



**Universidad
Zaragoza**

Undergraduate Dissertation
**DEGREE IN BUSINESS ADMINISTRATION &
MANAGEMENT**

Global Value Chains:
Evolution, Impacts and Trends

Author

María Jiménez Cáseda

Director

Ana Belén Gracia Andía

FACULTY OF ECONOMICS AND BUSINESS

2021

SYPNOSIS

Author:

María Jiménez Cáteda

Director:

Ana Belén Gracia Andía

Title:

Global Value Chains:
Evolution, Impacts and Trends

Degree:

Bachelor's Degree in Business Administration and Management

Year:

2021

Abstract:

The following paper is a comprehensive understanding of Global Value Chains, focusing on their evolution and current situation. Since their rise in the 80s, GVCs have been a key feature of the globalized world. In the paper it can be seen how most countries participate in GVCs whether through forward or backward linkages and how this participation has impacted on them. However, several trends and the deglobalization in which the current economy is, are changing the way GVCs operate. Shaping the appropriate reconfiguration of GVCs is essential for international managers. Aspects such as protectionism, increasing labor costs, environmental pressure and the Covid-19 pandemic are influencing GVCs and should be taken into account. Several projections are considered in the paper related to GVCs, from the emerging of new economies to the displacement of China as the main world manufacturer. Several databases have been used like the International Monetary Fund (IMF) Database, the World Bank and OECD national accounts data and the World Wealth and Income Database.

Resumen:

El presente trabajo es un análisis exhaustivo de las Cadenas Globales de Valor, centrándose en su evolución y situación actual. Desde su aparición en los años 80, las CGV han sido una característica clave del mundo globalizado. En el documento se puede ver cómo la mayoría de los países participan en las CGV, ya sea a través de “forward” o “backward linkages”, y cómo esta participación ha repercutido en ellos. Sin embargo, varias tendencias y la desglobalización en la que se encuentra la economía, están cambiando el funcionamiento de las CGV. Desarrollar la reconfiguración adecuada de las CGV es esencial para los directores internacionales. Aspectos como el proteccionismo, el aumento de los costes laborales, la presión medioambiental y la pandemia del virus Covid-19 están influyendo en las CGV y deben tenerse en cuenta. En el documento se comentan varias proyecciones relacionadas con las CGV, desde la aparición de nuevas economías hasta el desplazamiento de China como principal fabricante mundial. Se han utilizado varias bases de datos, como la del Fondo Monetario Internacional (FMI), los datos de las cuentas nacionales del Banco Mundial y la OCDE, y la base de datos de riqueza e ingresos mundiales.

TABLE OF CONTENTS

1. Introduction: Rise of Global Value Chains.....	5
2. Evolution of Global Value Chains	8
Participation and main countries involved in GVCs	8
GVCs and their impact: China’s case	12
3. Current situation of Global Value Chains: Main trends hindering GVCs.....	18
Trends hindering GVCs.....	18
1. Protectionism Policies and Trade Wars.....	19
2. Increasing labor costs of China	21
3. Different approaches towards costs.....	22
4. Environmental pressure.....	23
5. Economic crisis of Covid-19.....	25
4. Possible scenarios and future evolution of Global Value Chains.....	27
Possible scenarios	27
1. Emergence of new countries as key participants.....	27
2. Increase of domestic production.....	31
3. Production within China.....	32
Future evolution of Global Value Chains	33
5. Conclusions	35
BIBLIOGRAPHY	36
TABLES AND GRAPHICS	41

1. Introduction: Rise of Global Value Chains

The concept of Value Chain was first introduced by Michael E. Porter in the book “*Competitive Advantage: Creating and Sustaining Superior Performance (1985)*” where the Harvard graduate defined Value Chain as “a collection of activities that are performed by a company to create value for its customers”. Therefore, this aforementioned value created during the process is what leads to the subsequent competitive advantage.

On the other hand, the concept of Supply Chain which was first mentioned by an article of the newspaper “The Independent” in 1905, is defined as a network of organizations (suppliers, factories, distributors, clients, third-party logistics...) taking part in the manufacturing, delivery and sale of products or services to clients (Le Moigne, 2017).

The origin of both concepts can be traced down to the 20th century with the rise of the Second Industrialization (1914) and the First Globalization (1870 and 1914) as a consequence. The Second Industrial Revolution had a major impact in transport and telecommunications which lead to an increase in trade and communication between regions, connecting the different economies of the world. However, the most important breakthrough that indeed is believed to be the start of Supply Chains is the invention of the Assembly Line in the 1920s by Henry Ford. Ford is considered the pioneer of modern Supply Chains, as the assembly line innovative system completely changed the manufacturing process that was used until that date. The division of labor created by the assembly line, concept which was firstly introduced by Adam Smith, permitted to increase productivity reducing the costs and workforce needed. This systematic approach was therefore extended to other industries creating a benchmark for the supply chain management.

A new concept related to both Supply Chains and Value Chain, known as Global Value Chains (GVCs), appeared in the 80s. GVCs, following the main concept, can be defined as the network created by a company that expands to several countries with the purpose of creating and distributing products and services to customers.

Global Value Chains emerged due to the ideological movement known as Neoliberalism that appeared in the 70s as a response to the Keynesian policies implemented by the USA

government after the Great Depression in 1936. The Golden Age of Capitalism (1951-1973) where Keynesian economic thinking was the mainstream, stated that the main driving force for the economy was the aggregate consumer demand. Therefore, these policies encouraged the intervention of government in the economy injecting money in order to build infrastructures, improve education and other public services with the purpose of increasing consumer demand.

However, they were displaced by Neoliberalism, which was the response to the aforementioned policies and the striking oil crisis in 1973. Neoliberalism, “a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade” Harvey (2005, p. 2), permitted the creation of more globalized structures for supply chains. According to the definition, neoliberalism economic thinking opposes to the intervention of governments, giving them a restricted scope of actions limited to regulation of contracts, monetary policy, etc. This less restricted economy permitted free trade between countries, changing protective economies by economies oriented towards exports and imports, giving rise to what we know today as Global Value Chains.

There is clear evidence reflecting the shift from Local Value Chains to CVGs in the main economies of the World during the 80s which can be exemplified by these two facts. The first one was the emerging of governing bodies and agreements with international scope that regulated international trade. The main purpose of these types of supra national organizations was to overcome the major challenges that came with the globalization of the world, which included cooperation and resolution of conflicts between economies and companies operating in several countries. International bodies that can be highlighted are the foundation of United Nations in 1945 in San Francisco, USA, which main goal is to maintain worldwide peace and security while encouraging cooperation between members, and the World Trade Organization (WTO) in 1996. The WTO is the main international body enforcing international trade laws and rules. Other agreements were also created during the 80s and 90s, such as the North American Free Trade Agreement (NAFTA) in 1990 or the Asia-Pacific

Economic Cooperation Agreement (APEC) in 1989. Furthermore, international trade and GVCs lead to the creation of worldwide standards like IFRS in 2001.

The second evidence that highly endorses GVCs impact is the increasing relationship between countries, especially in terms of trade. As it can be seen from *Table 1. Exports of goods and services for the World* in page 41, there has been an important increase in exports since 1960. The indicator used, “Exports of Goods and Services as a percentage of the Gross Domestic Product of the World” (NE.EXP.GNFS.ZS), shows how from 1960 to 1970 the exports were increasing in a stable trend notably rising during the first years of the 70s.

World trade has been increasing since the 60s and the international approach to create value in products and services has also invigorated considerably. One of the main reasons is the benefits Global Value Chains have, or at least have had until now. Developed economies, have gained mostly in cost-based benefits, due to both cheaper labor costs and availability of raw materials. Furthermore, recent studies show that GVCs have had a positive impact on productivity and income per capita, especially for medium and high-income countries. While in developing countries have had a positive impact as well, studies show that changes are less important than in developed countries and can be surpassed by several drawbacks such as deregulation of labor rights and environmental issues, aspects which will be later analyzed.

Despite the aforementioned fact, one advantage that can be highlighted regarding emerging economies is the increment of foreign investment, followed by the ability to integrate in the world economy reaching industrialization at a rapid rate. GVCs in developing countries have had also a positive impact on local companies, as they have benefited from shared information and knowledge from global companies established there.

Two indexes are usually used to measure GVCs participation: backward and forward linkages. Backward linkages are defined as the share of foreign value-added in total exports of a country and forward linkages are the domestic value-added embodied in intermediate exports that are further re-exported to third countries, expressed as a ratio of gross exports.

2. Evolution of Global Value Chains

Global Value Chains literature is still relatively scarce, as it was not until the 1990s when Regional Value Chains started to developed into GVCs. Therefore, quantification of GVCs is a difficult task despite having several data bases that permit to carry out reliable conclusions.

Participation and main countries involved in GVCs

Several studies have been performed in order understand the issue of vertical specialization, including the pioneer in the subject David Hummels. Vertical specialization occurs when a country uses imported intermediate parts to produce goods it later exports. This definition captures the idea that countries link sequentially to produce a final good defined as GVCs. (Hummels, 2001)

It is assumed that a country can participate in vertical specialization in two ways: first, uses imported intermediate inputs to produce exports; second, exports intermediate goods that are used as inputs by other countries to produce final goods for export. (Koopman, 2014)

The first type is defined as *backward* linkage participation and the second type is called *forward* linkage participation. The sum of both types can be used as an indicator to identify the total participation of an economy in GVCs. If a country has a more predominant backward participation the economy itself is positioned in the final phases of the supply chain, that is to say closer to the final consumer. On the other hand, if an economy shows clear evidence that the type of participation is forward, the economy is placed in the early stages of the supply chain. This last type of linkage shows a specialization of the country in exports of intermediate products.

A recent study (Álvarez, 2020) conducted using the data bases of Trade in Value Added, TiVA disclosed by the World Trade Organization (WTO) and the Organization for Economic Co-operation and Development (OECD) has concluded that those economies closer to the

final consumer (backward linkages) are more sensible and are indeed more exposed to supply shocks, an aspect that could be proved with the Covid sanitary crisis.

The same database TiVA will be used to carry out an evolutionary analysis of participation in GVCs. The database seeks to analyze the value added by a country in the production of any good or service that is then exported and offers a comprehensive picture of commercial relations between nations. The last edition was published in 2018 and included indicators for the period 2005-2015. It comprises 64 economies: all OECD, EU28 and G20 countries, most East and South-east Asian economies and a selection of South American countries.

Participation in backward linkages is calculated using the foreign value added as share of gross exports. On the other hand, participation in forward linkages is calculated with the domestic value added in foreign exports as a share of gross exports.

To perform an analysis on the degree of participation of the different economies in the world it is necessary to sum up both, backward linkages and forward linkages of a particular country. In order to assess how this concept has changed over time, it has been calculated for both years, 2005 and 2015. In *Map 1. Global Participation of the World Economies in GVCs in 2005* in page 41 shows that the minimum percentage an economy had was 27% and the maximum was 69%, belonging respectively to New Zealand and Luxemburg. The former has such a strong participation in GVCs due to its relevant backward linkages, which contribute up to 58%. In economies where the main form of participation is through backward linkages, the production of outputs requires substantial Intermediate Inputs from many other industries (exports from other countries) and therefore are closer to the final consumer of the product. Another important figure was the 61.2% of participation that Malta had. This was a similar case to Luxemburg as the backward linkages of Malta contributed up to 50%, becoming mainly dependent of imported Intermediate goods. One of the reasons that explains such high figures is the small size of these two countries.

On the other hand, New Zealand compared with the other economies in the study participates in GCV with a low degree. It is important to highlight that the main economic activity and exports of the country were and are agricultural products, mainly meat. Agricultural products and services such as tourism, another important economic activity of the country does not

need as much inputs from other economies as other industry- intensive goods. It is also relevant the isolation of the country which makes international trade less accessible.

Excluding the marginal data, the Asiatic region shows relatively high percentages of participation in GCVs. For instance countries such as Singapore (63.7%), Chinese Taipei (53.8%), Korea (53.3%), Malaysia (60.9%), Thailand (52.1%) and Vietnam (50.5%) are among the highest.

Looking at *Map 3. Global Participation of the World Economies in GVCs in 2015* in page 42 it can be inferred how the world economy has evolved. The gap between the maximum and the minimum participation increased. The highest continues to be Luxembourg with 73.4% (a 4% greater than in 2005). Regarding the lowest, it is 26.2% (1% lower than in 2005) belonging this time to Argentina, which replaced New Zealand, although the figures of both countries were similar.

An important aspect that can be highlighted is the presence of the Easter European economies in the GCVs in 2015. Countries such as Czech Republic (58.6%), Hungary (63.1%), Slovak Republic (65.4%), Slovenia (55%) or Bulgaria (53.9%), despite having a relatively high percentage of participation in 2005, the participation is more accentuated in 2015. A possible explanation to this increase could be the membership and integration of these economies in the intra-Community trade of the European Union, as it was not until 2004 that they joined the EU, being 2007 for Bulgaria.

While there are changes during the analyzed period, it can be concluded that variations were really small as Asiatic countries maintained their strong participation.

In *Map 2. Position of the World Economies in the Supply Chain in 2005* and *Map 4. Position of the World Economies in the Supply Chain in 2015* in page 42 and 43 respectively, is represented what type of linkages an economy has. Those countries with a darker color show a positive result in the difference between linkages and therefore have predominant forward linkages. Those countries with lighter color and negative result have more backward linkages. The two world economies where most of the exports are based on imported intermediate products are Luxembourg and Malta in both 2005 and 2015. On the other hand,

Arabia Saudi is the economy most specialized in the manufacturing of exported intermediate goods for both periods.

When comparing regions in 2015 we find that the European Union (28 countries) has a difference of 2.5, being slightly specialized in the manufacturing of intermediate products versus final goods. However, this number is even higher for the United States (9.7) or the Non-OECD economies and aggregates with a 12.7.

