

The trade participation of developing countries in the context of the global value chains

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Key words

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Abstract

This Paper explores the main role of Global Value Chain on the Pattern of International Trade and the impact on the developing and New-industrial countries through exports promotion of intermediate goods across value chains activities globally, In Addition exploring the effects of the participation on the pattern of international trade and the new reallocation of industrial hubs which have been distributed along the global value chains over the world. The study applies the Qualitative analysis using the macro indicators relevant to the phenomenon to explain its impacts on the developing economies in a selected industry .

Introduction

Due to the expansion of the activities of Global value chains and their inclusion of all economic sectors on an international scale, many developing and emerging countries are tended to be engaged in global value chains through vertical specialization in one or more of the production stages of many productive sectors. Thus, this study analyzes the main trade indicators that are related to global value chains across a number of sectors most traded in global value chains to determine the extent of participation of developing countries in these chains that resulting in shifting in the patterns and trends of international trade and the change of international production centers for countries participating through the Global value chains.

Global value chains in agricultural and food commodities

Value chains in agricultural and food industries are more international in nature than regional, especially in the case of small economies, especially East Asian countries, which participate in many stages throughout the global value chains. However ,China has a different situation with regard to agricultural and food products, unlike global value chains. In other products, where the percentage of domestic added value increases in the inputs of intermediate goods used across the various stages of production, and the global value chain analysis includes food manufacturing industries, agricultural commodities, in addition related to the complementary services, where global value chains are linked to the downstream countries with the so-called “ The agri-food industry” includes both agricultural products , the food and beverage industry.

In this Regards , the Agri-food industry is increasingly organized and structured across global value chains through producers of processed and semi-processed food commodities, farmers and retailers in the participating countries, which in turn requires coordination Between traders and distributors. on the one hand, importers and exporters regarding managing and organizing how agricultural products are grown and processing methods to ensure that the final products would meet the quality and food safety standards . Therefore, the vertical integration of all producers at the different stages along the chain is necessary to ensure fulfilling these Global standards.

Regarding the consumption side, it was remarkable that in many countries the consumption pattern has changed, as consumers demand toward high-quality products that comply with health and safety standards, which has provided an opportunity for foreign direct investment and international companies producing food products in light of the trend towards liberalizing international trade to restructure and

organize their value chains. Through the participation of many local producers of other countries in the value chains organized by international companies (MNCs) in the developing countries, whose activities are linked to producers in developed countries through value chains through the fragmentation of production across the chain links.

The Characteristics of the value chain in agricultural commodities

In terms of length, the value chains of agricultural and food products are relatively long compared to value chains in other products, because of the stages they include, such as animal husbandry in some cases (such as dairy products), in addition to the fact that there are many agricultural inputs in the pre-production stage, Then the processing stages are carried out in the countries that specialize in the final stages of production downstream, and due to the high degree of fragmentation and the multiplicity of production stages across this industry, it is the longest to reach the final consumer.

In terms of the participation, it is notable from the Data reports issued by the OECD that in some developing countries such as (Vietnam, Cambodia and Argentina) the global value chain of agricultural products represents the highest percentage of exports, and for Argentina, it participates in the initial stages of upstream production in the chain compared to both From (Vietnam and Cambodia), China also occupies a high position in the index of participation in the upper stages of the value chain (which indicates that it participates in more than one stage of production with higher added value across the value chain), while India has a lower index Despite its high participation in value chains, and despite the similarity of the agricultural share in both countries. However, there is a difference in the participation of both of them in the agricultural value chain, and this is explained by the fact that India produces products that are characterized by the distance /closeness to the final consumers during less productive stages, while China participates in products with much longer production chains due to its participation in production processes in its various stages, which leads to an increase in the local added value of it through the value chains. Which mainly produce the inputs used in agricultural activities in other countries, and the three countries (*New Zealand, Vietnam, and the Netherlands*) are the countries most involved in the value chain of food and beverage products, and (*Malaysia, China and Korea*) are the most specialized in inputs in the production stages Intermediate goods in the upper links of the value chain (higher value added), while Mexico, Vietnam and Greece are among the countries that are most specialized in the final production stages in the lower links of the chain (lower centers) with the lowest added value, in addition to their participation in the processing services of imported food and agricultural products¹.

