continuous increase in the movement of exports at the same time when there is import movement.

To confront these numerous obstacles, the participants in the study proposed several strategic and technical measures to support Egyptian participation in global value chains. Such suggestions included working to strengthen regional value-added chains and linking them directly to global chains, which contributes to increasing productivity and increasing the competitiveness of industry, especially those with advanced manufacturing technologies.

Other suggestions were selecting sectors that are candidates to enter regional and international value chains

according to certain criteria, or sectors that achieve added value, import substitution, support for small and medium-sized enterprises, job creation, environmental protection, and energy efficiency.

Attention is directed towards developing business incubators to increase geographical coverage, enable entrepreneurs and investors to set up projects and take advantage of low-interest rates on loans, and work to keep pace with global demand trends by seeking to seize opportunities in global markets and researching the markets to which exports are directed. In this framework, it is proposed to build databases that include wide interactive platforms to bring together the various actors and ensure effective cooperation among them in various sectors with the relevant government agencies to engage in all work related to attracting and marketing investment opportunities. On the other hand, the huge momentum of online business interactions in Egypt should be taken advantage of.

It is also necessary to monitor and follow up existing companies, communicate with investors, and provide them with investment information through the investment cooperation committees of the facility locally and abroad. The business community must also be informed of the new role of the Investor Services Center, the investment map and incentives, the regular preparation of regional conferences in various regions of Egypt, the promotion of large projects, and the help of foreign investors in the search for Egyptian partners. In addition to working on developing the transportation system as a whole, the road network currently in Egypt represents a shift for Egypt, but it needs to be linked to ports and airports more efficiently to achieve total connectivity within Egypt.

The ecosystem can support companies to participate in global value chains, through the localization strategy to ensure the sustainability of local supply, provided that this covers all sectors. Also, the logistical strategy can make Egypt a hub for international companies, whether shipping, manufacturing, or trading companies, by establishing logistical centers for value-added, warehousing, and re-export activities, which ensures having a huge commercial stock to meet local and

international demand when needed. It also suggests launching a national initiative with a clear state orientation to provide facilities for individuals and companies that include positive social, economic, and environmental considerations when supplying, as this will help avoid social, economic, and environmental risks and help improve the social and environmental performance of the business. In addition to the application of modern customs technological solutions to facilitate the movement of trade.

A complementary framework must be developed among all parties in which the government plays a role in ensuring the sustainability of supply chains by imposing an appropriate legal framework that protects the public interest and supports responsible business practices and regular monitoring of business performance. Besides, the availability of flexible financial and monetary policies with global changes in addition to clarity.

The state's vision, which is reflected in the legislation and policies of the regulatory framework for the business sector, while the private sector works, as is a key partner in achieving development goals and addressing sustainability issues. This, in addition to the emergence of the role of banks in financing and investment in a more dynamic manner, as well as relying on training institutions and raising efficiency through training programs and platforms.

By reviewing the results from the previous analyzes, it becomes clear that the most important challenges facing Egypt's entry into the global value chain lie in:

- The potential increase in the trade deficit in the early stages of Egypt's participation in global value chains, in addition to the fact that it is difficult to adopt policies to protect or achieve independence in the country's trade policy;
- The absence of a regulatory body to protect exports and markets and prevent exports without a license;
- The lack of scientific research and development with the difficulty of complying with some of the new standards that are emerging on industries and services, in addition to the unplanned and random

entry of some manufacturers into promising sectors;

- Changes in political relations between countries of the world, and the resulting change in trade relations;
- The lack of a platform that markets investment opportunities in Egypt and directs investments to the required fields;
- The current legislative framework, which increases the difficulty of entering new investments at the time when investment opportunities are available;
- The high customs tariffs and taxes that directly affect the manufacturing industries that import components of their products from abroad;
- Some importing countries impose unjustified expenses or oblige the exporter to document many documents;
- Qualifying the logistic officials involved in export operations, in addition to the necessity of having knowledge of the logistic officials in the Egyptian exporting companies regarding the regulations in force in the countries of origin and how to obtain documents to facilitate customs clearance for the importing customer;
- Challenges in various modes of transport, especially the old fleet of land transport, with an insufficient transport fleet, in addition to the unjustified increase in transport prices that negatively affect the competitiveness of Egyptian products, the lack of special containers for some cases that require shipping goods (High Cab or Open Top), and the length of the sailing period;
- Companies are still in the early stages of integration into the global supply chain in terms of readiness for digital and modern applications since they are still using a traditional approach.