The graphs *Graph 2. Backward Linkages from 2005 to 2015*, *Graph 3. Forward Linkages from 2005 to 2015* and *Graph 4. Global Participation in the GVCs from 2005 to 2015* in pages 43 and 44, show the evolutionary pattern the main world economies have followed. Two main periods can be highlighted: 2007 and 2014-2015.

In all the graphs there is a recession of all the indicators during the year 2007, however the decrease was higher in the backward linkages than in the forward linkages. This proves that those economies that rely more on backward linkages are more vulnerable to external shocks and therefore more affected. While forward linkages and the participation percentage of the different economies have been stable more or less through the years, backward linkages were more volatile especially during the period 2014-2015 where they decreased, anticipating the current trend defined as deglobalization. When looking at China, one of the most important economies in GVCS, it can be seen that has a strong position in both *backward* and *forward* linkages during 2005-2015. The Asian country has been the focal point of both trends: it is the world's leading exporter of manufactured goods and the world's largest importer of many raw materials. (Gereffi, 2015).

A more intensive study will follow regarding the blocks in which economies can be spitted: developing economies and developed countries, analyzing how globalization, especially the participation in GVCs have impacted them.

GVCs and their impact: China's case

In 2016 the newspaper “The Economist” asked “YouGov”, a firm that specializes in market research internet-based, to conduct a survey on people’s attitudes towards immigration, trade and globalization. The result (*Graph 6. Attitudes towards globalization against change in GDP per person*, page 45) revealed a breach between developing economies and the Western countries. The countries that agreed the most with the statement “Globalization is a good force”, were India, Philippines, Vietnam, Indonesia and Malaysia, countries that are indeed considered emerging economies. On the other hand, developed economies were not as convinced.

In order to assess whether Globalization has or has had a positive impact, some indicators can be taken into account to measure the impact on national output, labor market, inequality and information-sharing.

Several trends indicate that trade openness has correlated with better macroeconomic performance in many EMEs (Arslan, Contreras, Patel, Shu, 2019). Indicators such as GDP growth or GDP per capita can be used to measure the economic performance and living standards of EMEs. In *Graph 7. GDP growth (annual %) for several economies* in page 46, appears the GDP growth rate for both developed economies (United States and Spain) and developing countries (China and India). It can be seen that prior to 1979 developing economies fluctuated from positive to negative growth rates, while on the other hand, developed economies had positive growing rates since the beginning (excluding the United States in 1982 when the recession ended). Since 1979, China and India have maintained higher GDP growth rates than developed economies. Furthermore, 1979 was an important year for China as they opened to international trade for the first time. The expansion of Global Supply Chains and the Second Globalization (1985) coincide with those years. Therefore, the better macroeconomic performance of both countries could be attributed to some extent to their participation in the world economy.

Another impact of Global Value Chains is related to the labor market. While the impact is broadly positive, there are several remarks to take into account. The core of GVC development has three main processes: importing, exporting and foreign direct investment.

Corporations participating in GVCs are typically involved in at least one of three processes and usually in all three simultaneously. In all cases, there is strong econometric evidence at the firm- and industry-levels to show that internationalized firms are larger (employ more workers) and pay higher wages than domestically-owned firms. (Shepherd, 2013).

Exporting corporations (participants of GVCs), produce a higher labor demand than non-exporting corporations (only present in the domestic market) for several reasons. A sound explanation would be that exporters tend to have higher sales and in order to cope with demand more workers are needed. However, higher output is not the only reason, as in order to become an exporter firm, production processes and supply chain management has to be improved. As a result, firms must employ skilled workers with experience in the field. This concept was introduced as the “preparation effect” by Iacovone and Javorcik in 2012.

GVCs are believed as well to have a repercussion on wages and equality. While scholars at the beginning of empirical literature (Feenstra and Hanson, 1996; Feenstra and Hanson, 1999; Geishecker and Görg, 2008; Hijzen, 2007) believed that the major wage changes depended on the skill level of labor force, more recent studies throw the idea that not only the skill degree is important but also the type of task. A study conducted by Baumgarten for German workers showed that a higher degree of interactivity, and non-routine activities, protect workers from wage adjustments.

Looking at the links between GVC participation and wage inequality, the empirical results say that the degree of participation in GVCs is not the main driver of wage inequality but the nature of GVC participation. We can mention two types of participation: low-skilled offshoring and high-skill offshoring.

- The most common one (or at least until recently) is low-skilled offshoring from high-income countries to low-income countries. Another common characteristic about this type of offshoring is that activities are also routinely tasks (Ex: assembly). As a consequence, low-skilled workforce from the high-income country has to compete with the salaries and labor costs of low-skilled workers in the emerging economies. This leads to an adjustment of wages in the developed economies for low-skilled workers, increasing the inequality gap between income groups. In conclusion, low

skilled employees in routine works tend to be adversely affected by world trade liberalization, especially in already established economies. (Heckscher Ohlin-Samuelson)

- The other type of offshoring is high-skilled, which consist on outsourcing tasks that require more knowledge, such as software developing or innovation activities. In the past few years this trend has increased, as a lot of companies have outsourced services to other countries. The impact of this type of offshoring on wages is still unclear. Some scholars believe that this type of offshoring could lead to a decrease in wages of high-skilled workers of high-income countries (like it has happened with low-skilled workers). This type of offshoring also could have an impact on wage inequality in low-income countries. As high-skilled workers in developing countries are more demanded, their wages tend to increase. This leads again to a greater inequality between income groups.

Therefore, the impact GVCs have on the labor market will vary depending on the type of labor needed. The ratio unskilled workers vs skilled workers will also change depending on the sector in which the firm is operating. Industries such as educational and health services require skilled workforce while mining, construction or agriculture require less skilled employees (*Table 1. Skilled to unskilled ratio in industries*, page 47).

Inequality does not only apply to labor force, but in general to the whole population. The integration of countries to the global economy through a complex series of “flows”, like trade and investment (GVC) have as a consequence not only the wage adjustments, but is also helping to shift the equilibrium between labor and capital, giving a greater share of income to the owners of capital (entrepreneurs) and a smaller share to workers. When looking at graphs, *Graph 12. Relationship between trade and inequality-China* and *Graph 13. Relationship between trade and inequality- The United States* in page 49 a relationship between trade as a share of GDP (participation in GVCs) and inequality can be introduced. Taking into account a developed country (United States) and a developing economy (China), a connection can be drawn between the two indicators: when international trade increases after 1980, inequality also does. On the other hand, when shocks occur in trade (2007

economic crisis) inequality also tends to decrease. However, when looking at other countries the link is not as clear. India for instance, has had an increase in inequality since it started to participate in the global economy, however the economic crisis only made inequality to increase at a slower pace rather than decreasing it.

Regarding the impact on living conditions, looking at *Graph 9. GDP per capita (current US\$) for several economies* in page 47 it can be seen that while GDP per capita has increased for both developing countries, India and China, developed economies as Spain or The United States have increased as well. Therefore, while it may seem that globalization and openness to international trade have contributed to a better standard of living for developing economies, is still very far away from the levels of more advanced economies.

Global Value Chain (GVC) approach has recently proved that international links have an important role on technological knowledge access and innovation improvements (Gereffi, 1994 and 1999; Kaplinsky, 2000; Humphrey and Schmitz, 2002 a and b). Related to this framework, several empirical studies have shown that relationships between global firms and local producers in EMEs (developing countries) may lead to learning and innovation activities (Nadvi and Schmitz, 1999; Schmitz and Knorringa, 2001; Gereffi et al., 2005; Giuliani et al., 2005). This link between international and local corporations is defined as “firm upgraded”. Some concerns related to “firm upgraded” have yet to be reviewed as is not clear how Global Value Chains exactly encourage upgrading processes in emerging countries. The improvement would not be as direct as thought. In order to enter global value chains, local firms need to invest first in obtaining technological abilities to effectively engage in the world economy. This is sometimes difficult due mainly to lack of funds, information and government policies. That is why a lot of emerging economies try to attract FDI as is believed that technological and managerial knowledge can ultimately lead to build technological capabilities, known as well as “indigenous innovation” within the developing country.

It is believed therefore that overall GVCs matter for economic development in several ways, since the ability of countries to prosper depends on their participation in the global economy, which is largely a story about their role in GVCs (Gereffi and Lee, 2012).

Engaging in GVCs, whether is through direct foreign investment or through imports and export of intermediate products leads to positive outcomes both in terms of output and information sharing, despite the possibility of an inequality increase between income groups or the still poor living conditions of the population in developing economies. Studies suggests that while GVCs are linked to higher employment opportunities and development, other benefits such as income gains or working conditions will depend on the type of participation.

Regarding the main developing economies, China has been a key participant of source of supply for the majority of industries and has established itself as the leading provider in Global Value Chains. The Asian country, defined by the World Bank as “the fastest sustained expansion by a major economy in history”, is a clear example of how industrialization and participation in the global economy has enabled a country to increment their GDP and GDP per capita. Before 1979, China was governed by Mao Zedong, who controlled the economy of the country using a centrally-oriented model. The main features of the model were controlled prices, high government intervention and production goals. Furthermore, as the objective was to convert China into a self-sufficient economy, international trade was limited only to goods that were difficult to produce within the country. The average GDP growth rate during 1961-1978 as seen in *Graph 10. GDP growth (annual %) – China* in page 48 is believed to be 5,37% (the reliability of the data has been questioned by analysts, as during this period, Chinese government officials usually exaggerated production levels due to several political motives (Morrison, 2015)). For the same period, the GDP growth rate during 1979-1996 was 10,01%. When taking into account a longer period, 1979-2020 the average GDP growth was 9,39%. While innovations in communication, transportation and technology, have increased productivity and therefore contributed to this increment in GDP, a clear component was globalization and participation in the world trade (GVC). It is important to mention that since 2012 growth rates have been more stable and closer to already developed economies. Rates around 6% are still relatively high, however as output level achieved by China is really high (almost as high as the leading country, *Graph 7. GDP growth (annual %) for several economies*, page 46), growth rates are bound to be still positive but lower. This happens because it is easier to obtain higher rates in the early stages of an emerging economy (around 14%-15%) than once a country is already established in the World trade.

Therefore, we can conclude that the first major impact related to participation in GCVs (better macroeconomic performance in terms of output) is confirmed for China.

Labor market in the Asian country has also undergone changes, while during 1990 to 2000 the economic growth was mainly focused on industrial labor; the current world shift to service-based activities has had a major impact on employment. Using a linear regression model, Yan-gang from Wuhan University of Technology (2018), analyzed the impact of change in industrial structure and global value chain on Chinese labor employment. The results showed that the degree of participation in GVC of the service industry was positively connected to employment in the same industry. Therefore, when the participation in GCV was higher, the demand of workers increased as well.

China went from being a poor and undeveloped economy in 1978 to become the world's leading emerging country. However, income distribution has not been that proportionally distributed. As seen in *Graph 12. Relationship between trade and inequality-China* in page 49, inequality, measured as the share of total income going to the top 1%, has increased since 1980 from 6% to more than 15%, showing wealth accumulation.

Regarding information sharing and innovation improvement linked to participation in GVC the Chinese market confirms the aforementioned idea. The paper by Zhu and Tomasi contributes to the vast empirical literature on firms in international trade, documenting a positive connection between firms' imported inputs and their export performance. The study looked up the disaggregated Chinese customs data between 2001 and 2013, obtaining results that indicated GVC have an impact on the "quality channel". The study demonstrated that having access to foreign inputs enabled Chinese firms to improve considerably the quality of products, and therefore to be able to compete with developed countries. Furthermore, the study strengthened that quality upgrading was even stronger when the inputs came from high-income countries, proving the benefits GVC exchanges have in sharing knowledge.

3. Current situation of Global Value Chains: Main trends hindering GVCs

Contrary to globalization, “deglobalization” is defined as the process in which interdependence and integration between countries decreases, and as a consequence world trade as a percentage of GDP also does.

It is important to mention that around the concept of globalization there are several dimensions. Trade globalization is one of the core aspects, but political or social globalization are also important variables. While trade globalization has “slowed down” over the past years, other types of globalization such as information globalization has increased considerably. Some examples of the increment in information flows would be patents, high-tech products or international data transfer.

During the chapter the main focus will be on economic globalization oriented towards trade globalization.

Trends hindering GVCs

In the world economy there has been a cyclic phenomenon between globalization and deglobalization, as in 1930s and in 2008 there was a clear decrease in world integration. The limited literature reveals that antecedent of deglobalization were based only on economic factors and later included political and social dimensions (Stiglitz, 2007). However, the origin of the current period of deglobalization in which the economy is (*Graph 1. Exports of goods and services for the World*, page 41), is political globalization. Deglobalization starts when the disadvantages of globalization are perceived in national society. The main drivers are therefore, developed economies. There are concerns that unemployment or offshore of developed economies is related to increasing imports by emerging countries. As a consequence, when an economy is mature and “slower”, the usual political choice is towards protectionism in order to protect resources (Kim, H. M., Li, P., & Lee, Y. R, 2020).

Political concerns are not the only antecedent of deglobalization that affects Global Value Chains as there are other aspects hindering world trade. Some examples disrupting current GVC would be the increasing labor costs of China, different approaches towards costs, environmental pressure and the sanitary and economic crisis of Covid-19.

1. Protectionism Policies and Trade Wars

Increasing populism and nationalism has been shaping world trade since 2017. Since that year, several major political events have impacted the economy and specially the relationship between countries. Gowling WLG (an international firm specialized in world trade) in their annual report stated that “There has been a sharp and sustained increase in discriminatory – or trade restricting – policies being enacted and implemented worldwide since the global financial crisis”.