The Global value chain of the chemical Industry

Chemical industry is characterized by the large number of different value chains intertwined over its chain, which reflects the diversity and multiplicity of final and intermediate products across value chains more than other Industry chains, as the structure of the entire value chain starts from the production of oil and gas where it is converted into petrochemicals Basic chemicals, polymers, and specialized active ingredients through another production stages along the chain. Furthermore, The chemical industries also provide the essential raw materials and inputs for many products in multiple industries such as plastics, clothing, etc.

The chemical industry market is also witnessing many developments across the different stages in the chemical value chains. For instance, within the petrochemical sector, especially polymers and propylene, it suffers from a high degree of volatility in oil prices; While the new discoveries of the many materials that depend on natural gas able to feed the industry extracted from oil rocks all over the world. thus, especially in the United States, providing industries that depend on them for their needs of raw materials and ethylene.

These various developments have also contributed to redistribute the production of the industry geographically in the last decade, which lead to a great movement toward the Middle East countries

through the specialization stages in the industry. The vertical Trade in the chemicals chain contains a new number of competitors who try to seize the opportunities to participate and achieve high profits .

Most of the inputs in the chemical industry and the related subsidiary industries are characterized by their high domestic Value added . As the indicator of the length of the global value chains indicates, which ranges between (2 and 3) for most countries, while the length of the local production chain is longer than other industries, which led to the high participation of relatively small countries in the global production stages. In the value chains of the chemical industry 90% of the total participation in that sector, which is explained by the assembling process of the chemical industry in China with the aim of integrating them as inputs and intermediate goods through the production chains of other products in China.

With regard to the indicator of the distance to the final demand, it shows us the centers of the participating countries and the extent of their specialization in the activities of the global value chains for chemical products, which indicates a large variation in the participation of developing countries. There are some countries that specialize in basic chemicals in the initial stages, such as (Korea and China and Malaysia), while other countries are more focused on specialized activities in the later stages, for example (Ireland and Switzerland). A number of smaller countries appear in the index of high participation in value chains, especially in the chemical industries. In (Ireland) participation in value chains increases Value due to the high volume of investments for large pharmaceutical companies, especially from the United States, while (Singapore, Belgium and the Netherlands) are important outlets for basic chemical products, and for other countries (Switzerland, Germany, France, the United Kingdom and the United States) their participation in the global value chain is closely linked By producing intermediate goods that are exported for use in the production of the final product through other countries ².

Global value chains in the Automotive Industry

The automotive industry is considered to be one of the industries in which production is highly fragmented on a large scale. as the nature of the industry that depends on the dismantling of production and its global distribution has prompted the outsourcing of tasks in specialized production stages, a strategy that international companies have followed since the beginning of the nineties from by dividing and distributing its production operations for parts, components, support services and assembly to many countries of the world according to the comparative advantage. And hence , the value chain of Automobiles is considered to be also one of the most organized chains as it follows a hierarchical structure that includes the leading companies producing cars, which are concentrated at the top of the pyramid as main companies responsible for design, brands and final assembly³, Then the first-class producers come to the bottom as they produce complete sub-systems through cooperation with a large network of lower- and sub-level suppliers ⁴, and with the development of relationships and their interdependence has become more and more profound between car assemblers and the first class of producers across global value chains . For instance, the role of producers has evolved significantly through the attribution of production operations to international companies as This includes the product design stage, where the global demand for them from major companies is increasing for the efficiency of their design capabilities for automotive production systems and more complex operational processes.

In view of the slowdown in growth rates experienced by the developed countries during the global crisis of 2008-2009 and its significant impact on international car producers, many of them have taken a new strategy to internationalize car production by dividing production processes geographically and distributing them to production centers. In developing countries to take advantage of their comparative advantages, especially the emerging countries in the Asian region, the participation of developing countries in the value chains of the automotive industry is divided into three groups:

The first Group: has been led by China, which is one of the most important centers for assembling and manufacturing auto spare parts and its support services, as well as the Philippines, Turkey, Brazil and

India, the latter of which was able to maintain reasonable growth rates in the automotive sector and attract foreign investments in the automotive sector, most notably the Toyota companies Volkswagen, Ford, and Hyundai for the production of parts and components, as well as installation, assembly and maintenance services. Due to their ability to perform these services at a lower cost than their production in the mother countries, which suffered during the financial crisis from high production costs in addition to transportation and marketing costs in different regions and what is characterized by markets Developing countries from the expansion of the size of the local market to absorb the production of international companies across the value chain in addition to their ability to better provide information related to markets and consumer preferences.