A Proposal for a Roadmap to Increase Egypt's Participation in the Global Value Chain

Within the framework of the previous analyzes and in light of the successful experiences that were reviewed in addition to the proposals submitted by the participants in the study, the authors propose to adopt a strategy to link the local value chain with the regional and global,

consisting in:

- Exploiting the existing infrastructure in Egypt, which is represented in the previously planned logistical areas (such as the Suez Canal axis, and the area adjacent to the East Al-Tariqa port), as well as a highly efficient network of roads, so this system can be developed within a comprehensive investment plan and link it with Central and West African countries to take advantage of opportunities to establish future export channels with Europe, the United States, and South America.
- Establishing a vertical development policy, "Vertical Integration", to direct local investments and institutions to replace imported intermediate materials that are included in the final goods to be exported with locally produced equivalents and providing these businesses with incentives as a kind of export incentive.
- Applying the sharing economy model.

This approach is based on considering the company's resources as an ecosystem, not a closed structure, where small and medium enterprises can use the mechanisms of the sharing economy to save money in the short term in light of the current crisis. They can also follow these mechanisms as a strategic approach in the long term as well by creating relationships with individuals and other institutions that can be beneficial to both parties through the flexibility of the staffing mechanism, outsourcing, and maximizing income from underutilized assets.

The proposed framework includes four main axes:

1. A governance model for supervising the activities of those economies participating in their various sectors to address any problems arising from these activities and to enhance consumer confidence.
2. Achieving conformity in legal regulations between participating markets, with the development of frameworks for determining legal liability that ensure consumer protection.
3. That modern labor policies include the concept of "part-time/part-time employment", for citizens or expatriates.
4. That the tax policies related to these activities be clear and announced by the concerned authorities

and commensurate with the reality of the establishments' activity.

Implementing Supply Chain Integration mechanisms, will lead to reducing supply chain costs, reducing time in supply operations, quality control, and reducing the costs of several operations – the most important of which are storage and distribution, quality assurance, and high competitiveness of products – in addition to improving the accuracy of demand forecasts by all partners. From this point of view, it is necessary to create incentive mechanisms to implement this approach, through the establishment of a body that can initially organize these processes to ensure the smoothness, credibility, and effectiveness of this approach, its marketing, and the protection of the rights of all parties working in it.

To activate the strategy of linking the local value chain with the regional and global, action plans are required for the different sectors as follows:

The Trade and Investment Sector

- Exploiting the current economic war between the major countries to replace their imports, which have been customs duties imposed on them, with Egyptian products, as well as inviting companies that were affected to manufacture in Egyptian factories with a local component.
- Working to reconsider Egypt's trade policy and bilateral trade agreements, while maximizing the role of commercial representation to maximize the benefit of investment opportunities.
- Establishing a legislative system conducive to investment, as the crisis of the industrial sector and other investment sectors in Egypt does not lie in the lack of investment opportunities, but in the difficulty of obtaining land, licenses and financing, as well as the complexity of the legislative system and judicial disputes.
- Quickly solving investors' problems and, most importantly, preventing their recurrence, and ensuring that the decisions of the dispute settlement committees are implemented on the ground.
- Equality between private sector projects and

economic projects for all state agencies time concerning the price of land, utilities, and licenses, as failure to implement this will deter foreign investors who fear unfair competition with similar state projects.

- Developing standard designs for projects in commercial and industrial areas (building area, and height), provided that all licenses are issued once the land is allocated according to the standard design, and normal procedures are followed for projects that want other designs.
- Making a unified map of the attached lands available through all the state authorities for each activity (industrial, commercial, agricultural, tourism, and service) with spaces, prices, standard contract, allocation procedures and time for starting the project before withdrawing the land, provided that the allocation includes all approvals and licenses.
- Promoting investment for the 1000 major global Fortune 100 companies that have not invested in the region by putting in place a package of attractive incentives designed specifically for each company and traveling to present it to the head of each company, provided that it is conditioned on the percentage of a local component (which Malaysia, Turkey, and Morocco did).
- Promoting the sectoral industrial zones Cluster, including major companies, Anchor, surrounded by small and medium-sized feeding projects, by expanding the establishment of nurseries containing small workshops for young people with facilities next to major industries, so that these areas will turn into integrated industrial complexes (Clustering), as happened in the experiences of the leather industry and the furniture industry, with the necessity of Supporting it through technical assistance and promoting its products to global markets. In addition to increasing credit facilities for these projects to fill the financing gap that most small and micro companies suffer from.
- Launching the Egyptian Instant License, which can be approved online within a few minutes to conduct business activities through a single digital portal, which is an important step towards business and investment in Egypt. Having as the license category expanded, it will provide greater

flexibility for companies because the licensing system It will allow order completion easily, efficiently and quickly, and can be accessed by anyone. In addition, the approval will be issued online immediately and holders of licenses in most areas can start their activities immediately (Khalifa, 2019).