The main driver of protectionism measures that spread deglobalization is considered to be the USA, with president Trump encouraging an ‘America First’ trade policy. However, tensions between the two world economic leaders appeared before signing the “Presidential Memorandum Targeting China's Economic Aggression”. The WTO recognized China as a market economy in 2017, and when an economy is granted such status, it limits the protectionism measures that can be taken against that country. As a consequence, the USA refused to recognize China as a market economy. With the main goal of reducing U.S. trade deficit and maintaining the lead position in the world economy, it imposed new tariffs to world trade, implemented restrictions on China’s investments in American technology, reinforced exports control and increased the products that could not be shipped to China. In response to these measures, China accused the U.S. of unfair trade practices. The tension aforementioned does not only affect the two participants, as it threatens the global economy. The World Bank has tried to forecast the economic impact this war trade will have using a Computable General Equilibrium (CGE) Model, stating that “The analysis shows that a US-China tariff escalation could reduce global exports by up to 3 percent (674 billion dollars) and global income by up to 1.7 percent (1.4 trillion dollars) with losses across regions”.

Protectionism measures have been in auge as well in Europe. “Brexit”, defined as the withdrawal of the United Kingdom from the European Union started in 2016 when 52% of citizens voted to leave the EU. One year later the decision was supported by the UK government when Article 50 of the Treaty on the European Union was applied. The consequence of this political and economic decision has far-reaching effects in world trade, affecting mainly to foreign corporations operating in the UK and British corporations operating in Europe. It is important to mention that the European Union establishes tools in order to increase integration between members, permitting free trade between countries. That is why since its incorporation in the European Union, UK-EU trade has increased enormously, converting the EU the UK’s most important trade partner. As a result, the withdrawal of a member will have disruptive effects on GVCs and trade. The most repercussed aspect is the organizational design of firms, as increased restrictions on trade may incurred in higher coordination costs, more complex regulations and administrative duties.

Therefore, it can be concluded that the world economy is undergoing through a period of protectionism in which international institutions are not able to act in consequence. A clear example of weakness in the organizations controlling world trade, would be the resignation of the head of the WTO, Roberto Azevedo, in August 2020. Furthermore, the WTO has been at a critical moment due to the blockage of its main dispute settlement mechanism, the Appellate Body. Defined by the WTO, “the Appellate Body was established in 1995 under Article 17 of the Understanding on Rules and Procedures Governing the Settlement of Disputes (DSU). It is a standing body of seven persons that hears appeals from reports issued by panels in disputes brought by WTO Members”. Currently, the institution is not able to review appeals due to the ongoing positions.

After World War II, the world has actively participated in growing economic integration encouraged by the creation of international institutional agreements. Firms since then, have taken advantage of the removal of barriers to trade in order to develop global value chains. However, political factors and the deterioration of supranational tools have impacted economic integration affecting the management and future forecast of GVCs.

2. Increasing labor costs of China

Another aspect influencing the current situation of GVCs would be related to labor costs in China, key participant of source of supply in world trade. Chinese production is characterized by two main points. On one hand, production is based on cheap labor and low wages and on the other hand, Chinese exports are controlled by TNCs (Transnational Corporations). Therefore, foreign and Chinese managers have focused on decreasing labor costs as a strategy in the last years. China has been able to provide workers willing to earn low wages, as a result of the privatization of state-owned enterprises in the mid-1990s which led to a decrease in the worker's rights. (Bieler, A., & Lee, C. Y, 2016)

However, as production in the country is mainly based on the idea of cheap labor, an increased in these costs could interrupt the current trend of export production in China. A paper presented by Janet Ceglowski (Bryn Mawr College) and Stephen S. Golub (Swarthmore College) explored the evolution of China's relative unit labor costs in manufacturing, and concluded that manufacturing unit labor costs increased from 22% to 33% of US unit labor costs between 2003 and 2009. While both productivity and wages have increased in China over the past years, relative Chinese wages have increased at a greater rate than productivity.

It is important to mention that labor costs in China are still considered low compared to other developed economies such as the U.S., The European Union, Japan, ... Nevertheless, the increase in labor costs (one of the main competitive advantages related to GVCs location) can have a strong impact on China. A clear consequence is how corporations are moving business units to other emerging countries that present the labor costs that China had at the beginning. For instance, apparel manufacturers moved from China to other emerging countries like Sri Lanka and Bangladesh, where labor costs are one-seventh of those in China.

Therefore, while changes in labor costs may not decrease global participation in GVCs, it will affect location distribution. GVCs location model can shift from China-based to other countries, provided the main goal of managers is to decrease production costs.

3. Different approaches towards costs

European and U.S. manufacturers have based production in Southeast Asian countries, making them dependent. The main motive behind this ongoing trend has been due to “Globalized Supply Chain” characterized by long lead times and low landed costs. (Handfield, R. B., Graham, G., & Burns, L, 2020).

GVCs were created with the purpose of lowering landed cost. Landed costs are defined as the total costs incurred in getting a product from the manufacturing plant to the consumer and are mainly focused on labor costs, transportation costs, tax costs, ... However, looking only at low landed costs when managing GVCs can result in long lead times, as sourcing products are far away. After analyzing the resilience of GVCs, other types of aspects are taking into consideration when calculating costs such as risk related to GVCs, being the main one risk of disruption.

“Managers’ focus on supply chain risks is typically related to standard business concerns, such as product quality and on-time delivery. Less attention has been paid to factors such as supply shocks, demand fluctuations and shifts in customer behaviors”

(Angela Hecimovic, University of Sydney Business School)

The supply chain management literature, Ho et al. (2015), points out seven different types of Global supply chain risk:

- Manufacturing risks: strikes, accidents and poor working conditions
- Transportation risks: disruptions to transportation and logistics due to accidents or government actions
- Financial risks: fluctuations in exchange rates, wages and currency
- Information risks: information delays and lack of transparency
- Demand risks: demand shocks or forecasting errors
- Supply risks: over-reliance on a supplier and supplier disruption
- Macro risks: aspects related to natural disasters, wars, diseases... and major economic events.

Behind this new approach towards costs (more related to total costs than just landed costs) is the resurgence of lean and efficient manufacturers, characterized by more local inventories. Lean supply chains defend free-flow of information, quick response, and real-time response to shifts in demand or shocks. (Handfield and Linton, 2017). The main goal of this new supply chain management model would be to mitigate the disruption risks associated to Global Value Chains.

Therefore, while GVCs have multiple advantages in terms of labor and manufacturing costs, other components are bound to take into account. When looking at disruption risks, supply chain literature identifies that more local and lean supply chains are preferred over GVCs.

4. Environmental pressure

Neoliberal globalization since the 80s has prioritized market and profit margin over environmental issues (Lehman, 2009). The increase in world trade since then, has impacted both economic growth and environmental elements such as biodiversity loss, water conservation and raw materials. A report conducted by the European Commission and the Joint Research Centre Institute for Environment and Sustainability in 2013 stated that international trade of commodities can lead to biodiversity loss. Furthermore, The North American Free Trade Agreement performed a study that showed how environmental impact of international trade differs on the extension of economic activity, the sector in which the GVC operates and the technology used. This difference also applies to whether the participant is a developed economy or not.

Development based on forward linkages (early-stage participation) in GVCs increases per capita carbon emissions and international freight transport, generates air pollution. Transport pollution coming from GVCs is much greater than standard trade, as intermediate products have to travel several times before reaching the final consumer. Finally, there is an increasing trend where firms are migrating to countries with weaker environmental restrictions than the origin country. This phenomenon is defined as “pollution haven”. Pollution haven is mainly practiced by companies operating in high pollution manufacturing activities, moving from

developed countries with strong environmental regulations to less restricted developing economies, with the main purpose of operating under the same circumstances.

As a result of the forementioned issues, managers, scholars and institutions are asking themselves whether other aspects should be taken into account apart from economic growth when managing GVCs. It has been recognized the importance of not only creating “greener” Supply Chains but sustainable ones. Sustainability is defined by the UN World Commission on Environment and Development as all the actions that “meet the needs of the present without compromising the ability of future generations to meet their own needs”. Therefore, sustainable supply chains are those that create competitive returns on their assets without jeopardizing the needs of internal and external stakeholders, people and the environment. (Kleindorfer, 2005).

Nowadays, environmental restrictions, climate change pressure, and consumer demand are external forces that are influencing Global Value Chains. Some examples of these policies targeting environmental issues, not only on developed economies but all over the world would be the international environmental agreements. There are several hundred agreements aimed at controlling environmental actions, however, most of them are bilateral or trilateral binding. Therefore, while they mostly affect to countries participating in the agreement, they are of great relevance in an international environment. For instance, the Kyoto protocol, signed in 1997, targets climate mitigation and reduction of carbon dioxide (CO₂) of industrialized countries.

While complying with the increasing environmental restrictions may have an impact on the profitability of GVCs and their current situation, the “Porter Hypothesis” presents a different idea. The concept defends that pollution is related to waste of resources and therefore stronger policies will encourage companies to innovate, compensating for the costs incurred in fulfilling the environmental regulations. (Porter, M.E. and C. van der Linde ,1995).

5. Economic crisis of Covid-19

Covid-19 was recognized as a pandemic by the WHI (World Health Organization) on March 11th, with more than 118.000 confirmed cases in 114 countries. The sanitary crisis forced governments to take severe measures with the purpose of reducing the spread of the virus, which were mainly related to financial aids, social distancing restrictions and limitations in international travel.

Implications of coronavirus are not only social-related but economic-related, as the World Trade Organization stated “the coronavirus pandemic will bring the deepest economic recession of our existence”. Entire sectors had to stopped operating due to the circumstances and as a consequence of the limitations on air and road transportation, some products could not be obtained. Therefore, the already fragmented Global Value Chains were disrupted, especially for sanitary garments. Regarding other economic issues, the increase in unemployment and the lack of savings are changing also the demand-supply equilibrium. The unemployment of developing countries participating in GVCs will be dependent of the demand of products in developed economies. If demand of certain products (Ex. textile) decreases considerably, workers of the developing countries producing those products will be unemployed.

The studies indicate that the pandemic has negatively impacted all sectors regardless of their industry. However, some sectors were less influenced by the shock than others. A worldwide survey in 2020 performed by Statista, a statistic German portal, showed that the most impacted sectors were manufacturing and travel/transportation. The research was based on repercussions on operations, supply chain, staff and profit, dividing sectors in an impact scale where “1” meant *minor impact* and “5” *severe impact*. The reason why manufacturing was appointed with a 5 was the strong relationship between the sector and GVCs. Manufacturing heavily relies on international trade and more than two thirds of world trade occur through GVCs. The sanitary crisis hit the three main “factories” in the world: China, the U.S. and the European Union. China is the most important exporter and the European Union is a key importer of inputs, therefore, both are highly integrated into Global Value Chains. As a

consequence, lockdown in those countries created a first-time combination of supply and demand shocks (Danciu, V, 2020).

The pandemic has reinforced a number of trends already in play related to GVCs. While other movements had already showed some of the risks GVCs display, Covid-19 has strongly exposed that global supply chains may be unresponsive to external shocks in geopolitics or customer demand. Experts suggest that higher resilience would not only allow more flexible operations but GVCs would be more prepared to possible and future disruptions.

Regarding international business management and the current global value chain, determining the appropriate reconfiguration of GVC and business strategy is essential. On one hand, political tensions and increasing protectionism is encouraging firms to produce within their countries, accessing more local suppliers. However, integration of countries, international trade and high participation in GVCs is an undeniable characteristic of the current globalized economy. While GVCs will continue existing, the management policies of supply chains may change. The main advantage of GVCs was the profit margin firms could obtain as a consequence of lower labor costs, access to raw materials...Nowadays, other aspects have to be taken into consideration apart from low landed costs such as the increasing labor costs in some developing countries, environmental regulations limiting operations of firms and external shocks. The aforementioned idea suggests that managers of GVCs would have to build more resilient supply chains. The main issue is that resilience comes with a price. Quoting Mr. Shih from Harvard Business School, “The real question is, ‘Are we going to stop chasing low cost as the sole criteria for business judgment? I’m skeptical of that. Consumers won’t pay for resilience when they are not in crisis ’” it can be concluded that changes if they occur will be gradual.

4. Possible scenarios and future evolution of Global Value Chains

Possible scenarios

Global Value Chains have evolved since their burst in the 1980s and have become a key feature of the global economy and the management of international firms. As a consequence of the advantages of offshoring and the improvements to do so, GVC have increased in both number and scope over the years. It seems since 2008 (Economic crisis) GVCs have consolidated. While international trade recovered to the pre-economic crisis level after 2009, the current decrease seems to continue in time. The recent slowdown is believed to be the anticipation of a structural change in GVCs, incentivized by the aspects mentioned in the previous chapter.

Some scholars identify the reach of a “peak trade”, expecting new trends in international supply chains and their organization. Possible outcomes in the next ten years would be the increase in domestic production, the emergence of other countries as key participants in world trade or the maintenance of the current model.

1. Emergence of new countries as key participants

Manufacturing is one of the industries that relies the most on GVCs. As the US- China trade war continues, and with the purpose of avoiding heavy tariffs, some companies are contemplating the possibility of moving manufacturing out of China, influencing current GVCs location. This trend was reinforced by the lack of regulations protecting intellectual property (IP) in the country. While the government has made a considerable effort on enforcing IP rights, the IP legal framework is directly connected to the country’s regulations and therefore a drastic change would be needed. Furthermore, human rights violations in

Xinjiang and the rise of costs due to the pandemic and higher wages in China are influencing company strategies and operations. Aging population is another issue to take into account when manufacturing, as the annual growth in working age population was negative for the first time in the last two decades. Therefore, it can be said that China is experiencing an exodus of foreign firms.

Some examples of the aforementioned are Nike or Apple. Costs in Chinese apparel factories have been increasing for several years now and as a consequence, some fashion firms are considering other location options to continue with production. While Nike still produces most of its products in China, cheaper costs in other countries like Vietnam are slowly changing this. In 2012, 32% of shoes were manufactured in China and five years later, in 2017, only 19%. Apple on the other hand will stay in China, however, the company has asked suppliers Foxconn and Pegatron to move part of the production out of the country. Foxconn's plan is to move to India but other suppliers are considering Vietnam, Thailand and Indonesia as well. Furthermore, American companies are not the only ones retreating from China, as Samsung Electronics (Korean firm), closed its last factory there in 2019. Currently, the Korean company has factories all over the world, including Vietnam, India or Brazil. China is still the key participant of supply chains but other emerging countries are taking advantage of this "exodus". Manufacturing is moving mainly to countries that have the initial characteristics of China (cheap labor costs and trade openness) like the so-called "Asian Tigers".