Moreover , the role of international companies is limited to designing products in the initial stages of the value chain, which provides the opportunity for local companies such as (Tata and Cherry) in China to participate in the value chain for the production of auto parts, maintenance and assembly services for them and the ability to grow faster than in the past This enables it to produce complete parts and assemble them regionally through the regional value chains spread in East Asia and export them to the American and African markets.

As for the second group, includes countries that do not have the ability to introduce modifications to parts and components, such as the countries of South Africa, Thailand, Turkey and Egypt, whose participation is limited to the final assembly of finished components in the last stage of value chains (such as the assembly of heavy and light parts, glass, seats and car bodies), according to To the standards and criteria set by the parent companies, which gave them the opportunity to increase exports in this sector.

The Third group relied on integrating into the global value chains of the automotive industry by relying on regional trade agreements as an entry point for participation, including: Mexico within the framework of the NAFTA agreement, Hungary through the European Union, and Thailand within the framework of ASIAN, and specialization in the production of components that depend on the intensity of hands operating such as wire production, electronics assembly and export to leading companies in the United States and Eastern European countries that specialized in the production of capital-intensive components and exported to the European market

Global value chains in the electronics Industry

It is one of the most widespread chains, as indicated by many applied studies that studied a number of individual products in the electronics sector. The most prominent characteristics of electronics value chains are as follows:

a- The modularity of its products.

b- Standardized products.

c- Codification and computing systems that allow the interoperability of parts and components for the segmentation of production as it includes different stages of production such as (*product design, logistics and different parts of the production process*) and is often implemented by different companies and institutions working through stages different from the value chain⁵.

d- Low transportation costs over large distances for most electronic products, which are characterized by high values and low weights, which led to dependence on fast transportation with ease and speed (often by air), in addition to low transportation, delivery and shipping expenses for intermediate and final electronic products in most parts of the world.

e- Ease of coordination and linking between the different stages of production across the different countries participating in the value chains, which are carried out via the Internet in order to share and monitor a chain of information related to them.

Therefore, the participation of developing countries takes place within the framework of international contracts, whose role is limited to assembling products to leading companies. Most of the leading companies in the electronics industry are settled in advanced economies, especially in Europe, Japan and the United States. It is also noted here that emerging economies are the most represented in companies Contract manufacturing, where companies from emerging countries (Acer and Huawei) have been able to

develop their activities and move up the value chain from OEM to ODM with true original brand as the leading companies, while PC manufacturers in China also failed a bit and remained It operates under the same type of contracts.

In light of the available data, the participation of small countries has been shown to a high degree, most notably (Hungary, the Czech Republic, the Slovak Republic, Ireland) and others, through participation in importing a huge volume of inputs from abroad to participate in the assembly operations of the final products. Thailand and China) as contract producers by relying on transformational processes of imports and re-exports as semi-manufactured goods, as well as the high participation of countries such as (Finland and Japan) largely driven by their intermediate exports with high value-added and often exported to the industrialized countries according to contracts.

In this context, the analysis of the total network of the electronics industry based on vertical trade, it turns out that there are three regions that are considered to be the dominant poles of the global production of electronics (*Asia, NAFTA and Europe*) and the industry is highly concentrated in Germany, while the Asian pole remains dominant in the global perspective in this industry. Most of the leading companies are concentrated in Japan as major producers of spare parts and electronic components, while China is concentrated in the producers according to contracts, and most other Asian countries are linked with Japan and China through value chains in the import and export of electronic components according to the comparative advantage and vertical specialization of each country, with particular importance for the participation of some Countries such as (*Philippines, Thailand, Malaysia*) and others.

Changing the pattern of international trade through participation in global value chains

The change in the pattern of international trade means a change in the relative weights of the various components of international trade, through an increase in the trend towards trade within the industry instead of trade between industries, which indicates a change in the pattern of international trade through an increase in the volume of trade in parts and components at the expense of trade in final goods and thus change The structure of exports and imports (change in the pattern of international trade) (), which is largely due to changes in the production structures of many countries participating in global value chains, through two main directions:

The first trend: the tendency of the developed countries to reshape their production system through global value chains and the fragmentation of production processes according to the competitive advantage in the production stage and their distribution along the chain, which led to the inclusion of developing economies in their productive circles according to their specializations.

The second trend: the tendency of developing countries to participate in value chains through deep specialization in tasks and production stages, according to two basic approaches⁶:

- The first approach: developing the traditional, historical competitive advantage of some developing countries and focusing on the most efficient production stages for them to enable them to maintain their international competitive position through summit chains such as: the Philippines, Brazil, Mexico, Vietnam, Argentina by specializing in the production of components of value chain products Agricultural and food crops, which have a historical competitive advantage.