- Reducing interest rates on borrowing, as the matter has exacerbated the increase in bank interest rates on industrial and investment projects in Egypt.

The Export Sector

The export sector will seek to launch the initiative to improve the efficiency of the export environment, which aims to understand the needs of exporters and spread the culture of export among them. It also focuses on solving the challenges they face and supporting them with support services and qualified human competencies to raise their level of satisfaction with the export environment, through:

- Supporting exports logistically and renting warehouses in free zones in the target markets, while accelerating the network of external logistics centers, to open new markets and help increase the flexibility of the supply of exported goods.
- Developing the export capabilities of the Egyptian establishments by launching a project to develop the training certificate program service for the practice of exporting, whereby building better local cadres by providing enhanced capacity building programs by international experts and making accredited training mandatory.
- Launching the consultancy services project for exporters by providing technical advice and market studies to exporters and formulating plans and policies to assist in innovation and localization of technology to improve competitiveness, whether by improving productivity or by improving product quality.
- Tax exemptions to stimulate investment, such as exempting distinguished exporters from indirect tax, exempting imports involved in manufacturing

exports from indirect tax, or tax exemptions for local producers who supply production inputs to exporting industries.

- Streamlining all export procedures at all levels and expediting the payment of export subsidy arrears due to exporters from the 2017/2018 fiscal year until 30/06/2019 to provide exporters with liquidity to meet business management requirements and pay obligations to workers and multiple entities such as insurance, electricity, suppliers, etc.
- Enhancing the orientation of Egyptian exports towards the African market, which represents only about 5% of the total Egyptian exports, taking into account the competition faced by Egyptian exports in those markets by some exporting countries through regular preparation for regional conferences in various regions of Egypt, promoting large projects and assisting foreign investors in searching for Egyptian partners.

The Logistics Sector

The logistics sector can activate the logistical strategy to make Egypt a hub for international companies, whether shipping, manufacturing, or trading companies, by establishing logistical centers for value-added, warehousing and re-export activities, which ensures having a huge commercial stock to meet local and international demand when needed. It requires preparing an integrated map for the establishment of logistic centers and commodity exchanges for commodity markets that depend on good management of the supply chain, including storage, transportation, and distribution to achieve cost reduction and liquidity in the movement of goods flow to and from the logistic centers. This can be done through:

- Making an inventory of all the existing markets (wholesale, retail, and market) determining their area and locations, evaluating their productive and administrative efficiency, and comparing the number of markets to the population density of each governorate to determine the current situation, represented by the number of markets to the population, while determining the optimal

ratio to be reached.

- Identifying the conditions and influencing factors of the different modes of transport, storage levels, and distribution networks, and understanding the relationships between these variables to determine the locations and specifications of the logistics centers in the governorates.
- Preparing an electronic trading system to link producers, retail markets, wholesale markets, and logistics centers so that the electronic trading system performs inference processes for the dynamics of distribution by performing quantitative modeling applications for Supply Chain Modeling.
- Activating a system of financial inclusion by agreeing with some banks to facilitate the opening of a bank account for all producers and merchants dealing within the system so that opening the account includes the issuance of an electronic payment card and a contract to accept electronic payments and the provision of simple-interest financing, provided that the affiliate agrees with the conditions of the bank.

Moreover, it is proposed to establish logistic centers at three functional levels, including the work that is required to establish a mechanism for the flow of goods and information both financial and logistical:

1. The international centers are located within the boundaries of both Greater Cairo and Alexandria, which are the main urban centers in Egypt. They also contain the vast majority of Egypt's population, both in the present and in the future. Transport facilities tend to be of great importance in terms of air transport, dry ports, logistics, rail, and international/domestic transport services.
2. Regional centers that serve the collection of materials at the city or county level and that must be served by a variety of different modes of transportation.
3. Gate centers, which are centers with multiple purposes and work as both international and regional centers functionally aiming that the international centers work to facilitate the international movement of goods. The main

objective of these operations is to practice export and import operations and these centers are characterized by being connected by a series of transport corridors that supports multimodal transport operations in road, rail, and inland waterway systems.