While these countries are viable alternatives for global manufacturers, each economy has to overcome several challenges. Some examples would be the talent shortage and political unrest of Malaysia or the still limited manufacturing capacity of Vietnam compared to China. (Deloitte Touche Tohmatsu Limited, 2016).

In addition, Asian countries are not the only ones "receiving" companies from China, as Mexico has been a common replacement for American firms. This U.S.-Mexico relationship is interesting for the United States due to several reasons. On one hand, proximity solves one of the main challenges GVCs have, and the cultural and economic strong relationship between the two countries enables continuous trade. This economic tie is supported by the North American Free Trade Agreement (NAFTA), which created a trilateral trade bloc

between Canada, the United States and Mexico. The automotive industry, computer and electronic appliances are some of the manufacturing industries in the U.S. that rely on the assistance of Mexican manufacturers. In just the automobile industry alone, Mexico is the host for several important companies such as Ford, GM or Toyota. Furthermore, the list of firms is bound to increase in the following years with BMW or Audi. (Congressional Research Service, 2020).

When analyzing world trade data in the following graphs, *Graph 14. EU Imports, CIF from Partner Countries*, *Graph 15. U.S Imports, CIF from Partner Countries* and *Graph 16. China Imports, CIF from Partner Countries* in pages 50 and 51 it can be established some of the ideas mentioned before. The data set from the International Monetary Fund (IFM) shows the main import trade partners of the three major economies, the European Union, the United States and China for the period 2014-2020. Imports are defined as the goods and services purchased from the rest of the world under CIF (Cost, Insurance and Freight).

When looking at products imported by the European Union it can be seen that the main partners are indeed member of the EU as Germany or the Netherlands. However, China is also an important exporter for the EU and has slightly increased its participation since 2014. Therefore, it can be concluded that European companies still bring intermediate products from China. On the other hand, United States' imports differ somewhat to the EU. Imports from China from 2014 to 2020 have decreased in -6,71% while imports from Mexico have increased 10,65%. This decrease in Chinese imports is not only explained by the U.S.-China trade war as other economies imports have decreased as well, like Canada imports. Therefore, one of the main reasons why overall imports have diminished is deglobalization and a general decline in world trade. However, the increase in trade of Mexican products can be explain by the advantages the country has in terms of profit margins and proximity.

When observing the “Mighty Five” (Malaysia, India, Thailand, Indonesia, and Vietnam) and other countries as Taiwan, it can be seen that their presence as trade partners have increased. In the case of China's imports for instance, Taiwan has become the leading exporter in 2020, when in 2014 was the fourth partner. USA imports from Vietnam have increased considerably as well since 2014. In that year American imports from Vietnam were 30.588,51 million dollars and in 2020, 79.645,03, reaching an increase of 160%. The same happened in

the European Union, as there was an increase of 53% of imported products from Vietnam. The 2016 Global Manufacturing Competitiveness Index from Deloitte stated that “*These nations could represent a “New China” in terms of low-cost labor, agile manufacturing capabilities, favorable demographic profiles, market and economic growth*”.

Regarding the development of other emerging economies as key participants in GVSs, there are projections about the future of the manufacturing sector in Africa. The main drivers of manufacturing are talent (human capital), cost competitiveness and workforce productivity. The African continent therefore, offers several favorable factors that drive manufacturing competitiveness particularly in terms of low-cost labor and abundance of raw materials. Irene Yuan Sun, a Harvard Business School Graduate, whose work has been featured in the *Harvard Business Review* explains in her last published book “*How Chinese Investment Is Reshaping Africa*” how the African continent could become an important component of the globalized economy through Chinese investment. While western companies are still reluctant to some extent in investing in Africa, Chinese manufacturers are setting up manufacturing business across the continent. The author states that a similar case of industrialization in China could happen in the African continent, as it was not long ago that China had similar structural characteristics (poor living conditions). China is the fastest growing source of foreign investment in Africa and managers used to carry out business operations under difficult environments such as Chinese managers could start the development of the emerging continent.

Furthermore, European and American companies are also considering Africa as a possible business destination. This interest is not only for production factories but for technological development industries, as managers see in the continent a potential location for technology disruption due to the increasing number of tech hubs.

However, there are still some challenges to overcome, as despite the fact that standards of education on the continent are improving, the still low education levels and poor health conditions could hinder productivity and new-technology absorption. In addition, Africa has been associated with problematic infrastructure and high levels of corruption. (Signé, L., & Johnson, C., 2018). Therefore, rapid industrialization of the African continent is not here yet.

2. Increase of domestic production

Global Value Chains are not about producing physical products but about discovering new ways of creating and capturing value. Changes in consumer demand, government policies and supply chain economics are influencing the way in which business operate. The strong focus on customer-oriented business strategies, is making international companies to go from a low-cost labor approach to improving customer demand and shorten lead times with more local suppliers. This increasing phenomenon is known as “reshoring”. Reshoring is a reversion of a previous offshoring decision, thereby ‘bringing manufacturing back home’ (Gray et al. J Supply Chain Management, 2013). This trend has been reinforced by supply chain sustainability. Studies have shown how important is to create long-term supply network and building trustworthy relationships between members when managing a sustainable supply chain. This collaborative network is done better under local suppliers than global, therefore encouraging the progressive reshoring of business activities. (Ashby, A., 2016).

Furthermore, in the case of high-end brands, supply chain strategy through reshoring and increasing control in supply chain operations can improve value and firm competitiveness. Reshoring in this case would not be an economic decision but a strategic decision made by companies to be able to use the “country of origin” as a competitive tag. The Burberry company for instance, moved back all the factories to the UK with the purpose of maintaining the brand’s heritage (Robinson, P. K., & Hsieh, L., 2016).

Sustainability and strategic decisions are not the only forces influencing reshoring, several countries have manifested tendencies towards protectionism and national policy encouraging firms to go back to their “home country”. This phenomenon has been strengthened by the pandemic, as it exposed the strong dependency countries have towards Global Value Chains. A clear example of these types of policies was when Japanese Prime Minister Shinzo Abe announced in March 2020 a stimulus package of \$2.2 billion with the purpose of helping Japanese manufacturers shift production out of China.

With all being said, reshoring is a clear tendency in response to a combination of rising production costs, sustainability awareness and international pressures.

3. Production within China

Despite increasing labor costs, IP issues and the U.S trade war, when other aspects like market access, transportation costs, efficiency and infrastructure development are taken into account, China is still one of the more cost-efficient locations. When looking at both graphs, *Graph 14. EU Imports, CIF from Partner Countries* and *Graph 15. U.S Imports, CIF from Partner Countries* in page 50 it can be seen that China is still the leading exporter for the U.S despite the decrease in trade volume. Furthermore, the country is also the second trade partner of the European Union after Germany, as imports from China are over \$400,000 million.

While some manufacturing companies are deciding to leave China for cheaper alternatives in labor cost, China has started to shift production towards a different approach. The country has been focusing for several years now on the development of innovation infrastructure to strengthen advanced technologies. As a consequence, China now wants to focus on higher-end production, moving away from labor-intensive manufacturing. Since 2010, China has issued a series of relevant industrial policies to support the transformation and development of manufacturing industry, putting forward the idea of “promoting traditional industries to move towards the middle and high-end,” emphasizing the development of “high-end manufacturing areas,” and enhancing technological innovation capabilities. An example of these types of policies is “the National Strategic Emerging Industries Development Plan for the 13th Five-Year Plan” in 2016, which consists on promoting ten strategic emerging industries, all belonging to the high-end manufacturing industry. Industries such as aerospace equipment, information technology or high-performance medical devices. (Li, Q., & Liu, T., 2019).

Development of smart manufacturing in China is possible due to its market space, cost advantages and a full understanding of the domestic market and indeed, the overall technological level of the country has improved considerably. However, some challenges have to be overcome including talent, supporting industries and core technologies.

Future evolution of Global Value Chains

As it can be seen GVCs are undergoing through changes related to their organization and location alternatives. GVCs managerial decisions will be extremely important for the operating of businesses and will depend on the industry and the goal of the company, whether is quick responsiveness or low landed costs for instance.

While all the aforementioned ideas are current and existing tendencies, the future of GVC will be a mixture of all. First of all, world trade will have to recover from the pandemic. The World Trade Organization forecasts that world trade will recover increasing around 8% respect to 2020. However, deglobalization already in place before the pandemic is expected to continue in 2022. (*Graph 17. Volume of world merchandise trade (Annual % change) forecast for 2021 and 2022*, page 51).

Regarding future evolution of GVCs, specially related to location issues, China is believed to maintain its strong position in the following years. However, production will not solely be based on Chinese manufacturing, but other emerging economies will participate as well. Therefore, instead of shifting manufacturing from China to other countries like Indonesia or Vietnam the most possible model of manufacturing in the future will be the “China Plus One” model. This model consists on businesses keeping a great share of their manufacturing in China but diversifying other parts to different countries, particularly high-labor intensive activities. While this is a trend currently in place as it can be seen from *Graph 16. China Imports, CIF from Partner Countries in million U.S. dollars* in page 51, is expected to consolidate in the next years. While China is focusing on moving towards more “smart manufacturing” activities through innovation and technological development, high-labor intensive activities may continue there in the future. The main reason of why this could happen is automatization. It is important to recall that China is one of the world leading countries in using industrial robots and this will enable companies to produce at a large scale maintaining the cost advantage. Automatization of business processes is starting to be in place in the automobile and electronic industry but in the following years, it could expand to other industries such as apparel.

Regarding projections in the African continent, there are policies already in place to reach economic development through participation in GVCs. An example is the Linking Agenda 2063 of the African Union and the UN Sustainable Development Goals. One of the main goals is “Transformed economies” that have as an objective to “build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”. It is true that as labor costs are increasing in other developing areas, those manufacturing activities could migrate to Africa, and indeed in 2018 the World Bank suggested that spending in manufacturing in Africa will reach \$666.3 billion by 2030, which would mean a considerably increase. The main advantage Africa has when becoming a key element of GVCs is the increasing size of its low-cost labor force. Nevertheless, industrial development through GVCs in Africa is still a difficult challenge and has become even harder after the Covid pandemic. The main problem is the lack of viable economic and political foundations that would enable companies operate in the continent. It can be concluded that while industrial revolution seems imminent in the African continent, the development will not copy the Asian growth model, as Africa has its unique demographic and socioeconomic characteristics.

Other important aspect that will have an impact on GVCs in the future is the growing power of consumers. One of the main characteristics of future consumers is how informed they are, as information is easily accessed nowadays. Consumers will be more demanding in terms of sustainability, social responsibility and quick response in the future. Therefore, managers and their businesses will have to adapt and meet consumer’s expectations. This will not only affect the operating of GVCs but their location as well. Brand’s image is perceived as better and more sustainable when labelled as “produced locally”. On the other hand, more resilient GVCs will be needed to meet the on-going demands. Furthermore, the European Union is seeing the importance of having more autonomous GVCs in the future focusing on a long-term strategy to develop more diversified and resilient GVCs within Europe.

5. Conclusions

Global Value Chains since their rise in the 1980s thanks to the openness to trade of several economies and the emergence of governing bodies like the World Trade Organization (WTO), they have been a key feature of the globalized world.

Looking at the evolution of GVC and the participation of countries in them, it can be concluded that participation has been strong overall (except during the economic crisis in 2007) from 2005 to 2015, with forward linkages more stable than backward linkages. During those years there was an increase in GVC participation of several Asian countries and Eastern European economies. China has been the world leading participant in both types of linkages, being the principal importer and exporter of manufactured goods. This participation in GVCs has had an impact on countries. Looking at data it can be determined that while GVCs matter for economic development, particularly in terms of GDP growth and information sharing, they may have caused an increase between income groups.

World trade has been decreasing for several years now, shifting the economy towards deglobalization and influencing the way GVCs operate. Trends encouraging changes are mainly political tensions and increasing protectionism, environmental regulations, increasing labor costs in developing areas and different approaches towards costs. All the aforementioned aspects hindering development of GVCs were reinforced by the Covid-19 pandemic, which exposed how global supply chains may be unresponsive to external shocks.

Determining the appropriate reconfiguration of GVC and business strategy is essential for managers. Forecasts mentioned that world trade will recover from the pandemic but deglobalization will continue. Despite this, GVCs will be maintained with a slightly different structure. Manufacturing will not only be China based but other emerging countries like the “Mighty Five” (Malaysia, India, Thailand, Indonesia and Vietnam) or the African continent with lower labor costs will participate as well. On the other hand, China will move towards higher-end production, moving away from labor-intensive manufacturing. Furthermore, shorter GVCs or more local supply chains will increase as well, with the objective of creating more resilient and responsive structures.