- The second approach: the trend towards creating a new competitive advantage away from the traditional advantage of the state through participation in new sectors such as electronics chains, cars and services, which is the approach followed by China, Malaysia, India, Singapore and other countries, as previously explained.

- The third approach: It is the approach that is considered the most successful in developing countries, which involves integrating the two previous approaches by preserving the comparative advantage in the traditional sectors and developing them in line with global developments within the framework of the international segmentation of production processes in addition to participating in promising new sectors and benefiting from Participating in acquiring experiences and skills through contracting systems across value chains and specializing in low value-added activities locally, enabling them to grow and mature in the long term and move to higher centers in the value chain. Among the most

prominent countries that have followed this approach: *China, India, Mexico, Morocco, Turkey, Malaysia, the Czech Republic, Ireland.*

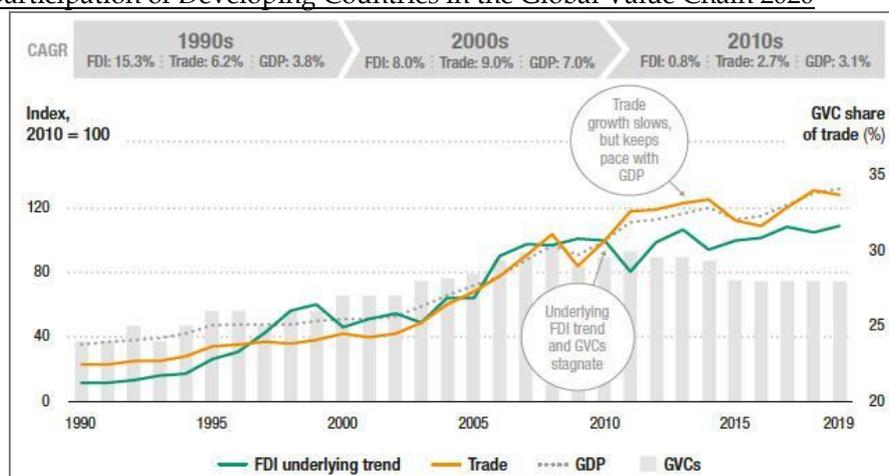
We refer here to the distinction between the change in the pattern of international trade resulting from the change in the relative weights of the components of the various total international trade, and the change in the pattern of international trade resulting from the ability of production functions to be switched or reversible (which Menhas presented in his study as one of the explanations provided to solve the Leontief paradox), which means that the function of Labor-intensive production can become after a certain level of relative prices a capital-intensive function, and thus the pattern of exports changes from labor-intensive goods to capital-intensive goods, and the structure of imports changes from capital-intensive goods to labor-intensive goods, which means that there is no clear pattern. The change in the foreign trade pattern of the country occurs through a change in the structure of the goods that are traded internationally (*Exports / Imports*) and resulting from many factors and economic policies. This is due to the fact that international trade is affected by the patterns of production and consumption in the country, in addition to the changes that the change in the state's mode of production means the transition from the integrated production system to the production of the entire final commodity within the state's borders to the international division of production. Furthermore, each country specializes in the stage of its production segmentation to produce a part or more of the final commodity, which affects the pattern of international trade in quantity and quality.

In terms of quantity, the volume of international trade increases; This is a result of the increasing transit of large shipments of parts and components across countries several times and their circulation through international trade, and in terms of type, the relative weight of parts and components trade is increasing at the expense of the traditional form of international trade in final goods.

In light of what we have presented previously regarding the strong relation between international trade & global value chains the following conclusions would be detected :

- The high participation of developing countries in many sectors through deep vertical specialization in the specialized production stages (one stage or several stages) - as we have previously explained - which reflects their ability to integrate into value chains and support their competitiveness in participation.
- The participation of some developing countries in value chains leads to a rise in the volume of their intermediate exports in the components of international trade, whether (goods or services through participation in international outsourcing services).
- The participation of developing countries in value chains also leads to an increase in the efficiency of human capital through participation in global production in accordance with the new production requirements and standards, which require the development of labor skills and raising the efficiency of performance, which is provided by participation through participation in the production systems of international institutions that lead to the transfer of expertise, skills and production technology to their suppliers in developing countries, in addition to increasing job opportunities in participating countries through specialized activities created by value chains that do not require the transfer of labor from one country to another, such as (outsourcing services).
- The high share of the participation of newly industrializing countries on a large percentage of trade in the inputs and components of many industries that were monopolized by the developed countries, which means that the economic geography of production has changed dramatically, as many of these countries were able to form specialized global production centers as previously mentioned. In the Asian region, in which China is considered the Factory of Asia due to the multiplicity of specialized tasks that

Figure 1: The participation of Developing Countries in the Global Value Chain 2020



Source: OECD, "DATA BASE", 2021.