The International Transport and Multimodal Transport Sector

Reliance on the site only will not last as evidenced today by the transfer of Egypt's share, as having the pivotal ports to neighboring countries such as Saudi Arabia and Greece because of the emergence of new competitive hub ports, such as Saudi Arabia and Turkey, and the position of the port of Djibouti as an entrance to Central Africa instead of the Egyptian ports. The international transport sector must be developed and increase its competitiveness with the acceleration of multimodal transport mechanisms to reach Central Africa through:

- Preparing an annual comparative study of the costs of maritime transport services compared to neighboring countries.
- Preparing an annual comparative study of the time of maritime transport services compared to neighboring countries.
- Expediting the multimodal transport mechanisms to reach Central Africa, especially the Oweinat road to Chad, Alexandria, and Cape Town.
- Granting a discount on transit fees in the Suez Canal appropriate to the volume of transit and re-shipment in Egyptian ports.
- Focusing on increasing Egypt's share of the Belt and Road Initiative and available funding.
- Transparency and avoiding sudden decisions, especially concerning prices, as the whole world fixes prices for the whole year and new prices are announced for the next year after studying the comparative prices of competitors.
- It is permissible to negotiate directly with international companies from the perspective of the macroeconomic interest and not the return on the port.
- Promoting RoRo lines with all neighboring countries.
- The use of global risk management mechanisms

(ACCUDA) at customs, making white lists, and not charging the carrier with inspection costs, especially X-ray detection.

- Expediting the activation of the TIR agreement with the promotion and granting of all incentives to international land transport companies to modernize the land transport fleet in conjunction with the revival of the affiliated driver training centers to create a new generation of international drivers.
- Promoting the transfer of floating towers and cranes from the ports of Europe, whose volume of dealings to Egypt has decreased to activate the river transport.

The Scientific Research Sector

Establishment of a (Research and Development Fund) to support the research and development activities of companies in Egypt. The Research and Development Fund grants to companies wishing to develop their activities to support research and development for:

- Innovation and technology localization by focusing on the development of scientific research to improve competitiveness, whether by improving productivity or by improving product quality.
- Contributing to providing more serious and effective technology to access global supply chains, thus reducing production costs and increasing export opportunities.

Conclusions

Integration into global and regional value chains represents an important opportunity for most countries, among others, to foster industrialization and linkages between the primary sector and the rest of the economy, and to reduce heavy dependence on a small number of commodities and products. A significant portion of economic integration is the expansion of inter- and intra-regional trade, thereby achieving higher GDP growth rates, and improved resource allocation and distribution. Therefore, this paper aimed to provide a roadmap proposal to increase Egypt's participation in the global value chain, with a review of the role of different sectors

to link the domestic value chain with regional and global value chains.

The study found that Egypt faces many challenges that prevent its entry into the global value chain, such as the possible increase in the trade deficit in the early stages of Egypt's participation in global value chains, the absence of a regulatory body to protect exports and markets and prevent exports without a license, the lack of scientific research and development, the unplanned and random entry of some manufacturers to promising sectors, and the various challenges. As for transportation, just as companies are still in the early stages of being integrated into the global supply chain in terms of readiness for digital and modern applications, companies are still using a traditional approach. Therefore, action plans are required for the different sectors (the trade and investment sector, the export sector, the logistics sector, the international transport sector and multimodal transport, and the scientific research sector) to enhance the participation of Egypt in global value chains.

This paper advanced an original proposal for a roadmap to increase Egypt's participation in the global value chain, comprised of four main axes: A governance model for supervising the activities of the stakeholders of this domain to enhance consumer confidence, achieve conformity in legal regulations between participating markets, and apply modern labor policies for citizens and expatriates, as well as clear and adequate tax policies. Also, the paper presents detailed action plans for different connected sectors, such as the trade and investment sector, the export sector, the logistics one, the international transport and multimodal transport sector, and the scientific research sector.

Future Work and Limitations

As part of the above, this study focused on investigating the current status of Egypt and providing a roadmap proposal to increase Egypt's participation in the global value chain, so it is proposed that future studies can use the same methodology used in this paper to tackle the obstacles facing other countries to propose a roadmap to increase the participation of these countries

in global supply chains. This paper did not address the implementation mechanism, and in this regard, future studies can complement this paper in listing the implementation mechanism and testing the extent of the success of the proposed roadmap to increase Egypt's participation in global supply chains.

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