BIBLIOGRAPHY

- Alvárez, I., & Martín, V. (2020). Cadenas de valor en Europa y autonomía estratégica. *ICE, Revista de Economía*, 916, 185–205. <https://doi.org/10.32796/ice.2020.916.7097>
- Arslan, Yavuz and Contreras, Juan and Patel, Nikhil and Shu, Chang, *How Has Globalization Affected Emerging Market Economies?* (December 21, 2018). BIS Paper No. 100b, Available at SSRN: <https://ssrn.com/abstract=3331767>
- Ashby, A. (2016). From global to local: reshoring for sustainability. *Oper Manag Res* 9, 75–88 <https://doi.org/10.1007/s12063-016-0117-9>
- Bieler, A., & Lee, C. Y. (2016). Chinese Labour in the Global Economy: An Introduction. *Globalizations*, 14(2), 179–188. <https://doi.org/10.1080/14747731.2016.1207934>
- Blankenau, W. F., & Cassou, S. P. (2009). Industrial Dynamics and The Neoclassical Growth Model. *Economic Inquiry*, 47(4), 815–837. <https://doi.org/10.1111/j.1465-7295.2008.00192.x>
- Chironga, M., Leke, A., Wamelen, A., & Lund, S. (2016, June 8). *The Globe: Cracking the Next Growth Market: Africa*. Harvard Business Review. <https://hbr.org/2011/05/the-globe-cracking-the-next-growth-market-africa>
- Congressional Research Service. (2020b, June). *U.S.-Mexico Economic Relations: Trends, Issues, and Implications*. <https://fas.org/sgp/crs/row/RL32934.pdf>
- Danciu, V. (2020). The Global Value Chain in Coronavirus Era: An Impact Approach. *The Romanian Economic Journal*, 76.
- De Marchi, V. (2019). Cadenas globales de valor y sistemas locales: las dos caras de una misma moneda. *ICE, Revista de Economía*, 909, 49–59. <https://doi.org/10.32796/ice.2019.909.6888>
- De Marchi, V., Giuliani, E., & Rabellotti, R. (2017). Do Global Value Chains Offer Developing Countries Learning and Innovation Opportunities? *The European Journal of Development Research*, 30(3), 389–407. <https://doi.org/10.1057/s41287-017-0126-z>

- De Santis, R. (2012). Impact of Environmental Regulations on Trade in the Main EU Countries: Conflict or Synergy? *The World Economy*, 35(7), 799–815. <https://doi.org/10.1111/j.1467-9701.2012.01450.x>
- Deloitte Touche Tohmatsu Limited. (2016). *2016 Global Manufacturing Competitiveness Index*. Deloitte Creative Studio. <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Manufacturing/gx-global-mfg-competitiveness-index-2016.pdf>
- Feenstra, R. C. (1998). Integration of Trade and Disintegration of Production in the Global Economy. *Journal of Economic Perspectives*, 12(4), 31–50. <https://doi.org/10.1257/jep.12.4.31>
- Free, C., & Hecimovic, A. (2021). Global supply chains after COVID-19: the end of the road for neoliberal globalisation? *Accounting, Auditing & Accountability Journal*, 34(1), 58–84. <https://doi.org/10.1108/aaaj-06-2020-4634>
- Gereffi, Gary. (2015). Global Value Chains, Development and Emerging Economies. 10.13140/RG.2.1.4697.2243.
- GOWLING WLG. (2020). *PROTECTIONISM: A NEW ERA*. <https://gowingstorage.blob.core.windows.net/gowlingcontentmedia/gwlg/media/gowlingwg/gwlg/topics/protectionism/gowling-wlg-protectionism-a-new-era.pdf>
- Handfield, R. B., Graham, G., & Burns, L. (2020). Corona virus, tariffs, trade wars and supply chain evolutionary design. *International Journal of Operations & Production Management*, 40(10), 1649–1660. <https://doi.org/10.1108/ijopm-03-2020-0171>
- Hummels, D., Ishii, J., & Yi, K. M. (2001). The nature and growth of vertical specialization in world trade. *Journal of International Economics*, 54(1), 75–96. [https://doi.org/10.1016/s0022-1996\(00\)00093-3](https://doi.org/10.1016/s0022-1996(00)00093-3)
- IMF. (2019–2021). *IMF Data* [Dataset]. <https://data.imf.org/regular.aspx?key=61726510>
- Kapustina, L., Lipková, U., Silin, Y., & Drevalov, A. (2020). US-China Trade War: Causes and Outcomes. *SHS Web of Conferences*, 73, 01012. <https://doi.org/10.1051/shsconf/20207301012>
- Keeley, B. (2015). Income Inequality: The Gap between Rich and Poor, OECD Insights, OECD.
- Keelty, J. (2020). *New Zealand (NZL) Exports, Imports, and Trade Partners*. OEC - The Observatory of Economic Complexity. <https://oec.world/en/profile/country/nzl>

- Kim, H. M., Li, P., & Lee, Y. R. (2020). Observations of deglobalization against globalization and impacts on global business. *International Trade, Politics and Development*, 4(2), 83–103. <https://doi.org/10.1108/itpd-05-2020-0067>
- Koopman, R., Wang, Z., & Wei, S. J. (2014). Tracing Value-Added and Double Counting in Gross Exports. *American Economic Review*, 104(2), 459–494. <https://doi.org/10.1257/aer.104.2.459>
- Leavy, B. (2018). Will China's entrepreneurial migrant managers awaken Africa's dream of becoming the next factory of the world? *Strategy & Leadership*, 46(1), 36–42. <https://doi.org/10.1108/sl-11-2017-0107>
- Li, Q., & Liu, T. (2019). Innovation Efficiency of China's High-End Manufacturing Industry: Evidence from Super-SBM Model and Malmquist Index. *Mathematical Problems in Engineering*, 2019, 1–15. <https://doi.org/10.1155/2019/6329746>
- Lopez Gonzalez, J., P. Kowalski and P. Achard (2015). Trade, global value chains and wage-income inequality. *OECD Trade Policy Papers*, No. 182, OECD Publishing, Paris. <http://dx.doi.org/10.1787/5js009mzrqd4-en>
- Maalej, A., & Cabagnols, A. (2020). Energy consumption, CO² emissions and economic growth in MENA countries. *Environmental Economics*, 11(1), 133–150. [https://doi.org/10.21511/ee.11\(1\).2020.12](https://doi.org/10.21511/ee.11(1).2020.12)
- Morrison, A., Pietrobelli, C., & Rabellotti, R. (2008). Global Value Chains and Technological Capabilities: A Framework to Study Learning and Innovation in Developing Countries. *Oxford Development Studies*, 36(1), 39–58. <https://doi.org/10.1080/13600810701848144>
- Morrison, Wayne M. (2015, September 11) *China's Economic Rise: History, Trends, Challenges, and Implications for the United States*, <https://digital.library.unt.edu/ark:/67531/metadc770519/>: University of North Texas Libraries, UNT Digital Library, <https://digital.library.unt.edu/>; crediting UNT Libraries Government Documents Department.
- Moschieri, C., & Blake, D. J. (2019). The organizational implications of Brexit. *Journal of Organization Design*, 8(1). <https://doi.org/10.1186/s41469-019-0047-8>
- Motohashi, K. (2015). *Global Business Strategy: Multinational Corporations Venturing into Emerging Markets (Springer Texts in Business and Economics)* (2015th ed.). Springer.

- OECD (2015). Economic and Social Upgrading of Developing Countries in Global Value Chains. *OECD Trade Policy*. Published. <https://www.oecd.org/countries/gabon/Participation-Developing-Countries-GVCs-Summary-Paper-April-2015.pdf>
- OECD (2017). “The Future of Global Value Chains: “Business as Usual” or “A New Normal”?. *Directorate for Science, Technology and Innovation Policy Note*, September 2017.
- OECD (2018). *OECD iLibrary | Trade in value added*. <https://www.oecd-ilibrary.org/trade/data/oecd-wto-statistics-on-trade-in-value-added-data-00648>
[en?parentId=http%3A%2F%2Finstance.metastore.ingenta.com%2Fcontent%2Fcollection%2Ftiva-data-en](https://www.oecd-ilibrary.org/trade/data/oecd-wto-statistics-on-trade-in-value-added-data-00648)
- OECD (2021). "Trade in value added", *OECD Statistics on Trade in Value Added* (database). <https://doi.org/10.1787/data-00648-en>
- Raei, F., Ignatenko, A., & Mircheva, B. (2019). Global Value Chains. *IMF Working Papers*, 19(18), 1. <https://doi.org/10.5089/9781484392928.001>
- Robinson, P. K., & Hsieh, L. (2016). Reshoring: a strategic renewal of luxury clothing supply chains. *Operations Management Research*, 9(3–4), 89–101. <https://doi.org/10.1007/s12063-016-0116-x>
- Royo, H. (2020). Tres estudios sobre el comercio internacional en la Segunda Globalización: Determinantes, cadenas globales de valor y evolución. *Universidad de Zaragoza*. Published. <https://drive.google.com/file/d/1boBWfrUPP4rYR5NTwr4R76VHqkI4uNt/view>
- Sheffi, Y. (2020, August 24). *Moving Out of China? Not Really - MITSupplyChain*. Medium. <https://medium.com/mitsupplychain/moving-out-of-china-not-really-50a818ed5b2d>
- Shepherd, B. (2013). Global Value Chains and Developing Country Employment: A Literature Review. *OECD Trade Policy Papers*, No. 156, OECD Publishing, Paris. <https://doi.org/10.1787/5k46j0qw3z7k-en>.
- Shipley, T. (2020, August 7). *El comercio internacional ya estaba en crisis antes del coronavirus*. El Orden Mundial - EOM. <https://elordenmundial.com/comercio-internacional-crisis-coronavirus/>
- Signé, L. (2018). The potential of manufacturing and industrialization in Africa Trends, opportunities, and strategies. *Africa Growth Initiative at Brookings*. Published.

<https://www.brookings.edu/wp-content/uploads/2018/09/Manufacturing-and-Industrialization-in-Africa-Signe-20180921.pdf>

Signé, L., & Johnson, C. (2018). The Potential of Manufacturing and Industrialization in Africa. *Brookings Institution*. Published. <https://doi.org/10.1111/hic3.12660>

Sloan, T.W. (2010). Measuring the Sustainability of Global Supply Chains: Current Practices and Future Directions. *Journal of Global Business Management*. 6. 92-107.

Wells, Paul (1995). Post-Keynesian Economic Theory. 10.1007/978-1-4615-2331-4.

What the world thinks about globalization. (2016, November 25). The Economist. <https://www.economist.com/graphic-detail/2016/11/18/what-the-world-thinks-about-globalisation>

World Bank & OECD (2010–2021). *GDP (current US\$) | Data* [Dataset]. World Bank national accounts data. <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD>

World Bank & OECD (2010–2021). *GDP growth (annual %) | Data* [Dataset]. World Bank national accounts data. <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>

World Bank & OECD (2010–2021). *GDP per capita (current US\$) | Data* [Dataset]. World Bank national accounts data. <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>

World Bank, Development Research Group (2015). *Share of income received by the richest 1% of the population* [Dataset]. World Bank Poverty and Equity database. <https://ourworldindata.org/grapher/share-of-income-received-by-the-richest-1-of-the-population>. Publishing, Paris. <http://dx.doi.org/10.1787/9789264246010-en>

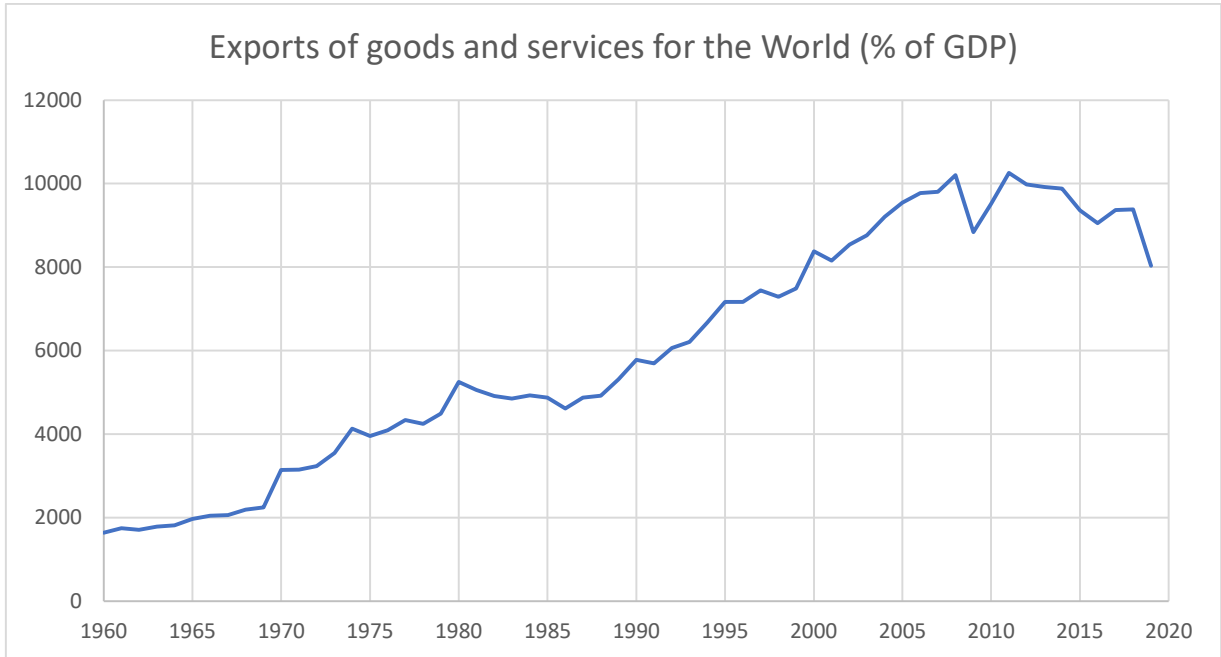
World Bank, Development Research Group (2021, April 26). *Percentage share of income or consumption is the share that accrues to subgroups of population indicated by deciles or quintiles*. [Dataset]. World Bank Poverty and Equity database. <https://datacatalog.worldbank.org/dataset/world-development-indicators>

Yan-gang, C. (2018). Impact of the Participation of China's Service Industry in the Global Value Chain on Employment. *Advances in Social Science, Education and Humanities Research - Atlantis Press*, 177. <https://doi.org/10.2991/erms-18.2018.48>

Zhu, M., & Tomasi, C. (2020). Firms' imports and quality upgrading: Evidence from Chinese firms. *The World Economy*, 43(5), 1371–1397. <https://doi.org/10.1111/twec.12934>