Note: Trade is global exports of goods and services. GVC share of trade is proxied by the share of foreign value added in exports, based on the UNCTAD-Eora GVC database (Casella et al., 2019). The underlying FDI trend is an UNCTAD indicator capturing the long-term dynamics of FDI by netting out fluctuations driven by one-off transactions and volatile financial flows. (FDI, trade and GDP indexed, 2010 = 100; GVCs per cent)

As shown in the Figure above, the participation of developing countries in trade in intermediate goods and components and parts of products and services in the sectors referred to, and the ability of middle-high income countries to participate in industries with high added value such as electronics, cars and clothing, in addition to Low-middle-income countries, whose shift from specializing in primary commodities to participation in semi-processing industries, on the other hand, we note the decline in the participation of high-income countries in some sectors such as shoes, clothing and electronics, due to many developing countries seizing opportunities to integrate into the value chains of these Industries and the limited role of the developed countries in participating in their (upstream) activities through the processes of (design, innovation of trademarks and innovation of production systems).

As the previous figure shows the distribution of the share of trade in value-added over regions in the world as a percentage of GDP, which shows the development of participation in value-added chains for developing and developed countries. We note the high share of developing countries in them, especially the Asian region and China, which is the global center for the assembly of many chain products. In addition to the middle-income European countries and the rest of the world, which includes the countries of the Middle East, which refers to the phenomenon of geographic transformation of international trade through value chains, which allowed emerging and developing countries to participate in trade in value-added and benefit from it in improving the gross domestic product by increasing foreign trade, especially Exports, whether of low or high added value¹², as it is clear that countries specialized in aggregating products may add little value to foreign production inputs, but they generate a large proportion of national income through exporting value-added products according to the ability of the participating country to integrate in value chains. The global additive and by looking at the countries specialized in the assembly stage, we find that it does not import basic high-cost inputs, adds a relatively small value to these elements, and exports goods with a large foreign added value, and the ratios of exports with these value-added countries are often the lowest in the total exports. But even if it performs aggregation tasks with low value-added, its exports still generate a large part of its income - that is, the proportion of exports with a value-added to its total - as shown in the figure - is high and growing. Also, the ratio of exports to the value added of its Gross Domestic product with larger countries such as Japan, Germany and Spain.

The Role of Global value chains in The Economic Development

Global value chains at the international level contribute to the acceleration of the pace of developing countries catching up with developed countries in the levels of GDP and income, by increasing the convergence between developing and developed economies. At the local level, the local added value resulting from trade through global value chains can be extremely important given the size of local economies. In developing countries, value-added trade contributes about 30% to GDP on average, compared to an 18% contribution in developed countries. This indicates the positive correlation between participation in global value chains and per capita GDP growth rates. The per capita GDP growth rates in the economy whose participation in global value chains is increasing faster than others are two percentage points higher than the average. Moreover, participation in global value chains usually leads to job creation in developing countries and employment growth at a greater rate, even if participation in those chains is linked to the imported contents that make up exports.

Most developing countries are also increasingly participating in global value chains, whose share in global value-added trade has increased from 20% in 1990 to 30% in 2000 ¹³ and then to more than 40% today. However, many poorer developing countries are still striving to access GVCs in sectors other than primary resource exports. GVCs are usually coordinated by transnational corporations that have cross-border exchanges of inputs and outputs across the networks of their affiliates, contracting partners and independent suppliers and form value chains. Global coordinated transnational corporations 80% of world trade. Investment decisions made by international firms shape to a large extent the models of value-added trade in global value chains, so countries in which FDI is concentrated are able to participate more in global value chains and reap relatively higher domestic value added from trade.

Conclusion

Participation in the global added summit series is a new framework for international trade that allows increasing interdependence between North and South countries, which leads to benefit for both parties. For developing countries to specialize in the specific stages, and developing countries also benefit from participating in the production of intermediate products for international companies according to specific specifications, which gives them many advantages related to modernizing their production structures and participating in new sectors, in addition to increasing the volume of intermediate exports and increasing the international trade movement through their regions.

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