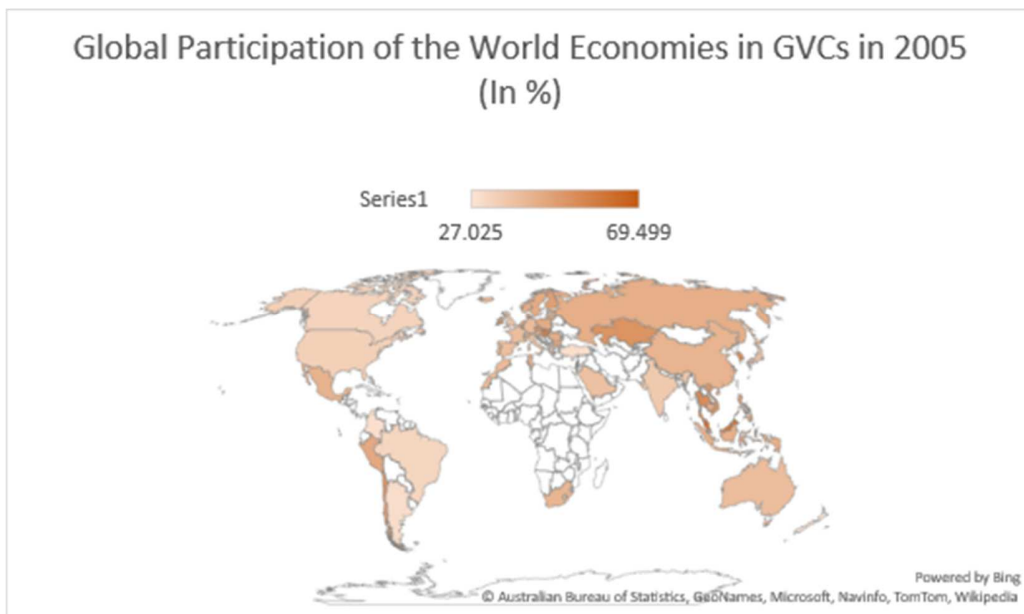
TABLES AND GRAPHICS

Graph 1. Exports of goods and services for the World



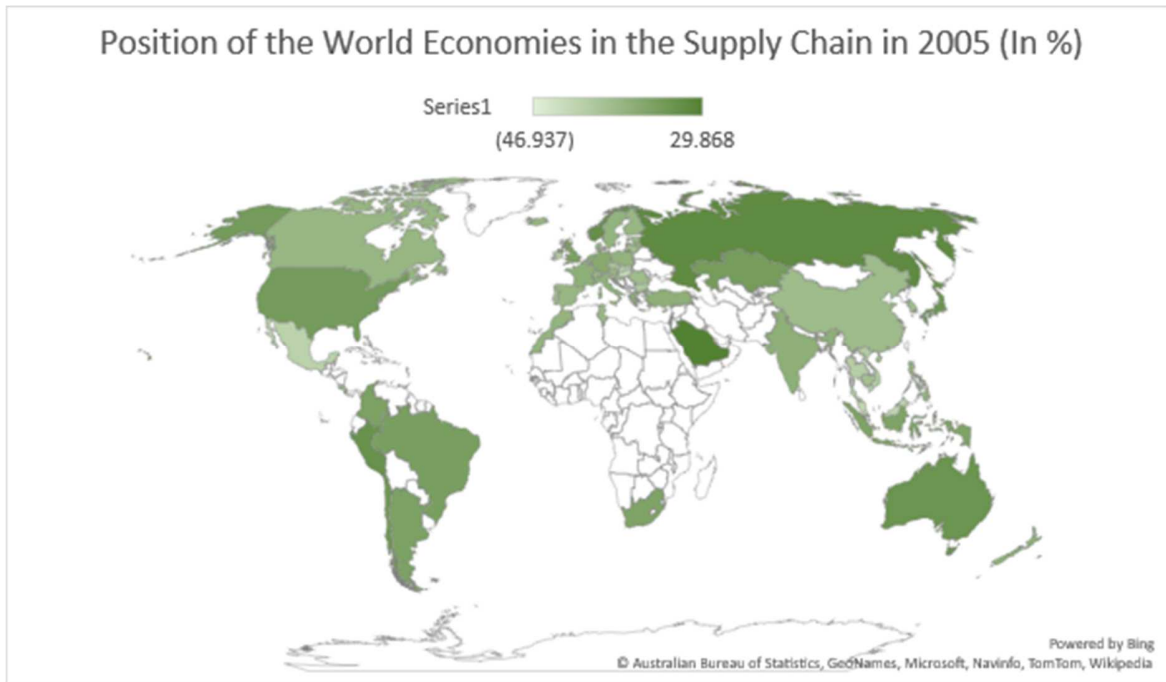
Source: World Bank national accounts data, and OECD National Accounts data files.

Map 1. Global Participation of the World Economies in GVCs in 2005



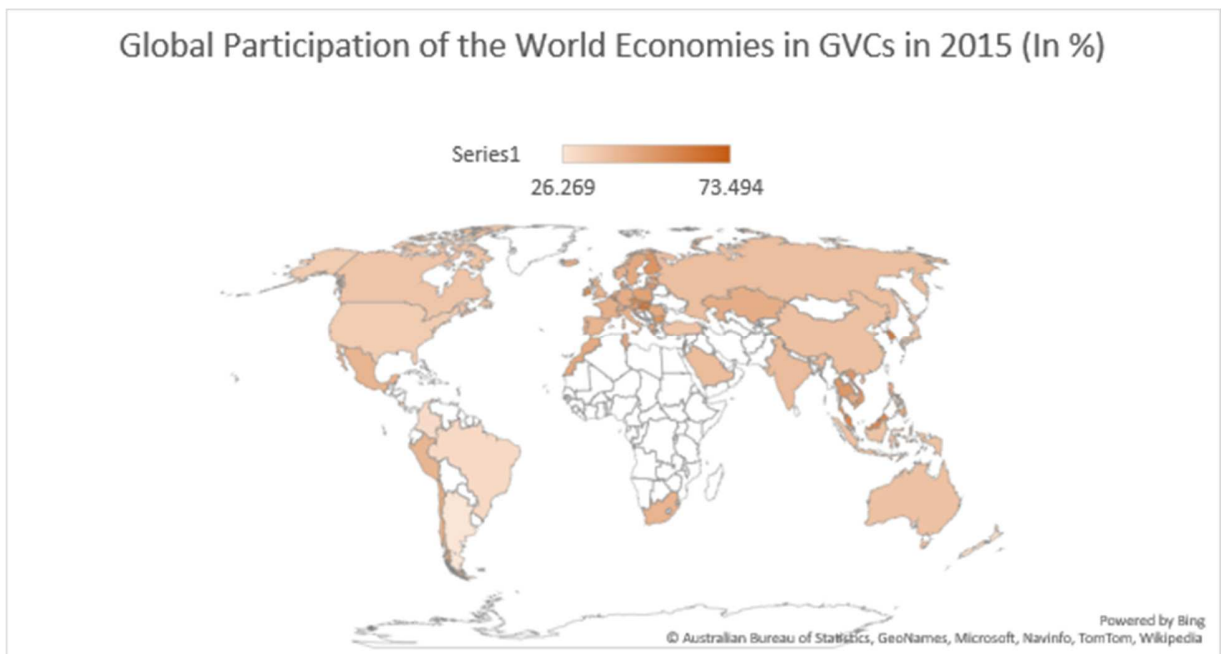
Source: OECD estimates based on Trade in Value Added (TiVA) Database

Map 2. Position of the World Economies in the Supply Chain in 2005



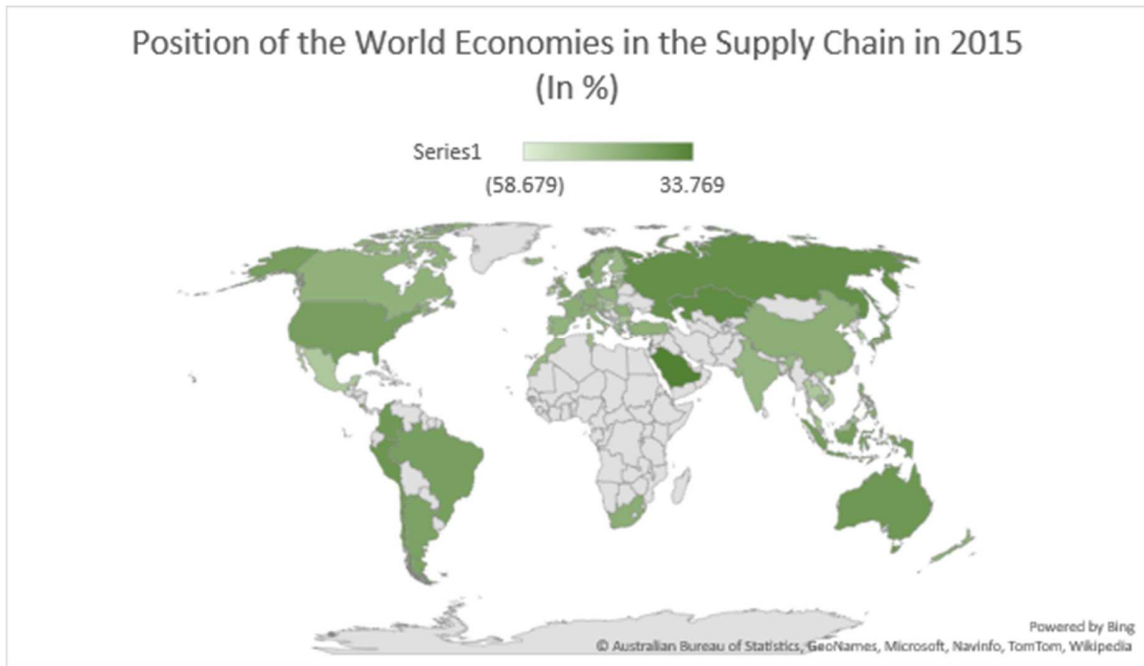
Source: OECD estimates based on Trade in Value Added (TiVA) Database

Map 3. Global Participation of the World Economies in GVCs in 2015



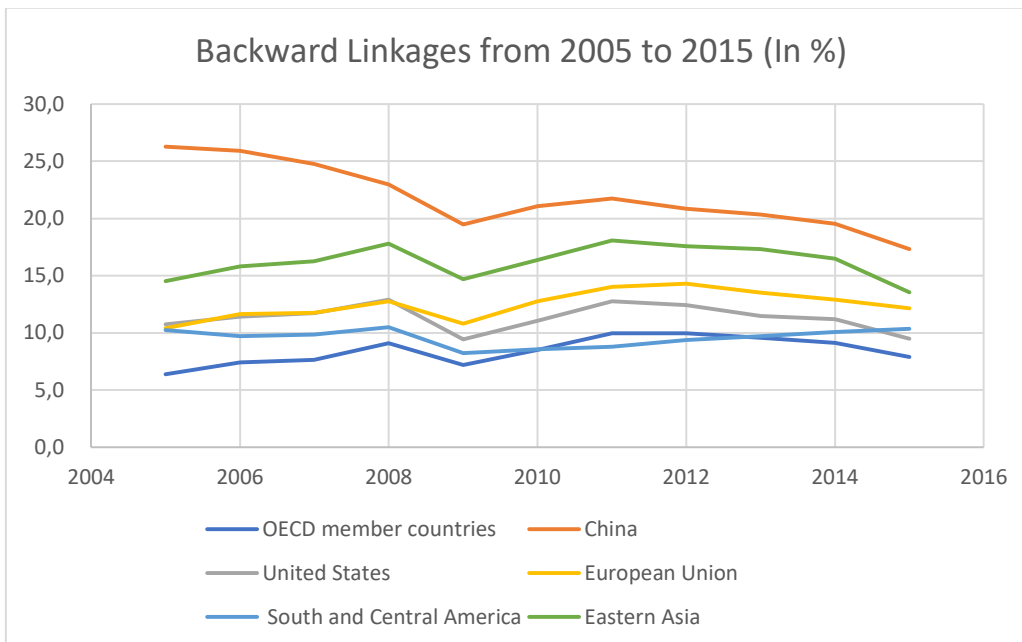
Source: OECD estimates based on Trade in Value Added (TiVA) Database

Map 4. Position of the World Economies in the Supply Chain in 2015



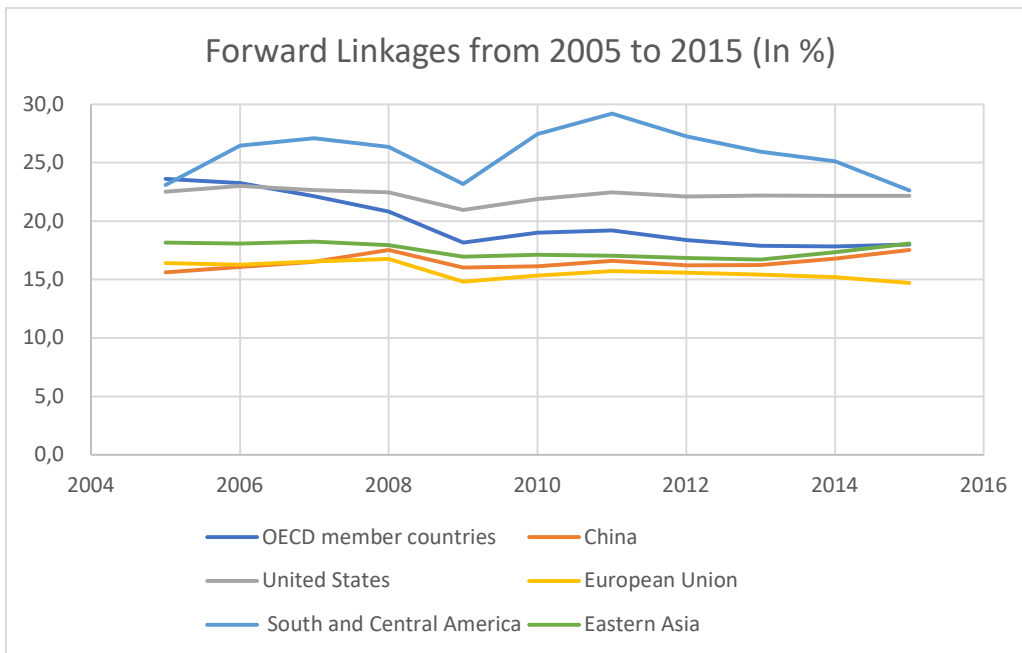
Source: OECD estimates based on Trade in Value Added (TiVA) Database

Graph 2. Backward Linkages from 2005 to 2015 (In %)



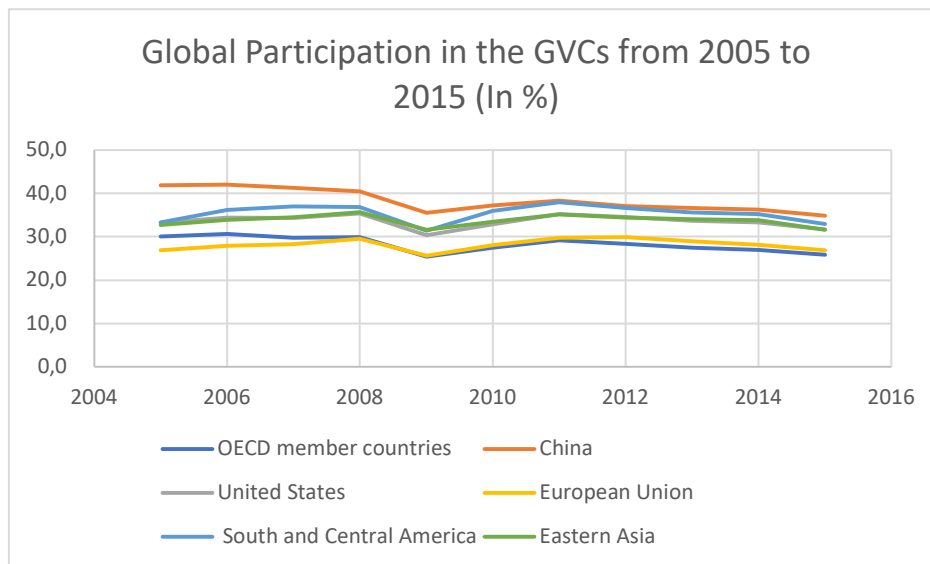
Source: OECD estimates based on Trade in Value Added (TiVA) Database

Graph 3. Forward Linkages from 2005 to 2015



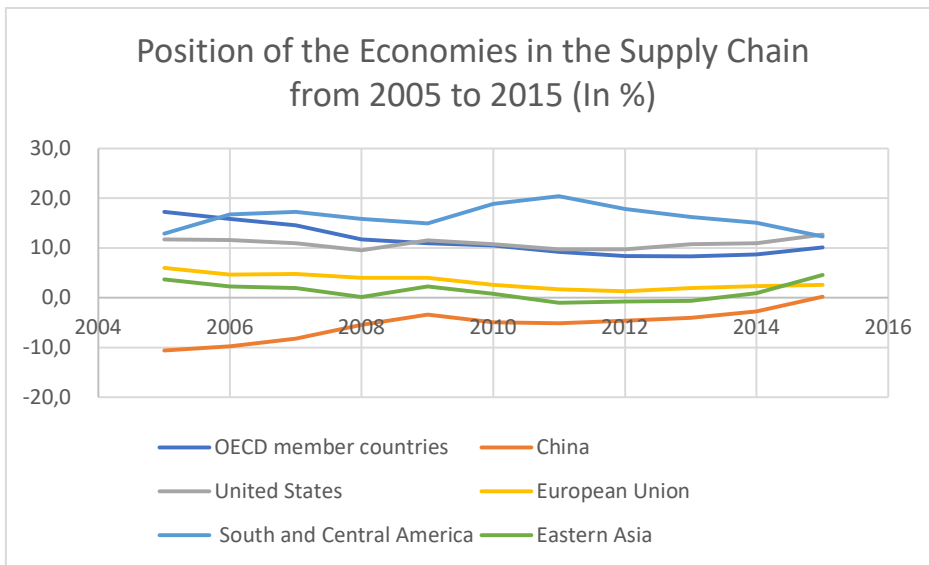
Source: OECD estimates based on Trade in Value Added (TiVA) Database

Graph 4. Global Participation in the GVCs from 2005 to 2015



Source: OECD estimates based on Trade in Value Added (TiVA) Database

Graph 5. Position of the Economies in the Supply Chain from 2005 to 2015



Source: OECD estimates based on Trade in Value Added (TiVA) Database

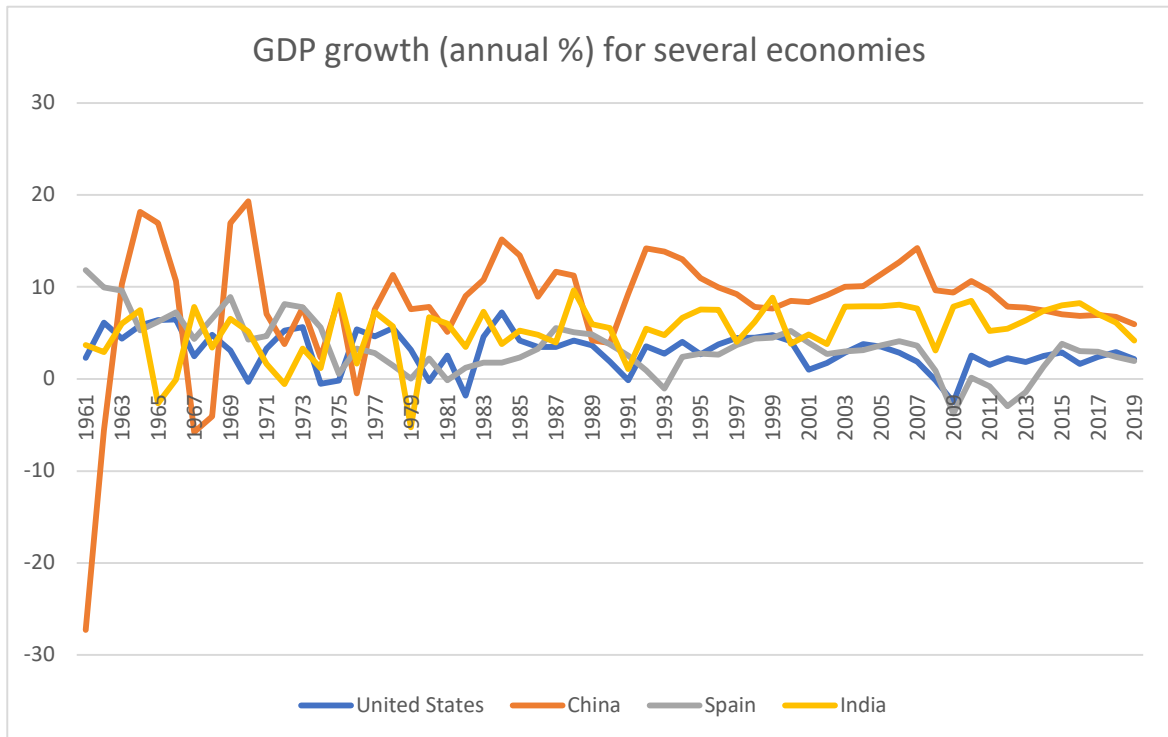
Graph 6. Attitudes towards globalization against change in GDP per person



Note. The Economist. (2016, November). Attitudes towards globalization against change in GDP per person [Graph]. TheEconomist.Com.

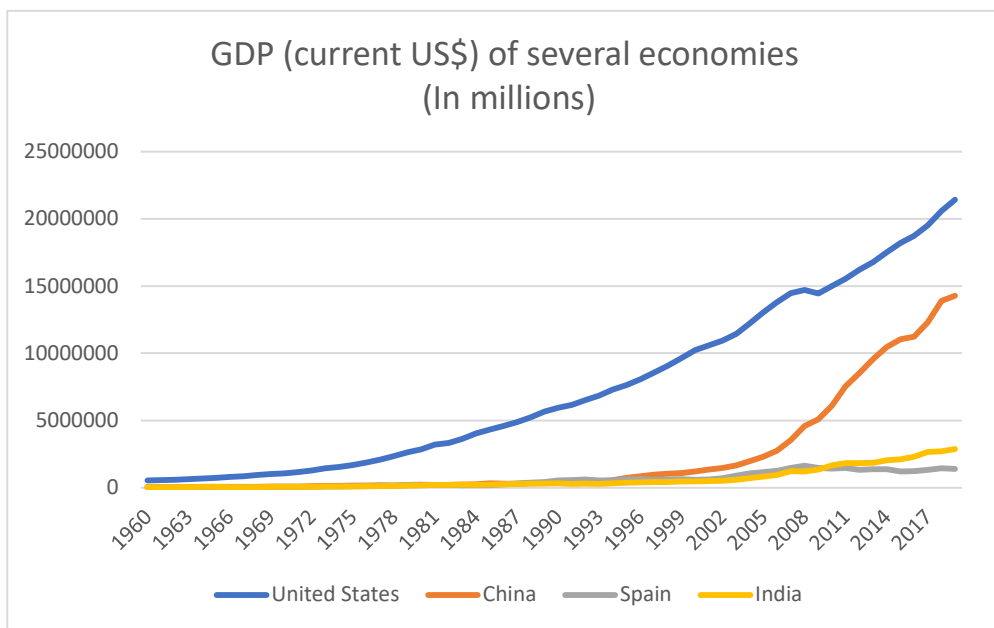
<https://www.economist.com/graphic-detail/2016/11/18/what-the-world-thinks-about-globalisation>

Graph 7. GDP growth (annual %) for several economies



Source: World Bank national accounts data, and OECD National Accounts data files.

Graph 8. GDP (current US\$) of several economies (In millions)



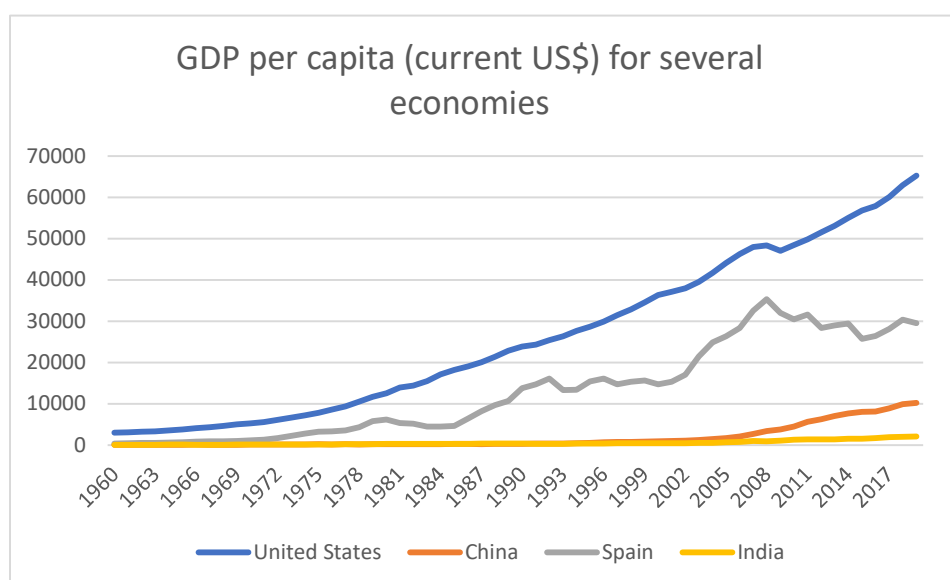
Source: World Bank national accounts data, and OECD National Accounts data files.

Table 1. Skilled to unskilled ratio in industries

	1968 Value	2004 Value	Change
Initially skilled			
Educational and health services	.562	.874	.312
Professional & business services	.334	.682	.348
Financial Services	.180	.582	.403
Public administration	.177	.622	.445
Initially unskilled			
Leisure and hospitality service	.105	.487	.382
Information	.101	.636	.535
Manufacturing	.083	.279	.197
Mining	.068	.159	.092
Other services	.061	.216	.155
Wholesale & retail trade	.056	.177	.122
Transportation	.046	.167	.121
Construction	.045	.111	.066
Agriculture & forestry	.026	.159	.134
Skilled aggregate	.363	.741	.378
Unskilled aggregate	.064	.217	.153

Source: Blankenau, William & Cassou, Steven (2005).

Graph 9. GDP per capita (current US\$) for several economies



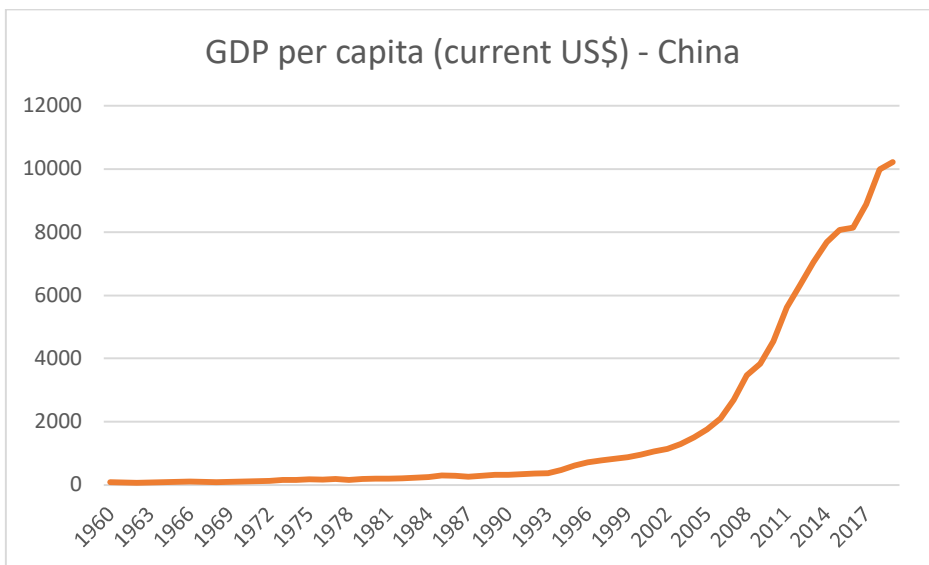
Source: World Bank national accounts data, and OECD National Accounts data files.

Graph 10. GDP growth (annual %) - China



Source: World Bank national accounts data, and OECD National Accounts data files.

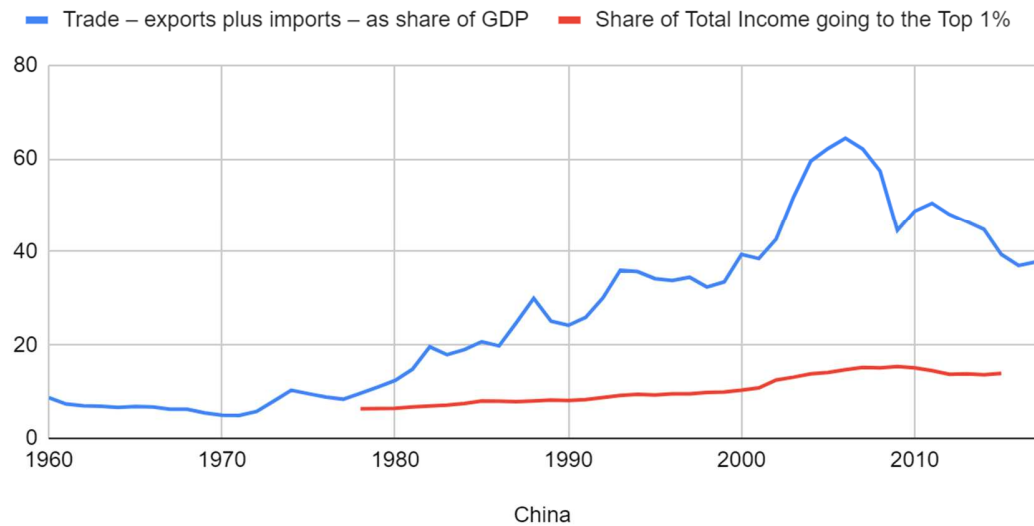
Graph 11. GDP per capita (current US\$) - China



Source: World Bank national accounts data, and OECD National Accounts data files.

Graph 12. Relationship between trade and inequality-China

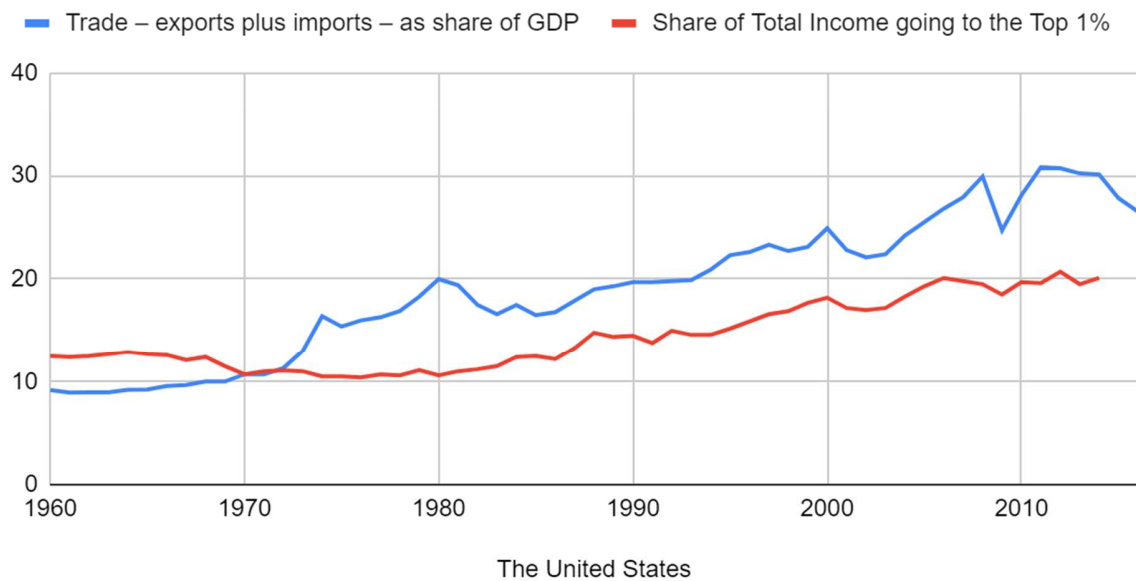
Trade – exports plus imports – as share of GDP and Share of Total Income going to the Top 1%



Source: World Wealth and Income Database

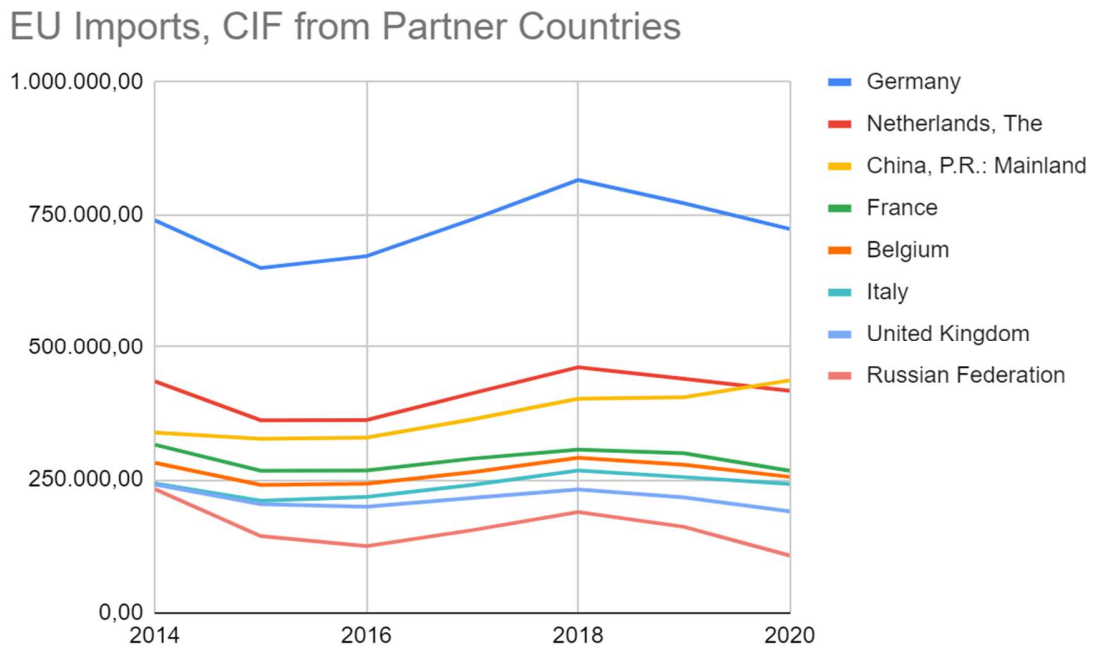
Graph 13. Relationship between trade and inequality- The United States

Trade – exports plus imports – as share of GDP and Share of Total Income going to the Top 1%



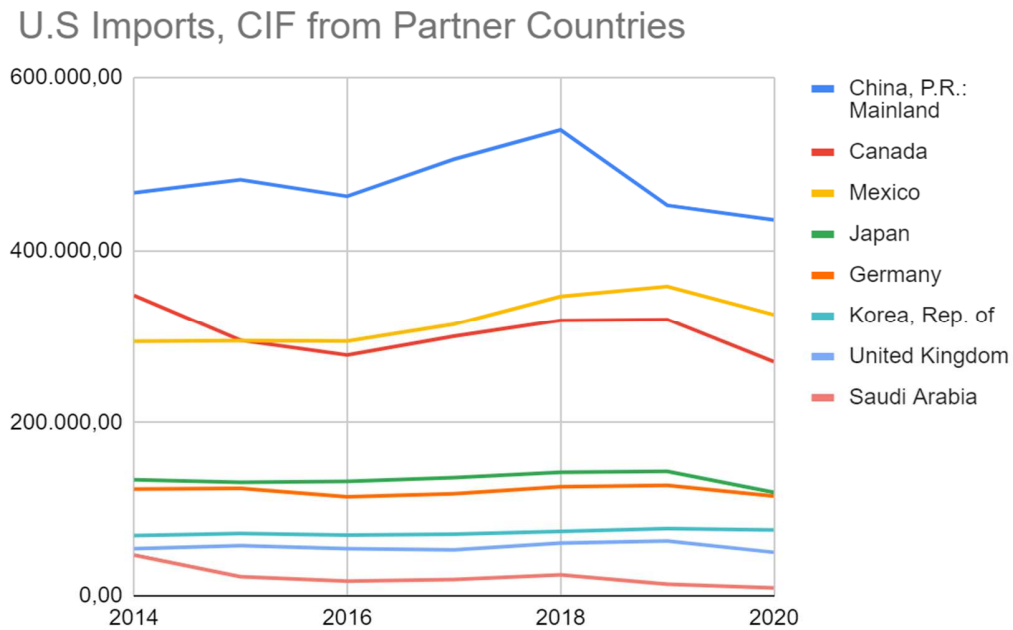
Source: World Wealth and Income Database

Graph 14. EU Imports, CIF from Partner Countries in million U.S. dollars



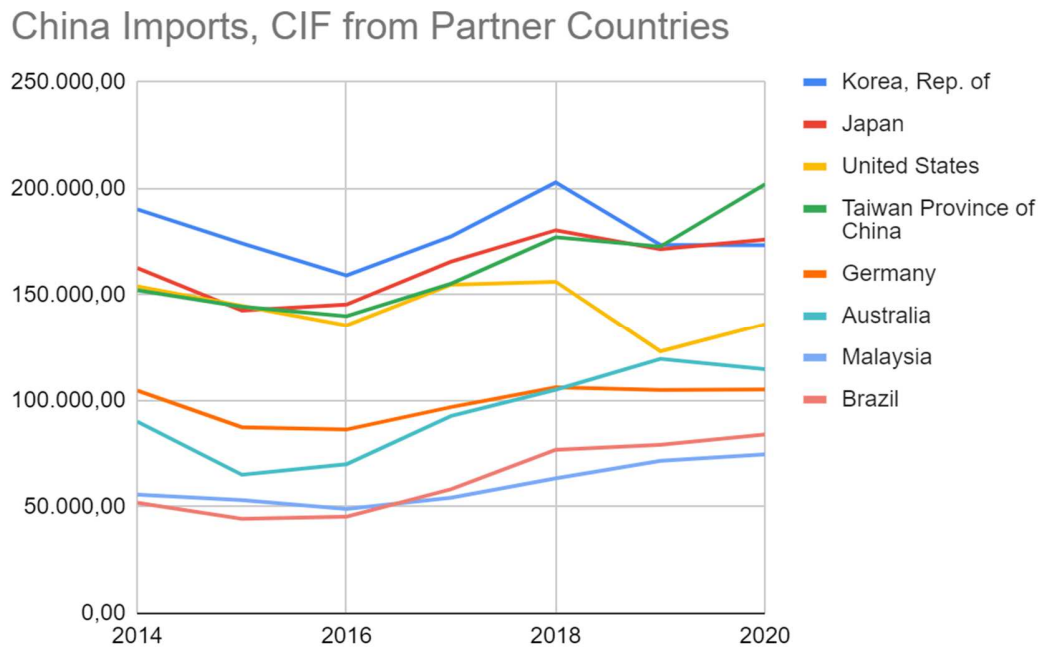
Source: International Monetary Fund (IMF) Database

Graph 15. U.S Imports, CIF from Partner Countries in million U.S. dollars



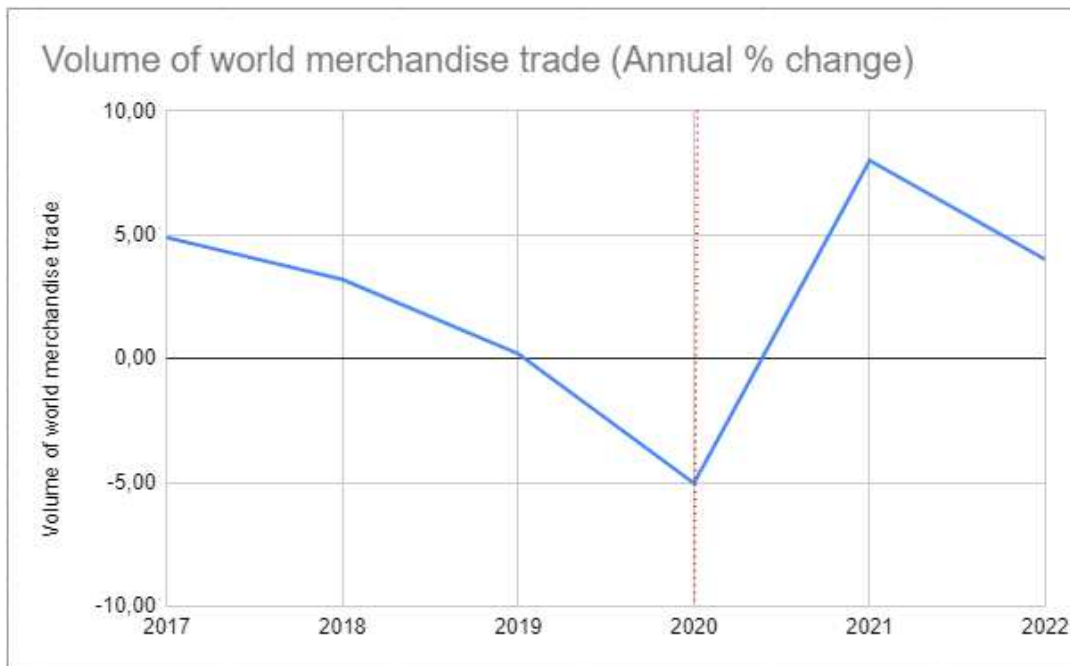
Source: International Monetary Fund (IMF) Database

Graph 16. China Imports, CIF from Partner Countries in million U.S. dollars



Source: International Monetary Fund (IMF) Database

Graph 17. Volume of world merchandise trade (Annual % change) forecast for 2021 and 2022



Source: WTO for trade, consensus estimates for GDP